Lwarp

LaTeX HTML5

The **lwarp** package

LaTeX to HTML

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Abstract

The lwarp package allows LaTeX to directly produce HTML5 output, using external utility programs only for the final conversion of text and images. Math may be represented by SVG files or MathJax.

Documents may be produced by pdfLaTeX, LuaLaTeX, or XeLaTeX. A *texlua* script removes the need for system utilities such as *make* and *gawk*, and also supports *xindy* and *latexmk*. Configuration is automatic at the first manual compile.

Print and HTML versions of each document may coexist, each with its own set of auxiliary files. Support files are self-generated on request. Assistance is provided for import into EPUB conversion software and word processors.

A modular package-loading system uses the lwarp version of a package for HTML when available. More than 300 LaTeX packages are supported with these high-level source-compatibility replacements, and many others work as-is.

A tutorial is provided to quickly introduce the user to the major components of the package.

To update existing projects, see section 2: Updates.

For a list of supported features, see table 2: Supported packages and features.

Note that this is still a "beta" version of lwarp, and some things may change in response to user feedback and further project development.

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2 Updates

The following is a summary of updates to lwarp, highlighting new features and any special changes which must be made due to improvements or modifications in lwarp itself.

For a detailed list of the most recent changes, see the end of the Change History on page 1044.

v0.62: MiKTEX docs, HTML title, CTEX xeCJK, bitpattern.

docs
- Docs: Setting a UTF-8 locale. See section 10.8.

MiKTEX
- MiKTEX: Docs for *MiKTeX Console* and miktex-poppler-bin.

HTML <title>
- HTML subpage titles: Added `\HTMLTitleBeforeSection` and `\HTMLTitleAfterSection` to select whether the HTML `<title>` displays the website name before or after the section name. See section 8.4.

fixes
- Fix for package options handling.
- Fixes for horizontal white space between `fminipage`, `fcolorminipage`, `colorboxBlock`, `fcolorboxBlock`.
- Logos: Fix for XƎTEX logo, improved CSS, made robust, improved search-engine optimization.
- `\\[$1]`: Additional HTML `<br>` if $1 > 0 pt.
- Fixes for `\includgraphics` filename, and with `FormatWP`.
- Fix: CSS for `\textup`.
- Fix: Added `\slshape`.

packages
- chemfig: Docs for new macro `\polymerdelim`.
- asymptote: Docs for compilation.
- chngpage: Fix to load lwarp-changepage.
- algorithm2e: Fix with non-book classes.
- register: Updated to v1.8.
- nicefrac: Improved font control and CSS, honors `nice` and `ugly`.
- units: Improved font control and CSS, honors `tight` and `loose`.
- xfrac: Improved CSS.
- textcomp and xunicode: Fix conflicts with `\textcircled`.
- ulem: Improved compatibility with CJKulem, `lateximage`.
- MathJax and siunitx: Removed inoperable extension.
- Added ctex package and related classes, xeCJK.
- Prevented CJK, CJKutf8 unless xeCJK, ctex are used.
- Added bitpattern, pdfcomment, pdfmarginpar, tram, unitsdef, xechangebar.
- Added musicography, octave, semantic-markup.
- Added 2in1, flippdf, notespages, rviewport, twoup.

v0.61: Custom compilation, EPS-related packages, documentation, indexes.

docs
- Split index into multiple indexes. See page 1074.
- Improved documentation regarding font selection. See section 8.2.
- Added documentation regarding debugging options. See section 34.
- Added documentation regarding HTML entities inside program listings. See section 9.2.1.

custom compiling
- Added options to specify the shell commands to execute for ***lwarpmk print*** and ***lwarpmk html***, allowing the use of lwarp with perltex, pythontex, etc. If not specified, these are set automatically depending on the LaTeX engine, `--shell-escape`, and lwarp options. See section 10.

⚠ changed names
- Changed macro names to match `\displaymathother`, `\displaymathnormal`:

Old	New
`\StartDynamicMath`	`\inlinemathother`
`\StopDynamicMath`	`\inlinemathnormal`

fixes
- Fix: Paragraph tags in a `tabular`.
- Fix: supertabular and xtab captions.
- Fix: DVI LaTeX `\includegraphics` EPS images.
- Fix: newfloat lists.
- Fix: CSS footnotes text align, minipage tabular and footnote margins.

packages
- Added epsfig, psfrag, psfragx, pstool.
- Added copyrightbox, pdfprivacy, thinsp, threadcol, uspace.
- Added chkfloat, cmdtrack, dprogress, lua-visual-debug, refcheck, srcltx, srctex, vpe, xbmks.

v0.60: Fixes for longtable, listings.

fixes
- longtable, etc.: Fixes for slowdown and memory management for very long tables.
- listings: Fix for HTML entities, and also when used inside a list.
- diagbox: Fix for incorrect HTML par tags.

packages
- Added 2up, booklet.
- Added bophook, draftfigure, fullminipage, grid-system, layaureo.
- Added leading, widows-and-orphans.
- Added fancytabs, thumb, thumbs.

v0.59: DVI *latex*, MATHJAX, asymptote, pdftricks and pstricks, epstopdf, brqen.

⚠ Reset the configuration
- Due to changes in *lwarpmk*, recompile any existing project a single time using ***`pdflatex filename.tex`*** or similar, after which *lwarpmk* may then be used with the new configuration files.

lwarpmk
- Added an error if `lwarpmk.conf`'s format has changed and the document must be recompiled.
- Added a warning if the `lwarpmk.conf` configuration file appears to be for the wrong operating system, in case files are transferred between systems.
- Added
  ```
  lwarpmk epstopdf <list-of-EPS-files>
  ```
  to quickly convert a document's EPS images to PDF or SVG. See section 9.7.

DVI *latex*
- Added support for DVI *latex*. See section 8.3.

latexmk
- Fix for `--shell-escape` with *latexmk*.

math
- Updated MathJax script to v2.7.4.
- Fix: Mathjax chapter number removed from non-numeric tagged equations.
- Added MathJax support for nicefrac, units.
- Fix for `\[` and `\]` with `\displaymathnormal`.

images
- Fix for `\includegraphics` filename expansion.
- `\includegraphics` now works with `.pdf` and `.eps` filename extensions.

packages
- Moved amsmath out of the lwarp core.
- Fix for chemformula `\NMR`.
- Added asymptote, pdftricks, pstricks, pst-eps.
- Added breqn, Slunits.
- Added bxpapersize, canoniclayout, draftcopy, fnbreak, nccfancyhdr.
- Added accsupp, axessibility.
- Added xunicode.
- Improved and now supports epstopdf.
- Tested to work as-is: eepic, sepfootnotes.

docs
- Added information about setting up a development version of lwarp.

v0.58: Extensive improvements in indexing, glossaries. Adds PDF-inclusion packages.

⚠ Reset the configuration
- Due to changes in *lwarpmk*, recompile any existing project a single time using ***`pdflatex filename.tex`*** or similar, after which *lwarpmk* may then be used with the new configuration files.

lwarpmk
- *lwarpmk*: Added the `-p` option to specify the project name.

glossaries

- *lwarpmk*: Now uses *makeglossaries* for glossary generation, allowing the processing of multiple glossaries at once.
- Added lwarp option `GlossaryCmd` to specify the shell command used by ***`lwarpmk printglossary`*** and ***`lwarpmk htmlglossary`***. Defaults to ***`makeglossaries`***.

index and glossary

- Docs: Extra indexing options. See section 9.5.11.
- Added support for *makeindex*. (Previously supported only *xindy*.) Also added indexing packages listed below.
- Added lwarp options `PrintIndexCmd`, `HTMLIndexCmd`, and `LatexmkIndexCmd` to specify shell commands used by ***`lwarpmk printindex`***, ***`lwarpmk htmlindex`***, and *latexmk*. May be preset with the `makeindex` or `xindy` lwarp options. See section 8.3.
- Added lwarp options `makeindex` and `xindy` to set `PrintIndexCmd`, `HTMLIndexCmd`, and `LatexmkIndexCmd` to sensible values for a typical single index. See section 8.3.
- Added lwarp option `makeindexStyle` to tell *lwarpmk* to use a custom style instead of `lwarp.ist`. See section 9.5.17.
- Fix for index entries with `\see`, `\seealso`, `\emph`, `\textbf`, etc.

misc. fixes

- Replaced each `\csuse` with `\@nameuse` for improved error detection.
- Additional internal print/HTML macro selection improvements.
- Fix: `\printindex` finishes pending `\index` writes first.

packages

- Fixes for memoir: makeidx, ccaption, multiple indexes, `\specialindex`.
- Fixes for komascript: Indexing improvements.
- Added imakeidx, index, repeatindex, splitidx.
- Added attachfile, attachfile2, intopdf, pdfpages, pdfx.
- Added cases.
- Tested to work as-is: notes2bib, hvindex.

v0.57: algorithm2e, float styles, tabular packages, internal improvements.

MathJax

- Added support for MathJax equations with `\footnote`, `\footnotemark`.

math macros

- Added `\StartDefiningMath` and `\StopDefiningMath` for use when defining macros in the preamble which contain $. See section 9.6.6.

dynamic math

- Added `\inlinemathother` and `\inlinemathnormal` to delimit math expressions which depend on a variable condition such as a counter. Such expressions will not be hashed for reuse, and will be converted to SVG math images even when MathJax is enabled. See section 9.6.7.

⚠ new name

- Renamed `\EndDefiningTabulars` to `\StopDefiningTabulars`.

lateximage alt tags

- Improved localization for lateximage HTML alt tags. For SVG math images, the alt tag under some conditions will be set to \mathimagename, which defaults to "math image". For packages, the alt tag is set using the package name followed by \packagediagramname, which defaults to "diagram". Ex:

  ```
  (-xy- diagram)
  ```

  See section 8.4.
- Fix: Improved print/HTML macro selection.

misc. fixes

- Fix: \href text catcodes.
- Fix: \subref text.
- Fixes: Colored \rule and \boxframe.

packages

- float, rotfloat: Adds support for float styles ruled and boxed.
- float: Fix: Do not create \l@<type> until \listof is used.
- marginnote: Fix: Long optional argument.
- ellipsis: Adds \midwordellipsis.
- breakurl: Fix for text catcodes.
- Added algorithm2e, register, ltablex, xltabular, xellipsis, trimclip, errata, vowel, xpiano.
- Prevents glossary.
- Tested to work as-is with gauss, phonrule, piano, SIunits, tikzcodeblocks.

v0.56: Shell escape, tabular packages.

lwarpmk

- Added

  ```
  lwarpmk pdftosvg <list-of-PDF-files>
  ```

  to quickly convert a document's PDF images to SVG, for use with HTML. See section 9.7.
- Added support for --shell-escape. See section 8.1.

tabular

- Added support for array w and W columns.
- Fix: \multicolumn parameter handling.
- Added support for double \hlines, \midrules, and vertical rules.
- Added support for arydshln dashed lines with HTML tabular, but reverts to plain rules for lateximage and SVG math array.

misc. fixes

- Fix: \thinspace.
- Fix: paralist compact environments.

packages

- Added parnotes, quoting, lua-check-hyphen, tocenter, underscore.
- Tested to work as-is with babelbib, bibunits, bodegraph, fast-diagram, nicematrix, structmech.

v0.55: Various fixes.

misc fixes

- Fix: Extraneous space in file links, which also prevented *Calibre* EPUB conversions.
- Fix: Float optional argument regression.
- Fix: `\ForceHTMLTOC` with `\phantomsection`.
- Fix: Overfull boxes in `lateximages`.
- Fix: QED symbols in `lateximage`.

packages

- koma-script: Fix: Figure with `\centering`, etc.
- Added clrdblpg.

v0.54: Float `\centering`, improved image checks.

⚠ Reset the configuration

- Due to changes in *lwarpmk*, recompile any existing project a single time using ***`pdflatex filename.tex`*** or similar, after which *lwarpmk* may then be used with the new configuration files.

lwarpmk

- `lwarpmk limages` checks for the presence of the HTML version of the document and valid image references before attempting to create the `lateximages`.
- *lwarpmk*: Improved error message if configuration file does not exist.

BibTeX

- Added documentation for avoiding error with BibTeX and `\etalchar`. See section 9.5.9.

polyglossia

- Added documentation regarding polyglossia. See section 9.13.4.

macros in section names

- Added documentation regarding the use of macros in section names. See section 9.1.

document encoding

⚠ New and revised encoding options

- Renamed and added package options:

Old Package Option	New Package Option
`xdyFilename`	`xindyStyle`
`IndexLanguage`	`xindyLanguage`
--	`xindyCodepage`
--	`pdftotextEnc`

  Use these options along with inputenc or inputenx to process documents in an encoding other than UTF-8. See section 8.2.

floats with `\centering`, etc.

- Floats now honor `\centering`, `\raggedright`, `\raggedleft`, and their ragged2e equivalents, when placed directly after:

```
\begin{floattype}
\centering
```

misc. fixes

- tikz: `\pgfpicture`, fit, align, font.
- ragged2e: `\centering` etc.

- hyperref: `\hypertarget` was creating duplicate of `\label`.
- hyperref: Active chars inside `\hyperref`, `\hyperlink`.
- hyperref: `\ref` inside `\hyperlink` caused a nested HTML link.
- glossaries: Fix when not using babel or polyglossia.
- textcomp: `\textperthousand`.
- LaTeX core `verse` environment: line spacing.

⚠ packages

- Removed `\citetitle`, adjusted `\attribution`.
- memoir: Minor update for v3.7g.
- Added inputenx, bibunits, chngpage, forest, magaz, gridset.
- Prevents loading ae, aecc, t1enc, and wasysym.

v0.53: Improved image checks.

lwarpmk

- *lwarpmk*: Added a warning about corrupted images due to the need to recompile the document one more time.
- *lwarpmk*: Added the ***`lwarpmk cleanlimages`*** command.
- Added documentation for ***`lwarpmk cleanlimages`*** and ***`lwarpmk pdftohtml`***.

v0.52: Improved footnotes, SVG math.

documentation

- Improved install instructions regarding `lwarp_baseline_marker.png`.
- Added documentation regarding footnotes in section headings, and footnotes with `\VerbatimFootnotes` from fancybox, fancyvrb. See section 9.4.4.
- Added documentation regarding font selection when using XeLaTeX or LuaLaTeX with fontspec and traditional font packages. See section 8.2.

SVG math

- Fix: Limit the number of background tasks when generating `lateximages`.
- Added user-adjustable SVG math font scaling. See section 78.3.
- Added warnings if `lwarp_baseline_marker.png` is not present, or if graphicx or graphics is not loaded.
- Improved `\ensuremath` hashing expansion.
- Fix: `equation*` with `split`.
- `tabbing` now works inside a `lateximage`. Use for math in `tabbing`.

MathJax

- Fix: MathJax script was not executing in some conditions.
- Added `\CustomizeMathJax` to add custom functions. See section 9.6.

footnotes

- Fix: Footnote numbering when using `HTMLDebugComments`.
- Fix: Footnote paragraph tags.
- Fix: `FootnoteDepth` defaults to `\subsubsection`.

misc. fixes

- Fix: `\kill` in a `lateximage`.

- Fix: `\FileDepth`, misc. others, when input encoding is not `utf8`.
- Fix: `\texorpdfstring` in a section name.

packages
- hyperref emulation: Fix for `#`, `%`, `&`, `~`, `_` characters in URLs.
- fancybox, fancyvrb: Initial support for `\VerbatimFootnotes`.
- nicefrac: Added with fix for `\ensuremath`.
- graphicx: Fix for option defaults. Added v1.1a/b options.
- endfloat: Updated for v2.6.
- url: Fixes for active characters.

v0.51: Improved SVG math, added numerous chemistry packages.

documentation
- Docs: Added Things to avoid.
- Docs: Added to Converting an existing document.
- Docs: Multiple authors and affiliations with custom classes. See section 9.5.1.
- Docs: tikz with matrices. See section 9.7.1.

SVG math
- Improved SVG math baseline.
- Improved SVG math font and color.
- Faster SVG math rendering.
- Improved support for display math containing complicated math objects, such as tikz-cd. See section 9.6.8.
- Fix: `\addcontentsline` inside SVG math.
- Fix: SVG math containing an embedded `lateximage`.

MathJax
- MathJax now handles `\ensuremath` in expressions.

misc. fixes
- Fix: Added `alignat` environment.
- Fix: afterpackage no longer required, which conflicted with scrlfile.
- Fix: titling `\thanks` mark.
- Fix: fancybox improvements.
- Fix: tikz `\tikz` macro. (Previously only the `tikzpicture` environment worked.)
- Fix: tikz with optional argument.

packages
- Added mhchem, chemfig, chemformula, chemmacros, chemnum, chemgreek, epstopdf-base, grid, ltxgrid.

v0.50: Improved SVG math.

svg math

- SVG math and other `lateximages` now are converted to SVG using parallel background tasks, utilizing all available CPU cores.
- Inline SVG math image file names now are MD5 hashes made from their source LaTeX code. Identical inline math expressions, such as multiple instance of x, now share a single image file. This reduces the number of images to store, transmit, process, and display. Each image file is only converted to SVG a single time, and reused if it already exists. Display math and other forms of SVG image such as `picture` and Ti*k*z still use individual image files which are recreated each time ***`lwarpmk limages`*** is run.
- Fixes: SVG math and/or `\underline` in a sectioning file name.
- Improved SVG display math and tags.
- Improved SVG math and siunitx `alt` tags.
- Improved siunitx units.
- Fix: `\ensuremath` with MathJax now creates a `lateximage`.
- Fix: `\centering`, etc. in SVG math, `lateximage`, Ti*k*z.

misc. fixes

- Fix: Made various macros robust, additionally fixing authblk.
- Fix: ntheorem if neither `standard` nor `amsthm` selected.
- Fix: listings: Improved column alignment.
- Fix: Load fontspec if necessary.

packages

- Added xy, epstopdf, diagbox, pbox, bytefield, axodraw2, phfqit, schemata, dblfloatfix, nonfloat, morefloats.

v0.49:

tabular

- Added xcolor `\rowcolors`.
- Fix: `\noalign` inside a `tabular`.

math

- Fix: `\eqref` in a caption.

misc fixes

- Fix: Incorrect PDF font size changes caused occasional HTML corruption.
- Fix: printlen changes are now grouped for HTML output.

packages

- Added vwcol, vertbars, hyphenat, lineno, fnlineno, figsize, hypdestopt, pagegrid, pdfrender, luacolor, resizegather.

v0.48:

documentation

- Added some documentation regarding converting an existing document. See section 7.

cleveref

- Updated compatibility for new cleveref v0.21.

tabular

- Fix: Ignores optional tabular column arguments.

minor updates
- Added \leftline, \centerline, \rightline.
- Lists have improved font control via \makelabel.
- Print-mode lateximage now boxed to the natural width of its multiline contents.
- abstract now allows an optional name, as required by some classes.

math
- Fix: Improved spacing, \mbox, and font sizes with SVG math, Ti*k*Z.
- siunitx: Improved SVG math, fraction compatibility, color output.

misc. fixes
- Fix: LOF/LOT links.
- Fix: Virtual page size grouping caused excessive PDF page breaks.
- Fix: Parsing similar package names in a single \usepackage.
- Fix: Adapts to classes without \part.
- Fix: \newline in \title was causing <br> in window title.
- Fix: \maketitle with \cr, \crcr, \noalign, for IEEEtran class.
- Fix: xfrac neutralized BlockClass and others.
- Fix: todonotes and luatodonotes: Improved \todototoc.

packages
- Added colortbl, chapterbib, acro, acronym, hypernat, hypcap, stfloats, vmargin, fancyheadings.
- fancyref: Now directly supported.

v0.47:

math
- Improved SVG math baseline and sizing.
- Fixes: SVGmath in captions, subcaptions, \nameref.
- Fixes: Line wrap at hyphen in HTML output.

packages
- Added endheads, multitoc, sectionbreak, blowup, xurl.

v0.46:

⚠ name change
- \PrintStack changed to \LWRPrintStack.

misc. fixes
- Fix: Empty lines between tabular rows.
- Fix: Stack unnesting.
- Fix: SVG math and lateximages in numerous situations.
- Fix: Spaces in \usepackage.
- Fix: Now allows MathJax inside verse.

v0.45:

documentation
- Improved *MikTeX* install instructions.
- Improved graphics and epstopdf instructions.
- Updates to the Introduction.

memoir
- Added memoir, memhfixc. See section 9.12.

cross-references
- Fix: Now allows underscores in labels.
- Fix: `\_` and `\<blank>` in section/file names.

math
- Fix: Now allows MathJax inside `tabbing`.

bibliography
- Fix: Bibliography `\em` names.
- Added cite, natbib, backref. (Also works as-is with biblatex.)

misc. fixes
- Fix: Empty lines between `tabular` rows.
- Fix: "Improper `\prevdepth`" with minipages, lists.
- Fix: Incorrect SVG math and `lateximages` with subfig.
- Fix: Lateximages from incorrect pages with Mathjax.
- Fix: Missing sidetoc if using listings.
- Fix: Added an array emulation package.

packages
- Added subfigure, prettyref, hanging, midpage, flafter, fltrace, changebar, endfloat, continue, fwlw, turnthepage, footnpag, pagesel, textfit, titleref.

v0.44:

koma-script
- Added koma-script classes (except scrlttr2, scrjura).
- Added scrextend, scrlayer, scrlayer-notecolumn, scrlayer-scrpage, scrhack, tocstyle, tocbasic.

HTML title and author
- Added `\HTMLTitle`. Fixed web page title if `\HTMLTitle` empty and no `\title` given and not using titling package.
- Fixed web page author if `\HTMLauthor` is empty and `\author` is not given.

encodings
- If using *pdflatex*, automatically loads T1 and UTF-8 encodings. (Additional fontenc encodings may be loaded after lwarp.)

lists
- Added `list` and `trivlist` environments, hang.

tabular
- Fix: `\multicolumn` alignment if formatting for a word processor.
- Added ltxtable.

math
- Fix: MathJax combined with `lateximages`.
- algorithmicx: Improved comment symbol and floating.

packages
- Completed todonotes and luatodonotes.
- Added todo, easy-todo, fixmetodonotes, fixme.
- Added soulutf8, soulpos, cancel.

- Added section, fancyref, ifoddpage.
- Added preview, atbegshi, watermark.
- Improved tocloft `\newlistof` and `\newlistentry`.

v0.43:

- Docs: Reorganized HTML customization, added an HTML settings table. See section 8.4.

footnotes
- Added `FootnoteDepth` to control the placement of pending footnotes before section breaks. By default, pending footnotes are printed before each `\subparagraph` or higher.

sectioning
- Fix: Expansion in section name.

tabular
- Fix: Ignore spaces in tabular column specification.
- Fix: Tabular rules at bottom or when finishing incomplete rows.
- Fix: `\multicolumn` at/bang/before/after specifications, trim, and vertical rules.
- Fix: supertabular and xtab column misalignment.

math
- Fix: `equation*`.
- Fix: SVG math in a section name.
- Fix: `\ref` and `\eqref` in SVG math.

packages
- Added todonotes and luatodonotes (but only `disabled`).
- Added breakurl.
- hyperref: Fix: Several macros were made robust, `\Gauge` added.

v0.42:

Support TEX!
- Added TEX development support page, Supporting TEX development.

word-processor conversion
- Improved assitance for word-processor conversions when boolean `FormatWP` is set `true`. See section 12.

⚠ name change
  - The boolean `FormatWordProcessor` has been renamed `FormatWP`.

⚠ name change
  - The boolean `HTMLMarkFloats` has been renamed `WPMarkFloats`.
  - New booleans control whether to place additional marks around mini-pages, at the table of contents, at the LOF and LOT, and whether to print math as LATEX source for copy/paste into the *LibreOffice Writer TeXMaths* extension.
  - Improved formatting for numerous objects. See section 12.

tabbing
- Add: `tabbing` environment.

overpic
- Add: overpic package. See section 317.

math
- Fix: Text copy/paste of $\mathcal{AMS}$ math environment numbers and names.
- Improved `\ensuremath`.

- MathJax with siunitx: Updated script and documentation.

symbols
- textcomp: Improved `\interrobangdown`.
- realscripts: Fix for subscripts in a `lateximage`.

load order
- morewrites: Enforces loading before lwarp.

v0.41:

`tabular`
- Added tabular vertical rules, subject to some limitations. See the rules section of section 9.9.
- Improved booktabs: Width and trim are honored.

⚠ new syntax
- Added `\mcolrowcell` for empty cells inside a `\multicolumnrow`. Use `\mcolrowcell` instead of `\mrowcell` for two-dimensional cells created by `\multicolumnrow`. Continue to use `\mrowcell` for empty cells in a `\multirow`. See section 299.2 on page 824.
- Fix: Unfinished tabular rows are automatically filled.
- Fix for tabular column specifiers while using babel-french. (`\NoAutoSpacing` is activated then nullified inside the tabular, due to a conflict with the tabular column parsing code.)

v0.40:

graphics, graphicx
- graphics and graphicx have been moved from the lwarp core, and are only loaded if requested with `\usepackage`.

`\includegraphics` path
⚠ image file extensions
- Improved graphics `\graphicspath` support. Multiple image directories may now be used. Refer to `.pdf` files without a file extension to allow the HTML version to use a `.svg`, `.png`, `.jpg`, or `.gif` version instead. See section 9.7.
- grffile is now directly supported instead of emulated.

bigdelim
- Fix for bigdelim, and improved documentation. See section 131.

symbols
- Improved LaTeX and textcomp symbols.

fixes
- Fix for LaTeX logos and `\InlineClass`, etc. inside a `lateximage`.
- Fix for xltxtra with XeLaTeX.
- Fixes for tocbibind with `\simplechapter`, etc.
- Fixes for `\multicolumnrow` and `\nullfonts` with older versions of multirow and xparse.
- Added `\underline`.

margins
- Added adjmulticol.

columns
- Added cuted, midfloat.

footnotes
- Added pfnote, fnpos, dblfnote.

tabular
- Added stabular, tabls.

sectioning
- Added sectsty, anonchap, quotchap.

v0.39:

title pages
- Improved the titlepage HTML code, `\thanks` notes, and `\maketitle`. titling is no longer required, but is still supported. The `\published` and `\subtitle` fields are no longer provided, but `\AddSubtitlePublished` replicates them using titling. See section 64.8. authblk is added, and should be loaded before titling. See section 64.

⚠ `\published` and `\subtitle` load order

tabular
- `\multirow` now supports the new optional `vpos` argument.

multi column/row cell
- Added `\multicolumnrow` for combined `\multicolumn` and `\multirow`. See section 299.2.

- Tabular special cases:
  - Added `\TabularMacro` to mark custom macros inside tabular data cells, avoiding row corruption. See section 9.9.

⚠ macros inside tabular

⚠ tabular defined inside another environment
  - Added `\ResumeTabular` for use when a `tabular` environment is defined inside another environment. See section 9.9.

tabular
- Added supertabular, xtab, bigstrut, bigdelim.

margins
- Added fullwidth.

page layout
- Added addlines, anysize, a4, a4wide, a5comb, textarea, zwpagelayout, typearea, ebook.

v0.38:

forced single-pass compile
- Added ***`lwarpmk print1`*** and ***`lwarpmk html1`*** actions to force a compile of the project a single time. Useful when multiple passes are not needed, or changes were not detected.

starred sections
- Added `\ForceHTMLPage` and `\ForceHTMLTOC` to force a starred sectional unit onto its own HTML page and with its own TOC entry. See section 9.5.2.

updated tutorial
- Modified the tutorial to use the new `\ForceHTMLPage` and `\ForceHTMLTOC` macros.

packages
- Added appendix, tocbibind, fncychap, fix2col.

font size
- Added relsize, scalefnt.
- Added realscripts, metalogo, xltxtra.
- Added grffile, romanbar.

page numbering
- Added arabicfront, chappg, nonumonpart, nopageno, romanbarpagenumber.

front & back matter
- Docs: Improved description of the use of front/back matter. See section 9.5.
- Fix: color requests xcolor.
- Fix: `\part` for article class.

v0.37:

\include for HTML
- \include now maintains independent .aux files for HTML versions.

latexmk
- comment, used by lwarp, now maintains independent cut files for print and HTML versions, helping *latexmk* to better know whether to recompile.

accents and symbols
- Improved support for LaTeX accents, textcomp, siunitx symbols.

babel-french
- Improved babel-french handling for load order and ~ tilde.

v0.36:

- Recorganized the documentation section regarding special cases and limitations. (Section 9)
- Improved source formatting.

boxes and frames
- \fbox and related now use \fboxsep and \fboxrule.
- \makebox and \framebox now use width and position.
- \fcolorbox and related now work inside a lateximage.

babel-french
- babel-french: Improvements for French variants, load order, footnotes, ellipses.

footnotes
- Improved footnote numbering. lateximage footnotes now appear as regular footnotes to match the numbering of the print version. Also fixed a regression with MathJax.

siunitx
- Improved siunitx units.
- Fix for filenames while using MathJax.
- Fix for \rule when xcolor is not loaded.
- Added transparent, upref.

v0.35: Fix: \textbf and related.

v0.34:

⚠ Optional arguments
- BlockClass's optional argument has been moved in front of the mandatory argument:

  BlockClass[style]{class} (NEW)

  instead of:

  BlockClass{class}[style] (OLD)

  This change makes it more consistent with LaTeX standards, and avoids problems with space between arguments.

⚠ Optional arguments
- Likewise, \InlineClass's optional argument now comes before the mandatory arguments:

  \InlineClass[style]{class}{text}

spans with minipages
- Improved compatibility between spans, minipages, lists, frames, and math. Handles minipages and lists inside an HTML span, such as an `\fbox` containing a minipage, although with minimal HTML fomatting.

framing minipages
See section 9.3.3. `\fboxBlock` is added to frame minipages, tables, and lists with full HTML formatting but no longer inline, and behaves as `\fbox` for print output. The `fminipage` environment is added for framed minipages, as an environment with full HTML formatting, and draws a framed minipage in print output. See section 9.3.5. `\fbox` and minipages now often work in SVG math and `lateximages`. MathJax supports `\fbox`, but not `\fboxBlock` nor `fminipage`.

`lateximage`, SVG math, `tabular`
- Improved compatibility between `lateximage` and `minipage`, `\parbox`, `\makebox`, `\fbox`, `\framebox`, `\raisebox`, `\scalebox`, `\reflectbox`, `tabular`, booktabs.
- Improved font control for `lateximagees` and SVG math.

`eqnarray`
- Added the `eqnarray` environments.

verbatim packages
- fancyvrb is no longer required (preloaded), but is still supported.
- Added verbatim and moreverb.

framing packages
- Added fancybox, boxedminipage2e and shadow.

list packages
- enumitem is no longer required, but is still supported.
- Added enumerate and paralist.
- titleps is no longer required, but is still supported.
- Added crop.
- Added rotfloat, marginfit, and several minor packages; see the change log.

babel-french
- Adds fixed-width HTML spaces around punctuation when using babel-french. LuaTeX does not yet use the extra punctuation spacing.

v0.33:

- Tabular `@` and `!` columns now havetheir own HTML columns.
- `&` catcode changes are localized, perhaps causing errors about the tab alignment character `&`, so any definitions of macros or environments which themselves contain `tabular` and `&` must be enclosed within `\StartDefiningTabulars` and `\StopDefiningTabulars` (previously called `\EndDefiningTabulars`. See section 42. This change is not required for the routine use of tables, but only when a table is defined inside another macro or environment, and while also using the `&` character inside the definition. This may include the use inside conditional expressions.
- Several math environments were incorrectly placed inline. Also, for amsmath with SVG math, the `fleqn` option has been removed, resulting in improved spacing for aligned equations.
- Bug fixes; see the changelog.

v0.32: Bug fixes; no source changes needed:

- *lwarpmk* has been adjusted to work with the latest *luatex*.
- Spaces in the `\usepackage` and `\RequirePackage` package lists are now accepted and ignored.
- Fix for the glossaries package and `\glo@name`.

v0.31: Bug fix; no source changes needed:

- Improved compatibility with keyfloat, including the new `keywrap` environment.

v0.30:

⚠ lwarp-newproject

- lwarp-newproject has been removed, and its functions have been combined with lwarp.

  To modify existing documents, remove from the document source:

  ```
  \usepackage{lwarp-newproject}
  ```

  The lwarp package now produces the configuration files during print output, and also accepts the option `lwarpmk` if desired.

⚠ HTML setup changes.

- A number of macros related to HTML settings have been converted to options, and other macros and options have been renamed to create a consistent syntax:

Old Macro	New Package Option
`\HomeHTMLFileName`	`HomeHTMLFilename`
`\HTMLFileName`	`HTMLFilename`
`\useLatexmk`	`latexmk`
`\warpOSwindows`	`OSWindows`

Old Package Option	New Package Option
`lwarpmklang`	`xindyLanguage`
(new)	`xindyStyle`

Old Macro	New Macro
`\MetaLanguage`	`\HTMLLanguage`
`\HTMLauthor`	`\HTMLAuthor`
`\NewHTMLdescription`	`\HTMLDescription`
`\SetFirstPageTop`	`\HTMLFirstPageTop`
`\SetPageTop`	`\HTMLPageTop`
`\SetPageBottom`	`\HTMLPageBottom`
`\NewCSS`	`\CSSFilename`

- Per the above changes, in existing documents, modify the package load of lwarp, such as:

```
\usepackage[
    HomeHTMLFilename=index,
    HTMLFilename={},
    xindyLanguage=english
]{lwarp}
```

- The file `lwarp_html.xdy` has been renamed `lwarp.xdy`. To update each document's project:
  1. Make the changes shown above.
  2. Recompile the document in print mode. This updates the project's configuration files, and also generates the new file `lwarp.xdy`.
  3. The old file `lwarp_html.xdy` may be deleted.
- The new lwarp package option `xindyStyle` may be used to tell *lwarpmk* to use a custom `.xdy` file instead of `lwarp.xdy`. See section 9.5.18.
- Improvements in index processing:
  - *xindy*'s language is now used for index processing as well as glossary.
  - Print mode without *latexmk* now uses *xindy* instead of *makeindex*.
  - *texindy*/*xindy* usage depends on *pdflatex* vs *xelatex*, *lualatex*.
  - For *pdflatex* and *texindy*, the `-C utf8` option is used. This is supported in modern distributions, but a customized `lwarpmk.lua` may need to be created for use with older distributions.

v0.29:

- Add: `lwarpmklang` option for lwarp-newproject and lwarp. Sets the language to use while processing the glossary. (As of v0.30, this has been changed to the `IndexLanguage` option.) (As of v0.54, this has been changed to the `xindyLanguage` option.)
- Fix: `\includegraphics` when no optional arguments.

v0.28:

- `\HTMLAuthor {`⟨*name*⟩`}` assigns HTML meta author if non-empty. Defaults to `\theauthor`.
- Booean `HTMLDebugComments` controls whether HTML comments are added for closing `<div>`s, opening and closing sections, etc.
- Boolean `FormatEPUB` changes HTML output for easy EPUB conversion via an external program. Removes per-file headers, footers, and nav. Adds footnotes per chapter/section.
- Boolean `FormatWordProcessor` changes HTML output for easier conversion by a word processor. Removes headers and nav, prints footnotes per section, and also forces single-file output and turns off HTML debug comments. Name changed to `FormatWP` as of v0.42.

- Boolean `HTMLMarkFloats` adds text marks around floats only if the boolean `FormatWordProcessor` is `true`. These make it easier to identify float boundaries, which are to be manually converted to word-processor frames. Name changed to `WPMarkFloats` as of v0.42.
- Updated for the new MathJax CDN repository.
- Adds tabulary.
- Supports the options syntax for graphics.
- Improved index references, now pointing exactly to their target.
- Adds glossaries. *lwarpmk* is modified to add `printglosssary` and `htmlglossary` actions.

3 Introduction

The lwarp project aims to allow a rich LaTeX document to be converted to a reasonable HTML5 interpretation, with only minor intervention on the user's part. No attempt has been made to force LaTeX to provide for every HTML-related possibility, and HTML cannot exactly render every possible LaTeX concept. Where compromise is necessary, it is desirable to allow the print output to remain typographically rich, and compromise only in the HTML conversion.

Several "modern" features of HTML5, CSS3, and SVG are employed to allow a fairly feature-rich document without relying on the use of JAVASCRIPT. Limited testing on older browsers shows that these new features degrade gracefully.

---

lwarp is a native LaTeX package, and operates by either patching or emulating various functions. Source-level compatibility is a major goal, but occasional user intervention is required in certain cases.

As a package running directly in LaTeX, lwarp has some advantages over other methods of HTML conversion. TeX itself is still used, allowing a wider range of TeX trickery to be understood. Lua expressions are still available with LuaTeX. Entire categories of LaTeX packages work as-is when used with lwarp: definitions, file handling, utilities, internal data structures and calculations, specialized math-mode typesetting for various fields of science and engineering, and anything generating plain-text output. Blocks of PDF output may be automatically converted to SVG images while using the same font and spacing as the original print document, directly supporting Ti*k*z and `picture`. Numerous packages are easily adapted for HTML versions, either by loading and patching the originals, or by creating nullified or emulated replacements, and all without resorting to external programming. As a result, several hundred packages have already been adapted (table 2), and an uncounted number more work as-is.

Packages have been selected according to several criteria: perceived importance, popularity lists, recent CTAN updates, CTAN topics, mention in other packages, support by other HTML conversion methods, and from sample documents taken from public archives. These include some "obsolete" packages as well.[1]

Assistance is also provided for modifying the HTML output to suit the creation of EPUB documents, and for modifying the HTML output to ease import into a word processor.

---

[1] An amazing number of decades-old packages are still in use today.

pdflatex, *xelatex*, or *lualatex* may be used, allowing lwarp to process the usual image formats. While generating HTML output, SVG files are used in place of PDF. Other formats such as PNG and JPG are used as-is.

SVG images may be used for math, and are also used for `picture`, Ti*k*z, and similar environments. The SVG format has better browser and e-book support than MathML (as of this writing), while still allowing for high-quality display and printing of images (again, subject to potentially bug-ridden[2] browser support).

Furthermore, SVG images allow math to be presented with the same precise formatting as in the print version. Math is accompanied by `<alt>` tags holding the LaTeX source for the expression, allowing it to be copy/pasted into other documents.[3] Custom LaTeX macros may be used as-is in math expressions, since the math is evaluated entirely inside LaTeX. An MD5 hash is used to combine multiple instances of the same inline math expression into a single image file, which then needs to be converted to SVG only a single time.

The MathJax JavaScript display engine may be selected for math display instead of using SVG images. Subject to browser support and Internet access, MathJax allows an HTML page to display math without relying on a large number of external image files.[4] lwarp maintains LaTeX control for cross-referencing and equation numbering, and attempts to force MathJax to tag equations accordingly.

A *texlua* program called *lwarpmk* is used to process either the print or HTML version of the document. A few external utility programs are used to finish the conversion from a LaTeX-generated PDF file which happens to have HTML5 tags, to a number of HTML5 plain-text files and accompanying images.

lwarp automatically generates the extra files necessary for the HTML conversion, such as CSS and `.xdy` files, and configuration files for the utility *lwarpmk*. Also included is a parallel version of the user's source document, `<sourcename>-html.tex`, which selects HTML output and then inputs the user's own source. This process allows both the printed and HTML versions to co-exist side-by-side, each with their own auxiliary files.

When requesting packages during HTML conversion, lwarp first looks to see if it has its own modified version to use instead of the standard LaTeX version. These `lwarp-packagename.sty` files contain code used to emulate or replace functions for HTML output.

---

[2] Firefox has had an on-again/off-again bug for quite some time regareding printing SVGs at high resolution.

[3] There seems to be some debate as to whether MathML is actually an improvement over LaTeX for sharing math. The author has no particular opinion on the matter, except to say that in this case LaTeX is much easier to implement!

[4] One SVG image file per math expression, except that duplicate inline math expressions are combined into a single file according to the MD5 hash function of its contents. A common scientific paper can easily include several thousand files, and in one case the MD5 hash cut the number of files in half and the rendering time by 30%.

3.1 Typesetting conventions

Font weight, family, and style are used to indicate various objects:

Table 1: Typesetting conventions

package	LaTeX package.
program	Program's executable name.
`option`	Program or package option.
`filename`	File name in the operating system.
Brand Name	Proper name for a program, operating system, etc.
commands	Commands to be entered by the user.
`code`	Program code.
`\macroname`	LaTeX macro.
`environment`	LaTeX environment.
`counter`	LaTeX counter.
`boolean`	LaTeX boolean.
`<element>`	HTML element.
`attribute`	HTML attribute.
User Interface	A user-interface item.
ACRO	Acronym.

3.2 Supported packages and features

Table 2 lists some of the various LaTeX features and packages which may be used. Many are tested to work as-is, some are patches for the original packages, and some are emulations written for source-level compatibility. Many are nullified as being irrelevent to HTML output.

Table 2: LaTeX–HTML generation — lwarp package — Supported features

Category	Status and supported features.
Engines:	DVI LaTeX, pdfLaTeX, XeLaTeX, LuaLaTeX
Compiling:	latexmk, perltex, pythontex, *make*, etc.
Classes:	article, book, report, scrartcl, scrbook, scrreprt, memoir, CTeX-related.
Koma-script:	scrextend, scrhack, scrlayer. Others as listed below.
Memoir:	memhfixc
Languages:	babel, ctex, polyglossia, xeCJK.
Page layout:	2in1, 2up, a4, a4wide, a5comb, addlines, anysize, atbegshi, blowup, booklet, bophook, bxpapersize, canoniclayout, clrdblpg, continue, draftcopy, draftfigure, draftwatermark, ebook, everyshi, fancyhdr, fancytabs, flippdf, fullminipage, fullpage, fwlw, geometry, grid, grid-system, gridset, layaureo, leading, ltxgrid, nccfancyhdr, notespages, pagegrid, pdfprivacy, pagesel, preview, scrlayer-scrpage, textarea, threadcol, thumb, thumbs, titleps, tocenter, turnthepage, twoup, typearea, vmargin, watermark, zwpagelayout. Tested to work as-is: underlin.
Sectioning:	Adds `FileDepth` for splitting the HTML output. Files may be numbered sequentially or named according to section name. Common short words and punctuation are removed from the file-names. anonchap, fncychap, quotchap, section, sectionbreak, sectsty, titlesec.
Table of contents, figures, tables:	Supported, with hyperlinks. multitoc, shorttoc, titletoc, tocbasic, tocbibind, tocloft, tocstyle.
Title page:	`\maketitle`, `titlepage`, authblk, titling.

lwarp Supported Functions — continued

Category	Status
Front & back matter:	abstract, appendix.
Indexing:	*makeindex* and *xindy* are supported, with hyperlinks. idxlayout, imakeidx, index, makeidx, repeatindex, splitidx. Tested to work as-is: hvindex, sepfootnotes.
Glossary:	glossaries and *xindy* are used.
Bibliography:	babelbib, backref, biblatex, bibunits, chapterbib, cite, hypernat, natbib. Tested to work as-is: notes2bib.
Cross-references:	bookmark, breakurl, cleveref, fancyref, hypdestopt, hyperref, prettyref, titleref, url, varioref, xurl.
Margin notes:	marginfit, marginfix, scrlayer-notecolumn.
Footnotes:	Adds `FootnoteDepth` to print footnotes at section breaks. dblfnote, endheads, endnotes, fnbreak, fnpos, footmisc, footnote, footnpag, marginnote, nccfoots, pagenote, parnotes, pfnote, sidenote.
Math:	Converted to SVG images with HTML `<alt>` tags containing the LaTeX source for the math expression. MathJax supported as an alternative. amsmath: $\mathcal{AMS}$ environments are supported. User-defined macros are available during conversion, due to native LaTeX processing.
Theorems:	Native LaTeX theorems, amsthm, ntheorem, theorem.
Additional math:	Math fonts via SVG images, breqn, cases, resizegather, xy. Tested to work as-is: amscd, bm, braket, delarray, guass, nicematrix, pb-diagram, tikz-cd, etc.
Display math with `\displaymathother`:	Complicated math objects in display math, such as tikz-cd, etc.
Units and fractions:	nicefrac, SIunits, siunitx, units, unitsdef, xfrac. Tested to work as-is: SIunits.

lwarp Supported Functions — continued

Category	Status
Floats:	Appear where declared. capt-of, caption, cutwin, dblfloatfix, endfloat, fix2col, flafter, float, floatflt, floatrow, fltrace, hypcap, keyfloat, morefloats, newfloat, nonfloat, placeins, rotfloat, stfloats, subcaption, subfig, subfigure, subfloat, trivfloat, wrapfig.
Tabular:	`tabular` environment, array, arydshln, bigdelim, booktabs, colortbl, diagbox, longtable, ltablex, ltxtable, multirow, supertabular, tabularx, tabulary, threeparttable, xltabular, xtab.
Graphics:	graphics and graphicx. `\includegraphics` supports `width`, `height`, `origin`, `angle`, and `scale` tags, and adds `class`. References to PDF files are changed to SVG, other image types are accepted as well. `\rotatebox` and `\scalebox` are supported as well as HTML can handle. rotating is emulated but all objects are unrotated. picture, tikz, and xy are converted to an SVG image. asymptote, epsfig, epstopdf, figsize, grffile, overpic, psfrag, psfragx, pst-eps, pstool, pstricks, rviewport. Tested to work as-is: eepic, tikz-3dplot.
xcolor:	Full package color names, any color models, and mixing. `\textcolor`, `\colorbox`, `\fcolorbox`. Enhanced for HTML compatibility.
Lists:	Standard LaTeX environments, enumerate, enumitem, hang, paralist.
Environments:	Standard LaTeX environments.
`minipage`, `\parbox`:	Some HTML5-imposed limitations. Nested minipages are supported. pbox.
Quotations:	copyrightbox, csquotes, epigraph, quoting, verse.
Verbatim:	fancyvrb, moreverb, shortvrb, verbatim.
Frames:	boxedminipage2e, fancybox, framed, mdframed, shadow, vertbars.
Multi-columns:	adjmulticol, multicol, vwcol.

lwarp Supported Functions — continued

Category	Status
Margins:	fullwidth, hanging, midpage.
Line numbering:	fnlineno, lineno.
Direct formatting:	`\emph`, `\textsuperscript`, `\textbf`, etc are supported. `\bfseries`, etc. are only supported in some cases. cancel, ellipsis, hyphenat, lettrine, lips, lua-check-hyphen, luacolor, magaz, nowidow, pdfrender, realscripts, relsize, scalefnt, soul, soulpos, soulutf8, textfit, thinsp, trimclip, ulem, underscore, uspace, widows-and-orphans, xellipsis.
Acronyms:	acro, acronym.
Ordinals:	engord, fmtcount, nth.
Text ligatures:	Ligatures for symbols are supported. Ligatures for f, q, t are intentionally turned off because many simpler browsers do not display them correctly. Modern full-featured browsers re-create these ligatures on-the-fly.
Horizontal space:	HTML output for thin-unbreakable, unbreakable, `\enskip`, `\quad`, `\qquad`, `\hspace`.
Rules:	`\rule` with width, height, raise, text color.
HTML reserved characters:	`\&`, `\textless`, and `\textgreater` are converted to HTML entities.
Fonts:	Used as-is. Appear in SVG math expressions or embedded image environments.
Symbols:	Native LaTeX diacriticals, chemgreek, textalpha, textcomp, textgreek, xunicode. Tested to work as-is: gensymb.
Files:	attachfile, attachfile2, hyperxmp, intopdf, pdfpages, pdfx, xmpincl.

lwarp Supported Functions — continued

Category	Status
Science and engineering:	algorithm2e, algorithmicx, axodraw2, bitpattern, bytefield, chemfig, chemformula, chemgreek, chemmacros, chemnum, listings, mhchem, phfqit, register. Tested to work as-is: blochsphere, bodegraph, bohr, circuitikz, elements, engtlc, fast-diagram, hepnicenames, heppennames, linop, pgfgantt, physics, simpler-wick, slashed, structmech, tikzcodeblocks.
Arts and humanities:	forest, musicography, octave, schemata, semantic-markup, vowel, xpiano. Tested to work as-is: phonrule, piano, tikz-dependency.
Editorial:	changebar, easy-todo, errata, fixme, fixmetodonotes, pdfcomment, pdfmarginpar, todo, todonotes, tram, xechangebar.
Accessibility:	accsupp, axessibility.
Debug:	chkfloat, cmdtrack, dprogress, lua-visual-debug, refcheck, srcltx, srctex, vpe, xbmks.
Working as-is:	Various utility, calculation, file, and text-only packags, such as calc, fileerr, somedefs, trace, xspace. Also, most math-only packages, including specialized typesetting for various fields of science and engineering.

4 Alternatives

Summarized below are several other ways to convert a LaTeX or other document to HTML. Where an existing LaTeX document is to be converted to HTML, lwarp may be a good choice. For new projects with a large number of documents, it may be worth investigating the alternatives before decided which path to take.

4.1 internet class

Cls `internet` The closest to lwarp in design principle is the `internet` class by Andrew Stacey — an interesting project which directly produces several versions of markdown, and also HTML and EPUB. https://github.com/loopspace/latex-to-internet

4.2 TeX4ht

Prog `TeX4ht` http://tug.org/tex4ht/

Prog `htlatex`

This system uses native LaTeX processing to produce a DVI file containing special commands, and then uses additional post-processing for the HTML conversion by way of numerous configuration files. In some cases lwarp provides a better HTML conversion, and it supports a different set of packages. TeX4ht produces several other forms of output beyond HTML, including ODT and a direct path to EPUB, and is still being developed.

4.3 Translators

These systems use external programs to translate a subset of LaTeX syntax into HTML. Search for each on CTAN (http:\ctan.org).

Prog `Hevea` **HeVeA:** http://hevea.inria.fr/ (not on CTAN)

Prog `TtH` **TtH:** http://hutchinson.belmont.ma.us/tth/

Prog `GELLMU` **GELLMU:** http://www.albany.edu/~hammond/gellmu/

Prog `LaTeXML` **LaTeXML:** http://dlmf.nist.gov/LaTeXML/

Prog `Plastex` **PlasTeX:** https://github.com/tiarno/plastex

Prog `LaTeX2HTML` **LaTeX2HTML:** http://www.latex2html.org/
and http://ctan.org/pkg/latex2html.

Prog `TeX2page` **TeX2page:** http://ds26gte.github.io/tex2page/index.html

Finally, GladTeX may used to directly insert LaTeX math into HTML:

Prog `GladTeX` **GladTeX:** http://humenda.github.io/GladTeX/

4.4 AsciiDoc and Asciidoctor

AsciiDoc is one of the most capable markup languages, providing enough features to produce the typical technical-writing document with cross-references, and it writes LaTeX and HTML.

Prog AsciiDoc **Asciidoctor:** http://asciidoctor.org/ (More active.)

Prog AsciiDoctor **AsciiDoc:** http://asciidoc.org/ (The original project.)

4.4.1 Asciidoctor-LaTeX

The Asciidoctor-LaTeX project is developing additional LaTeX-related features.

Asciidoctor-LateX:
http://www.noteshare.io/book/asciidoctor-latex-manual
Prog Asciidoctor-LaTeX https://github.com/asciidoctor/asciidoctor-latex

4.5 Pandoc

Prog Pandoc A markup system which also reads and writes LaTeX and HTML.

Pandoc: http://pandoc.org/

(Watch for improvements in cross-references to figures and tables.)

4.6 Word processors

Prog Word
Prog LibreOffice
Prog OpenOffice

It should be noted that the popular word processors have advanced through the years in their abilities to represent math with a LaTeX-ish input syntax, unicode math fonts, and high-quality output, and also generate HTML with varying success. See recent developments in Microsoft® *Word*® and LibreOffice™ *Writer*.

4.7 Commercial systems

Prog Adobe
Prog FrameMaker
Prog InDesign
Prog Flare
Prog Madcap

Likewise, several professional systems exist whose abilities have been advancing in the areas of typesetting, cross-referencing, and HTML generation. See Adobe® *FrameMaker*®, Adobe *InDesign*®, and Madcap *Flare*™.

4.8 Comparisons

AsciiDoc, Pandoc, and various other markup languages typically have a syntax which tries to be natural and human-readable, but the use of advanced features tends to require many combinations of special characters, resulting in a complicated mess of syntax. By contrast, LaTeX spells things out in readable words but takes longer to type, although integrated editors exist which can provide faster entry and a graphic user interface. For those functions which are covered by the typical markup language it is arguable that LaTeX is comparably easy to learn, while LaTeX provides many more

advanced features where needed, along with a large number of pre-existing packages which provide solutions to numerous common tasks.

Text-based document-markup systems share some of the advantages of LaTeX vs. a typical word processor. Documents formats are stable. The documents themselves are portable, work well with revision control, do not crash or become corrupted, and are easily generated under program control. Formatting commands are visible, cross-referencing is automatic, and editing is responsive. Search/replace with regular expressions provides a powerful tool for the manipulation of both document contents and structure. Markup systems and some commercial systems allow printed output through a LaTeX back end, yielding high-quality results especially when the LaTeX template is adjusted, but they lose the ability to use LaTeX macros and other LaTeX source-document features.

The effort required to customize the output of each markup system varies. For print output, LaTeX configuration files are usually used. For HTML output, a CSS file will be available, but additional configuration may require editing some form of control file with a different syntax, such as XML. In the case of lwarp, CSS is used, and much HTML output is adjusted through the usual LaTeX optional macro parameters, but further customization may require patching LaTeX code.

The popular word processors and professional document systems each has a large base of after-market support including pre-designed styles and templates, and often include content-management systems for topic reuse.

5 Installation

Table 3 shows the tools which are used for the LaTeX to HTML conversion. In most cases, these will be available via the standard package-installation tools.

Detailed installation instructions follow.

Table 3: Required software programs

Provided by your LaTeX distribution:

From TeXLive: http://tug.org/texlive/.

LaTeX: *pdflatex*, *xelatex*, or *lualatex*.

The lwarp package: This package.

The *lwarpmk* utility: Provided along with this package. This should be an operating-system executable in the same way that *pdflatex* or *latexmk* is. It is possible to have the lwarp package generate a local copy of *lwarpmk* called `lwarpmk.lua`. See table 4.

***luatex*:** Used by the *lwarpmk* program to simplify and automate document generation.

***xindy*:** The *xindy* program is used by lwarp to create indexes. On a MiKTeX system this may have to be acquired separately, but it is part of the regular installer as of mid 2015.

***latexmk*:** Optionally used by *lwarpmk* to compile LaTeX code. On a MiKTeX system, *Perl* may need to be installed first.

***pdfcrop*:** Used to pull images out of the LaTeX PDF.

Poppler PDF utilities:

***pdftotext*:** Used to convert PDF to text.

***pdfseparate*:** Used to pull images out of the LaTeX PDF.

***pdftocairo*:** Used to convert images to SVG.

These might be provided by your operating-system package manager, and MiKTeX provides miktex-poppler-bin-* packages.

From Poppler: poppler.freedesktop.org.

For MacOS®, see https://brew.sh/, install *Homebrew*, then

Enter ⇒ `brew install poppler`

For Windows, see MikTeX miktex-poppler-bin-*, or:
https://sourceforge.net/projects/poppler-win32/ and:
http://blog.alivate.com.au/poppler-windows/

***Perl*:**

This may be provided by your operating-system package manager, and may be required for some of the Poppler PDF utilities.

strawberryperl.com (recommended), perl.org

Automatically downloaded from the internet as required:

MathJax: Optionally used to display math. From: mathjax.org

5.1 Installing the lwarp package

There are several ways to install lwarp. These are listed here with the preferred methods listed first:

Pre-installed: Try entering into a command line:

Enter ⇒ `kpsewhich lwarp.sty`

If a path to `lwarp.sty` is shown, then lwarp is already installed and you may skip to the next section.

TEX Live: If using a TEX Live distribution, try installing via *tlmgr*:

Enter ⇒ `tlmgr install lwarp`

MiKTEX:

1. For newer versions of MiKTEX, install or update lwarp using the *MiKTeX Console* program.
2. For older versions of MiKTEX, to install lwarp the first time, use the *MikTeX Package Manager (Admin)*. To update lwarp, use *MikTeX Update (Admin)*.
3. Either way, also update the package miktex-misc, which will install and update the *lwarpmk* executable.

Operating-system package: The operating-system package manager may already have lwarp, perhaps as part of a set of TEX-related packages.

CTAN TDS archive: lwarp may be downloaded from the Comprehensive TEX Archive:

1. See http://ctan.org/pkg/lwarp for the lwarp package.
2. Download the TDS archive: `lwarp.tds.zip`
3. Find the TEX `local` directory:

   TEX Live:

   Enter ⇒ `kpsewhich -var-value TEXMFLOCAL`

   MiKTEX:

   In the **Settings** window, **Roots** tab, look for a local TDS root.

   This should be something like:

   `/usr/local/texlive/texmf-local/`
4. Unpack the archive in the TDS local directory.
5. Renew the cache:

   Enter ⇒ `mktexlsr`

   — or —

Enter ⇒ `texhash`

Or, for WINDOWS MiKTEX, start the program called *MiKTeX Settings (Admin)* and click on the button called **Refresh FNDB**.

CTAN `.dtx` and `.ins` files: Another form of TEX package is `.dtx` and `.ins` source files. These files are used to create the documentation and `.sty` files.

1. See http://ctan.org/pkg/lwarp for the lwarp package.
2. Download the zip archive `lwarp.zip` into your own `lwarp` directory.
3. Unpack `lwarp.zip`.
4. Locate the contents `lwarp.dtx` and `lwarp.ins`
5. Create the `.sty` files:
   Enter ⇒ `pdflatex lwarp.ins`
6. Create the documentation:

```
pdflatex lwarp.dtx  (several times)
makeindex -s gglo.ist -o lwarp.gls lwarp.glo
makeindex -s gind.ist lwarp.idx
pdflatex lwarp.dtx  (several times)
```

7. Copy the `.sty` files somewhere such as the TEX Live local tree found in the previous CTAN TDS section, under the subdirectory:
   `<texlocal>/tex/latex/local/lwarp`
8. Copy `lwarp_baseline_marker.png` and `lwarp_baseline_marker.eps` to the same place as the `.sty` files.
9. Copy the documentation `lwarp.pdf` to a `source` directory in the local tree, such as:
   `<texlocal>/doc/local/lwarp`
10. Renew the cache:
    Enter ⇒ `mktexlsr`
    — or —
    Enter ⇒ `texhash`
    Or, for WINDOWS MiKTEX, start the program called *MiKTeX Settings (Admin)* and click on the button called **Refresh FNDB**.
11. See section 5.2.1 to generate your local copy of *lwarpmk*.
12. Once the local version of `lwarpmk.lua` is installed, it may be made available system-wide as per section 5.2.

Project-local CTAN `.dtx` and `.ins` files: The `.dtx` and `.ins` files may be downloaded to a project directory, then compiled right there, alongside the document source files. The resultant `*.sty` and `lwarpmk.lua` files may be used as-is, so long as they are in the same directory as the document source.

Just testing!

The files `lwarp_baseline_marker.png` and `lwarp_baseline_marker.eps` must also be copied as well. This approach is especially useful if you would like to temporarily test lwarp before deciding whether to permanently install it.

5.2 Installing the *lwarpmk* utility

(Note: If *lwarpmk* is not already installed, it is easiest to use a local copy instead of installing it system-wide. See section 5.2.1.)

After the lwarp package is installed, you may need to setup the *lwarpmk* utility:

1. At a command line, try executing ***`lwarpmk`***. If the *lwarpmk* help message appears, then *lwarpmk* is already set up. If not, it is easiest to generate and use a local copy. See section 5.2.1.
2. For MiKTEX, try updating the miktex-misc package. This may install the *lwarpmk* executable for you.

   Otherwise, continue with the following:
3. Locate the file `lwarpmk.lua`, which should be in the `scripts` directory of the TDS tree. On a TEX Live or MiKTEX system you may use

   Enter ⇒ `kpsewhich lwarpmk.lua`

   (If the file is not found, you may also generate a local copy and use it instead. See section 5.2.1.)
4. Create *lwarpmk*:

   Unix: Create a symbolic link and make it executable:

   (a) Locate the TEX Live binaries:
   Enter ⇒ `kpsewhich -var-value TEXMFROOT`
   This will be something like:
   `/usr/local/texlive/<year>`
   The binaries are then located in the `bin/<arch>` directory under the root:
   `/usr/local/texlive/<year>/bin/<architecture>/`
   In this directory you will find programs such as *pdflatex* and *makeindex*.

   (b) In the binaries directory, create a new symbolic link from the binaries directory to `lwarpmk.lua`:
   Enter ⇒ `ln -s <pathtolwarpmk.lua> lwarpmk`

   (c) Make the link executable:
   Enter ⇒ `chmod 0755 lwarpmk`

   WINDOWS TEX Live: Create a new `lwarpmk.exe` file:

(a) Locate the TEX Live binaries as shown above for UNIX.

(b) In the binaries directory, make a *copy* of `runscript.exe` and call it `lwarpmk.exe` This will call the copy of `lwarpmk.lua` which is in the `scripts` directory of the distribution.

WINDOWS MiKTEX: Create a new `lwarpmk.bat` file:

(a) Locate the MiKTEX binaries. These will be in a directory such as:
```
C:\Program Files\MiKTeX 2.9\miktex\bin\x64
```
In this directory you will find programs such as `pdflatex.exe` and `makeindex.exe`.

(b) Create a new file named `lwarpmk.bat` containing:
```
texlua "C:\Program Files\MiKTeX 2.9\scripts\lwarp\lwarp.texlua" %*
```
This will call the copy of `lwarpmk.lua` which is in the `scripts` directory of the distribution.

5.2.1 Using a local copy of *lwarpmk*

It is also possible to use a local version of *lwarpmk*:

1. When compiling the tutorial in section 6, use the `lwarpmk` option for the lwarp package:
```
\usepackage[lwarpmk]{lwarp}
```
2. When the tutorial is compiled with *pdflatex*, the file `lwarpmk.lua` will be generated along with the other configuration files.
3. `lwarpmk.lua` may be used for this project:

Unix:

(a) Make `lwarpmk.lua` executable:
```
Enter ⇒  chmod 0755 lwarpmk.lua
```

(b) Compile documents with
```
Enter ⇒  ./lwarpmk.lua html
Enter ⇒  ./lwarpmk.lua print
```
etc.

(c) It may be useful to rename or link to a version without the `.lua` suffix.

WINDOWS:

Compile documents with either of the following, depending on which command shell is being used:
```
Enter ⇒  texlua lwarpmk.lua html
Enter ⇒  texlua lwarpmk.lua print
```
etc.

Or:

Enter ⇒ `lwarpmk html`

Enter ⇒ `lwarpmk print`

etc.

5.3 Installing additional utilities

To test for the existence of the additional utilities:

Enter the following in a command line. If each programs' version is displayed, then that utility is already installed. See table 3 on page 86.

Enter ⇒ `luatex --version`

Enter ⇒ `xindy --version`

Enter ⇒ `latexmk --version`

Enter ⇒ `perl --version`

Enter ⇒ `pdfcrop --version`

Enter ⇒ `pdftotext -v`

Enter ⇒ `pdfseparate --version`

Enter ⇒ `pdftocairo -v`

To install *xindy*, *latexmk*, and *pdfcrop*:

The TEX utilities *xindy*, *latexmk*, and *pdfcrop* may be installed in *TexLive* with *tlmgr*, installed by *MikTeX*, provided by your operating system's package manager, or downloaded from the *CTAN* archive:

http://ctan.org/pkg/xindy
http://ctan.org/pkg/latexmk
http://ctan.org/pkg/pdfcrop

Prog `pdftotext`
Prog `pdfseparate`
Prog `pdftocairo`

To install the POPPLER utilities to a UNIX/LINUX system:

The tools from the POPPLER project should be provided by your operating system's package manager.

To install the POPPLER utilities to a MACOS machine:

1. Install *Homebrew* from https://brew.sh/:

   Enter ⇒

```
/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
```

2. Install the POPPLER utilities:

   Enter ⇒ `brew install poppler`

To install the POPPLER utilities to a WINDOWS machine:

If using MikTEX, install a miktex-poppler-bin-* package. Otherwise:

1. See table 3 on page 86.

2. Download and extract the POPPLER utilities *pdftotext*, *pdfseparate*, and *pdfseparate* to a directory, such as `Poppler`.
3. In the **Start** window, type "Path" to search for results related to Path. Or, open the control panel and search for "Path".
4. Choose **Edit the system environment variables** in the control panel.
5. Choose the **Environment Variables** button.
6. Choose the **Path** variable, then the **Edit** button.
7. Choose the **New** button to make an additional entry.
8. Enter the `bin` directory of the POPPLER utilities, such as:

   `C:\Users\<myname>\Desktop\Poppler\poppler-0.5_x86\poppler-0.5\bin`

   Be sure to include `\bin`.
9. Click **Ok** when done.

Prog `perl` **To install PERL to a WINDOWS machine:**

1. Download and install a version of PERL, such as STRAWBERRY PERL, to a directory without a space in its name, such as `C:\Strawberry`.
2. Edit the **Path** as seen above for the POPPLER utilities.
3. Enter the `bin` directory of the *perl* utility, such as:

   `C:\Strawberry\perl\bin`

   Be sure to include `\bin`.
4. Click **Ok** when done.

Any utilities installed by hand must be added to the `PATH`.

6 Tutorial

This section shows an example of how to create an lwarp document.

Need help?

See the General Index for "how-to", and the Troubleshooting Index if something doesn't work. The Index of Objects contains automated entries for each package, macro, environment, counter, boolean, and other objects; individually and also sorted by category. A Troubleshooting section is also available.

6.1 Starting a new project

1. Create a new project directory called `tutorial`.

File `tutorial.tex`

2. Inside the `tutorial` directory, create a new file called `tutorial.tex`. This may be done several ways:

   Copy from the documentation PDF:

   A listing is in fig. 1, which may be copied/pasted from the figure directly into your own editor, depending on the quality of the PDF viewer and editor, or:

   Copy from the lwarp documentation directory:

File `lwarp_tutorial.txt`

⚠ Note: `.txt` suffix!

   Another copy may be found by entering into a command line:

   Enter ⇒ `texdoc -l lwarp_tutorial.txt`

   This should be in the `doc/latex/lwarp/` directory along with this PDF documentation. Copy `lwarp_tutorial.txt` directly into your `tutorial` directory, renamed as `tutorial.tex`.

⚠ Bad formatting!

   When using WINDOWS, use an editor other than NOTEPAD, since NOTEPAD does not accept the end-of-line from a UNIX text file.

3. Compile the project:

   Enter ⇒ `pdflatex tutorial.tex`

   (several times)

   (*xelatex* or *lualatex* may be used as well. lwarp also supports DVI *latex* for use with `.eps` images.)

4. View the resulting `tutorial.pdf` with a PDF viewer.

A number of new files are created when `tutorial.tex` is compiled, as shown in table 4. These files are created by the `lwarp` package.

(Two of the new files are configuration files for the helper program *lwarpmk*. Whenever a print version of the document is created, the configuration files for *lwarpmk*

are updated to record the operating system, LaTeX engine (*latex*, *pdflatex*, *xelatex*, or *lualatex*), the filenames of the source code and HTML output, and whether the additional helper program *latexmk* will be used to compile the document.)

Figure 1: tutorial.tex listing

Note: There are two pages!

```
% Save this as tutorial.tex for the lwarp package tutorial.

\documentclass{book}

\usepackage{iftex}

% --- LOAD FONT SELECTION AND ENCODING BEFORE LOADING LWARP ---

\ifPDFTeX
\usepackage{lmodern}            % pdflatex or dvi latex
\usepackage[T1]{fontenc}
\usepackage[utf8]{inputenc}
\else
\usepackage{fontspec}           % XeLaTeX or LuaLaTeX
\fi

% --- LWARP IS LOADED NEXT ---
\usepackage[
%   HomeHTMLFilename=index,     % Filename of the homepage.
%   HTMLFilename={node-},       % Filename prefix of other pages.
%   IndexLanguage=english,      % Language for xindy index, glossary.
%   latexmk,                    % Use latexmk to compile.
%   OSWindows,                  % Force Windows. (Usually automatic.)
%   mathjax,                    % Use MathJax to display math.
]{lwarp}
% \boolfalse{FileSectionNames}  % If false, numbers the files.

% --- LOAD PDFLATEX MATH FONTS HERE ---

% --- OTHER PACKAGES ARE LOADED AFTER LWARP ---
\usepackage{makeidx} \makeindex
\usepackage{xcolor}             % (Demonstration purposes only.)
\usepackage{hyperref,cleveref}  % LOAD THESE LAST!

% --- LATEX AND HTML CUSTOMIZATION ---
\title{The Lwarp Tutorial}
\author{Some Author}
\setcounter{tocdepth}{2}        % Include subsections in the \TOC.
\setcounter{secnumdepth}{2}     % Number down to subsections.
\setcounter{FileDepth}{1}       % Split \HTML\ files at sections
\booltrue{CombineHigherDepths}  % Combine parts/chapters/sections
\setcounter{SideTOCDepth}{1}    % Include subsections in the side\TOC
\HTMLTitle{Webpage Title}       % Overrides \title for the web page.
\HTMLAuthor{Some Author}        % Sets the HTML meta author tag.
```

```
\HTMLLanguage{en-US}            % Sets the HTML meta language.
\HTMLDescription{A description.}% Sets the HTML meta description.
\HTMLFirstPageTop{Name and \fbox{HOMEPAGE LOGO}}
\HTMLPageTop{\fbox{LOGO}}
\HTMLPageBottom{Contact Information and Copyright}
\CSSFilename{lwarp_sagebrush.css}

\begin{document}

\maketitle                      % Or titlepage/titlingpage environment.

% An article abstract would go here.

\tableofcontents                % MUST BE BEFORE THE FIRST SECTION BREAK!
\listoffigures

\chapter{First chapter}

\section{A section}

This is some text which is indexed.\index{Some text.}

\subsection{A subsection}

See \cref{fig:withtext}.

\begin{figure}\begin{center}
\fbox{\textcolor{blue!50!green}{Text in a figure.}}
\caption{A figure with text\label{fig:withtext}}
\end{center}\end{figure}

\section{Some math}

Inline math: $r = r_0 + vt - \frac{1}{2}at^2$
followed by display math:
\begin{equation}
a^2 + b^2 = c^2
\end{equation}


\begin{warpprint}   % For print output ...
\cleardoublepage    % ... a common method to place index entry into TOC.
\phantomsection
\addcontentsline{toc}{chapter}{\indexname}
\end{warpprint}
\ForceHTMLPage      % HTML index will be on its own page.
\ForceHTMLTOC       % HTML index will have its own toc entry.
\printindex

\end{document}
```

Table 4: Files created along with the print version

`tutorial.pdf`: The PDF output from LaTeX. The print version of the document.

`tutorial_html.tex`: A small `.tex` file used to create a parallel HTML version of the document, which co-exists with usual the PDF version, and which will have its own auxiliary files. In this way, both PDF and HTML documents may co-exist side-by-side.

Auxiliary files: The usual LaTeX files `.aux`, `.log`, `.out`, `.toc`, `.lof`, `.idx`. When an HTML version of the document is created, `_html` versions of the auxiliary files will also be generated.

`lwarpmk.conf`: A configuration file for *lwarpmk*, which is used to automate the compilation of PDF or HTML versions of the document.

`tutorial.lwarpmkconf`: Another configuration file used by *lwarpmk*, which is only useful if you wish to have several projects residing in the same directory.

`.css files`: `lwarp.css`, `lwarp_formal.css`, `lwarp_sagebrush.css` These files are standard for lwarp, and are not meant to be modified by the user.

`sample_project.css`: An example of a user-customized css file, which may be used for project-specific changes to the lwarp defaults.

`lwarp.ist`: Used by lwarp while creating an index using *makeindex*. This file should not be modified by the user. A custom file may be used instead, if necessary.

`lwarp.xdy`: Used by lwarp while creating an index using *xindy*. This file should not be modified by the user. A custom file may be used instead, if necessary.

`lwarp_one_limage.txt`: For Windows only. Used to process svg images in the background. Copied to `lwarp_one_limage.cmd` when images are generated.

`lwarp_mathjax.txt`: Inserted into the HTML files when MathJax is used to display math. This file should not be modified by the user.

`comment.cut`: A temporary file used by lwarp to conditionally process blocks of text. This file may be ignored.

When the `lwarpmk` option is given to the lwarp package:

`lwarpmk.lua`: A local copy of the *lwarpmk* utility.

On Unix-related operating systems this file must be made executable:

```
chmod u+x lwarpmk.lua
```

This may be useful to have to archive with a project for future use.

6.2 Compiling the print version with *lwarpmk*

The *lwarpmk* utility program is used to compile either the printed or the HTML version of the document.

`lwarpmk print` is used to recompile a printed version of the document.

1. Re-compile the print version:

   Enter ⇒ `lwarpmk print`

   lwarpmk prints an introduction then checks to see if the document must be recompiled. If it seems that the files are up-to-date, then *lwarpmk* informs you of that fact and then exits.

2. Make a small change in the original document, such as adding a space character.

3. Recompile again.

   Enter ⇒ `lwarpmk print`

   The document is recompiled when a change is seen in the source. Several compilations may be necessary to resolve cross-references.

4. Force a recompile to occur.

   Enter ⇒ `lwarpmk again`

   Enter ⇒ `lwarpmk print`

   `lwarpmk again` updates the date code for the file, triggering a recompile the next time the document is made.[5]

5. Process the index. [6] [7]

   Enter ⇒ `lwarpmk printindex`

6. Recompile again to include the index.

   Enter ⇒ `lwarpmk print`

7. To force a single recompile when needed, even if no changes were detected:

   Enter ⇒ `lwarpmk print1`

Note that the HTML customization commands are ignored while making the print version.

[5] Although, when using the utility *latexmk* (introduced later), the changed date is ignored and an actual change in contents must occur to cause a recompile.

[6] The command ***`lwarpmk printglossary`*** is also available to process a glossary produced with the glossaries package. See section 9.5.10.

[7] Also see section 9.5.12 for index options.

6.3 Compiling the HTML version with *lwarpmk*

`lwarpmk html` is used to recompile an HTML version of the document.

1. Compile the HTML version:

   Enter ⇒ `lwarpmk html`

   (a) *lwarpmk* uses LaTeX to process `tutorial_html.tex` to create `tutorial_html.pdf`.

   (b) *pdftotext* is then used to convert to the file `tutorial_html.html`. This file is a plain-text file containing HTML tags and content for the entire document.

   (c) *lwarpmk* manually splits `tutorial_html.html` into individual HTML files according to the HTML settings. For this tutorial, the result is `tutorial.html` (the home page), along with `First-chapter.html`[8], `Some-math.html`, and the document's index in `_Index.html`.[9]

2. View the HTML page in a web browser.

   Open the file `tutorial.html` in a web browser.

   math Note that math is still displayed as its `alt` tag, which is the plain-text LaTeX source, until the images of the math expressions have been generated. Math may be displayed as SVG images or by a MathJax script, as seen in sections 6.4 and 6.5.

3. Force a recompile:

   Enter ⇒ `lwarpmk again`

   Enter ⇒ `lwarpmk html`

   Enter ⇒ `lwarpmk print`

4. Process the HTML index and recompile: [10][11]

   Enter ⇒ `lwarpmk htmlindex`

   Enter ⇒ `lwarpmk html`

   `_Index.html` is updated for the new LaTeX index.

5. Reload the web page to see the added index.

6. To force a single recompile when needed, even if no changes were detected:

   Enter ⇒ `lwarpmk html1`

[8] `First-chapter.html` also contains the first section, even though the second section is its own HTML page. This behavior is controlled by the boolean `CombineHigherDepths`.

[9] `index.html` is commonly used as a homepage, so the document index is in `_Index.html`.

[10] The command ***`lwarpmk htmlglossary`*** is also available to process a glossary produced with the glossaries package. See section 9.5.10.

[11] Also see section 9.5.12 for index options.

6.4 Generating the SVG images

math as SVG images

By default lwarp represents math as SVG images with the LaTeX source included in `alt` attributes. In this way, the math is displayed as it was drawn by LaTeX, and the LaTeX source may be copied and pasted into other documents.

`picture` and Ti*k*z

lwarp uses the same mechanism for `picture` and Ti*k*z environments.

1. Create the SVG images:

   Enter ⇒ `lwarpmk limages`

   Enter ⇒ `lwarpmk html`

2. Move to the tutorial's HTML math page and reload the document in the browser.
3. The math images are displayed using the same font and formatting as the printed version.
4. Copy/paste a math expression into a text editor to see the LaTeX source.

⚠ adding/removing

When a math expression, `picture`, or Ti*k*z environment is added or removed, the SVG images must be re-created by entering ***`lwarpmk limages`*** to maintain the proper image-file associations. Inline SVG math may be hashed and thus not need to be recreated, but display math and objects such as Ti*k*z may move to new image numbers when the document is changed.

Before attempting to create the SVG image files, *lwarpmk* verifies that the HTML version of the document exists and has correct internal image references.[12] If it is necessary to recompile the document's HTML version, *lwarpmk* will inform so with an error message.

⚠ HTML instead of images

If HTML appears where an SVG image should be,recompile the document one more time to get the page numbers back in sync, then remake the images one more time. *lwarpmk* attempts to detect this situation and print a warning.

⚠ page counter

Incorrect SVG images will also occur if the document changes the `page` counter:

```
\setcounter{page}{<value>}
```

The `page` counter must *not* be adjusted by the user.

⚠ Lots of files!

Expressing math as SVG images has the advantage of representing the math exactly as LaTeX would, but has the disadvantage of requiring an individual file for each math expression. For inline math, and some other objects, lwarp uses an MD5 hash on its LaTeX source to combine multiple instances of identical inline expressions into a single image file, but display math and other environments such as `picture` and

[12] This becomes important when dealing with a document containing thousands of images.

Ti*k*z require one image file each. For a document with a large amount of math, see section 6.5 to use MathJax instead.

6.5 Using MathJax for math

math with MathJax

Math may also be represented using the MathJax JavaScript project.

1. In the tutorial's source code, uncomment the `mathjax` package option for lwarp:

   ```
   mathjax, % Use MathJax to display math.
   ```

2. Recompile

   Enter ⇒ `lwarpmk html`

3. Reload the math page.

⚠ MathJax requirements

MathJax requires web access unless a local copy of MathJax is available, and it also requires that JavaScript is enabled for the web page. The math is rendered by MathJax. Right-click on math to see several options for rendering, and for copying the LaTeX source.

While using MathJax has many advantages, it may not be able to represent complex expressions or spacing adjustments as well as LaTeX, and it may not support some math-related packages.

6.6 Changing the css style

For a formal css style, add to the preamble:

```
\usepackage{lwarp}
...
\CSSFilename{lwarp_formal.css}
...
\begin{document}
```

For a modern css style, `lwarp_sagebrush.css` is also provided:

```
\CSSFilename{lwarp_sagebrush.css}
```

See section 8.5 for more information about modifying the css styling of the document.

6.7 Customizing the HTML output

A number of settings may be made to control the HTML output, including filename generation, automatic compilation, math output, document splitting, meta data, and page headers and footers.

See section 8.4 for more information.

6.8 Using *latexmk*

latexmk is a LaTeX utility used to monitor changes in source files and recompile as needed.

1. In the tutorial's source code uncomment the `latexmk` option for the lwarp package:

   ```
   latexmk, % Use latexmk to compile.
   ```

2. Recompile the printed version of the document.

   Enter ⇒ `lwarpmk print`

   lwarp updates its own configuration files (`lwarpmk.conf` and `tutorial.lwarpmkconf`) whenever the printed version of the document is compiled. These configuration files remember that *lwarpmk* should use *latexmk* to compile the document.

3. Recompile the document.

   Enter ⇒ `lwarpmk print`

   and/or

   Enter ⇒ `lwarpmk html`

Changes are detected by comparing checksums rather than modification times, so `lwarpmk again` will not trigger a recompile, but *latexmk* has a much better awareness of changes than the *lwarpmk* utility does and it is likely to correctly know when to recompile. A recompile may be forced by making a small change to the source, and a single recompile may be forced with:

forced single-pass recompile

Enter ⇒ `lwarpmk print1`

and/or

Enter ⇒ `lwarpmk html1`

6.9 Using XeLaTeX or LuaLaTeX

XeLaTeX or LuaLaTeX may be used instead of LaTeX.

1. Remove the auxiliary files for the project:

   Enter ⇒ `lwarpmk cleanall`

2. Use *xelatex* or *lualatex* to compile the printed version a single time.

   Enter ⇒ `xelatex tutorial.tex`

   -or-

   Enter ⇒ `lualatex tutorial.tex`

   When the compile occurs, the configuration files for *lwarpmk* are modified to remember which TeX engine was used. XeLaTeX or LuaLaTeX will be used for future runs of *lwarpmk*.

3. To recompile the document:

   Enter ⇒ `lwarpmk print`

   -and-

   Enter ⇒ `lwarpmk html`

4. Also remember to update the indexes and recompile again:

   Enter ⇒ `lwarpmk htmlindex`

   Enter ⇒ `lwarpmk html`

   Enter ⇒ `lwarpmk printindex`

   Enter ⇒ `lwarpmk print`

6.10 Using DVI LaTeX

Traditional DVI LaTeX may also be used along with `.eps` image files. An SVG version of each image must also be provided. *lwarpmk* may be used to convert image formats.

To convert EPS files to PDF:

Enter ⇒ `lwarpmk epstopdf *.eps` (or a list of files)

To convert PDF files to SVG:

Enter ⇒ `lwarpmk pdftosvg *.pdf` (or a list of files)

⚠ bitmapped fonts See section 8.2 regarding font selection to avoid the use of bitmapped fonts.

6.11 Using a glossary

lwarp supports the glossaries package, although this tutorial does not supply an example.

To process the glossary for the print version:

Enter ⇒ `lwarpmk printglossary`

⚠ (If ***`makeglossaries`*** is not found, see section 9.5.10.)

To process the glossary for the HTML version:

Enter ⇒ `lwarpmk htmlglossary`

In each case, the document will have to be recompiled afterwards:

Enter ⇒ `lwarpmk html1`

Enter ⇒ `lwarpmk html`

Enter ⇒ `lwarpmk print1`

Enter ⇒ `lwarpmk print`

See section 9.5.10 to set options for processing glossaries.

6.12 Cleaning auxiliary files

To remove the auxiliary files `.aux`, `.toc`, `.lof`, `.lot`, `.idx`, `.ind`, `.log`, and `.gl*`:

Enter ⇒ `lwarpmk clean`

6.13 Cleaning auxiliary and output files

To remove the auxiliary files, and also remove the `.pdf` and `.html` files:

Enter ⇒ `lwarpmk cleanall`

6.14 Cleaning the images from the `lateximages` directory

The `lateximage` directory contains SVG images automatically generated for inline and display math, tikz, etc. To remove all the images from the `lateximages` directory:

Enter ⇒ `lwarpmk cleanlimages`

6.15 Converting PDF or EPS images to SVG

HTML cannot display PDF or EPS images, so any external PDF graphics images must be converted to SVG format. *pdftocairo* and *epstopdf* may be used one image at a time, but *lwarpmk* also provides a way to convert PDF or EPS images in bulk:

Enter ⇒ `lwarpmk epstopdf *.eps` (or a list of files)

Enter ⇒ `lwarpmk pdftosvg *.pdf` (or a list of files)

Be sure to always provide SVG files for HTML output.

6.16 Creating HTML from an incomplete compile

During testing it may be useful to finish the HTML conversion even when the document had errors and did not compile successfully. To attempt an HTML conversion of an incomplete document:

Enter ⇒ `lwarpmk pdftohtml [-p project]`

6.17 Processing multiple projects in the same directory

It is possible to have several projects in the same directory. *lwarpmk* has an optional parameter which is the document to compile.

To create each project:

Enter ⇒ `pdflatex project_a`

Enter ⇒ `pdflatex project_b`

Each project is given its own configuration file:

`project_a.lwarpmkconf, project_b.lwarpmkconf`

To compile each project with `lwarkmk`:

Enter ⇒ `lwarpmk print -p project_a`

Enter ⇒ `lwarpmk html -p project_b`

6.18 Using the *make* utility

lwarpmk has an action which may be useful for integration with the common *make* utility:

`lwarpmk pdftohtml [-p project]`

make may be used to compile the code to PDF with HTML tags (`project_html.pdf`), then *lwarpmk* may be used to convert each target to HTML files.

7 Converting an existing document

To convert an existing document for use with lwarp:

1. Arrange the document in the following order:
   (a) Declare the `\documentclass`.
   (b) Load text fonts.
   (c) Load inputenc or inputenx, fontenc, and/or fontspec.
   (d) Load lwarp.
   (e) Load remaining packages.
2. Modify the document:
   (a) Avoid the `scale` option. Change:
   `\includegraphics[scale=<xx>]`
   to:
   `\includegraphics[width=<yy>\linewidth]`
   (b) Possible changes to `tabular` environments include * columns, multirow, longtable, supertabular, xtab, bigdelim. See section 9.9.
   (c) Possible option clashes with memoir. See section 9.12.
   (d) If using indexes, see section 9.5.12.
   (e) If using many indexes, glossaries, `.aux` files, etc., see section 9.5.12 regarding morewrites. If morewrites is already used, be sure to add the setup with `allocate=10`.
   (f) Other changes as per Special cases and limitations, section 9.
3. Convert any PDF images to SVG. See section 9.7.
4. Manually compile the print version with *latex*, *pdflatex*, *lualatex*, or *xelatex*.
5. `lwarpmk print` to finish the print version.
6. `lwarpmk html` to create the HTML version.
7. `lwarpmk limages` to create the SVG images of any SVG math, `lateximage`, Ti*k*Z, etc.

Need help?

See the General Index for "how-to", and the Troubleshooting Index if something doesn't work. The Index of Objects contains automated entries for each package, macro, environment, counter, boolean, and other objects; individually and also sorted by category. A Troubleshooting section is also available.

8 Additional details

8.1 Shell escape

Opt `--shell-escape`

Some documents require the use of an external program, which is allowed when using the `--shell-escape` command-line option. When the document is first compiled manually, and also whenever the print version is recompiled, lwarp detects and remembers whether shell escape is enabled. If so, it will also be enabled when the document is recompiled with *lwarpmk*.

8.2 Font and UTF-8 support

⚠ type 3 bitmapped fonts

lwarp uses *pdftotext* to convert PDF output into UTF-8-encoded text. This process requires that UTF-8 information be embedded in the PDF file, which may prevent the use of older "type 3" bit-mapped fonts, and of older packages such as ae. The lwarp option `pdftotextEnc` may be useful in some situations. See section 8.3.

vector fonts

Computer Modern

⚠ *pdflatex*

⚠ DVI *latex*

Pkg `cm-super`

Pkg `lmodern`

While using DVI *latex* or PDF *pdflatex*, if no font-related package is specified then the default Computer Modern font is used, which may be a "type 3" bit-mapped font which may not convert well to plain text. A "type 1" vector font is required.

To use the updated cm-super's type 1 fonts instead of Computer Modern, install the cm-super font package.

To use Latin Modern instead, add

```
usepackage{lmodern}
```

to the preamble.

Pkg `dejavu`

Another useful option is the Deja Vu series of fonts, which have an increased coverage of language and glyphs:

```
\usepackage{dejavu}
```

latex, *pdflatex*, T1, UTF8

While using DVI *latex* or PDF *pdflatex*, lwarp automatically loads fontenc with T1 encoding. fontenc may be loaded with an additional encoding after lwarp. inputenc is automatically loaded with UTF8 encoding if if has not yet been loaded, but may also be specified with another encoding such as `latin1`. See the next section regarding index encoding.

⚠ *xelatex* and *lualatex*

XeLaTeX and LuaLaTeX users must use the fontspec package. Do NOT use fontenc!

Place fontspec or fontenc, xunicode, and other font and UTF-8 related commands after the `\documentclass` command and before `\usepackage{lwarp}`.

⚠ package conflicts

In some cases, a package conflict may require that a font package be loaded after lwarp, which should work as well:

1. `documentclass{article/book/report}` comes first, followed by any of:
2. Font and UTF-8 related commands:
   - For XeLaTeX or LuaLaTeX:
     - fontspec and font choices

       Pkg `fontspec`

       ligatures

       lwarp sets the following to turn off TeX ligatures during the generation of HTML tags, and turn off common ligatures in regular text, since older browsers may not display them correctly and newer browsers can automatically re-create them.

       ```
       \defaultfontfeatures[\rmfamily]{Ligatures={NoCommon,TeX}}
       \defaultfontfeatures[\sffamily]{Ligatures={NoCommon,TeX}}
       \defaultfontfeatures[\ttfamily]{Ligatures=NoCommon}
       ```
   - For *pdflatex*:
     (a) `\usepackage{lmodern}`, or other font-related packages

     Pkg `lmodern`

     (b) `\usepackage[T1]{fontenc}`

     Pkg `fontenc`

     (c) `\usepackage[utf8]{inputenc}`, or `latin1`, etc. Or use inputenx.

     Pkg `inputenc`

     (d) `\usepackage{newunicodechar}` along with related definitions.

     Pkg `inputenx`

     Pkg `newunicodechar`

     (e) To assist with the PDF-HTML conversion:
     i. `\input glyphtounicode.tex`
     ii. `\input glyphtounicode-cmr.tex% from the pdfx package`
     iii. `\pdfgentounicode=1`

     File `glyphtounicode.tex`

     (f) Another option to assist with the PDF-HTML conversion:
     – `\usepackage{cmap}`

     Pkg `cmap`

     (g) `\usepackage{textcomp}`

     Pkg `textcomp`
3. `\usepackage{lwarp}` (section 8.3) goes after any of the above, followed by:
4. `\usepackage{newtxmath}` or other math-related font packages. Many of these load amsmath, which must be loaded after lwarp, so they must also be loaded after lwarp.
5. ⚠ fontspec with traditional font packages

   `\setmonofont{TeX Gyre Cursor}` or similar may be required if using XeLaTeX or LuaLaTeX and fontspec along with traditional font packages such as txfonts, newtxtext, etc. This is required to turn off the monospaced font's ligatures with fontspec after loading the traditional font packages. Monospaced output ligatures must be turned off to produce the correct HTML characters.
6. ... the rest of the preamble and the main document.

⚠ UTF-8 locale

In some cases, an external program may require a UTF-8 "locale". See section 10.8.

8.2.1 Indexes, glossaries, and encoding

lwarp uses the *xindy* program to processes indexes. *xelatex* and *lualatex* use *xindy* and *pdflatex* uses *texindy*.

The lwarp option `xindyLanguage` may be used to set the language option for xindy, and the `xindyCodepage` option may be used to set the codepage option for xindy. These are used for index generation.

8.3 lwarp package loading and options

lwarp supports book, report, and article classes, as well as the equivalent Koma-script classes and memoir.

Load the lwarp package immediately after the font and UTF-8 setup commands.

Package options may be set while loading lwarp, or later with

```
\lwarpsetup{⟨key=value, ...⟩}
```

Pkg `lwarp`

Opt `mathsvg`
Opt `mathjax`

`mathsvg`, `mathjax`: For math display, select `mathsvg` (default) or `mathjax`. For more information about the math options, see section 9.6.

Opt `latexmk`
Default: `false`

`latexmk`: Tells *lwarpmk* to use *latexmk* to recompile the document several times if necessary. Otherwise, *lwarpmk* attempts to determing for itself whether to recompile. See section 8.4.

Opt `dvips`
Default: `false`

`dvips`: Tells *lwarpmk* to use *dvips* and *ps2pdf* to convert DVI output to PDF.

Opt `dvipdfm`
Default: `false`

`dvipdfm`: Tells *lwarpmk* to use *dvipdfm* to convert DVI output to PDF.

Opt `dvipdfmx`
Default: `false`

`dvipdfmx`: Tells *lwarpmk* to use *dvipdfmx* to convert DVI output to PDF.

Opt `HomeHTMLFilename`
Default: {}

`HomeHTMLFilename`: See section 8.4.

Opt `HTMLFilename`
Default: {}

`HTMLFilename`: See section 8.4.

Opt `PrintLatexCmd`
Default: `<automatic>`

`PrintLatexCmd`: Sets the shell commands executed by ***`lwarpmk print`***. If not specified, will automatically be set according to the detected LaTeX engine and the use of `--shell-escape`.

Opt `HTMLLatexCmd`
Default: `<automatic>`

`HTMLLatexCmd`: Sets the shell commands executed by ***`lwarpmk html`***. If not specified, will automatically be set according to the detected LaTeX engine and the use of `--shell-escape`.

Opt `makeindex`
Default: `makeindex`

`makeindex`: Sets `PrintIndexCmd`, `HTMLIndexCmd`, and `LatexmkImageCmd` to use *makeindex* when generating indexes with ***`lwarpmk printindex`***, ***`lwarpmk htmlindex`***, or *latexmk*. If neither `makeindex` nor `xindy` is used, `makeindex` is assumed.

Opt `xindy`
Default: `makeindex`

`xindy`: Sets `PrintIndexCmd`, `HTMLIndexCmd`, and `LatexmkImageCmd` to use *xindy* when generating indexes with ***`lwarpmk printindex`***, ***`lwarpmk htmlindex`***, or *latexmk*.

Opt `makeindexStyle`
Default: `lwarp.ist`

`makeindexStyle`: If you wish to use a custom `.ist` file for index generation, see section 26.

Opt `xindyStyle`
Default: `lwarp.xdy`

`xindyStyle`: If you wish to use a custom `.xdy` file for index generation, see section 26.

Table 5: lwarp package options

Option	Description
mathsvg	Show math using SVG images.
mathjax	Show math using MATHJAX.
latexmk	Use *latexmk* for compiling documents.
dvips	Use *dvips* and *ps2pdf* to convert DVI documents.
dvipdfm	Use *dvipdfm* to convert DVI documents.
dvipdfmx	Use *dvipdfmx* to convert DVI documents.
HomeHTMLFilename	The filename of the home page.
HTMLFilename	A prefix for the filenames of the remaining web pages.
PrintLatexCmd	The shell commands for ***lwarpmk print***.
HTMLLatexCmd	The shell commands for ***lwarpmk html***.
For indexing (section 9.5.12) and glossaries (section 9.5.10):	
makeindex	Use *makeindex* to generate indices.
xindy	Use *xindy* to generate indices.
makeindexStyle	Set a custom style for *makeindex*.
xindyStyle	Set a custom style for *xindy*.
xindyLanguage	The *xindy* language option used for index generation.
xindyCodepage	The *xindy* codepage option used for index generation.
PrintIndexCmd	Shell commands executed by ***lwarpmk printindex***.
HTMLIndexCmd	Shell commands executed by ***lwarpmk htmlindex***.
LatexmkIndexCmd	Shell commands executed by *latexmk*.
GlossaryCmd	Shell command executed by ***lwarpmk printglossary*** and ***lwarpmk htmlglossary***.
Seldom necessary:	
OSWindows	Force compatibility with MS-WINDOWS.
pdftotextEnc	Set the encoding for *pdftotext*.
lwarpmk	Generate a local copy of `lwarpmk.lua`.
Used internally by lwarp:	
warpprint	Generate print output, and also generate configuration files.
warpHTML	Generate HTML output.
BaseJobname	The `\jobname` to use. Set to the `\jobname` of the printed version even while generating HTML.

Opt xindyLanguage
Default: english

xindyLanguage: If using an index or glossary, see section 26.

Opt xindyCodepage
Default: utf8

xindyCodepage: If using an index, see section 26.

Opt PrintIndexCmd
Default: <automatic>

PrintIndexCmd: Sets the shell commands executed by ***lwarpmk printindex***. If not specified, will be set by the selection of `makeindex` or `xindy`. May be used to specify the creation of multiple indexes. See section 9.5.12.

Examples:

```
makeindex -s lwarp.ist projectname.idx                (makeindex)
xindy -M lwarp.xdy -L english -C utf8 projectname.idx      (xindy)
```

automatic setting

The use of the `makeindex` or `xindy` options sets `PrintIndexCmd` to sensible values for each of those programs while compiling a single index. lwarp's `makeindexStyle`, `xindyStyle`, `xindyLanuage`, and `xindyCodepage` options will be used if specified.

⚠ xindy

If specifying `PrintIndexCmd` manually, be sure to assign an *xindy* language and codepage with the `-L` and `-C` *xindy* options, as the *lwarp* `xindyLanguage` and `xindyCodepage` options are not used for the `PrintIndexCmd` option when it is set manually.

This option is stored in the configuration files `lwarpmk.conf` and `*.lwarpmkconf`, and is then passed by the ***lwarpmk printindex*** command to the operating system to compile the print indexes. Since the command string is parsed by TEX, written to a file, read from the file by LuaTEX, and finally passed to the operating system, any attempt at quoting will be problematic. For complicated commands, it would be best to create a shell script, and simply refer to the script with the lwarp `PrintIndexCmd` option.

Opt HTMLIndexCmd
Default: <automatic>

HTMLIndexCmd: Sets the shell commands executed by ***lwarpmk htmlindex***. If not specified, will be set by the selection of `makeindex` or `xindy`. May be used to specify the creation of multiple indexes. See section 9.5.12.

⚠ filenames

Example settings are similar to `PrintIndexCmd`, but append `_html` to the filenames:

```
makeindex -s lwarp.ist projectname_html.idx           (makeindex)
xindy -M lwarp.xdy -L english -C utf8 projectname_html.idx  (xindy)
```

automatic setting

The use of the `makeindex` or `xindy` options sets `HTMLIndexCmd` to sensible values for each of those programs while compiling a single index. lwarp's `makeindexStyle`, `xindyStyle`, `xindyLanuage`, and `xindyCodepage` options will be used if specified.

⚠ xindy

If specifying `HTMLIndexCmd` manually, be sure to assign an *xindy* language and codepage with the `-L` and `-C` *xindy* options, as the *lwarp* `xindyLanguage` and `xindyCodepage` options are not used for the `HTMLIndexCmd` option when it is set manually.

As with `PrintIndexCmd`, to generate complicated indexes it may be worthwhile to use a shell script, then refer to that script with `HTMLIndexCmd`.

Opt LatexmkIndexCmd
Default: <automatic>

LatexmkIndexCmd: Sets the shell commands executed by *latexmk*. Unlike PrintIndexCmd and HTMLIndexCmd, LatexmkIndexCmd does not include any filenames, which will be provided instead by *latexmk*. See section 9.5.12.

Example settings are similar to PrintIndexCmd, but without a filename:

```
makeindex -s lwarp.ist                          (makeindex)
xindy -M lwarp.xdy -L english -C utf8           (xindy)
```

automatic setting

The use of the makeindex or xindy options sets LatexmkIndexCmd to either of the two settings show above. lwarp's makeindexStyle, xindyStyle, xindyLanuage, and xindyCodepage options will be used if specified. Unlike PrintIndexCmd and HTMLIndexCmd, *latexmk* uses either of the single-line settings of LatexmkIndexCmd shown above to compile each of multiple indexes if necessary.

⚠ xindy

If specifying LatexmkIndexCmd manually, be sure to assign an *xindy* language and codepage with the -L and -C *xindy* options, as the *lwarp* xindyLanguage and xindyCodepage options are not used for the LatexmkIndexCmd option when it is set manually.

Opt GlossaryCmd
Default: *makeglossaries*

GlossaryCmd: Sets the shell command executed by ***lwarpmk printglossary*** and ***lwarpmk htmlglossary***. The print or HTML glossary filename is appended to this command. See section 9.5.10.

Opt OSWindows

OSWindows: lwarp attempts to automatically sense WINDOWS, but it may be forced with this option. See section 8.6.

Opt pdftotextEnc
Default: UTF-8

pdftotextEnc: Used to specify the encoding used by *pdftotext* during the PDF-HTML conversion. In most situations, the default is the correct choice.

Opt lwarpmk

lwarpmk: If you wish to have lwarp generate a local copy of lwarpmk.lua for archival or local-installation purposes, compile the print version with the lwarpmk option set. See section 26.

The following options are used internally by lwarp, and usually are not used in the user's document:

Opt warpprint
Opt warpHTML

warpprint and warpHTML: Usually controlled by *lwarpmk*, and not set in the document. Select the warpprint option to generate print output (default), or the warpHTML option to generate HTML5 output. The default is print output, so the print version may be compiled with the usual *pdflatex*, etc. When lwarp is loaded in print mode, it creates <project>_html.tex, which sets the warpHTML option before calling the user's source code <project>.tex. In this way, <project>.tex can \usepackage{lwarp} without any options to create a printed version, while <project>_html.tex will create an HTML version.

Opt BaseJobname
Default: \jobname

BaseJobname: Not intended for the user. Used internally by lwarp when creating the *_html.tex file used to compile the HTML version. See section 26.

8.4 Customizing the HTML output

⚠ Placement! Table 6 shows several settings may be used to customize the HTML output. Watch for the correct placement of each!

⚠ Changes! Note that if changes are made, it is best to first:

1. Clear all the HTML, PDF, and auxiliary files:
   Enter ⇒ `lwarpmk clearall`
2. Recompile the print version in order to recreate the configuration files for *lwarpmk*:
   Enter ⇒ `lwarpmk print`
3. Finally, recompile the HTML version with the new settings:
   Enter ⇒ `lwarpmk html`

Options for the lwarp package:
Use the following as options for `\usepackage[<options>]{lwarp}`:

Opt `HomeHTMLFilename`
Default: `\BaseJobname`

`HomeHTMLFilename`: Filename of the homepage, without the "`.html`" suffix. Defaults to the `\BaseJobname`. A common setting is:

```
HomeHTMLFilename=index
```

causing the homepage to be the file `index.html`. Underscores are allowed in `HomeHTMLFilename` and `HTMLFilename` options, but may need to be escaped elsewhere, such as when appearing in a list:

filename underscores

```
\item [\href{file\_name.pdf}{text}] \
```

See section 8.4.1 for examples of naming and numbering HTML files.

Opt `HTMLFilename`
Default: `<empty>`

`HTMLFilename`: A filename prefix for the rest of the HTML web pages. Useful for numbered web pages with a common prefix. May be empty. See section 8.4.1 for examples of naming and numbering HTML files.

Opt `latexmk`
Default: `false`

`latexmk`: Controls whether lwarp uses *latexmk* to compile the document. This setting is written to *lwarpmk*'s configuration files.

Opt `mathsvg`
Default: `true`

`mathsvg`: Selects SVG display for math output. (The default.)

Opt `mathjax`
Default: `false`

`mathjax`: Selects MathJax for math output.

Opt `makeindex`
Default: `makeindex`

`makeindex`: Selects *makeindex* for index generation by *lwarpmk*.

Opt `xindy`
Default: `makeindex`

`xindy`: Selects *xindy* for index generation by *lwarpmk*.

Table 6: HTML settings

Option	Description
SideTOCDepth	Sectioning depth of the sideTOC.
FileDepth	Sectioning depth of the file splits.
CombineHigherDepths	Combine higher section levels.
FileSectionNames	Use section names for file names, else use numbers.
FootnoteDepth	Sectioning depth of footnotes.
\abstractname	The name of the abstract.
\mathimagename	The SVG math image lateximage alt tag.
\packagediagramname	The suffix for a package's lateximage alt tags.
\CSSFilename	The CSS for the following files.
\HTMLLanguage	The HTML lang tag.
\HTMLTitle	The homepage's <title>, overriding \title.
\HTMLTitleBeforeSection	Set subpage <title>s to \HTMLTitle - sectionname
\HTMLTitleAfterSection	Set subpage <title>s to sectioname - \HTMLTitle
\HTMLAuthor	The HTML author meta tag, overriding \author.
\HTMLDescription	The HTML description meta tag.
\HTMLFirstPageTop	Heading for the home page.
\HTMLPageTop	Heading for the other pages.
\HTMLPageBottom	Footing for all pages.
HTMLDebugComments	Boolean to generate HTML comments.

Placed in the preamble before `\begin{document}`:

Ctr `tocdepth`

`tocdepth`: Sectioning depth of the table of contents. See section 17 for a list of LaTeX stack depths.

Ctr `SideTOCDepth`
Default: `1`

`SideTOCDepth`: Sectioning depth of the sideTOC. Defaults to 1, causing the sideTOC to show sections but not subsections.

sideTOC

Each subpage of the website has its own small table of contents on the side (the "sideTOC"). Its depth is set by `SideTOCDepth`. This sideTOC is only shown if the web page is wide enough. When using a narrow web browser window, "responsive web design" is used to show the sideTOC at the top of the page and a link back to **Home** at the bottom.

It is recommended to set:

```
SideTOCDepth = FileDepth
```

or

```
SideTOCDepth = FileDepth+1
```

⚠ inaccessible pages

If `SideTOCDepth < FileDepth`, web pages will be inaccessible via the sideTOC.

Ctr `FileDepth`
Default: `-5`

`FileDepth`: Sectioning depth of file splits. Defaults to -5, causing the entire HTML website to be one single file.

- To place the entire file into one HTML page, use:
  `\setcounter{FileDepth}{-5}`
- To split the HTML file at `\section` depth, use:
  `\setcounter{FileDepth}{1}`

⚠

- To ensure that the HTML pages/files are accessible:
  Place a `\tableofcontents` somewhere before the first section break (therefore in the "home page"), and set
  `tocdepth >= FileDepth`

Bool `CombineHigherDepths`
Default: `true`

`CombineHigherDepths`: Combine a higher section with its first lower subsections, down to the `FileDepth`. Defaults to true. Set to false to simulate the concept of a chapter opening on its own page, for example.

The file splits are controlled by the counter `FileDepth` and the boolean `CombineHigherDepths`. Setting `FileDepth` to 0 splits the file at chapters, 1 at sections, etc. `CombineHigherDepths` controls whether to combine pages at levels higher than the chosen `FileDepth`, such as in this tutorial where the page which opens the chapter also contains the first section.

⚠ Inaccesible pages!

Be careful to set `tocdepth` and `SideTOCDepth` to allow access to each page of the website. Set `tocdepth` and `SideTOCDepth` to be greater than or equal to `FileDepth`.

⚠ Lost in an old page!

When making changes to the file structure, it is possible to end up with the web browser pointing to an old file which is no longer in use. When this occurs, changes to the web site will not appear in the browser, even if reloading the page, because that page is no longer in use. It is best to return to the home page, clean the files (`lwarpmk cleanall`), change `FileDepth` and/or `CombineHigherDepths`, then finally recompile and renavigate to the desired page using the new file structure.

Bool `FileSectionNames`
Default: `true`

`FileSectionNames`: If true, web page filenames are derived from a sanitized version of the section names. If false, web pages are numbered. Either way, the `HTMLFilename` option is used as a prefix. See section 8.4.1 for examples of naming and numbering HTML files. The user must ensure that filenames are unique after begin sanitized. For example, math in the section name is removed before creating the filename, so the rest of the filename must be sufficiently unique to avoid name collisions.

⚠ Unique filename!

⚠ ctex

If ctex or its related classes are used, `FileSectionNames` is forced `false` to avoid spaces in the section names.

Ctr `FootnoteDepth`
Default: `3`

`FootnoteDepth`: Determines where to place pending footnotes. `3` places footnotes before each break down to the `\subsubsection` level. `1` places footnotes before each `\section` break. Any pending footnotes are also placed at the bottom of each page before each file break.

Bool `HTMLDebugComments`
Default: `false`

`HTMLDebugComments`: Set `true` to generate HTML comments, such as which section or `<div>` is being opened or closed.

`\abstractname`
Default: `Abstract`

`\abstractname`: The name of the abstract. This may also be over-written by the babel package. Defaults to “Abstract”.

Placed before `\begin{document}`, or before any sectioning command which causes a file break:

`\CSSFilename`
Default: `lwarp.css`

`\CSSFilename`: {⟨*filename.css*⟩} Sets the CSS file to use for the following files. May be changed before each each sectioning command which would cause a file split.

The CSS styles of the web pages are set by the `\CSSFilename` command. If `\CSSFilename` is not used, a default plain style is used to mimic printed LaTeX output. `lwarp_sagebrush.css` is a semi-fancy colored style as shown in this tutorial. Change it to `lwarp_formal.css` for a more formal look, or comment out the `\CSSFilename` command to see the default. `\CSSFilename` may be used before each file break to set the CSS for individual pagess of the website.

`\HTMLLanguage`
Default: `en-US`

`\HTMLLanguage`: {⟨*langauge*⟩} The HTML file's HTML `lang` meta tag. Defaults to `en-US`.

\HTMLTitle
Default: \thetitle

\HTMLTitle: {⟨*title*⟩} Overrides \title for the HTML header's meta title. Defaults to \thetitle, which is set by \title, or empty otherwise. Unlike the author, \thetitle is set by \title even if not using the titling package.

\HTMLTitleBeforeSection
Default: \HTMLTitleBeforeSection
\HTMLTitleAfterSection

\HTMLTitleBeforeSection: Sets subpage <title> tags to show the website title followed by the section name.

\HTMLTitleAfterSection: Sets subpage <title> tags to show the section name followed by the website title.

custom <title>

To customize subpage <title>s, redefine \theHTMLTitleSection, which defaults to:

```
\def\theHTMLTitleSection{%
  \theHTMLTitle\theHTMLTitleSeparator\theHTMLSection%
}
```

\HTMLAuthor
Default: \theauthor

\HTMLAuthor: {⟨*author*⟩} The HTML header's meta author. Defaults to \theauthor, which is set by \author if using the titling package, but is empty otherwise. There are several ways to represent the author and affiliations, especially if using the authblk package, most of which do not result in a sensible \theauthor, so \HTMLAuthor is useful to create a list of authors without their affiliations.

\HTMLDescription
Default: <empty>

\HTMLDescription: {⟨*description*⟩} Sets the HTML description tag for the following files. May be changed before each each sectioning command which would cause a file split.

\HTMLFirstPageTop
Default: <empty>

\HTMLFirstPageTop: {⟨*contents*⟩} A user-definable custom action applied to the top of the home page. Useful for logos, etc. Defaults empty. Ignored in print output.

\HTMLPageTop
Default: <empty>

\HTMLPageTop: {⟨*contents*⟩} A user-definable custom action applied to the top of pages other than the home page. Useful for logos, etc. Defaults empty. \LinkHome may be used to place a link back to the homepage. Ignored in print output.

\HTMLPageBottom
Default: <empty>

\HTMLPageBottom: {⟨*contents*⟩} A user-definable custom action applied to the bottom of each web page. Useful for authors, copyright notices, contact information, etc. Defaults empty. \LinkHome may be used to place a link back to the homepage. Ignored in print output.

Placed in the home page before the first sectioning command which causes a file break:

\tableofcontents
⚠ TOC on the homepage!

\tableofcontents: Used to place a table of contents on the home page. This command must be used before the first file split, so that a way is available to navigate to other files from the homepage.

Links to each chapter/section are provided, as selected by `tocdepth`.

Placed in the document wherever necessary:

`\mathimagename` Default: `math image`

`\mathimagename`: When creating an SVG math image, its `alt` tag may be set to the math expression, which may be hashed for image reuse. In the case of `\ensuremath` or after `\inlinemathother`, where the contents require a unique image for each instance of the same expression, the `alt` tag is set to `\mathimagename`, and the image is not reused.

This expression is visible in the browser if images are not loaded, and appears when the text is copied and pasted. The default is "math image", and it may be changed according to the document's language. This may be set in the preamble, or changed as necessary inside the document, where it will affect the following SVG math images.

`\packagediagramname` Default: `diagram`

`\packagediagramname`: For many packages, the output is placed inside a `lateximage` with an HTML `alt` tag set to the package name followed by `\packagediagramname`. For example:

```
(-xy- diagram)
```

This expression is visible in the browser if images are not loaded, and appears when the text is copied and pasted. The default is "diagram", and may it be changed according to the document's language. This may be set in the preamble, or changed as necessary inside the document, where it will affect the following `lateximage`s.

Env `warpprint`

`warpprint`: An environment which is only used while generating print output. Place inside anything which does not apply to HTML and which may cause problems with lwarp. If lwarp knows about and emulates or supports a package then its related macros, lengths, counters, etc. probably won't have to be placed inside a `warpprint` environment, but unknown packages may cause problems which may be isolated from lwarp using this environment.

⚠ *Do not place anything else on the same line as `\end{warpprint}`.*

Env `warpHTML`

`warpHTML`: An environment which is only used while generating HTML output. This is useful for website logos and other items which have no purpose in printed output.

⚠ *Do not place anything else on the same line as `\end{warpHTML}`.*

`\warpprintonly`

`\warpprintonly`: {⟨*contents*⟩} A macro version of the `warpprint` environment.

`\warpHTMLonly`

`\warpHTMLonly`: {⟨*contents*⟩} A macro version of the `warpHTML` environment.

8.4.1 Example HTML file naming

Examples of ways to name or number HTML files:

Numbered HTML nodes:

Example: Homepage `index.html`, and `node-1`, `node-2`. [13]

```
\usepackage[
    HomeHTMLFilename=index,
    HTMLFilename={node-}
]{lwarp}
\boolfalse{FileSectionNames}
```

Named HTML sections, no prefix:

Example: `index.html`, and `About.html`, `Products.html`

```
\usepackage[
    HomeHTMLFilename=index,
    HTMLFilename={}
]{lwarp}
\booltrue{FileSectionNames}
```

Named HTML sections, with prefix:

Example: Homepage `mywebsite.html`, and additional pages such as `mywebsite-About.html`, `mywebsite-Products`, etc.

```
\usepackage[
    HomeHTMLFilename=mywebsite,
    HTMLFilename={mywebsite-}
]{lwarp}
\booltrue{FileSectionNames}
```

8.5 Customizing the css

`\CSSFilename`
Default: `lwarp.css`

`\CSSFilename` may be used to choose which `.css` file is used to display each page of the web site. Use `\CSSFilename` before `\begin{document}` to assign the style of the home page. If different parts of the website should have different styles, call `\CSSFilename` again before each section heading which creates a new file. This may be changed numerous times throughout the file, resulting in different HTML pages having different css files assigned:

[13] See `\SetHTMLFileNumber` to number in groups by chapter, for example.

```
...
\CSSFilename{myCSS.css}
\chapter{Another Chapter}
...
```

The styles provided by lwarp include:

lwarp.css: A default style if \CSSFilename is not used. This style is comparable to a plain LaTeX document. To set this style, you may use \CSSFilename{lwarp.css}, or no \CSSFilename call at all.

lwarp_formal.css: A formal style with a serif fonts and a traditional look.

lwarp_sagebrush.css: A style with muted colors, gradient backgrounds, additional borders, and rounded corners.

To see each style in use, change the \CSSFilename entry in the tutorial, `lwarpmk html` again, and then reload the tutorial webpage.

Custom css

A customized style may also be created. For each new project a file called `sample_project.css` is generated. This may be renamed to `<project>.css` then used by assigning \CSSFilename{<project>.css}.

⚠ Rename it!

Note that `sample_project.css` is overwritten whenever lwarp is loaded in print mode. It is therefore important to rename the file to something like `<project>.css` before using it, so that your own changes are not overwritten.

`<project>.css` has an entry which loads `lwarp.css`, and this entry may be changed to load `lwarp_formal.css` or `lwarp_sagebrush.css` if desired. Additional changes to the css may be made by making entries later in the `<project>.css` file.

File `lwarp.css`
File `project.css`
File `sample_project.css`

It is best to make a local project-specific css file such as `project.css`, containing only things which are different from `lwarp.css`. The file `project.css` should refer to `lwarp.css` as follows:

```
/* ( --- Start of project.css --- ) */
/* ( --- A sample project-specific CSS file for lwarp --- ) */

/* Uncomment one of the following: */
@import url("lwarp.css") ;
/* @import url("lwarp_formal.css") ; */
/* @import url("lwarp_sagebrush.css") ; */

/* Project-specific CSS setting follow here. */
/* . . . */
```

```
/* ( --- End of project.css --- ) */
```

Finally use `\CSSFilename{<project>.css}` in the document to activate the custom CSS.

8.6 Selecting the operating system

Prog `Unix`
Prog `Mac OS`
Prog `Linux`

lwarp tries to detect which operating system is being used. UNIX / MAC OS / LINUX is the default (collectively referred to as "UNIX" in the configuration files), and MS-WINDOWS is supported as well.

Prog `MS-Windows`

If MS-WINDOWS is not correctly detected, use the lwarp option `OSWindows`.

Prog `Windows`
Opt `OSWindows`

When detected or specified, the operating-system path separator used by lwarp is modified, and the boolean `usingOSWindows` is set `true`. This boolean may be tested by the user for later use.

8.7 Selecting actions for print or HTML output

The following environments and macros are used to select actions which only apply to either traditional LaTeX print-formatted PDF generation, or to HTML generation.

For most of built-in LaTeX and many additional packages there is user-level source code support or emulation, so no special handling will be required. For those cases which lwarp does not handle by itself, the following environments and macros may be used to isolate sections of code for print-only or HTML-only.

These environments are also useful for creating a special version of the titlepage for print and another for HTML.

Env `warpHTML`

Anything which is to be done only for HTML5 output is surrounded by a `warpHTML` environment:

```
\begin{warpHTML}
 ... something to be done only during \HTML\ generation
\end{warpHTML}
```

⚠ `\end{warpHTML}`

Do *not* place anything else on the same line as `\end{warpHTML}`. The exact phrase is used to mark the end of the environment.

Env `warpprint`

Anything which is to be done only for print output is surrounded by a `warpprint`

environment:

```
\begin{warpprint}
 ... something to be done only during traditional \PDF\ generation
\end{warpprint}
```

⚠ `\end{warpprint}` As above, do not place anything else on the line with `\end{warpprint}`.

Env `warpall` Anything which is to be done for any output may be surrounded by a `warpall` environment. Doing so is optional.

```
\begin{warpall}
 ... something to be done during print \PDF\ or \HTML\ output
\end{warpall}
```

As above, do not place anything else on the line with `\end{warpall}`.

Macros are also provided for print-only or HTML-only code:

`\warpprintonly` {⟨*actions*⟩}

Performs the given actions only when print output is being generated.

`\warpHTMLonly` {⟨*actions*⟩}

Performs the given actions only when HTML output is being generated.

8.8 Commands to be placed into the `warpprint` environment

Certain print-related commands should always be placed inside a `warpprint` environment, or may need other special handling. These are unrelated to HTML output, but are hard to isolate automatically. For example:

- Paragraph formatting: `\parindent` `\parskip`
- Manual page positions such as the textpos package, which is emulated but only in a limited way.
- Anything changing the `page` counter. lwarp requires that the `page` counter not be adjusted during HTML output.

Some packages require additional setup commands. Where these packages are emulated for HTML, setup commands may work for the emulated HTML output as well as for print output. See the details for each package in this document for more information.

Also see section 14: Troubleshooting.

8.9 Title page

In the preamble, place an additional block of code to set the following:

```
\title{Document Title} % One line only
\author{Author One\affiliation{Affiliation One} \and
    Author Two\affiliation{Affiliation Two} }
\date{Optional date}
```

The title is used in the meta tags in the HTML files, unless overridden by \HTMLTitle, and the rest are used in \maketitle. To use a \subtitle or \published field, see section 64.8.

\maketitle Use \maketitle just after the \begin{document}, as this will establish the title of the homepage. Optionally, use a titlepage environment instead.

Env titlepage The titlepage environment may be used to hold a custom title page. The titlepage will be set in a class titlepage, and \printtitle, etc. may be used inside this environment.

Env titlingpage Another form of custom title page, where \maketitle is allowed, and additional information may be included as well.

\title {⟨*title*⟩}

⚠ newlines Avoid newlines in the \title; these will interfere with the file break and css detection. Use a \subtitle command instead (section 64.8). The title will appear in the document \maketitle as a heading <h1>. The HTML meta title tag will also have this title, unless \HTMLTitle is used to set the meta title to something else instead.

\author {⟨*author*⟩}

In \author, \protect may be needed before some formatting commands. In HTML, the author will appear in a of class author in the \maketitle. If the titling package is used, the author will also appear in a HTML meta tag, but \HTMLAuthor may be necessary to create a plain list of names if \author had affiliations added. \affiliation is a new addition to lwarp.

\date {⟨*date*⟩}

\date works as expected. In HTML, this will appear in a class titledate.

\thanks {⟨*text*⟩}

\thanks are allowed in the titlepage fields, and will be rendered as HTML notes at the bottom of the title page.

8.10 HTML page meta descriptions

\HTMLDescription {⟨*A description of the web page.*⟩} The default is no description.

limitations Each page of HTML output should have its own HTML meta description, which usually shows up in web search results, is limited to around 150 characters in length, and should not include the ASCII double quote character (").

placement Use \HTMLDescription just before \begin{document} to set the description of the home page, and also just before each sectioning command such as \chapter or \section where a new file will be generated, depending on FileDepth. For example, if FileDepth is 1, use \HTMLDescription just before each \section command, and that description will be placed inside the HTML page for that \section. The same descrition will be used for all following HTML files as well, until reset by a new \HTMLDescription. It is best to use a unique description for each HTML file.

disabling To disable the generation of HTML description meta tags, use:

```
\HTMLDescription{}
```

8.11 HTML homepage meta title

\HTMLTitle {⟨*title*⟩} Sets the contents of the web page <meta name="title"> element. Defaults to \HTMLtitle{\thetitle}. May be set empty to cancel the meta title tag.

See section 8.4 for \HTMLTitleBeforeSection and \HTMLTitleAfterSection, used to set the title for HTML subpages.

8.12 HTML page meta author

\HTMLAuthor {⟨*author*⟩} Sets the contents of the web page <meta name="author"> element. Defaults to \HTMLAuthor{\theauthor}. May be set empty to cancel the meta author tag.

\author may be used to create a list of authors and their affiliations, in several formats if using authblk, and these may not successfully parse properly into a sensible

list for \theauthor. \HTMLAuthor may be used to set the meta tag to a simple list of names.

9 Special cases and limitations

Some commonly-used LaTeX expressions should be modified as follows to allow for a smooth conversion to both HTML and print-formatted outputs.

Need help?

See the General Index for "how-to", and the Troubleshooting Index if something doesn't work. The Index of Objects contains automated entries for each package, macro, environment, counter, boolean, and other objects; individually and also sorted by category. A Troubleshooting section is also available.

9.1 Things to avoid

In the document, avoid the following:

page counter: Do not adjust the page counter. If doing so is required for the print version, place the adjustment inside a warpprint environment.

Custom math environment macros: Do not use expressions such as \beq as a replacement for \begin{equation}.

Custom macros in section, figure, table names: Custom macros which appear in sectioning commands or float captions then appear in the .toc, .lof, and .lot lists, and should be made robust using \newrobustcmd or \robustify from etoolbox, xparse, etc.

When setting FileSectionNames to true to name the HTML files from the section names, the file names are created from sanitized versions of the chapter or section names, but the section names must be plain text or something which expands into plain text. Robust macros will not work at the sectioning level which is used for file names, but a robust macro or other complicated name may be used for the manditory argument of \chapter, \section, etc., if a plain-text version is also included in the optional argument:

```
\chapter[Plain Name]{\ARobustMacro{Fancy Name}}
```

9.2 Formatting

9.2.1 Text formatting

⚠ \bfseries, etc.

`\textbf`, etc. are supported, but `\bfseries`, etc. work only in some situations.

⚠ HTML special chars

`&`, `<`, and `>` have special meanings in HTML. If `\&`, `\textless`, and `\textgreater` are used, proper HTML entities will be used, but there may be HTML parsing problems if these special characters occur unescaped in program listings or other verbatim text.

program listings

For program listings, the listings package is supported, and its `literate` option is used to convert `&`, `<`, and `>` to proper HTML entities.

verbatim

The various `verbatim`-related environments do not convert `&`, `<`, and `>`, so care must be taken to avoid accidentally including valid HTML code inside these environments. Adding a space on either side may be sufficient.

9.2.2 Horizontal space

\hspace

`\hspace` is converted to an inline HTML span of the given width, except that `0` width is ignored, a width of `.16667em` is converted to an HTML thin breakable space (`U+2009`), and a `\fill` is converted to a `\qquad`.

\, ~

`~` and `\,` are converted to HTML entities.

\kern \hskip

`\kern` and `\hskip` are entered into the HTML PDF output as-is, then interpreted by *pdftotext*, and thus usually appear as a single space.

9.2.3 Text alignment

Use the environments `center`, `flushright`, `flushleft` instead of the macros `\centering`, `\raggedright`, `\raggedleft`.

⚠ figure & table alignment

`\centering`, etc. are honored in a `figure` or `table` if they are the first command inside the float:

```
\begin{table*}
\centering
\caption{A Table}
...
```

9.2.4 Accents

Native LaTeX accents such as `\"` will work, but many more kinds of accents are available when using Unicode-aware XeLaTeX and LuaLaTeX.

9.2.5 textcomp package

Pkg `textcomp` Some textcomp symbols do not have Unicode equivalents, and thus are not supported.

⚠ missing symbols Many textcomp symbols are not supported by many fonts. In the CSS try referencing fonts which are more complete, but expect to see gaps in coverage.

9.2.6 Superscripts and other non-math uses of math mode

Use `\textsuperscript{x}` instead of `$^{x}$`

9.2.7 Empty `\item` followed by a new line of text or a nested list:

lists Use a trailing backslash: `\item[label] \`

9.2.8 Filenames and URLs in lists or footnotes

filename underscore Escape underscores in the filenames:

```
\item[\href{file\_name.pdf}{text}]
```

9.2.9 relsize package

Pkg `relsize` For HTML, only the inline macros are supported: `\textlarger`, `\textsmaller`, and `\textscale`. Each becomes an inline span of a modified `font-size`.

`\relsize`, `\larger`, `\smaller`, and `\relscale` are ignored.

While creating SVG math for HTML, the original definitions are temporarilty restored, and so should work as expected.

⚠ not small The HTML browser's setting for minumum font size may limit how small the output will be displayed.

9.3 Boxes and minipages

9.3.1 Marginpars

\marginpar [⟨*left*⟩] {⟨*right*⟩} \marginpar may contains paragraphs, but in order to remain inline with the surrounding text lwarp nullifies block-related macros inside the \marginpar. Paragraph breaks are converted to <br /> tags.

\marginparBlock [⟨*left*⟩] {⟨*right*⟩} To include block-related macros, use \marginparBlock, which takes the same arguments but creates a instead of a . A line break will occur in the text where the \marginBlock occurs.

9.3.2 Save Boxes

TEX boxes are placed inline and do not allow line breaks, so boxes with long contents may overflow the line during HTML conversion. This is mostly a problem when the boxes contain objects which themselves hold large HTML tags, such as rotation commands with long contents. When this object overflows the line, some HTML code will be lost and the page will be corrupted.

9.3.3 Minipages

⚠ inline A line of text with an inline minipage or parbox will have the minipage or parbox placed onto its own line, because a paragraph is a block element and cannot be made inline-block.

placement Minipages and parboxes will be placed side-by-side in HTML unless you place a \newline between them.

side-by-side Side-by-side minipages may be separated by \quad, \qquad, \enskip, \hspace, \hfill, or a \rule. When inside a center environment, the result is similar in print and HTML. Paragraph tags are suppressed between side-by-side minipages and these spacing commands, but not at the start or end of the paragraph.

in a span There is limited support for minipages inside an HTML . An HTML cannot appear inside a . While in a , minipages, and parboxes, and any enclosed lists have limited HTML tags, resulting in an "inline" format, without markup except for HTML breaks. Use \newline or \par for an HTML break.

size When using \linewidth, \textwidth, and \textheight, widths and heights are scaled proportionally to a 6×9 inch text area.

no-width minipages A minipage of width exactly \linewidth is automatically given no HTML width.

full-width minipages

A new macro `\minipagefullwidth` requests that the next minipage be generated without an HTML `width` attribute, allowing it to be the full width of the display rather than the fixed width given.

⚠ text alignment

Nested minipages adopt their parent's text alignment in HTML, whereas in regular LaTeX PDF output they do not. Use a `flushleft` or similar environment in the child minipage to force a text alignment.

9.3.4 Side-by-side minipages

Place side-by-side minipages inside a `center` environment, with horizontal space between them, such as `\quad`, `\qquad`, `\hspace`, or `\hfill`. The result is similar in print and HTML. Do not use space commands at the start or end of the line.

9.3.5 Framed minipages and other environments

`\fbox` can only be used around inline `<span>` items during HTML output, but HTML cannot place a block element such as a `<div>` for a minipage or a list inside of a `<span>`. Several options are provided for framing an object, depending on which kind of object and which packages are loaded:

`\fbox`
`\fboxBlock`
Env `fminipage`

For a framed object, options include:

To remove the frame in HTML output: Place the `\fbox` command and its closing brace inside `warpprint` environments. This will nullify the frame for HTML output.

For inline text:

To frame the contents inline with some formatting losses in HTML: This is the default action of `\fbox` when enclosing a minipage. During HTML output, `\fbox` nullifies the HTML tags for `minipage`, `\parbox`, and lists. The contents are included as inline text inside the `\fbox`'s `<span>` of class `framebox`. For lists, line breaks are converted to HTML breaks. The result is a plain-text inline version of the contents, framed inline with the surrounding text, but lacking any extra HTML markup.

For inline `minipage` and lists:

To frame the contents on their own line with improved formatting in HTML: A new command `\fboxBlock` is included, intended to be a direct replacement for `\fbox` for cases where the `\fbox` surrounds a minipage, table, or list. For print output, this behaves as `\fbox`. For HTML output, the contents are placed inside an HTML `<div>` with the class `framed`, resulting in the contents being placed on their own line with a frame surrounding them. The contents preserve their HTML formatting, so lists and minipages look nicer, and valid HTML is created for a `tabular`. While an `\fbox` containing a `tabular` is valid LaTeX code, the result in HTML is problematic since a table is a `<div>` not a `<span>`, so use

\fboxBlock around a tabular, or else place the tabular inside a minipage, or use fminipage, described next. Also see below regarding the "Misplaced alignment tab character &." error.

For display tabular, minipages, and lists:

To create a framed minipage in both print and HTML: A new environment fminipage is included. For print output, this is identical to minipage, except that it is also framed. For HTML output, this forms a of class framed, the contents preserve their HTML formatting, and valid HTML is created for a tabular. Also see section 83 for a new environment fcolorminipage. Also see below regarding the "Misplaced alignment tab character &." error.

colored boxes and frames:

To create colored frames and boxes: See section 444 for xcolor's \colorbox and \fcolorbox, and lwarp's additional \colorboxBlock and \fcolorboxBlock.

⚠ Misplaced alignment tab character &

To frame tables or verbatim environments: Place the contents inside a fminipage, or perhaps a \fboxBlock for a tabular. Also, if using \fboxblock with tabular, you will have to use \StartDefiningTabulars before the start of the macro which uses \fboxBlock and the tabular, and \StopDefiningTabulars afterwards. Also see the lwarp documentation for the fancybox package.

To frame equations: See section 201 for the fancybox package.

For fancy framed minipages: See packages boxedminipage, shadow, fancybox, framed, mdframed.

Custom environments: Use a custom environment to create a sidebar, containing a BlockClass environment with custom css formatting, and \warpprintonly{\hrule} command:

```
\begin{BlockClass}{frameminipage}% ignored in print output
  % use \CSS\ to format div class ``framedminipage''
\warpprintonly{\hrule} % only appears in print output
Contents
\warpprintonly{\hrule} % only appears in print output
\end{BlockClass}
```

9.3.6 fancybox package

Pkg fancybox

framed equation example

fancybox's documentation has an example FramedEqn environment which combines math, \Sbox, a minipage, and an \fbox. This combination requires that the entire environment be enclosed inside a lateximage, which is done by adding \lateximage at the very start of FramedEqn's beginning code, and \endlateximage at the very end of the ending code. Unfortunately, the HTML alt attribute is not used here.

```
\newenvironmentFramedEqn
{
\lateximage% NEW
\setlength{\fboxsep}{15pt}
...}{...
\[\fbox{\TheSbox}\]
\endlateximage% NEW
}
```

framing alternatives

`\fbox` works with fancybox. Also see lwarp's `\fboxBlock` macro and `fminipage` environment for alternatives to `\fbox` for framing environments.

framed table example

The fancybox documentation's example framed table using an `\fbox` containing a `tabular` does not work with lwarp, but the `FramedTable` environment does work if `\fbox` is replaced by `\fboxBlock`. This method loses HTML formatting. A better method is to enclose the table's contents inside a `fminipage` environment. The caption may be placed either inside or outside the `fminipage`:

```
\begin{table}
\begin{fminipage}{\linewidth}
\begin{tabular}{lr}
...
\end{tabular}
\end{fminipage}
\end{table}
```

⚠ framed verbatim

lwarp does not support the `verbatim` environment inside a span, box, or fancybox's `\Sbox`, but a `verbatim` may be placed inside a `fminipage`. The fancybox documentation's example `FramedVerb` may be defined as:

```
\newenvironment{FramedVerb}[1] % width
{
\VerbatimEnvironment
\fminipage{#1}
\beginVerbatim
}{
\endVerbatim
\endfminipage
}
```

framed `\VerbBox`

fancybox's `\VerbBox` may be used inside `\fbox`.

indented alignment

`LVerbatim`, `\LVerbatimInput`, and `\LUseVerbatim` indent with horizontal space which may not line up exactly with what *pdftotext* detects. Some lines may be off slightly in their left edge.

9.3.7 mdframed package

Pkg `mdframed` support

Most basic functionality is supported, including frame background colors and single-border colors and thickness, title and subtitle background colors and borders and thickness, border radius, and shadow. CSS classes are created for mdframed environments and frame titles.

⚠ loading

When used, lwarp loads mdframed in HTML with `framemethod=none`.

font

For title font, use

```
frametitlefont=\textbf,
```

instead of

```
frametitlefont=\bfseries,
```

where `\textbf` must appear just before the comma and will receive the following text as its argument (since the text happens to be between braces in the mdframed source). Since lwarp does not support `\bfseries` and friends, only one font selection may be made at a time.

theoremtitlefont

`theoremtitlefont` is not supported, since the following text is not in braces in the mdframed source.

footnotes

Footnotes are currently placed at the bottom of the HTML page.

ignored options

`userdefinedwidth` and `align` are currently ignored.

9.4 Cross-references

labels

⚠ label characters

Labels with special characters may be a problem. It is best to stick with alphanumeric, hyphen, underscore, and perhaps the colon (if not French).

`\nameref`

⚠ empty link

`\nameref` refers to the most recently-used section where the `\label` was defined. If no section has been defined before the `\label`, the link will be empty. Index entries also use `\nameref` and have the same limitation.

9.4.1 Page references

⚠ LaTeX page numbers

The printed page does not translate to the HTML page, so `\pageref` references are converted to parentheses containing `\pagerefPageFor`, which defaults to "see ", followed by a hyperlink to the appropriate object.

Ex:

```
\ref{sec:name} on page \pageref{sec:name}
```
in HTML becomes:
"Sec. 1.23 on page (**see** sec. 1.23)".

`\pagerefPageFor` may be redefined to "page for ", empty, etc. See page 485.

9.4.2 cleveref and varioref packages

Pkg `cleveref`
Pkg `varioref`

cleveref and varioref are supported, but printed page numbers do not map to HTML, so a section name or a text phrase are used for `\cpageref` and `\cpagerefrange`. This phrase includes `\cpagerefFor`, which defaults to "for".

⚠ cleveref page numbers

Ex:

```
\cpageref{tab:first,tab:second}
```
in HTML becomes:
"pages **for** table 4.1 and **for** table 4.2"

See `\cpagerefFor` at page 563 to redefine the message which is printed for page number references.

9.4.3 Hyperlinks, hyperref, and url

Pkg `hyperref`
Pkg `url`

lwarp emulates hyperref, including the creation of active hyperlinks, but does not require that hyperref be loaded by the document.

⚠ comments between arguments

Do not place a comment with a % character between arguments for `\hyperref`, etc., as it is neutralized for inclusion in HTML URLs.

lwarp can also load url, but url should not be used at the same time as hyperref, since they both define the `\url` command. lwarp does not (yet) attempt to convert url links into hyperlinks during HTML output, nor does url create hyperlinks during print output.

⚠ backref

When generating HTML, lwarp's emulation of hyperref does not automatically load backref, so backref must be loaded explicitly.

9.4.4 Footnotes and page notes

lwarp uses native LaTeX footnote code, although with its own `\box` to avoid the LaTeX output routine. The usual functions mostly work as-is.

The footmisc `stable` option is emulated by lwarp.

⚠ sectioning commands

When using footnotes in sectioning commands, to generate consistent results be-

tween print and HTML, use the footmisc package with the `stable` option, provide a short TOC entry, and `\protect` the `\footnote`:

```
\usepackage[stable]{footmisc}
...
\subsection[Subsection Name]
    {Subsection Name\protect\footnote{A footnote.}}
```

⚠ memoir

If using memoir class, with which lwarp preloads footmisc, the `stable` option must be declared before lwarp is loaded:

```
\PassOptionsToPackage{stable}{footmisc}
\usepackage{lwarp}
...
```

Do not use a starred sectioning command. As an alternative, it may be possible to adjust `\secnumdepth` instead.

⚠ `\VerbatimFootnotes`
⚠ sectioning or displaymath

If using fancybox or fancyvrb with `\VerbatimFootnotes`, and using footnotes in a sectioning command or display math, use `\footnotemark` and `\footnotetext`:

```
\subsection[Subsection Name]
    {Subsection Name\protect\footnotemark}
\footnotetext{A footnote with \verb+verbtim+.}
```

and likewise for equations or display math.

At present there is a bug such that paragraph closing tags are not present in footnotes when `\VerbatimFootnotes` are selected. The browser usually compensates.

⚠ pfnote numbers

While emulating pfnote, lwarp is not able to reset HTML footnote numbers per page number to match the printed version, as HTML has no concept of page numbers. lwarp therefore uses continuous footnote numbering even for pfnote.

9.5 Front and back matter

9.5.1 Custom classes with multiple authors and affiliations

Some classes allow multiple authors and affiliations. Often it is possible to emulate these using a standard class along with authblk:

```
%\documentclass{customclass} % for print document
\documentclass{article} % for HTML document

\usepackage{lwarp}
\begin{warpHTML}
\usepackage{authblk}
\let\affiliation\affil % maybe required
\end{warpHTML}
```

9.5.2 Starred chapters and sections

The following describes \ForceHTMLPage and \ForceHTMLTOC, which may be used for endnotes, glossaries, tocbibind, and the index. See the following sections where applicable. Continue here if interested in the reason for adding these commands to lwarp.

Some packages use \chapter* or \section* to introduce reference material such as notes or lists, often to be placed in the back matter of a book. These starred sections are placed inline instead of on their own HTML pages, and they are not given TOC entries.

lwarp provides a method to cause a starred section to be on its own HTML page, subject to FileDepth, and also a method to cause the starred section to have its own TOC entry during HTML output.

\ForceHTMLPage To place a starred section on its own HTML page, use \ForceHTMLPage just before the \chapter* or \section*. lwarp will create a new page for the starred sectional unit.

A starred sectional unit does not have a TOC entry unless one is placed manually. The typical method using \phantomsection and \addcontentsline works for inline text but fails when the new starred section is given its own webpage after the TOC entry is created, or when creating an EPUB where the TOC entry will point to the page before the starred section. If the starred section has its own HTML page but no correct TOC entry pointing to that page, the page will be inaccessible unless some other link is created.

⚠ inaccessible HTML page

\ForceHTMLTOC To automatically force the HTML version of the document to have a TOC entry for a starred section, use \ForceHTMLTOC just before the \chapter* or \section*, and place \phantomsection and \addcontentsline inside a warpprint environment.

For print output, \ForceHTMLTOC and \ForceHTMLPage have no effect.

9.5.3 abstract package

Pkg abstract

⚠ missing TOC

If using the number option with file splits, be sure to place the table of contents before the abstract. The number option causes a section break which may cause a file split, which would put a table of contents out of the home page if it is after the abstract.

9.5.4 titling and authblk

Pkg titling

Pkg authblk

package support

⚠ load order

\published and \subtitle

lwarp supports the native LaTeX titling commands, and also supports the packages authblk and titling. If both are used, authblk should be loaded before titling.

If using the titling package, additional titlepage fields for \published and \subtitle may be added by using \AddSubtitlePublished in the preamble. See section 64.8.

9.5.5 tocloft package

Opt tocloft titles

Pkg tocloft

Pkg tocloft

⚠ tocloft & other packages

If using tocloft with tocbibind, anonchap, fncychap, or other packages which change chapter title formatting, load tocloft with its titles option, which tells tocloft to use standard LaTeX commands to create the titles, allowing other packages to work with it.

9.5.6 appendix package

Pkg appendix

⚠ incorrect TOC link

During HTML conversion, the option toc without the option page results in a TOC link to whichever section was before the appendices environment. It is recommended to use both toc and also page at the same time.

9.5.7 pagenote package

Pkg pagenote

pagenote works as-is, but the page option is disabled.

9.5.8 endnotes package

Pkg endnotes

table of contents

To place the endnotes in the TOC, use:

```
\usepackage{endnotes}
\appto\enoteheading{\addcontentsline{toc}{section}{\notesname}}
\renewcommand*{\notesname}{Endnotes} % optional
```

HTML page

To additionally have the endnotes on their own HTML page, if `FileDepth` allows:

```
\ForceHTMLPage
\theendnotes
```

9.5.9 BibTeX

`\etalchar`

Displays a superscript "+" to indicate "and others".

⚠ Modify *.bib

When enough authors are cited for a source, BibTeX may use the `\etalchar` command to display a math superscript with a + character to indicate "and others". Without modification, this will result in an "Improper `\prevdepth`" error. At present, lwarp requires that `\etalchar` be replaced by a text superscript. To do so, add to the start of the `.bib` file the following:

```
@PREAMBLE{"\let\etalchar\relax \newcommand{\etalchar}[1]{\textsuperscript{#1}}"}
```

9.5.10 glossaries package

Pkg `glossaries`

processing glossaries

Opt `GlossaryCmd`

Default: `makeglossaries`

Opt `lwarpmk` `printglossary`

Opt `lwarpmk` `htmlglossary`

lwarpmk has the commands `lwarpmk printglossary` and `lwarpmk htmlglossary`, which process the glossaries created by the glossaries package using that package's ***makeglossaries*** command.

The shell command to execute is set by the lwarp option `GlossaryCmd`, which defaults to ***makeglossaries***. The print or HTML glossary filename is appended to this command.

⚠ ***makeglossaries*** not found

In some situations it may be required to modify the default command, such as to add the ***perl*** command in front:

```
\usepackage[
   GlossaryCmd={perl makeglossaries},
] {lwarp}
```

xindy language

To set the language to use for processing glossaries with *xindy*:

```
\usepackage[
   GlossaryCmd={makeglossaries -L english},
] {lwarp}
```

Other options for ***makeglossaries*** may be set as well.

placement and TOC options

The glossaries may be placed in a numbered or unnumbered section, given a TOC entry, and placed inline or on their own HTML page:

Numbered section, on its own HTML page:

```
\usepackage[xindy,toc,numberedsection=nolabel]{glossaries}
...
\printglossaries
```

Unnumbered section, inline with the current HTML page:

```
\usepackage[xindy,toc]{glossaries}
...
\printglossaries
```

Unnumbered section, on its own HTML page:

```
\usepackage[xindy,toc]{glossaries}
...
\ForceHTMLPage
\printglossaries
```

⚠ glossary style

The default `style=item` option for glossaries conflicts with lwarp, so the style is forced to `index` instead.

⚠ number list

The page number list in the printed form would become `\namerefs` in HTML, which could become a very long string if many items are referenced. For now, the number list is simply turned off.

print/HTML versions

The print and HTML versions of the glossary differ in their internal page numbers. Separate commands for generating print and HTML glossaries are used, even though the page number is currently ignored.

9.5.11 Indexing overview

There are many ways to process indexes for a LaTeX document, including native LaTeX capabilities, a number of packages and classes, the possible availability of shell escape and *latexmk*, and the need to process print and HTML versions. lwarp attempts to provide easy recompilation of indexes along with the rest of the document, but the various indexing options must be set correctly. Numerous examples are given below. Some differ in minor details, so the important parts are highlighted in red, and options are in green.

Once set up properly, the entire document may be recompiled with ***`lwarpmk print`*** and ***`lwarpmk html`***. In some cases, it will also be necessary to compile the indexes with ***`lwarpmk printindex`*** and ***`lwarpmk htmlindex`***. A recompile may then be forced with ***`lwarpmk print1`*** and ***`lwarpmk html1`***.

manual processing

The user may continue to process indexes manually or by shell script without the use of *lwarpmk*, but adjustments will be required to process HTML indexes as well. In general, `*.idx` and `*.ind` files will be accompanied by `*_html.idx` and `*_html.ind` files.

custom index style

If using a custom indexing style file, see sections 9.5.17 and 9.5.18.

source code

See section 74 for lwarp's core index and glossary code, section 258 for index, section 382 for splitidx, section 256 for imakeidx, section 412 for tocbibind, and section 459.17 for memoir's indexing patches.

9.5.12 Indexing with basic LaTeX and makeidx

lwarpmk processing

The following allow the user to process indexes automatically, or using *lwarpmk*'s commands:

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

For a single index using *makeindex*:

```
\usepackage[makeindex,latexmk] {lwarp}
```

The usual `.idx` and `.ind` files will be used, along with the new `lwarp.ist` style file. When creating the HTML index, "`_html`" is automatically appended to each of the names.

lwarpmk will use *latexmk* if specified, in which case *latexmk* will create the index automatically. Otherwise, use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

For a single index using *xindy*:

```
\usepackage[
    xindy,
    xindyLanguage=english,                    <optional>
    xindyCodepage=utf8,                       <optional>
    latexmk                                   <optional>
]{lwarp}
```

The usual `.idx` and `.ind` files will be used, along with the new `lwarp.xdy` style file.

lwarpmk will use *latexmk* if specified, in which case *latexmk* will create the index automatically. Otherwise, use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

9.5.13 Indexing with index

lwarp is told how to use *makeindex* using the `PrintIndexCmd` and `HTMLIndexCmd` options. The file `lwarp.ist` is specified, which generates index letter heads for print output and also allows special HTML formatting for HTML output.

For multiple indexes using *makeindex* and index:

(Assuming that the second index has file extensions `.sist` and `.sind`)

```
\usepackage[
  makeindex, latexmk,
  PrintIndexCmd={
    makeindex -s lwarp.ist <projectname>.idx ;
    makeindex -s lwarp.ist
      -o <projectname>.sind <projectname>.sidx
  },
  HTMLIndexCmd={
    makeindex -s lwarp.ist <projectname>_html.idx ;
    makeindex -s lwarp.ist
      -o <projectname>_html.sind <projectname>_html.sidx
  }
]{lwarp}
\usepackage{index}
...
\makeindex
\newindex{secondname}{sidx}{sind}{Second Index}
```

⚠ WINDOWS *For WINDOWS, replace the two ";" characters with "&".*

When creating the HTML index, "`_html`" is automatically appended to the index filenames.

Use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

If the `latexmk` option is selected for lwarp, *latexmk* will compile the document but will *not* compile the indexes. ***`lwarpmk printindex`*** and ***`lwarpmk htmlindex`*** will still be required.

9.5.14 Indexing with splitidx

lwarp is told how to use *splitindex* using the `PrintIndexCmd` and `HTMLIndexCmd` options. The file `lwarp.ist` is specified, which generates index letter heads for print output and also allows special HTML formatting for HTML output.

If the `latexmk` option is selected for lwarp, *latexmk* will compile the document but will *not* compile the indexes. ***`lwarpmk printindex`*** and ***`lwarpmk htmlindex`*** will still be required.

⚠ `\thepage` When using `\AtWriteToIndex` or `\AtNextWriteToIndex`, the user must not refer to `\thepage` during HTML output, as the concept of a page number is meaningless. Instead, do

```
\addtocounter{LWR@autoindex}{1}
\LWR@new@label{LWRindex-\arabic{LWR@autoindex}}
```

where the `\index`-like action occurs, and then refer to `\arabic{LWR@autoindex}` instead of `\thepage` where the reference should occur.

See section 459.17 in the lwarp-patch-memoir package for the `\@@wrspindexhyp` macro as an example.

For multiple indexes using *makeindex* and splitidx:

```
\usepackage[
  makeindex, latexmk,
  PrintIndexCmd={
    splitindex <projectname> -- -s lwarp.ist
  },
  HTMLIndexCmd={
    splitindex <projectname>_html -- -s lwarp.ist
  }
]{lwarp}
\usepackage{splitidx}
...
\makeindex
\newindex[Second Index]{secondname}
```

When creating the HTML index, "`_html`" is automatically appended to each of the names.

Use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

For multiple indexes using *xindy* and splitidx:

```
\usepackage[
  xindy, latexmk,
  PrintIndexCmd={
    splitindex -m xindy <projectname> -- -M lwarp.xdy
      -L english -C utf8                          <optional>
  },
  HTMLIndexCmd={
    splitindex -m xindy <projectname>_html -- -M lwarp.xdy
      -L english -C utf8                          <optional>
  }
]{lwarp}
\usepackage{splitidx}
...
\makeindex
\newindex[Second Index]{secondname}
```

When creating the HTML index, "`_html`" is automatically appended to each of the names.

Use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

9.5.15 Indexing with imakeidx

Due to the number of methods which may be used to process multiple indexes, the options for style file and *xindy* language and codepage must be specified in one of several different ways. These are described in detail later in this section, but are summarized here.

If shell escape is used, imakeidx will automatically compile the indexes by itself. Options specifying a custom style file and *xindy* language and codepage must be specified for each `\makeindex` command using its `options=` option, which must include lwarp's special `lwarp.ist` or `lwarp.xdy` file, or a file based on them. If using a custom indexing style file, see sections 9.5.17 and 9.5.18. The `splitindex` option is also available of shell escape is used, in which case the splitidx package and *splitindex* program will also be used.

If shell escape is not possible, *latexmk* may be used to automatically compile the indexes. The style, language, and codepage options are specified with lwarp's `makeindexStyle`, `xindyStyle`, `xindyLanguage`, and `xindyCodepage` options. These are passed to *latexmk* by *lwarpmk*'s ***`lwarpmk printindex`*** and ***`lwarpmk htmlindex`*** commands.

Where shell escape and *latexmk* are not possible, *lwarpmk* may be used to manually compile the indexes. lwarp's `PrintIndexCmd` and `HTMLIndexCmd` options are used.

For a single or multiple indexes using *makeindex* and imakeidx:

The index style `lwarp.ist` is automatically used for HTML output. This file turns on letter headings, so it may be desirable to specify it as an option, in which case it will also be used for print output, which will help match the print and HTML output.

```
\usepackage[makeindex,latexmk] {lwarp}
\usepackage[makeindex]{imakeidx}
...
\makeindex[options={-s lwarp.ist}]
\makeindex[name=secondname,options={-s lwarp.ist}]
```

imakeidx will automatically compile the indexes. Shell escape is not required while using *makeindex*. `latexmk` may be specified, and if so it will be used for ***`lwarpmk print`*** and ***`lwarpmk html`***, but *imakeidx* will actually create the indexes.

For a single or multiple indexes using *makeindex* and *splitindex* with imakeidx:

The index style `lwarp.ist` is automatically used for HTML output. This file turns on letter headings, so it may be desirable to specify it as an option, in which case it will also be used for print output, which will help match the print and HTML output.

```
\usepackage[makeindex,latexmk] {lwarp}
\usepackage[makeindex,splitindex]{imakeidx}
...
\makeindex[options={-s lwarp.ist}]
\makeindex[name=secondname,options={-s lwarp.ist}]
```

⚠ enable shell escape

Shell escape is required while using *splitindex*. For the first compile, use

Enter ⇒ `pdflatex --shell-escape projectname.tex`

Enter ⇒ `pdflatex --enable-write18 projectname.tex` (MikTeX)

or similar with *xelatex* or *lualatex*. *lwarp* will remember that shell escape was used.

imakeidx will automatically execute *splitindex*, and will also use *makeindex* to compile the indexes.

`latexmk` may be specified, and if so it will be used for ***`lwarpmk print`*** and ***`lwarpmk html`***, but *imakeidx* will actually create the indexes.

For multiple indexes using *xindy* and imakeidx, using shell escape:

Options may be given to imakeidx's `\makeindex` command. The style file `lwarp.xdy` is automatically used for HTML output, and is not necessary for print output since the output will be similar. If language or codepage must be set, they should be specified as options for `\makeindex`, since imakeidx will process the indexes.

```
\usepackage[xindy,latexmk] {lwarp}
\usepackage[xindy,splitindex]{imakeidx}
...
\makeindex[
  options={ -M lwarp.xdy -L english -c utf8 }
]
\makeindex[
  name=secondname,
  options={ -M lwarp.xdy -L english -c utf8 }
]
```

⚠ enable shell escape

For the first compile, use

Enter ⇒ `pdflatex --shell-escape projectname.tex`

Enter ⇒ `pdflatex --enable-write18 projectname.tex` (MikTeX)

or similar with *xelatex* or *lualatex*. *lwarp* will remember that shell escape was used.

imakeidx will automatically execute *splitindex* if selected, and will also use *xindy* to compile the indexes.

If selected, *latexmk* will automatically recompile the entire document as necessary.

For indexes using *xindy* and *imakeidx*, without shell escape, but *with latexmk*:

lwarp's options are used, and are passed to *latexmk*.

```
\usepackage[
  xindy,
  xindyLanguage=english,                    <optional>
  xindyCodepage=utf8,                       <optional>
  latexmk,
]{lwarp}
\usepackage[xindy]{imakeidx}
...
\makeindex
\makeindex[name=secondname]
```

latexmk will create the indexes automatically when ***lwarpmk print*** and ***lwarpmk html*** are executed.

For indexes using *xindy* and *imakeidx*, without shell escape, and *without latexmk*:

lwarpmk must be told how to create the indexes:

```
\usepackage[
  xindy,
  PrintIndexCmd={
    xindy -M lwarp.xdy -L english -C utf8
      <projectname>.idx ;
    xindy -M lwarp.xdy -L english -C utf8
      secondname.idx
  },
  HTMLIndexCmd={
    xindy -M lwarp.xdy -L english -C utf8
      <projectname>_html.idx ;
    xindy -M lwarp.xdy -L english -C utf8
      secondname_html.idx
  }
]{lwarp}
\usepackage[xindy]{imakeidx}
...
\makeindex
\makeindex[name=secondname]
```

⚠ WINDOWS *For WINDOWS, replace the two ";" characters with "&".*

`<projectname>` is the `\jobname`: if compiling "`name.tex`", use the filenames `name.idx` and `name_html.idx`.

Use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

9.5.16 Indexes with memoir

For a single index with memoir and makeindex:

```
\documentclass{memoir}
\usepackage[makeindex,latexmk]{lwarp}
...
\makeindex
```

The usual `.idx` and `.ind` files will be used, along with the `lwarp.ist` style file.

lwarpmk will use *latexmk* if specified, in which case *latexmk* will create the index automatically. Otherwise, use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

For multiple indexes with memoir and makeindex, using *latexmk*:

lwarp's options are used, and are passed to *latexmk*.

```
\documentclass{memoir}
\usepackage[makeindex,latexmk]{lwarp}
...
\makeindex
\makeindex[secondname]
```

lwarpmk will use *latexmk* to create the indexes automatically when the user executes ***`lwarpmk print`*** and ***`lwarpmk html`***.

For multiple indexes with memoir and makeindex, *without* latexmk:

lwarpmk must be told how to create the indexes:

```
\documentclass{memoir}
\usepackage[
  makeindex,
  PrintIndexCmd={
    makeindex -s lwarp.ist <projectname>.idx ;
    makeindex -s lwarp.ist secondname.idx
  },
  HTMLIndexCmd={
    makeindex -s lwarp.ist <projectname>_html.idx ;
    makeindex -s lwarp.ist secondname_html.idx
  }
]{lwarp}
...
\makeindex
\makeindex[secondname]
```

⚠ WINDOWS *For WINDOWS, replace the two ";" characters with "&".*

`<projectname>` is the `\jobname`: if compiling "`name.tex`", use the filenames `name.idx` and `name_html.idx`.

Use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

For a single index with memoir and xindy:

```
\documentclass{memoir}
\usepackage[
    xindy,
    xindyLanguage=english,                    <optional>
    xindyCodepage=utf8,                       <optional>
    latexmk                                   <optional>
]{lwarp}
...
\xindyindex
\makeindex
```

The usual `.idx` and `.ind` files will be used, along with the `lwarp.xdy` style file.

lwarpmk will use *latexmk* if specified, in which case *latexmk* will create the index automatically. Otherwise, use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

For multiple indexes with memoir and xindy, using latexmk:

lwarp's options are used, and are passed to *latexmk*.

```
\documentclass{memoir}
\usepackage[
    xindy,
    xindyLanguage=english,                    <optional>
    xindyCodepage=utf8,                       <optional>
    latexmk
]{lwarp}
...
\xindyindex
\makeindex
\makeindex[secondname]
```

lwarpmk will use *latexmk* to create the indexes automatically.

For multiple indexes with memoir and xindy, *without* latexmk:

lwarpmk must be told how to create the indexes:

```
\documentclass{memoir}
\usepackage[
  xindy,
  PrintIndexCmd={
    xindy -M lwarp.xdy -L english -C utf8
      <projectname>.idx ;
    xindy -M lwarp.xdy -L english -C utf8
      secondname.idx
  },
  HTMLIndexCmd={
    xindy -M lwarp.xdy -L english -C utf8
      <projectname>_html.idx ;
    xindy -M lwarp.xdy -L english -C utf8
      secondname_html.idx
  }
]{lwarp}
...
\xindyindex
\makeindex
\makeindex[secondname]
```

⚠ WINDOWS *For WINDOWS, replace the four ";" characters with "&".*

`<projectname>` is the `\jobname`: if compiling "`name.tex`", use the filenames `name.idx` and `name_html.idx`.

Use

Enter ⇒ `lwarpmk printindex`

Enter ⇒ `lwarpmk htmlindex`

to compile the indexes.

9.5.17 Using a custom *makeindex* style file

Prog `makeindex`
File `lwarp.ist`

When using *makeindex*, *lwarpmk* uses the file `lwarp.ist` to process the index. This file is over-written by lwarp whenever a print version of the document is processed.

To use a custom *makeindex* style file:

1. Copy `lwarp.ist` to a new filename such as `projectname.ist`
2. Make changes to `projectname.ist`. Keep the lines which refer to `\hyperindexref`. These lines creates the hyperlinks for the HTML index. During print output `\hyperindexref` becomes a null function.

Opt makeindexStyle

3. In the document source use the makeindexStyle option for lwarp:

```
\usepackage[
    ... other options ...
    \textred{makeindexStyle=projectname.ist},
]{lwarp}
```

   Likewise, refer to the custom style file if using \PrintIndexCmd, \HTMLIndexCmd, or \LatexmkIndexCmd.

4. Recompile the print version, which causes lwarp to rewrite the lwarpmk.conf configuration file. This tells *lwarpmk* to use the custom projectname.ist file instead of lwarp.ist.

9.5.18 Using a custom *xindy* style file

Prog xindy
File lwarp.xdy

When using *xindy*, *lwarpmk* uses the file lwarp.xdy to process the index. This file is over-written by lwarp whenever a print version of the document is processed.

To use a custom *xindy* style file:

1. Copy lwarp.xdy to a new filename such as projectname.xdy
2. Make changes to projectname.xdy.

   Keep the lines which refer to \hyperindexref:

```
(define-attributes (("hyperindexref")))
(markup-locref :open "\hyperindexref{" :close "}")
...
(markup-locref :open "\textit{\hyperindexref{" :close "}}" :attr "textit")
```

   These lines create the hyperlinks for the HTML index. During print output \hyperindexref becomes a null function.

   To create custom styles, refer to the lines for \textbf and \textit.

Opt xindyStyle

3. In the document source use the xindyStyle option for lwarp:

```
\usepackage[
    ... other options ...
    \textred{xindyStyle=projectname.xdy},
]{lwarp}
```

   Likewise, refer to the custom style file if using \PrintIndexCmd, \HTMLIndexCmd, or \LatexmkIndexCmd.

4. Recompile the print version, which causes lwarp to rewrite the lwarpmk.conf configuration file. This tells *lwarpmk* to use the custom projectname.xdy file instead of lwarp.xdy.

9.5.19 Additional indexing limitations

⚠ xindy with hyperref

xindy and hyperref may not work well together for print output with “see”, “see also”, reference ranges, or stylized index references. It may be necessary to turn off hyperreferencing for indexes:

```
\usepackage[hyperindex=false]{hyperref}
```

⚠ empty index

If an HTML index is empty, it may be necessary to add the following before lwarp is loaded:

```
\usepackage{morewrites}
\morewritessetup{allocate=10}
...
\usepackage{lwarp}
```

makeindex custom display styles

When using *makeindex*, custom display styles are possible:

```
\begin{warpprint}
\newcommand{\notesstyle}[1]{#1nn}
\end{warpprint}

\begin{warpHTML}
\makeatletter
\newcommand{\notesstyle}[1]{\LWR@doindexentry{#1} notes }
\makeatother
\end{warpHTML}
...
A sentence.\index{key|notesstyle}
```

xindy custom display styles

For custom styles with *xindy*, see `lwarp.xdy` for `\textbf` and `\textit` as examples.

9.5.20 Index positions, TOC, tocbibind

placement and TOC options

An index may be placed inline with other HTML text, or on its own HTML page:

Pkg makeidx

Inline, with a manual TOC entry:

A commonly-used method to introduce an index in a LaTeX document:

```
\cleardoublepage
\phantomsection
\addcontentsline{toc}{section}{\indexname}% or chapter
\printindex
```

Pkg makeidx **On its own HTML page, with a manual TOC entry:**

```
\begin{warpprint}
\cleardoublepage
\phantomsection
\addcontentsline{toc}{section}{\indexname}% or chapter
\end{warpprint}
\ForceHTMLPage
\ForceHTMLTOC
\printindex
```

Pkg tocbibind **Inline, with an automatic TOC entry:**

The tocbibind package may be used to automatically place an entry in the TOC.

```
\usepackage[nottoc]{tocbibind}
...
\cleardoublepage
\phantomsection % to fix print-version index link
\printindex
```

Pkg tocbibind **On its own HTML page, with an automatic TOC entry:**

```
\usepackage[nottoc]{tocbibind}
...
\cleardoublepage
\phantomsection % to fix print-version index link
\ForceHTMLPage
\printindex
```

Opt tocbibind numindex
numbered index section

Use the tocbibind `numindex` option to generate a numbered index. Without this option, the index heading has no number.

Other packages, such as imakeidx, may also have options for including the index in the Table of Contents.

Pkg tocloft
⚠ tocloft & other packages

If using tocloft with tocbibind, anonchap, fncychap, or other packages which change chapter title formatting, load tocloft with its `titles` option, which tells tocloft to use standard LaTeX commands to create the titles, allowing other packages to work with it.

9.6 Math

9.6.1 Rendering tradeoffs

Math rendering

Math may be rendered as SVG graphics or using the MathJax JavaScript display engine.

SVG files

Rendering math as images creates a new SVG file for each expression, except that an MD5 hash is used to combine identical duplicates of the same inline math expression into a single file, which must be converted to SVG only once. Display math is still handled as individual files, since it may contain labels or references which are likely to change.

SVG inline

The SVG images are currently stored separately, but they could be encoded in-line directly into the HTML document. This may reduce the number of files and potentially speed loading the images, but slows the display of the rest of the document before the images are loaded.

PNG files

Others LaTeX-to-HTML converters have used PNG files, sometimes pre-scaled for print resolution but displayed on-screen at a scaled down size. This allows high-quality print output at the expense of larger files, but SVG files are the preferred approach for scalable graphics.

MathML

Conversion to MathML might be a better approach, among other things allowing a more compact representation of math than SVG drawings. Problems with MathML include limited browser support and some issues with the fine control of the appearance of the result. Also see section 11 regarding EPUB output with MathJax.

9.6.2 svg option

SVG math option

For SVG math, math is rendered as usual by LaTeX into the initial PDF file using the current font[14], then is captured from the PDF and converted to SVG graphics via a number of utility programs. The SVG format is a scalable-vector web format, so math may be typeset by LaTeX with its fine control and precision, then displayed or printed at any size, depending on (sometimes broken) browser support. An HTML `alt` attribute carries the LaTeX code which generated the math, allowing copy/paste of the LaTeX math expression into other documents.

SVG image font size

For the `lateximage` environment, the size of the math and text used in the SVG image may be adjusted by setting `\LateximageFontSizeName` to a font size name — *without the backslash*, which defaults to:

```
\renewcommand{\LateximageFontSizeName}{normalsize}
```

For inline SVG math, font size is instead controlled by `\LateximageFontScale`, which defaults to:

```
\newcommand*{\LateximageFontScale}{.75}
```

SVG math copy/paste

For SVG math, text copy/paste from the HTML `<alt>` tags lists the equation number or tag for single equations, along with the LaTeX code for the math expression. For $\mathcal{AMS}$ environments with multiple numbers in the same environment, only the first and

[14] See section 448 regarding fonts and fractions.

last is copy/pasted, as a range. No tags are listed inside a starred $\mathcal{AMS}$ environment, although the \tag macro will still appear inside the LaTeX math expression.

⚠ SVG math in TeX boxes

SVG math does not work inside TeX boxes, since a \newpage is required before and after each image.

9.6.3 MathJax option

MathJax math option

Prog MathJax

The popular MathJax alternative (mathjax.org) may be used to display math.

When MathJax is enabled, math is rendered twice:

1. As regular LaTeX PDF output placed inside an HTML comment, allowing equation numbering and cross referencing to be almost entirely under the control of LaTeX, and
2. As detokenized printed LaTeX commands placed directly into the HTML output for interpretation by the MathJax display scripts. An additional script is used to pre-set the equation number format and value according to the current LaTeX values, and the MathJax cross-referencing system is ignored in favor of the LaTeX internal system, seamlessly integrating with the rest of the LaTeX code.

9.6.4 Customizing MathJax

MathJax does not have preexisting support every possible math function. Additional MathJax function definitions may be defined. These will be declared at the start of each HTML page, and thus will have a global effect.

Examples:

```
\CustomizeMathJax{
    \newcommand{\expval}[1]{\langle#1\rangle}
    \newcommand{\abs}[1]{\lvert#1\rvert}
}
\CustomizeMathJax{\newcommand{\arsinh}{\text{arsinh}}}
\CustomizeMathJax{\newcommand{\arcosh}{\text{arcosh}}}
\CustomizeMathJax{\newcommand{\NN}{\mathbb{N}}}
```

9.6.5 MathJax limitations

MathJax limitations

Prog MathJax

Limitations when using MathJax include:

subequations

- MathJax itself does not support subequations. This may be improved by parsing the LaTeX math expression to manually insert tags, but this has not yet been done.

footnotes in math

- Footnotes inside equations are not yet supported while using MathJax.

lateximage

- Math appearing inside a lateximage, and therefore also inside a Ti*k*z or `picture` environment, is rendered as SVG math even if MathJax is used in the rest of the document.

siunitx

- Usage of siunitx inside a math equation is supported via a third-party MathJax extension. While inside a math expression, do not use `\SI` or `\si` inside `\text`, where it will be rendered as normal text.

  ⚠ siunitx inside an equation

  https://github.com/burnpanck/MathJax-siunitx

  Also see section 9.6.10.

tabbing

- A `tabbing` environment is emulated using an HTML `<pre>`.While MathJax is enabled inside `tabbing`, the browser may not correctly render the horizontal alignment of the math and text following after on the same line.

⚠ other macros and packages

- Other math-related macros and packages are not supported by MathJax, including `\ensuremath` and bigdelim, along with occasionally-used macros such as `\relax`. lwarp emulates footnotes, units, and nicefrac for MathJax.

9.6.6 Catcode changes

preamble macros with math

The math shift character `$` is not set for HTML output until after the preamble. Macros defined in the preamble which contain `$` must be enclosed between `\StartDefiningMath` and `\StopDefiningMath` to temporarily change to the HTML meaning of `$`:

```
\StartDefiningMath
\newcommand{...}
\StopDefiningMath
```

As an alternative, use `\(` and `\)` instead of `$`, in which case `\StartDefiningMath` and `\StopDefiningMath` are not necessary.

If a package defines macros using `$`, it may be nessary to use `\StartDefiningMath` and `\StopDefiningMath` before and after loading the package.

9.6.7 Complicated inline math objects

`\inlinemathnormal`
`\inlinemathother`

An inline math expression is usually converted to a reusable hashed SVG math image, or a MathJax expression. The hash or expression depends on the contents of the

changing contents
complicated alt tag

math expression. In most cases this math expression is static, such as `$x+1$`, so the image can be reused for multiples instances of the same expression. In some cases, the math expression includes a counter or other object which may change between uses. Another problem is complicated contents which do not expand well in an `alt` tag. The macro `\inlinemathother` may be used before a dynamic math expression, and `\inlinemathnormal` after. Doing so tells lwarp to use an unhashed SVG math image, even if MathJax is in use. See section 43.

9.6.8 Complicated display math objects

`\displaymathnormal`

By default, or when selecting `\displaymathnormal`, MATHJAX math display environments print their contents as text into HTML, and SVG display math environments render their contents as SVG images and use their contents as the `alt` tag of HTML output. To do so, the contents are loaded into a macro for reuse. In some cases, such as complicated Ti*k*z pictures, compilation will fail.

`\displaymathother`
MathJax unsupported
complicated alt tag

When selecting `\displaymathother`, it is assumed that the contents are more complicated than "pure" math. An example is an elaborate Ti*k*z picture, which will not render in MATHJAX and will not make sense as an HTML `alt` tag. In this mode, MATHJAX is turned off, math display environments become SVG images, even if MATHJAX is selected, and the HTML `alt` tags become simple messages. The contents are internally processed as an environment instead of a macro argument, so complicated objects such as Ti*k*z pictures are more likely to compile successfully.

9.6.9 ntheorem package

Pkg `ntheorem`
⚠ Font control

This conversion is not total. Font control is via CSS, and the custom LaTeX font settings are ignored.

⚠ Equation numbering

ntheorem has a bug with equation numbering in $\mathcal{AMS}$ environmentswhen the option `thref` is used. lwarp does not share this bug, so equations with `\split`, etc, are numbered correctly with lwarp's HTML output, but not with the print output. It is recommended to use cleveref instead of ntheorem's `thref` option.

9.6.10 siunitx package

Pkg `siunitx`
fractions

Due to *pdftotext* limitations, fraction output is replaced by symbol output for `per-mode` and `quotient-mode`.

⚠ math mode required

Some units will require that the expression be placed inside math mode.

NOTE: As of this writing, the siunitx extension for MathJax is not currently hosted at any public CDN, thus siunitx is not usable with MathJax unless a local copy of this extension is created first.

⚠ tabular

Tabular S columns are rendered as simple c columns, and tabular s columns are not supported. These may be replaced by c columns with each cell contained in \num or \si.

9.6.11 units and nicefrac packages

Pkg units
Pkg nicefrac

units and nicefrac work with lwarp, but MathJax does not have an extension for units or nicefrac. These packages do work with lwarp's option svgmath.

9.6.12 newtxmath package

Pkg newtxmath
⚠ loading sequence

The proper load order is:

```
...
\usepackage{lwarp}
...
\usepackage{amsthm}
\usepackage{newtxmath}
...
```

9.7 Graphics

Pkg graphics
Pkg graphicx
\includegraphics file formats

For \includegraphics with .pdf or .eps files, the user must provide a .pdf or .eps image file for use in print mode, and also a .svg, .png, or .jpg version of the same image for use in HTML.

```
\includegraphics{filename} % print:.pdf/.eps HTML:.svg, etc.
```

For print output, lwarp will automatically choose the .pdf or .eps format if available, or some other format otherwise. For HTML, one of the other formats is used instead.

If a .pdf or .eps image is referred to with its file extension, the extension will be changed to .svg for HTML:

```
\includegraphics{filename.pdf} % uses .svg in HTML
\includegraphics{filename.eps} % uses .svg in HTML
```

Prog pdftocairo
PDF to SVG

To convert a PDF image to SVG, use the utility *pdftocairo*:

Enter ⇒ `pdftocairo -svg filename.pdf`

Prog `lwarpmk pdftosvg`

For a large number of images, use *lwarpmk*:

Enter ⇒ `lwarpmk pdftosvg *.pdf` (or a list of filenames)

Prog `lwarpmk epstopdf`

Prog `epstopdf`

epstopdf package

For EPS images converted to PDF using the package epstopdf, use

Enter ⇒ `lwarpmk pdftosvg *.PDF`

to convert to SVG images.

DVI latex

When using DVI *latex*, it is necessary to convert EPS to PDF and then to SVG:

Enter ⇒ `lwarpmk epstopdf *.eps` (or a list of filenames)

Enter ⇒ `lwarpmk pdftosvg *.pdf` (or a list of filenames)

PNG and JPG

For PNG or JPG while using *pdflatex*, *lualatex*, or *xelatex*, the same file may be used in both print or HTML versions, and may be used with a file extension, but will also be used without the file extension if it is the only file of its base name.

GIF

GIF files may be used for HTML, but another format must also be provided for print output.

file extension priorities

If a file extension is not used, for HTML the file extension priorities are: SVG, GIF, PNG, then JPG.

⚠ graphics vs. graphicx

⚠ viewport

⚠ viewport units

If using the older graphics syntax, use both optional arguments for `\includegraphics`. A single optional parameter is interpreted as the newer graphicx syntax. Note that viewports are not supported by lwarp — the entire image will be shown.

For `\includegraphics`, avoid `px` and % units for width and height, or enclose them inside `warpHTML` environments. For font-proportional image sizes, use `ex` or `em`. For fixed-sized images, use `cm`, `mm`, `in`, `pt`, or `pc`. Use the keys `width=.5\linewidth`, or similar for `\textwidth` or `\textheight` to give fixed-sized images proportional to a 6 by 9 inch text area. Do not use the `scale` option, since it is not well supported by HTML browsers.

options

`\includegraphics` accepts `width` and `height`, `origin`, `rotate` and `scale`, plus a new `class` key.

HTML class

With HTML output, `\includegraphics` accepts an optional `class=xyz` keyval combination, and if this is given then the HTML output will include that class for the image. The class is ignored for print output.

`\rotatebox`

`\rotatebox` accepts the optional `origin` key.

⚠ browser support

`\rotatebox`, `\scalebox`, and `\reflectbox` depend on modern browser support.

The CSS3 standard declares that when an object is transformed the whitespace which they occupied is preserved, unlike LaTeX, so expect some ugly results for scaling and rotating.

9.7.1 tikz package

Pkg tikz

⚠ displaymath and matrices

If using display math with `tikzpicture` or `\tikz`, along with matrices with the `&` character, the document must be modified as follows:

```
\usepackage{tikz}
\tikzset{every picture/.style={ampersand replacement=\&}}
```

and each instance of `&` in the tikz expression must be replaced with `\&`.

9.7.2 grffile package

Pkg grffile

⚠ matching PDF and SVG

grffile is supported as-is. File types known to the browser are displayed, and unknown file types are given a link. Each PDF image for print mode should be accompanied by an SVG, PNG, or JPG version for HTML.

9.7.3 color package

Pkg color

color is superceded by xcolor, and lwarp requires several of the features of xcolor. When color is requested, xcolor is loaded as well.

9.7.4 xcolor package

Pkg xcolor

`\colorboxBlock` and `\fcolorboxBlock`

`\colorboxBlock` and `\fcolorboxBlock` are provided for increased HTML compatibility, and they are identical to `\colorbox` and `\fcolorbox` in print mode. In HTML mode they place their contents into a `<div>` instead of a `<span>`. These `<div>`s are set to `display: inline-block` so adjacent `\colorboxBlock`s appear side-by-side in HTML, although text is placed before or after each.

Print-mode definitions for `\colorboxBlock` and `\fcolorboxBlock` are created by lwarp's core if xcolor is loaded.

background: none

`\fcolorbox` and `\fcolorboxBlock` allow a background color of `none`, in which case only the frame is drawn, which can be useful for HTML.

color support

Color definitions, models, and mixing are fully supported without any changes required.

colored tables — `\rowcolors` is supported, except that the optional argument is ignored so far.

colored text and boxes — `\textcolor`, `\colorbox`, and `\fcolorbox` are supported.

`\color` and `\pagecolor` — `\color` and `\pagecolor` are ignored. Use CSS or `\textcolor` where possible.

9.7.5 epstopdf package

Pkg `epstopdf`

⚠ convert to `.svg`

Images with an `.eps` extension will be converted to `.pdf`. The HTML output uses the `.svg` version, so use

Enter ⇒ `lwarpmk pdftosvg <listofPDFfiles>`

to generate `.svg` versions.

9.7.6 pstricks package

Pkg `pstricks`

⚠ use `pspicture`

All pstricks content should be contained inside a `pspicture` environment.

9.7.7 pdftricks package

Pkg `pdftricks`

⚠ convert image files

The pdftricks image files `<jobname>-fig*.pdf` must be converted to `.svg`, or else a missing file error will occur. The image files must also be converted again whenever they change. To convert the images:

Enter ⇒ `lwarpmk pdftosvg <jobname>-fig*.pdf`

9.7.8 psfrag package

Pkg `psfrag`

⚠ use `psfrags`

The `psfrags` environment is modified to use `lateximage` to encapsulate the image. Always use a `psfrags` environment to contain any local `\psfrag` macros and the associated `\includegraphics` or `\epsfig` calls. Outside of a `psfrags` environment, psfrags adjustments will not be seen by lwarp.

⚠ Tip: Use a mono-spaced font for the tags in the EPS file.

9.7.9 pstool package

Pkg `pstool`

`\graphicspath` is ignored, and the file directory must be stated.

⚠ path and filename

The filename must not have a file extension.

Use

Enter ⇒ `lwarpmk html`

followed by

Enter ⇒ `lwarpmk limages`

.

9.7.10 asymptote package

Pkg `asymptote`

To compile:

```
pdflatex project.tex
asy project-*.asy
pdflatex project.tex

lwarpmk print
asy project-*.asy
lwarpmk print1
lwarpmk print1

lwarpmk html
asy project_html-*.asy
lwarpmk html1
lwarpmk html1
lwarpmk limages
```

9.7.11 overpic package

Pkg `overpic`

⚠ scaling

The macros `\overpicfontsize` and `\overpicfontskip` are used during HTML generation. These are sent to `\fontsize` to adjust the font size for scaling differences between the print and HTML versions of the document. Renew these macros before using the `overpic` and `Overpic` environments.

9.8 Tabbing

The `tabbing` environment works, except that SVG math and `lateximages` do not yet work inside the environment.

⚠ math in `tabbing`

If math is used inside `tabbing`, place `tabbing` inside a `lateximage` environment,

which will render the entire environment as a single SVG image.

9.9 Tabular

Tabular mostly works as expected, but pay special attention to the following, especially if working with environments, macros inside tabulars, multirows, * column specifiers, siunitx S columns, or the packages multirow, longtable, supertabular, or xtab.

Defining environments:

⚠ Misplaced alignment tab character &

- When defining environments or macros which include `tabular` and instances of the `&` character, it may be necessary to make `&` active before the environment or macro is defined, then restore `&` to its default catcode after, using the following commands. These are are ignored in print mode.

```
\StartDefiningTabulars
<define macros or environments using tabular and &
here>
\StopDefiningTabulars
```

⚠ floatrow

This includes before and after defining any macro which used `\ttabbox` from floatrow.

⚠ `tabular` inside another environment

- When creating a new environment which contains a `tabular` environment, lwarp's emulation of the tabular does not automatically resume when the containing enviroment ends, resulting in corrupted HTML rows. To fix this, use `\ResumeTabular` as follows. This is ignored in print mode.

```
\StartDefiningTabulars % because & is used in a
definition
\newenvironment{outerenvironment}
{
\tabular{cc}
left & right \\
}
{
\TabularMacro\ResumeTabular
left & right \\
\endtabular
}
\StopDefiningTabulars
```

Cell contents:

⚠ `\multirow`

- For multirow, insert `\mrowcell` into any empty multi-row cells. This will

be a null function for the print output, and is a placeholder for parsing the table for HTML output.

```
... &   \multirow{2}{.5in}{text}   & ...
... &   \mrowcell                  & ...
```

vposn

Note that recent versions of multirow include a new optional vposn argument.

- The multirow documentation regarding colored cells recommends using a negative number of rows. This will not work with lwarp, so \warpprintonly and \warpHTMLonly must be used to make versions for print and HTML.
- See section 299.2 for \multicolumrow.

⚠ \multicolumn & \multirow

lwarp does not support directly combining \multicolumn and \multirow. Use \multicolumnrow instead. To create a 2 column, 3 row cell:

```
\multicolumnrow{2}{c}[c]{3}[0]{1in}[0pt]{Text}
```

The two arguments for \multicolumn come first, followed by the five arguments for \multirow, many of which are optional, followed by the contents.

⚠ skipped cells

As per \multirow, skipped cells to the right of the \multicolumnrow statement are not included in the source code on the same line. On the following lines, \mcolrowcell must be used for each cell of each column and each row to be skipped:

⚠ empty cells

```
... &   \multicolumnrow{2}{c}[c]{3}[0]{1in}[0pt]{Text}   & ...
... &   \mcolrowcell          &          \mcolrowcell   & ...
... &   \mcolrowcell          &          \mcolrowcell   & ...
```

vposn

Note that recent versions of multirow include a new optional vposn argument.

⚠ macro in a table

- Using a custom macro inside a tabular data cell may result in an extra HTML data cell tag, corrupting the HTML table. To avoid this, use \TabularMacro just before the macro. This is ignored in print mode.

```
\TabularMacro\somemacro & more row contents \\
```

Column specifiers:

⚠ * column specification

- * in a column specification is not used (so far). Repeat the column type the correct number of times.

@ and !

- Only one each of @ and ! is used at each column, and they are used in that order.

\multirow

- In \multirow cells, the print version may have extra instances of <, >, @, and ! cells on the second and later rows in the \multirow which do not appear in the HTML version.

⚠ \newcolumntype

- \newcolumntype is ignored; unknown column types are set to l.

Rules:

- Doubled `\hlines`, `\midrules`, and vertical rules are supported.

vertical rules

- Vertical rules next to either side of an `@` or `!` column are displayed on both sides of the column.

width and trim

- Width options are honored. Trim options are converted to rounded top corners. Trim corners are not rounded with `@` or `!` columns, and full-width rules ignore trim.

full-width rules

- `\toprule`, `\midrule`, `\bottomrule`, and `\hline` ignore trim. When given an optional width, each cell is styled to create the custom border. Without an optional width, the entire row is given a class to assign the standard border.

combined rules

- If you wish to use `\cmidrule` followed by `\bottomrule`, it may be necessary to use:

```
\cmidrule{2-3} \\[-2ex]
\bottomrule
```

The optional `-2ex` is ignored in HTML, but improves the visual formatting in the print output.

⚠ `\warpprintonly`
⚠ Misplaced `\noalign`

- For `\toprule` and `\bottomrule`, when combined with a `warpprint` or `warpHTML` environment, if a "Misplaced `\noalign`" error occurs, change

```
This & That \endhead
```

to

```
\warpprintonly{This & That \endhead}
```

and likewise with the other `\end` headings. Keep the `\endfirsthead` row unchanged, as it is still relevent to HTML output.

colortbl:

⚠ row/cell color

Only use `\rowcolor` and `\cellcolor` at the start of a row, in that order.

colortbl ignores the overhang arguments.

Other:

- tabularx ignores the width, but `X` columns do produce paragraph columns or multicolumns.

`longtable` headings

- For longtable, place headings and footings which do not apply to HTML inside `\warpprintonly{}`.

⚠ S columns

- For S columns (from the siunitx package), while producing print output, anything non-numeric must be placed inside { } braces, including commands such as `\multirow`. While producing HTML output, though, anything placed inside braces is not seen by lwarp's tabular handling algorithm. To resolve this problem, make a copy of the row, with one version for print output, containing the extra braces, and another version for HTML output, without the extra braces, such as:

```
\warpprintonly{1 & 2 & {\multirow{2}{2cm}{Text}} & 3 \\}
\warpHTMLonly{1 & 2 & \multirow{2}{2cm}{Text} & 3 \\}
```

9.9.1 longtable package

Pkg longtable

⚠ Misplaced \noalign

Longtable \endhead, \endfoot, and \endlastfoot rows are not used for HTML, and these rows should be disabled. Use

```
\warpprintonly{row contents}
```

instead of

```
\begin{warpprint} ... \end{warpprint}
```

Doing so helps avoid "Misplaced \noalign." when using \begin{warpprint}.

Keep the \endfirsthead row, which is still relevent to HTML output.

⚠ \kill

\kill is ignored, place a \kill line inside

```
\begin{warpprint} ... \end{warpprint}
```

or place it inside \warpingprintonly.

⚠ lateximage

longtable is not supported inside a lateximage.

9.9.2 supertabular and xtab packages

Pkg supertabular

Pkg xtab

⚠ Misplaced alignment tab character &

For \tablefirsthead, etc., enclose them as follows:

```
\StartDefiningTabulars
\tablefirsthead
...
\StopDefiningTabulars
```

See section 9.9.

⚠ lateximage

supertabular and xtab are not supported inside a lateximage.

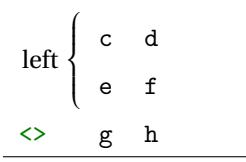
9.9.3 bigdelim package

Pkg bigdelim

⚠ use \mrowcell

\ldelim and \rdelim use \multirow, so \mrowcell must be used in the proper number of empty cells in the same column below \ldelim or \rdelim, but not in cells which are above or below the delimiter:

```
\begin{tabular}{lll}
<empty> & a & b \\
\ldelim{\{}{2}{.25in}[left ] & c & d \\
\mrowcell & e & f \\
<empty> & g & h \\
\end{tabular}
```



9.10 Floats

9.10.1 Float contents alignment

figure & table alignment

\centering, etc. are honored in a figure or table if they are the first command inside the float:

```
\begin{table*}
\centering
\caption{A Table}
...
```

9.10.2 float, trivfloat, and/or algorithmicx together

Pkg float
Pkg trivfloat
Pkg algorithmx

If using \newfloat, trivfloat, and/or algorithmicx together, see section 421.1.

9.10.3 caption and subcaption packages

package conflicts

Pkg caption
Pkg subcaption

options

To pass options to caption, select the options before loading lwarp:

```
\documentclass{article}
...
\PassOptionsToPackage{options_list}{caption}
...
\usepackage{lwarp}
...
\usepackage{caption}
```

numbering

To ensure proper float numbering, set caption positions such as:

```
\captionsetup[table]{position=top}
\captionsetup[figure]{position=bottom}
```

Similarly for subtable, subfigure, and longtable.

9.10.4 subfig package

Pkg subfig

⚠ lof/lotdepth

At present, the package options for lofdepth and lotdepth are not working. These counters must be set separately after the package has been loaded.

In the document source, use \hfill and \hspace* subfig>inline between subfigures to spread them apart horizontally. The use of other forms of whitespace may cause paragraph tags to be generated, resulting in subfigures appearing on the following lines instead of all on a single line.

9.10.5 floatrow package

Pkg floatrow

⚠ Misplaced alignment tab character &

⚠ subfig package

Use \StartDefiningTabulars and \StopDefiningTabulars before and after defining macros using \ttabbox with a tabular inside. See section 9.9.

When combined with the subfig package, while inside a subfloatrow \ffigbox and \ttabbox must have the caption in the first of the two of the mandatory arguments.

⚠ \FBwidth, \FBheight

The emulation of floatrow does not support \FBwidth or \FBheight. These values are pre-set to .3\linewidth and 2in. Possible solutions include:

- Use fixed lengths. lwarp will scale the HTML lengths appropriately.
- Use warpprint and warpHTML environments to select appropriate values for each case.
- Inside a warpHTML environment, manually change \FBwidth or \FBheight before the \ffigbox or \ttabbox. Use \FBwidth or \FBheight normally afterwards; it will be used as expected in print output, and will use your custom-selected value in HTML output. This custom value will be used repeatedly, until it is manually changed to a new value.

9.10.6 keyfloat package

Pkg keyfloat

⚠ keywrap

If placing a \keyfig[H] inside a keywrap, use an absolute width for \keyfig, instead of lw-proportional widths. (The [H] option forces the use of a minipage, which

internally adjusts for a virtual 6-inch wide minipage, which then corrupts the `lw` option.)

9.11 KOMA-SCRIPT classes

Cls `komascript` Many features are ignored during the HTML conversion. The goal is source-level compatibility.

`\titlehead`, `\subject`, `\captionformat`, `\figureformat`, and `\tableformat` are not yet emulated.

⚠ Not fully tested! Please send bug reports!

Some features have not yet been tested. Please contact the author with any bug reports.

9.12 MEMOIR class

Cls `memoir` While emulating memoir, lwarp pre-loads a number of packages (section 459.1). This
⚠ options clash can cause an options clash when the user's document later loads the same packages with options. To fix this problem, specify the options before loading lwarp:

```
\documentclass{memoir}
...
\PassOptionsToPackage{options_list}{package_name}
...
\usepackage{lwarp}
...
\usepackage{package_name}
```

`\verbfootnote` is not supported.

`\newfootnoteseries`, etc. are not supported.

lwarp loads pagenote to perform memoir's pagenote functions, but there are minor differences in `\pagenotesubhead` and related macros.

Poem numbering is not supported.

The `verbatim` environment does not yet support the memoir enhancements. It is currently recommended to load and use fancyvrb instead.

The memoir glossary system is not yet supported by *lwarpmk*. The glossaries package may be used instead, but does require the glossary entries be changed from the memoir syntax to the glossaries syntax.

9.13 Miscellaneous packages

9.13.1 verse and memoir

Pkg verse
Cls memoir
\attrib

When using verse or memoir, always place a \\ after each line.

The documentation for the verse and memoir packages suggest defining an \attrib command, which may already exist in current documents, but it will only work for print output. lwarp provides \attribution, which works for both print and HTML output. To combine the two so that \attrib is used for print and \attribution is used for HTML:

```
\begin{warpHTML}
\let\attrib\attribution
\end{warpHTML}
```

Len \vleftskip
Len \vleftmargini
Len \HTMLvleftskip
Len \HTMLleftmargini

These lengths are used by verse and memoir to control the left margin, and they may already be set by the user for print output. New lengths \HTMLvleftskip and \HTMLleftmargini are provided to control the margins in HTML output. These new lengths may be set by the user before any verse environment, and persist until they are manually changed again. One reason to change \HTMLleftmargini is if there is a wide \flagverse in use, such as the word "Chorus", in which case the value of \HTMLleftmargini should be set to a wide enough length to contain "Chorus". The default is wide enough for a stanza number.

⚠ spacing

Horizontal spacing relies on *pdftotext*'s ability to discern the layout (-layout option) of the text in the HTML-tagged PDF output. For some settings of \HTMLleftmargini or \HTMLleftskip the horizontal alignment may not work out exactly, in which case a label may be shifted by one space.

9.13.2 newclude package

Pkg newclude
⚠ loading

newclude modifies \label in a non-adaptive way, so newclude must be loaded before lwarp is loaded:

```
\documentclass{article}
…<font setup>
\usepackage{newclude}
\usepackage[warpHTML]{lwarp}
…
```

9.13.3 babel package

Pkg babel

⚠ \CaptionSeparator

When French is used, the caption separator is changed to a dash. The following may be used to restore it to a colon:

```
\renewcommand*{\CaptionSeparator}{:~}
```

punctuation spaces

Also when French is used, lwarp creates fixed-width space around punctuation by patching \FBcolonspace, \FBthinspace, \FBguillspace, \FBmedkern, \FBthickkern, \FBtextellipsis, and the tilde. If the user's document also changes these parameters, the user's changes should be placed inside a warpprint environment so that the user's changes do not affect the HTML output.

⚠ customized spacing

9.13.4 polyglossia package

Pkg polyglossia

lwarp uses cleveref, which has some limitations when using polyglossia, possibly resulting in the error

```
! Undefined control sequence.  ... \@begindocumenthook
```

To test compatibility, add

```
\usepackage{cleveref}
```

near the end of the preamble (as the last package to be loaded), and try to compile the print version. It may be necessary to set

```
\setdefaultlanguage{english}
```

or some other language supported by cleveref, then select other languages using \setotherlanguages.

Once the print version works with cleveref and polyglossia, the HTML version should work as well using lwarp.

9.13.5 todonotes and luatodonotes packages

Pkg todonotes

Pkg luatodonotes

The documentation for todonotes and luatodonotes have an example with a todo inside a caption. If this example does not work it will be necessary to move the todo outside of the caption.

9.13.6 fixme

Pkg fixme

External layouts (\fxloadlayouts) are not supported.

⚠ external layouts

User control is provided for setting the HTML styling of the "faces". The defaults are as follows, and may be changed in the preamble after fixme is loaded:

```
\def\FXFaceInlineHTMLStyle{font-weight:bold}
\def\FXFaceEnvHTMLStyle{font-weight:bold}
\def\FXFaceSignatureHTMLStyle{font-style:italic}
\def\FXFaceTargetHTMLStyle{font-style:italic}
```

9.13.7 chemfig package

If using \polymerdelim to add delimiters to a \chemfig, wrap both inside a single lateximage:

```
\begin{lateximage}[(-chemfig-~\packagediagramname)]
\chemfig{...}
\polymerdelim[...]{...}
\end{lateximage}
```

9.13.8 chemformula package

⚠ chemformula with MathJax

chemformula works best without MathJax. If MathJax is used, \displaymathother must be used before array, and then \displaymathnormal may be used after. (The chemformula package adapts to array, but does not know about MathJax, and MathJax does not know about chemformula.)

While using MathJax, \displaymathother may also be used for other forms of display and inline math which contain chemformula expressions.

9.13.9 mhchem package

See section 290.

9.13.10 xparse

Pkg xparse

To remove from the log any warnings about redeclaring objects, place the following before lwarp is loaded:

```
\usepackage[log-declarations=false]{xparse}
```

10 Compiling using custom shell commands

lwarp and *lwarpmk* try to make it easy to process print and HTML compilation tasks in most situations. Depending on the operating system, command-line options, TEX engine, and lwarp options, the commands ***lwarpmk print*** and ***lwarpmk html*** are automatically set up to correctly recompile the project. These actions may be overridden using lwarp options, thus allowing the use of packages such as perltex and pythontex.

10.1 Command options

Opt PrintLatexCmd
Opt HTMLLatexCmd

The lwarp options `PrintLatexCmd` and `HTMLLatexCmd` are used to set customized commands to be executed by ***lwarpmk print*** and ***lwarpmk html***.

PrintLatexCmd should be set to shell commands which take `project.tex` and generate `project.pdf`.

HTMLLatexCmd should be set to take `project_html.tex` and generate `project_html.pdf`. *lwarpmk* will then take `project_html.pdf` and automatically convert it and generate `project.html`.

10.2 Literal character macros

The lwarp package options are parsed by TEX, and so some characters require the use of a special macro to represent them. See table 7. `\LWRopquote` and `\LWRopseq` may be used to increase operating-system portability. `\jobname` must have `_html` appended for processing HTML. `\space` may be necessary between other macros.

⚠ macro not found

To use these macros, either kvoptions-patch must be loaded before lwarp:

```
\usepackage{kvoptions-patch}
\usepackage[
    PrintLatexCmd={ ... } ,
    HTMLLatexCmd={ ... }
]{lwarp}
```

Table 7: Literal character macros

Character	Macro	Comment
%	\LWRpercent	
$	\LWRdollar	
&	\LWRamp	
%	\LWRhash	
\	\LWRbackslash	
' or "	\LWRopquote	Depends on the operating system.
& or &&	\LWRopseq	Depends on the operating system.
(space)	\space	Forces an extra space.
(jobname)	\jobname	Without file extension.

or \lwarpsetup must be used to set PrintLatexCmd and HTMLLatexCmd:

```
\usepackage[...]{lwarp}
\lwarpsetup{
  PrintLatexCmd=
      {
          latex tm \LWRopseq
          dvips -o tm-pics.ps tm.dvi \LWRopseq
          ps2pdf tm-pics.ps \LWRopseq
          pdflatex tm.tex
      } ,
  HTMLLatexCmd=
      {
          latex tm_html \LWRopseq
          dvips -o tm_html-pics.ps tm_html.dvi \LWRopseq
          ps2pdf tm_html-pics.ps \LWRopseq
          pdflatex tm_html.tex
      }
}
```

10.3 *latexmk*

Prog `latexmk` If *latexmk* is used for a project, it may be easiest to continue using it.

`latexmk project.tex` would create `project.pdf` as normal.

`latexmk project_html.tex` would create `project_html.pdf`, then

`lwarpmk pdftohtml project_html.pdf` would take `project_html.pdf` and convert it to `project.html`.

Pkg `sagetex` *latexmk* may simplify the use of packages such as sagetex.

10.4 perltex package

Pkg `perltex` The lwarp package option settings to use perltex would be similar to:

```
\usepackage[
  ...
  PrintLatexCmd={perltex -latex=pdflatex project.tex} ,
  HTMLLatexCmd={perltex -latex=pdflatex project_html.tex} ,
  ...
]{lwarp}
```

⚠ "impure" math Place perltex math expressions between `\displaymathother` and `\displaymathnormal`, or `\inlinemathother` and `\inlinemathnormal`. See section 9.6.8.

10.5 pythontex package

Pkg `pythontex` An example using pythontex:

```
\usepackage[
  ...
  PrintLatexCmd={
    pdflatex project.tex \LWRopseq
    pythontex project \LWRopseq
    pdflatex project.tex
  } ,
  HTMLLatexCmd={
    pdflatex project_html.tex \LWRopseq
    pythontex project_html \LWRopseq
    pdflatex project_html.tex
  } ,
  ...
]{lwarp}
```

Another possibility is to use *latexmk*, placing the ***latexmk ...*** commands in the `PrintLatexCmd` and `HTMLLatexCmd` options. While using these options, the lwarp option `latexmk` would not be used.

⚠ "impure" math

No attempt has yet been made to make pythontex robust with HTML output. Some math objects must be surrounded by `\displaymathother` ... `\displaymathnormal`, or `\inlinemathother` ... `\inlinemathnormal`. Displays of code may have to be enclosed inside a `lateximage` environment to prevent <, > and similar from being interpreted by the browser as HTML entities.

⚠ HTML look-alike

10.6 Other packages

Pkg `sympytex`
Pkg `rterface`

Other packages such as sympytex and rterface would be set up similar to pythontex, and the same warnings would apply.

10.7 *make* program

Prog `make`

To use lwarp with the *make* program, have the `makefile` take `project.tex` and generate the print version `project.pdf`, as normal. `\usepackage{lwarp}` must be used, and it generates `lwarpmk.conf` when the print version is created.

To generate HTML, first have `project_html.tex` be compiled to generate `project_html.pdf`. This must be in PDF format. Finally, have `project_html.pdf` be converted to HTML using ***lwarpmk pdftohtml project_html.pdf***, and convert SVG math with ***lwarpmk limages***.

10.8 UTF-8 locale

⚠ UTF-8 locale

lwarpmk uses the *texlua* program, which sets the "locale" to "C", including for external operating-system calls such as when executing ***lwarpmk html***. In some cases, an external program called from the user's document may require the use of a UTF-8 "locale". For UNIX-related operating systems, it may be required to use lwarp's custom compilation options to add a locale change:

```
\usepackage{lwarp}[
  PrintLatexCmd={
    env LC_CTYPE=en_US.UTF-8
      xelatex -shell-escape project.tex
  }
  HTMLLatexCmd={
    env LC_CTYPE=en_US.UTF-8
      xelatex -shell-escape project_html.tex
  }
]
```

Pkg ditaa The only example seen so far where this is required is the ditaa package, where the locale change allows the use of UTF-8 with XeLaTeX and ditaa. To use LuaLaTeX instead, the locale change would have to be made inside the ditaa package where its calls the *ditaa* program.

11 EPUB conversion

lwarp does not produce EPUB documents, but it may be told to modify its HTML output to greatly assist in the conversion. An external program may then be used to finish the conversion to EPUB.

<meta> author

To assign the author's name for regular lwarp HTML files, and also for the EPUB, use `\HTMLAuthor {⟨name⟩}`. This assigns the name to the `<meta>` author element. It may be set empty, and it defaults to `\theauthor`.

A special boolean is provided to simplify the process of converting lwarp HTML output to EPUB:

FormatEPUB

Bool FormatEPUB
Default: false

FormatEPUB changes HTML output for easy EPUB conversion via an external program. Removes per-file headers, footers, and nav. Adds footnotes per chapter/section.

To help convert lwarp HTML output to EPUB, add

```
\booltrue{FormatEPUB}
```

to the project's source preamble after `\usepackage{lwarp}`. The EPUB version of the document cannot co-exist with the regular HTML version, so

Enter ⇒ `lwarpmk cleanall`

Enter ⇒ `lwarpmk html`

Enter ⇒ `lwarpmk limages`

to recompile with the FormatEPUB boolean turned on. Several changes are then made to the HTML output:

- Headers, footers, and navigation are removed at file splits.
- Any accumulated footnotes are printed at the bottom of each section.

Calibre

The resulting files will be ready to be loaded into an EPUB conversion program, such as the open-source program *Calibre* (https://calibre-ebook.com/).

⚠ search order

The EPUB conversion program must know what order the files are included. For lwarp projects, set the EPUB conversion software to do a breadth-first search of the files. For *Calibre*, this option is found in

Preferences → Plugins → File type plugins → HTML to Zip

⚠ encoding

Check the box Add linked files in breadth first order. Set the document encoding as `utf-8`, which is what lwarp generates for HTML, even if the original printed document uses some other encoding.

⚠ section breaks

The EPUB-conversion program must also know where the section breaks are located. For a list of lwarp's section headings, see table 9. For example, an `article` class document would break at `\section`, which is mapped to HTML heading level `<h4>`, whereas a `book` class document would break at `\chapter`, which is HTML heading level `<h3>`. For *Calibre*, this option is found in

Preferences → Conversion (Common Options) → Structure Detection → Detect chapters at (XPath expression)

Select the "magic wand" to the right of this entry box, and set the first entry

Match HTML tags with tag name:

to "h4". (Or "h3" for document classes with `\chapters`.) The Detect chapters at field should then show

//h:h4 — or — //h:h3

This option is also available on the main tool bar at the Convert books button.

Once these settings have been made, the lwarp-generated HTML files may be loaded by *Calibre*, and then converted to an EPUB.

MathJax support

MathJax may be used in EPUB documents. Some e-readers include MathJax, but any given reader may or may not have a recent version, and may or may not include extensions such as support for siunitx.

lwarp adds some modifications to MathML to support equations numbered by chapter. These modifications may not be compatible with the e-reader's version of MathJax, so lwarp requests that a known version be loaded instead. In some cases chapter numbering of equations still doesn't work.

Until math support in EPUB documents is improved, it is recommended to use SVG images instead of MathJax, especially for equations numbered by chapter, or where siunitx support is important.

12 Word-processor conversion

lwarp may be told to modify its HTML output to make it easier to import the HTML document into a word processor. At the time of this writing, it seems that LibreOffice works best at preserving table layout, but it still has some limitations, such as an inability to automatically assign figure and table frames and captions according to user-selected HTML classes. lwarp provides some assistance in locating these frame boundaries, as shown below.

12.1 Activating word-processor conversion

A special boolean is provided to simplify the process of converting lwarp HTML output to EPUB:

FormatWP

Bool `FormatWP`
Default: `false`

Changes HTML output for easier conversion by a word processor. Removes headers and nav, prints footnotes per section, and also forces single-file output and turns off HTML debug comments. Additionally, honors the booleans `WPMarkFloats`, `WPMarkMinipages`, `WPMarkTOC`, and `WPMarkLOFT`.

To help modify lwarp HTML output for easier import to a word processor, add

```
\booltrue{FormatWP}
```

to the project's source preamble after lwarp is loaded. The following changes are formatting adjustments then made to the HTML output:

- If using a class without chapters, `\section` and lower are shifted up in level for the HTML heading tags. The CSS has not been changed, so the section heading formats will not match the normal HTML output, but when imported to *LibreOffice Writer* the higher section headings will import as **Heading 1** for the title, **Heading 2** for `\section`, etc.
- Headers, footers, and navigation are removed at file splits.
- Any accumulated footnotes are printed at the bottom of each section.
- Forces single-file output.
- Turns off HTML debugging comments. These are comments appearing inside the HTML code, marking the opening/closing of sections and `<div>`s, but they are no longer useful when the document has been imported into a word processor.

- An additional `<div>` with an `id` encapsulates each float and minipage, which on import into *LibreOffice Writer* causes a thin frame to appear around the text block for each.
- Float captions are given an explicit italic formatting.
- Tabular rule borders are made explicit for *LibreOffice Writer*. LibreOffice displays a light border around each cell while editing, even those which have no border when printed, and lwarp also uses a light border for thin rules, so it will be best to judge the results using the print preview instead of while editing in LibreOffice.
- `\includegraphics` and SVG math width and height are made explicit for LibreOffice.
- `\hspace` is approximated by a number of `\quad`s, and rules are approximated by a number of underscores.
- Explicit HTML styles are given to:
  - `\textsc`, etc.
  - `\underline`, soul and ulem markup.
  - `center`, `flushleft`, `flushright`.
  - `\marginpar`, keyfloat, sidenotes, floatflt, and wrapfig.
  - fancybox `\shadowbox`, etc.
  - The LaTeX and TeX logos.
- Honors several booleans:

  `WPMarkFloats`: Marks the begin and end of floats.

  `WPMarkMinipages`: Marks the begin and end of minipages.

  `WPMarkTOC`: Marks the location of the Table of Contents.

  `WPMarkLOFT`: Marks the locations of the List of Figures/Tables.

  `WPMarkMath`: Prints LaTeX math instead of using images.

  `WPTitleHeading`: Adjusts title and section headings.

  Several of these may be used to add markers to the HTML text which help determine where to adjust the word processor document after import.

12.2 Additional modifications

WPMarkFloats

Adds

```
=== begin table ===
...
=== end ===
```

or

```
=== begin figure ===
...
=== end ===
```

around floats while formatting for word processors. This helps identify boundaries of floats to be manually converted to word-processor frames and captions.

Bool `WPMarkFloats`
Default: `false`

WPMarkMinipages

Adds

```
=== begin minipage ===
...
=== end minipage ===
```

around minipages while formatting for word processors. This helps identify boundaries of minipages to be manually converted to word-processor frames.

Bool `WPMarkMinipages`
Default: `false`

WPMarkTOC

While formatting for word processors, adds

```
=== table of contents ===
```

where the Table of Contents would have been. This helps identify where to insert the actual TOC.

If set `false`, the actual TOC is printed instead.

Bool `WPMarkTOC`
Default: `true`

WPMarkLOFT

While formatting for word processors, adds

```
=== list of figures ===
=== list of tables ===
```

and/or

Bool WPMarkLOFT
Default: false

where each of these lists would have been. This helps identify where to insert the actual lists.

If set `false`, the actual lists are printed instead.

WPMarkMath

While formatting for word processors, prints math as LaTeX code instead of creating SVG images or MathJax. This is useful for cut/paste into the *LibreOffice Writer TeXMaths* extension.

Bool WPMarkMath
Default: false
Prog TeXMaths
siunitx

When using the siunitx package, enter

```
\usepackage{siunitx}
```

in the *TeXMaths* preamble. Equation numbering is problematic for $\mathcal{AMS}$ math environments.

WPTitleHeading

While formatting for word processors, `true` sets the document title to `<h1>`, which is expected for HTML documents, but also causes the lower-level section headings to start at **Heading 2** when imported into LibreOffice. Set to `false` to cause the title to be plain text, and the section headings to begin at **Heading 1**.

Bool WPTitleHeading
Default: false
section headings

See table 8 on page 187.

12.3 Recommendations

TOC, LOF, LOT

For use with *LibreOffice Writer*, it is recommended to:

1. Set \booltrue{FormatWP}.
2. Set \booltrue{WPMarkTOC} and \boolfalse{WPMarkLOFT}.
3. Use lwarp to generate the HTML document.
4. Copy/paste from the HTML document into an empty *LibreOffice Writer* document.
5. Manually insert a LibreOffice TOC in the LibreOffice document.

Table 8: Section HTML headings for word-processor conversion

	HTML headings*			
	With \chapter		Without \chapter	
	WPTitleHeading		WPTitleHeading	
Section	true	false	true	false
Title	<h1>	plain	<h1>	plain
\part	<h2>	<h1>	<h2>	<h1>
\chapter	<h3>	<h2>	—	—
\section	<h4>	<h3>	<h3>	<h2>
\subsection	<h5>	<h4>	<h4>	<h3>
\paragraph	<h6>	<h5>	<h5>	<h4>
\subparagraph	span	<h6>	<h6>	<h5>

* For default depths when not FormatWP, see table 9 on page 201.

6. Manually add frames around each float, adding a caption which is cut/pasted from each float's simulated caption.
7. Manually create cross references.

This process yields a document with an actual LibreOffice Table of Contents, but a simulated List of Figures and List of Tables.

siunitx

For siunitx, remember to adjust the preamble as mentioned above.

LO view border options

LibreOffice has options in the **View** menu to turn on/off the display of thin borders around table cells and text objects.

12.4 Limitations

Floats and captions are not explicitly converted to LibreOffice floats with their own captions. Floats are surrounded by a thin frame in the LibreOffice editor, and may be marked with WPMarkFloats, but are not given a proper LibreOffice object frame. Captions are given an explicit italic formatting, but not a proper LibreOffice paragraph style.

Cross references are not actual LibreOffice linked cross references.

The List of Figures and List of Tables are not linked. The pasted pseudo LOF and LOT match the numbering of the LaTeX and HTML versions.

Equation numbering is not automatic, but the equation numbers in SVG math will match the LaTeX and HTML output. SVG math is recommended when using the AMS environments, which may have multiple numbered equations per object.

As of when last checked, LibreOffice ignores the following:

- Minipage alignment.
- Tabular cell vertical alignment.
- Image rotation and scaling.
- Rounded border corners, which are also used by:
  - `\textcircled`
  - booktabs trim
- `\hspace` and rules, also used by algorithmic.
- Coloring of text decorations, used by soul and ulem.
- Overline text decoration, used by romanbar.

LibreOffice also has limitations with frames and backgrounds:

- Multiple lines in an object are framed individually instead of as a whole.
- Nested frames are not handled correctly.
- Images inside boxes are not framed correctly.
- Spans with background colors and frames are not displayed correctly.

13 Modifying lwarp

locating something

To quickly find the source for a package in `lwarp.dtx`, search for `*packagename`, such as `*siunitx`.

Likewise, to quickly find the source for a file in `lwarp.dtx`, search for `*filename`, such as `*lwarp.css`.

Purely text-based packages probably will work as-is when generating HTML.

Look to existing code for ideas on how to expand into new code.

image of TEX output

An environment may be converted to a `lateximage` then displayed with an image of the resulting LATEX output. See section 86 for an example of the `picture` environment.

CSS classes

To create a custom HTML block or inline CSS class, see section 51.8.

print/HTML macros

To create print and HTML versions of the same macro or environment, see section 35.

⚠ TEX boxes

Any TEX boxes must be undone, as SVG math or `lateximages` require `\newpage`, which will not work in a TEX box.

index recreation

To recreate the index for the lwarp documentation:

```
makeindex -s gglo.ist -o lwarp.gls lwarp.glo
splitindex lwarp.idx -- -s gind.ist
```

13.1 Creating a development system

The following creates a local development system for lwarp on a TeXLive system in a UNIX-like environment. Doing so allows anything requesting lwarp to use the development version instead of whichever version is installed in TeXLive.

Create a development directory:

Place into this directory `lwarp.dtx` and `lwarp.ins`.

To create `lwarp.sty`, execute

Enter ⇒ `pdflatex lwarp.ins`

which creates `lwarp.sty` and several hundred additional `lwarp-*.sty` files for the various packages which are supported.

To create the documentation `lwarp.pdf`, execute

Enter ⇒ `pdflatex lwarp.dtx`

To make the development files visible to other projects:

Create the directory

`/usr/local/texlive/texmf-local/tex/latex/local/lwarp`

Inside this directory, create the file `update`, containing:

```
ln -s /path_to_dev_directory/lwarp*.sty .
ln -s /path_to_dev_directory/lwarp_baseline_marker.png .
ln -s /path_to_dev_directory/lwarp_baseline_marker.eps .
mktexlsr
```

Run ./update now, and whenever a new lwarp-* package is added.

To make the development version of *lwarpmk* visible to other projects:

```
cd /opt
ln -s /usr/local/texlive/texmf-local/bin/x86_64-linux texbin_local
cd texbin_local
ln -s ../../scripts/lwarp/lwarpmk.lua lwarpmk
cd /usr/local/texlive/texmf-local/scripts/
mkdir lwarp
cd lwarp
ln -s /path_to_dev_directory/lwarpmk.lua lwarpmk
```

Verify that the correct version is found with

Enter ⇒ `which lwarpmk`

To make the local versions visible to the shell:

Paths must be set by the shell startup, such as in `.bashrc` and `.cshrc`:

In `.bashrc`:

```
PATH=/opt/texbin_local:/opt/texbin:$PATH
```

In `.cshrc`:

```
setenv PATH ${HOME}/bin:/opt/texbin_local:/opt/texbin:${PATH}
```

13.2 Modifying a package for lwarp

If a class loads additional packages, it will be required to modify the class for lwarp, since lwarp must be loaded before most other packages.

To work with lwarp, a class must first set up anything which replicates the functions of the basic LaTeX classes, load any required fonts, then load lwarp, then finally load and adjust any other required packages.

When creating HTML, lwarp redefines the `\usepackage` and `\RequirePackage` macros such that it first looks to see if a `lwarp-<packagename>.sty` version exists. If so, the lwarp version is used instead. This modular system allows users to create their own versions of packages for lwarp to use for HTML, simply by creating a new package with a `lwarp-` prefix. If placed in the local directory along with the source code, it will be seen by that project alone. If placed alongside the other `lwarp-` packages where TeX can see it, then the user's new package will be seen by any documents using lwarp. (Remember `mktexlsr` or `texhash`.)

An `lwarp-<packagename>.sty` package is only used during HTML generation. Its purpose is to pretend to be the original package, while modify anything necessary to create a successful HTML conversion. For many packages it is sufficient to simply provide nullified macros, lengths, counters, etc. for anything which the original package does, while passing the raw text on to be typeset. See the pre-existing `lwarp-` packages for examples.

Anything the user might expect of the original package must be replaced or emulated by the new `lwarp-` package, including package options, user-adjustable counters, lengths, and booleans, and conditional behaviors. In many of these packages, most of the new definitions have a "local" prefix according to the package name, and `@` characters inside the name, which hides these names from the user. In most cases these macros will not need to be emulated for HTML output. Only the "user-facing" macros need to be nullified or emulated.

Each `lwarp-*` package should first call either of:

```
\LWR@ProvidesPackageDrop
  -or-
\LWR@ProvidesPackagePass
```

If "`Drop`"ped, the original print-version package is ignored, and only the `lwarp-` version is used. Use this where the original print version is useless for HTML. If "`Pass`"ed, the original package is loaded first, with the user-supplied options, then the `lwarp-` version continues loading as well. See section 315 (ntheorem) for an example of selectively disabling user options for a package. Use this when HTML output only requires some modifications of the original package. For a case where the original package is usable without changes, there is no need to create a `lwarp-` version.

13.2.1 Adding a package to the lwarp.dtx file

When adding a package to `lwarp.dtx` for permanent inclusing in lwarp, provide the `lwarp-<packagename>` code in `lwarp.dtx`, add its entry into `lwarp.ins`, and also remember to add

```
\LWR@loadafter{<packagename>}
```

to `lwarp.dtx` in section 27.1. This causes lwarp to stop with an error if packagename is loaded before lwarp. Finally, add an entry in table 2, Supported packages and features, and also the Updates section.

13.3 Modifying a class for lwarp

If a class loads additional packages, it will be required to modify the class for lwarp, since lwarp must be loaded before most other packages.

To work with lwarp, a class must first set up anything which replicates the functions of the basic LaTeX classes, load any required fonts, then load lwarp, then finally load and adjust any other required packages.

13.4 Testing lwarp

When changes have been made, test the print output before testing the HTML. The print output compiles faster, and any errors in the printed version will be easier to figure out than the HTML version.

Remember that the configuration files are only rewritten when compiling the printed version of the document.

When changing the source to *lwarpmk* or a CSS file in `lwarp.dtx`:

1. Change the source in `lwarp.dtx`.
2. `pdflatex lwarp.ins`
3. `pdflatex lwarp.dtx`
4. If modifying *lwarpmk* the new version should now be active.
5. If modifying CSS files:
   (a) For the document, `lwarpmk print` to update the CSS files in the project.
   (b) Reload the HTML document to see the effect of the new CSS files.

Sometimes it is worth checking the `<project>_html.pdf` file, which is the PDF containing HTML tags. Also, `<project>_html.html` has the text conversion of these tags, before the file is split into individual HTML files.

It is also worth checking the browser's tools for verifying the correctness of HTML and CSS code.

13.5 Modifying *lwarpmk*

Prog `lwarpmk`
File `lwarpmk.lua`

In most installations, `lwarpmk.lua` is an executable file located somewhere the operating system knows about, and it is called by typing ***`lwarpmk`*** into a terminal.

A project-local copy of `lwarpmk.lua` may be generated, modified, and then used to compile documents:

1. Add the `lwarpmk` option to the lwarp package.
2. Recompile the printed version of the document. The `lwarpmk` option causes lwarp to create a local copy of `lwarpmk.lua`
3. The `lwarpmk` option may now be removed from the lwarp package.
4. Copy and rename `lwarpmk.lua` to a new file such as `mymake.lua`.
5. Modify `mymake.lua` as desired.
6. If necessary, make `mymake.lua` executable.
7. Use `mymake.lua` instead of `lwarpmk.lua`.

14 Troubleshooting

14.1 Using the lwarp.sty package

Also see:
Section 8.8: Commands to be placed into the `warpprint` environment
Section 9: Special cases and limitations

Text is not converting correctly / corrupted HTML tags:

- Font-related UTF-8 information must be embedded in the PDF file. See section 8.2 regarding bitmapped vs. vector fonts.
- See section 9.2.1 regarding HTML entities and the characters `&`, `<`, and `>`.

Undefined HTML settings:

- See the warning regarding the placement of the HTML settings at section 8.4.

Tabular problems: See section 9.9.

Obscure error messages:

Print first: Be sure that a print version of the document compiles and that your document's LaTeX code is correct, before attempting to generate an HTML version.

`\end{warpHTML}, \end{warpprint}, \end{warpall}`: Each of these must be without any other characters on the same line.

Options clash: If using memoir, see section 9.12.

"No room for a new `\write`.": Before `\usepackage{lwarp}`, add:

```
\usepackage{morewrites}
\morewritessetup{allocate=10}
```

"Missing $ inserted.": If using a filename or URL in a footnote or `\item`, escape underscores with `\_`.

"Label(s) may have changed. Rerun to get cross-references right.":

This warning may repeat endlessly if a math expression is used in a caption. Simple math expressions such as $X=1$ may be replaced with

```
\textit{X}\,=\,1
```

"Leaders not followed by proper glue": This can be caused by a missing `l@<floattype>` or `l@<sectiontype>` definition. See lwarp's definitions for examples.

"Improper \prevdepth": lateximages and SVG math require \newpage, which cannot work inside TEX boxes or \ensuremath. Anything using \newsavebox, \newbox, \lrbox, \savebox, \hbox, \vbox, \usebox, \sbox, etc., must be modified to work without box commands.

If you find something using \ensuremath, have it temporarily set:

```
\LetLtxMacro\@ensuredmath\LWR@origensuredmath
```

inside a group first.

⚠ macros in section,table,figure names

Also, custom macros which appear inside a section, figure, or table name should be made robust since they appear inside the .toc, .lof, or .lot files. Use \newrobustcmd or \robustify from etoolbox, xparse, etc.

⚠ BibTeX

If using BibTeX, see section 9.5.9.

⚠ polyglossia

"! Undefined control sequence. ... \@begindocumenthook": See section 9.13.4 if using polyglossia.

⚠ custom macros for environments

"\begin{equation} ended by \end{document}": Do not use custom macros such as \beq and \eeq to replace

```
\begin{equation}
...
\end{equation}
```

⚠ \LWR@formatted

"Misplaced \omit": If using \LWR@formatted to define new macros for print and HTML modes, see section 35 regarding \LWR@expandableformatted.

⚠ "impure" math objects

Complicated objects inside math: Some objects, such as Ti*k*z, may not compile in lwarp's normal math emulation. Insert

```
\displaymathother -or- \inlinemathother
```

before the math, and then

```
\displaymathnormal -or- \inlinemathnormal
```

when displaying "normal" math. See section 9.6.8.

Slow compliation of math objects: Complicated math objects can also cause problems with alt tags, resulting in very slow compilation, large alt tags, and possible crashes. Use \inlinemathother ... \inlinemathnormal or \displaymathother ... \displaymathnormal around the math expression.

⚠ MathJax

⚠ MathJax

Incorrect MathJax: Some objects do not convert to MathJax. Use \displaymathother before these objects, then \displaymathnormal to return to "normal" display math. See section 9.6.8.

Missing sections: See section 8.4 regarding the FileDepth and SideTOCDepth counters, and the use of \tableofcontents in the home page.

Misnumbered footnotes from section headings: See section 9.4.4.

Missing HTML files:

- See the warning regarding changes to the HTML settings at section 8.4.
- Ensure that the filenames are unique after math and short words are removed. See `FileSectionNames` at section 8.4.

Missing / incorrect cross-references:

- Use `lwarpmk again` followed by `lwarpmk html` or `lwarpmk print` to compile the document one more time.

labels
⚠ label characters

- Labels with special characters may be a problem. It is best to stick with alpha-numeric, hyphen, underscore, and perhaps the colon (if not French).

\nameref
⚠ empty link

  `\nameref` refers to the most recently-used section where the `\label` was defined. If no section has been defined before the `\label`, the link will be empty. Index entries also use `\nameref` and have the same limitation.

⚠ cleveref page numbers

- cleveref and varioref are supported, but printed page numbers do not map to HTML, so a section name or a text phrase are used for `\cpageref` and `\cpagerefrange`. This phrase includes `\cpagerefFor`, which defaults to "for".

  Ex:

  ```
  \cpageref{tab:first,tab:second}
  ```

  in HTML becomes:

  "pages **for** table 4.1 and **for** table 4.2"

  See `\cpagerefFor` at page 563 to redefine the message which is printed for page number references.

BibTeX errors with `\etalchar`: See section 9.5.9.

Malformed URLs: Do not use the `%` character between arguments of `\hyperref`, etc., as this character is among those which is neutralized for inclusion in HTML URLs.

Em-dashes or En-dashes in listing captions and titles:

Use XeLaTeX or LuaLaTeX.

Floats out of sequence:

Mixed "Here" and floating: Floats [H]ere and regular floats may become out of order. `\clearpage` if necessary.

Caption setup: With `\captionsetup` set the positions for the captions `above` or `below` to match their use in the source code.

Images are appearing in strange places:

- Enter ***`lwarpmk limages`*** to refresh the `lateximage` images.

SVG images:

⚠ adding/removing

When a math expression, `picture`, or Ti*k*z environment is added or removed, the SVG images must be re-created by entering ***`lwarpmk limages`*** to maintain the proper image-file associations. Inline SVG math may be hashed and thus not need to be recreated, but display math and objects such as Ti*k*z may move to new image numbers when the document is changed.

Before attempting to create the SVG image files, *lwarpmk* verifies that the HTML version of the document exists and has correct internal image references.[15] If it is necessary to recompile the document's HTML version, *lwarpmk* will inform so with an error message.

⚠ HTML instead of images

If HTML appears where an SVG image should be,recompile the document one more time to get the page numbers back in sync, then remake the images one more time. *lwarpmk* attempts to detect this situation and print a warning.

⚠ page counter

Incorrect SVG images will also occur if the document changes the `page` counter:

```
\setcounter{page}{<value>}
```

The `page` counter must *not* be adjusted by the user.

⚠ Lots of files!

Expressing math as SVG images has the advantage of representing the math exactly as LaTeX would, but has the disadvantage of requiring an individual file for each math expression. For inline math, and some other objects, lwarp uses an MD5 hash on its LaTeX source to combine multiple instances of identical inline expressions into a single image file, but display math and other environments such as `picture` and Ti*k*z require one image file each. For a document with a large amount of math, see section 6.5 to use MathJax instead.

Plain-looking document:

- The document's CSS stylesheet may not be available, or may be linked incorrectly. Verify any `\CSSFilename` statements point to a valid CSS file.

Broken fragments of HTML:

- Check the PDF file used to create HTML to see if the tags overflowed the margin. (This is why such large page size and margins are used.)

Changes do not seem to be taking effect:

- Be sure to `lwarpmk clean`, recompile, then start by reloading the home page. You may have been looking at an older version of the document. If you changed a section name, you may have been looking at the file for the old name.
- See the warning regarding changes to the HTML settings at section 8.4.
- Verify that the proper CSS is actually being used.

[15] This becomes important when dealing with a document containing thousands of images.

- The browser may compensate for some subtle changes, such as automatically generating ligatures, reflowing text, etc.

Un-matched conditional compiles:

- Verify the proper `begin/end` of `warpprint`, `warpHTML`, and `warpall` environments.

14.1.1 Debug tracing output

`\tracinglwarp` When `\tracinglwarp` is used, lwarp will add extra tracing messages to the `.log` file. The last several messages may help track down errors.

Place `\tracinglwarp` just after `\usepackage{lwarp}` to activate tracing.

14.2 Compiling the `lwarp.dtx` file

`lwarp_tutorial.tex`: Copy or link `lwarp_tutorial.txt` from the TDS `doc` directory to the `source` directory, or wherever you wish to compile the documentation. This file is included verbatim in the documentation, but is in the `doc` directory so that it may be found by *texdoc* and copied by the user.

Illogical error messages caused by an out-of-sync `lwarp.sty` file:

1. Delete the `lwarp.sty` file.
2. Enter ***`pdflatex lwarp.ins`*** to generate a new `lwarp.sty` file.
3. Enter ***`pdflatex lwarp.dtx`*** to recompile the `lwarp.pdf` documentation.

Un-nested environments:

Be sure to properly nest:

- `\begin{macrocode}` and `\end{macrocode}`
- `\begin{macro}` and `\end{macro}`
- `\begin{environment}` and `\end{environment}`

15 Trademarks

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File 1 `lwarp.sty`

16 Implementation

This package is perhaps best described as a large collection of smaller individual technical challenges, in many cases solved through a number of ~~crude hacks~~ clever tricks. Reference sources are given for many of the solutions, and a quick internet search will provide additional possibilities.

Judgement calls were made, and are often commented. Improvements are possible. The author is open to ideas and suggestions.

Packages were patched for re-use where they provided significant functionality. Examples include xcolor with its color models and conversion to HTML color output, and siunitx which provides many number and unit-formatting options, almost all of which are available in pure-text form, and thus easily used by *pdftotext*.

Packages were emulated where their primary purpose was visual formatting which is not relevent to HTML output. For example, packages related to sectioning are already patched by numerous other packages, creating a difficult number of combinations to try to support, and yet in HTML output all of the formatting is thrown away, so these packages are merely emulated.

Packages with graphical output are allowed as-is, but must be nested inside a `lateximage` environment to preserve the graphics.

Testing has primarily been done with the Iceweasel/Firefox browser.

Table 9: Section depths and HTML headings

Section	LaTeX depth	HTML headings *
title of the entire website		`<h1>`
none	-5	new for this package
book	-2	**not yet used**
part	-1	`<h2>`
chapter	0	`<h3>`
section	1	`<h4>`
subsection	2	`<h5>`
subsubsection	3	`<h6>`
paragraph	4	`<span class = "paragraph">`
subparagraph	5	`<span class = "subparagraph">`
listitem	7	new for this package, used for list items

* If `FormatWP` is true, section headings may be adjusted, depending on `WPTitleHeading`. See table 8 on page 187.

17 Section depths and HTML headings

Stacks are created to track depth inside the LaTeX document structure. This depth is translated to HTML headings as shown in table 9. "Depth" here is not depth in the traditional computer-science stack-usage sense, but rather a representation of the nesting depth inside the LaTeX document structure.

When starting a new section, the program first must close out any existing sections and lists of a deeper level to keep the HTML tags nested correctly.

Support for the memoir package will require the addition of a `book` level, which may push the HTML headings down a step, and also cause `subsubsection` to become a `<div>` due to a limit of six HTML headings.

It is possible to use HTML5 `<section>` and `<h1>` for all levels, but this may not be well-recognized by older browsers.

Fixed levels for parts and chapters allow the CSS to remain fixed as well.

18 Source code

This is where the documented source code for lwarp begins, continuing through the following sections all the way to the change log and index at the end of this document.

The following sections document the actual implementation of the lwarp package.

line numbers The small numbers at the left end of a line refer to line numbers in the `lwarp.sty` file.

subjects Blue-colored tags in the left margin aid in quickly identifying the subject of each paragraph.

objects Black-colored tags in the left marign are used to identify programming objects such as files, packages, environments, booleans, and counters. Items without a tag are command macros. Each of these also appears in the index as individual entries, and are also listed together under “files”, “packages”, “environments”, “booleans”, and “counters”.

index entries

⚠ warnings Special warnings are marked with a warning icon.

for HTML output:
for PRINT output:
for HTML & PRINT:

Green-colored tags in the left margin show which sections of source code apply to the generation of HTML, print, or both forms of output.

— lwarp source code begins on the following page —

19 Detecting the TEX Engine — *pdflatex*, *lualatex*, *xelatex*

See: http://tex.stackexchange.com/a/47579.

Detects XeTeX and LuaLaTeX:

```
\RequirePackage{iftex}
\newif\ifxetexorluatex
\ifXeTeX
    \xetexorluatextrue
\else
    \ifLuaTeX
        \xetexorluatextrue
    \else
        \xetexorluatexfalse
    \fi
\fi

\ifLuaTeX
\RequirePackage{luatex85}% until the geometry package is updated
\fi

\RequirePackage{ifpdf}
```

20 MD5 hashing

The MD5 hash is used for `lateximage` filenames for SVG math.

```
\newcommand{\LWR@mdfive}[1]{%
\PackageError{lwarp}
{No MD5 macro was found.}
{Lwarp must find the macros pdfmdfivesum or mdfivesum.}
}

\ifPDFTeX% pdflatex or dvi latex
\let\LWR@mdfive\pdfmdfivesum
\fi

\ifLuaTeX
\RequirePackage{pdftexcmds}
\let\LWR@mdfive\pdf@mdfivesum
\fi

\ifXeTeX
\@ifundefined{pdffivesum}{}
```

```
    {\let\LWR@mdfive\pdfmdfivesum}
\@ifundefined{mdfivesum}{}
    {\let\LWR@mdfive\mdfivesum}
\fi
```

21 pdfLaTeX T1 and UTF-8 encoding

When using pdfLaTeX, lwarp requires T1 encoding, and recommends UTF-8 encoding.

If some other input encoding is already defined, lwarp will try to use it instead, and hope for the best.

XeLaTeX and LuaLaTeX are both UTF-8 by nature.

```
\ifPDFTeX% pdflatex or dvi latex
\RequirePackage[T1]{fontenc}

\@ifpackageloaded{inputenc}{}{
    \@ifpackageloaded{inputenx}{}{
        \RequirePackage[utf8]{inputenc}
    }
}
\fi
```

22 Unicode input characters

for HTML & PRINT:

If using *pdflatex*, convert a minimal set of Unicode characters. Additional characters may be defined by the user, as needed.

A commonly-used multiply symbol is declared to be `\texttimes`.

The first arguments of `\newunicodechar` below are text ligatures in the source code, even though they are not printed in the following listing.

```
\RequirePackage{newunicodechar}

\newunicodechar{×}{\texttimes}

\ifPDFTeX% pdflatex or dvi latex
\newunicodechar{ff}{ff}% the first arguments are ligatures
\newunicodechar{fi}{fi}
\newunicodechar{fl}{fl}
\newunicodechar{ffi}{ffi}
```

```
\newunicodechar{ffl}{ffl}
\newunicodechar{--}{---}
\newunicodechar{-}{--}
```

In PDFTEX, preserve upright quotes in verbatim text. upquote also loads textcomp.

```
\RequirePackage{upquote}
\else
\fi
```

23 Miscellaneous tools

\LWR@providelength {⟨*\lengthname*⟩} Provides the length if it isn't defined yet.

Used to provide source compatibility for lengths which will be ignored, but might or might not be already provided by other packages.

```
\newcommand*\LWR@providelength[1]{%
    \ifdeflength{#1}{}{\newlength{#1}}%
}
```

Prints a length in the given units, without printing the unit itself.

\LWR@convertto {⟨*dest unit*⟩} {⟨*length*⟩}

```
\newcommand*{\LWR@convertto}[2]{\strip@pt\dimexpr #2*65536/\number\dimexpr 1#1}
```

\LWR@patcherror {⟨*packagename*⟩} {⟨*macroname*⟩}

Prints an error if could not patch a macro.

```
\newcommand*{\LWR@patcherror}[2]{%
\PackageError{lwarp}
{Unable to patch package #1, macro #2}
{Please contact the author of the lwarp package.}
}
```

\LWR@isolate {⟨*text*⟩} Isolates Chinese characters from the surrounding text. This is required to avoid extra spaces on either side of the Chinese characters, especially when written to a file.

```
\@ifpackageloaded{ctexpatch}{
    \newcommand{\LWR@isolate}[1]{\null#1\null}%
```

```
}{
    \newcommand{\LWR@isolate}[1]{#1}%
}
```

24 Early package requirements

Pkg etoolbox Provides `\ifbool` and other functions.

Pkg xpatch Patches macros with optional arguments.

```
\RequirePackage{etoolbox}[2011/01/03]% v2.6 for \BeforeBeginEnvironment, etc.
\RequirePackage{xpatch}
```

Pkg ifplatform Provides `\ifwindows` to try to automatically detect WINDOWS OS.

```
\RequirePackage{ifplatform}% sense op-system platform
```

Pkg letltxmacro Used to redefine `\textbf` and friends.

```
\RequirePackage{letltxmacro}
```

25 Operating-System portability

Prog Unix
Prog Mac OS
Prog Linux
Prog MS-Windows
Prog Windows
Opt OSWindows

lwarp tries to detect which operating system is being used. UNIX / MAC OS / LINUX is the default (collectively referred to as "UNIX" in the configuration files), and MS-WINDOWS is supported as well.

If MS-WINDOWS is not correctly detected, use the lwarp option `OSWindows`.

When detected or specified, the operating-system path separator used by lwarp is modified, and the boolean `usingOSWindows` is set `true`. This boolean may be tested by the user for later use.

25.1 Literal characters

Literal characters to be used in `PrintLatexCmd` and `HTMLLatexCmd`. These are defined without `@` to easily allow their inclusion in the user's document.

The literal `%` character:

```
\let\LWRpercent\@percentchar
```

The literal $ character:

```
\catcode`\$=12
\def\LWRdollar{$}
\catcode`\$=3
```

The literal & character:

```
\catcode`\&=12
\def\LWRamp{&}
\catcode`\&=4
```

The literal \ character. The ampersand is temporarily set to the escape character during the definition of the backslash macro.

```
\catcode`\&=0
&catcode`&\=12
&def&LWRbackslash{\}
&catcode`&\=0
\catcode`\&=4
```

The literal # character:

```
\catcode`\#=12
\def\LWRhash{#}
\catcode`\#=6
```

`\LWRopquote` The operating system's quote mark, UNIX default. For WINDOWS, see `\LWR@setOSWindows`, below.

```
\def\LWRopquote{'}
```

`\LWRopseq` The operating system's sequential execution command, UNIX default. For WINDOWS, see `\LWR@setOSWindows`, below.

```
\def\LWRopseq{\space\LWRamp\LWRamp\space\space}
```

25.2 Common portability code

Bool `usingOSWindows` Set if the `OSWindows` option is used, or if WINDOWS is automatically detected.

```
\newbool{usingOSWindows}
\boolfalse{usingOSWindows}
```

25.3 UNIX, LINUX, and MAC OS

\OSPathSymbol Symbol used to separate directories in a path.

```
\newcommand*{\OSPathSymbol}{/}
```

25.4 MS-WINDOWS

For MS-WINDOWS:

\LWR@setOSWindows Set defaults for the MS-WINDOWS operating system. lwarp attempts to auto-detect the operatings system, and the OSWindows option may also be used to force MS-WINDOWS compatibility.

```
\newcommand*{\LWR@setOSWindows}
{
\booltrue{usingOSWindows}
\renewcommand*{\OSPathSymbol}{\@backslashchar}
\def\LWRopquote{"}
\def\LWRopseq{\space\LWRamp\space\space}
}
```

Test for windows during compile. The user may also specify OSWindows package option in case this test fails.

```
\ifwindows
\LWR@setOSWindows
\fi
```

26 Package options

Pkg kvoptions Allows key/value package options.

```
\RequirePackage{kvoptions}
\SetupKeyvalOptions{family=LWR,prefix=LWR@}
```

\lwarpsetup A user interface to set the keys:

```
\newcommand{\lwarpsetup}[1]{\setkeys{LWR}{#1}}
```

Bool warpingprint
Bool warpingHTML
Bool mathjax
Bool LWR@origmathjax

Set to true/false depending on the package option selections for print/HTML/EPUB output and mathsvg/mathjax.

LWR@origmathjax remembers the original setting to be restored by \displaymathnormal.

```
\newbool{warpingprint}
\newbool{warpingHTML}
\newbool{mathjax}
\newbool{LWR@origmathjax}
```

defaults The default is print output, and SVG math if the user chose HTML output.

```
\booltrue{warpingprint}%
\boolfalse{warpingHTML}%
\boolfalse{mathjax}%
```

Opt warpprint If the warpprint option is given, boolean warpingprint is true and boolean warpingHTML is false, and may be used for \ifbool tests.

```
\DeclareVoidOption{warpprint}{%
\PackageInfo{lwarp}{Using option 'warpprint'}
\booltrue{warpingprint}%
\boolfalse{warpingHTML}%
}
```

Opt warpHTML Anything in the warpHTML environment will be generated for HTML output only.

Opt warpHTML If the warpHTML option is given, boolean warpingHTML is true and boolean warpingprint is false, and may be used for \ifbool tests.

```
\DeclareVoidOption{warpHTML}{%
\PackageInfo{lwarp}{Using option 'warpHTML'}%
\booltrue{warpingHTML}%
\boolfalse{warpingprint}%
}
```

Opt mathsvg Option mathsvg selects SVG math display: If the mathsvg option is given, boolean mathjax is false, and may be used for \ifbool tests.

```
\DeclareVoidOption{mathsvg}{%
\PackageInfo{lwarp}{Using option 'mathsvg'}
\boolfalse{mathjax}%
\boolfalse{LWR@origmathjax}%

}
```

Opt `mathjax` Option `mathjax` selects MathJax math display: If the `mathjax` option is given, boolean `mathjax` is true, may be used for `\ifbool` tests.

```
\DeclareVoidOption{mathjax}{%
\PackageInfo{lwarp}{Using option 'mathjax'}
\booltrue{mathjax}%
\booltrue{LWR@origmathjax}%

}
```

Opt `BaseJobname` Option `BaseJobname` sets the `\BaseJobname` for this document.

This is the `\jobname` of the printed version, even if currently compiling the HTML version. I.e. this is the `\jobname` without `_html` appended. This is used to set `\HomeHTMLFilename` if the user did not provide one.

```
\DeclareStringOption[\jobname]{BaseJobname}
```

Opt `makeindexStyle` Selects a custom `.ist` file. The default is `lwarp.ist`. A customized file should be based on `lwarp.ist`, and must retain the lines related to `\hyperindexref`.

```
\DeclareStringOption[lwarp.ist]{makeindexStyle}
```

Opt `xindyStyle` Selects a custom `.xdy` file. The default is `lwarp.xdy`. A customized file should be based on `lwarp.xdy`, and must retain the line

```
(markup-locref :open "\hyperindexref{" :close "}")
```

```
\DeclareStringOption[lwarp.xdy]{xindyStyle}
```

Opt `xindyLanguage` Sets the xindy language to be assigned in *lwarpmk*'s configuration files. This is then used by *lwarpmk* while processing the index and glossary.

```
\DeclareStringOption[english]{xindyLanguage}
```

Opt `xindyCodepage` Sets the xindy codepage to be assigned in *lwarpmk*'s configuration files. This is then used by *lwarpmk* while processing the index.

```
\DeclareStringOption[utf8]{xindyCodepage}
```

Opt `pdftotextEnc` Default: `UTF-8` The option `pdftotextEnc` sets the encoding used by *pdftotext*. This is passed to *pdftotext* using its `-enc` option, and is used when converting LaTeX PDF output with HTML tags into a plain-text file with HTML tags.

```
\DeclareStringOption[UTF-8]{pdftotextEnc}
```

Opt `lwarpmk` Tells lwarp to generate a local copy of *lwarpmk* called `lwarpmk.lua`. Useful for archiving for future use. This file may be made executable and acts just like *lwarpmk*.

If `lwarpmk` option, creates a local copy of `lwarpmk.lua`:

```
\newbool{LWR@creatinglwarpmk}
\boolfalse{LWR@creatinglwarpmk}

\DeclareVoidOption{lwarpmk}{
\PackageInfo{lwarp}{Using option 'lwarpmk'}
\booltrue{LWR@creatinglwarpmk}
}
```

Opt `OSWindows` Tells lwarp to use MS-WINDOWS compatibility. Auto-detection of the operating system is attempted, and this option is only necessary if the auto-detection fails. See the automatically-generated `lwarpmk.conf` file to find out whether the operating system was detected correctly.

```
\DeclareVoidOption{OSWindows}{
\PackageInfo{lwarp}{Using option 'OSWindows'}
\LWR@setOSWindows
}
```

Opt `HomeHTMLFilename` The filename of the homepage. The default is the jobname. This option is stored into `\LWR@HomeHTMLFilename`, and later transferred into `\HomeHTMLFilename` for internal use.
Default: `\lwarp`

```
\DeclareStringOption[]{HomeHTMLFilename}
```

Opt `HTMLFilename` The filename prefix of web pages after the homepage. The default is empty, no prefix. This option is stored into `\LWR@HTMLFilename`, and later transferred into `\HTMLFilename` for internal use.
Default: `<empty>`

```
\DeclareStringOption[]{HTMLFilename}
```

Opt `PrintLatexCmd` The shell commands to use to compile the print document.
Default: `<automatic>`

```
\DeclareStringOption[]{PrintLatexCmd}
```

Opt `HTMLLatexCmd` The shell commands to use to compile the HTML document.
Default: `<automatic>`

```
\DeclareStringOption[]{HTMLLatexCmd}
```

Opt `PrintIndexCmd` The shell commands to use to compile the print indexes.
Default: `<empty>`

```
\DeclareStringOption[]{PrintIndexCmd}
```

Opt `HTMLIndexCmd`
Default: `<empty>`

The shell commands to use to compile the HTML indexes.

```
163 \DeclareStringOption[]{HTMLIndexCmd}
```

Opt `LatexmkIndexCmd`
Default: `<empty>`

The shell commands to by used by *latexmk* to compile the print indexes. Unlike `PrintIndexCmd` and `HTMLIndexCmd`, `LatexmkIndexCmd` does not include the filename, which will be provided by *latexmk*.

```
164 \DeclareStringOption[]{LatexmkIndexCmd}
```

Opt `makeindex`

Tells lwarp to use makeindex for index generation. When `lwarpmk.conf` and `*.lwarpmkconf` are generated, `PrintIndexCmd` and `HTMLIndexCmd` will be set for *makeindex* with a single index file.

```
165 \DeclareBoolOption[false]{makeindex}
```

Opt `xindy`

Tells lwarp to use xindy for index generation. When `lwarpmk.conf` and `*.lwarpmkconf` are generated, `PrintIndexCmd` and `HTMLIndexCmd` will be set for *xindy* with a single index file.

```
166 \DeclareBoolOption[false]{xindy}
```

Opt `GlossaryCmd`
Default: `makeglossaries`

The shell command to use to compile the glossary. The print or HTML version of the glossary filename will be appended to this command.

```
167 \DeclareStringOption[makeglossaries]{GlossaryCmd}
```

Opt `latexmk`

Option `latexmk` tells *lwarpmk* to use *latexmk* when compiling documents.

```
168 \DeclareBoolOption[false]{latexmk}
```

Opt `dvips`

Option `dvips` tells *lwarpmk* to use *dvips* when compiling DVI *latex* documents.

```
169 \DeclareBoolOption[false]{dvips}
```

Opt `dvipdfm`

Option `dvipdfm` tells *lwarpmk* to use *dvipdfm* when compiling DVI *latex* documents.

```
170 \DeclareBoolOption[false]{dvipdfm}
```

Opt `dvipdfmx`

Option `dvipdfmx` tells *lwarpmk* to use *dvipdfmx* when compiling DVI *latex* documents.

```
171 \DeclareBoolOption[false]{dvipdfmx}
```

Execute options

Execute the package options, with the defaults which have been set just above:

```
\ProcessKeyvalOptions*\relax
```

Assign the `\BaseJobname` if the user hasn't provided one:

```
\providecommand*{\BaseJobname}{\LWR@BaseJobname}
```

Defaults unless already over-ridden by the user:

```
\ifcsempty{LWR@HomeHTMLFilename}{
\newcommand*{\HomeHTMLFilename}{\BaseJobname}
}{
\csedef{HomeHTMLFilename}{\LWR@HomeHTMLFilename}
}

\csedef{HTMLFilename}{\LWR@HTMLFilename}
```

`\LWR@PrintIndexCmd` and `\LWR@HTMLIndexCmd` are tested to see if they are empty. If so, they are set to a reasonable defaults for a single index using *makeindex*, then possibly set to defaults for *xindy* if the lwarp `xindy` option was selected.

```
\ifdefempty{\LWR@PrintIndexCmd}{
    \renewcommand{\LWR@PrintIndexCmd}{%
        makeindex  -s \LWR@makeindexStyle \space  \jobname.idx%
    }
    \ifbool{LWR@xindy}{
        \renewcommand{\LWR@PrintIndexCmd}{%
            xindy
            -M \LWR@xindyStyle \space
            -L \LWR@xindyLanguage \space
            -C \LWR@xindyCodepage \space
            \jobname.idx%
        }
    }{}
}{}

\ifdefempty{\LWR@HTMLIndexCmd}{
    \renewcommand{\LWR@HTMLIndexCmd}{%
        makeindex  -s \LWR@makeindexStyle \space  \jobname_html.idx%
    }
    \ifbool{LWR@xindy}{
        \renewcommand{\LWR@HTMLIndexCmd}{%
            xindy
            -M \LWR@xindyStyle \space
            -L \LWR@xindyLanguage \space
            -C \LWR@xindyCodepage \space
            \jobname_html.idx%
        }
```

```
    }{}
}{}

\ifdefempty{\LWR@LatexmkIndexCmd}{
    \renewcommand{\LWR@LatexmkIndexCmd}{%
        makeindex  -s \LWR@makeindexStyle%
    }
    \ifbool{LWR@xindy}{
        \renewcommand{\LWR@LatexmkIndexCmd}{%
            xindy
            -M \LWR@xindyStyle \space
            -L \LWR@xindyLanguage \space
            -C \LWR@xindyCodepage%
        }
    }{}
}{}
```

26.1 Conditional compilation

`\warpprintonly` {⟨*contents*⟩}

Only process the contents if producing printed output.

```
\newcommand{\warpprintonly}[1]{\ifbool{warpingprint}{#1}{}}
```

`\warpHTMLonly` {⟨*contents*⟩}

Only process the contents if producing HTML output.

```
\newcommand{\warpHTMLonly}[1]{\ifbool{warpingHTML}{#1}{}}
```

Pkg `comment` Provides conditional code blocks.

Attempts to use versions or verbatim fail in some cases, and do not provide much of a speed benefit even when they do work.

```
\RequirePackage{comment}
```

Use `comment_print.cut` for print mode, and `comment_html.cut` for HTML mode. This helps *latexmk* to more reliably know whether to recompile.

```
\ifbool{warpingHTML}{
\def\DefaultCutFileName{\def\CommentCutFile{comment_html.cut}}
}{}

```

```
\ifbool{warpingprint}{
\def\DefaultCutFileName{\def\CommentCutFile{comment_print.cut}}
}{}
```

Env warpall Anything in the warpall environment will be generated for print or HTML outputs.

```
\includecomment{warpall}
```

Env warpprint Anything in the warpprint environment will be generated for print output only.

Env warpHTML

For HTML output:

```
\ifbool{warpingHTML}
{\includecomment{warpHTML}}
{\excludecomment{warpHTML}}%

\ifbool{warpingprint}
{\includecomment{warpprint}}
{\excludecomment{warpprint}}
```

Optionally generate a local copy of *lwarpmk*. Default to no.

```
\ifbool{LWR@creatinglwarpmk}
{\includecomment{LWR@createlwarpmk}}
{\excludecomment{LWR@createlwarpmk}}
```

27 Package load order

Several packages should only be loaded before lwarp, and most others should only be loaded after.

Packages which should only be loaded before lwarp have their own

```
lwarp-<packagename>.sty
```

which use \LWR@loadbefore to trigger an error if they are loaded after lwarp. Examples include fontspec, inputenc, inputenx, fontenc, and newunicodechar.

Most packages should be loaded after lwarp. This is enfoced by a large number of \LWR@loadafter statements, below.

Some packages are emulated by memoir, and so these are tested by \LWR@notmemoirloadafter, which does not cause an error if memoir is used.

27.1 Tests of package load order

`\LWR@loadafter` {⟨*packagename*⟩} Error if this package was loaded before lwarp.

```
\newcommand*{\LWR@loadafter}[1]{%
\@ifpackageloaded{#1}
{
\PackageError{lwarp}
{Package #1, or one which uses #1, must be loaded after lwarp}
{Move \detokenize{\usepackage}{#1} after \detokenize{\usepackage}{lwarp}.
Package #1 may also be loaded by something else, which must also be moved
after lwarp.}
}
{}
}
```

`\LWR@notmemoirloadafter` {⟨*packagename*⟩} Error if not memoir class and this package was loaded before lwarp.

memoir emulates many packages, and pretends that they have already been loaded.

```
\@ifclassloaded{memoir}
{\newcommand*{\LWR@notmemoirloadafter}[1]{}}
{\LetLtxMacro\LWR@notmemoirloadafter\LWR@loadafter}
```

`\LWR@loadbefore` {⟨*packagename*⟩} Error if this package is loaded after lwarp.

```
\newcommand*{\LWR@loadbefore}[1]{%
\@ifpackageloaded{#1}
{}
{
\PackageError{lwarp}
{Package #1 must be loaded before lwarp}
{Move \detokenize{\usepackage}{#1} before \detokenize{\usepackage}{lwarp}.}
}
}
```

`\LWR@loadnever` {⟨*badpackagename*⟩} {⟨*replacementpkgname*⟩}

The first packages is not supported, so tell the user to use the second instead.

```
\newcommand*{\LWR@loadnever}[2]{%
\PackageError{lwarp}
{Package #1 is not supported by lwarp's HTML conversion.
Package(s) #2 may be useful instead}
{Package #1 might conflict with lwarp in some way,
```

```
or is superceded by another package.
For a possible alternative, see package(s) #2.}
}
```

`\LWR@earlyloadnever` {⟨*badpackagename*⟩} {⟨*replacementpkgname*⟩}

The first packages is not supported, so tell the user to use the second instead. This version checks immediately for packages which may have been loaded before lwarp.

```
\newcommand*{\LWR@earlyloadnever}[2]{%
\@ifpackageloaded{#1}{%
\PackageError{lwarp}
{Package #1 is not supported by lwarp's HTML conversion.
Package(s) #2 may be useful instead}
{Package #1 might conflict with lwarp in some way,
or is superceded by another package.
For a possible alternative, see package(s) #2.}
}{}%
}
```

27.2 Error for disallowed packages loaded before lwarp

```
\LWR@earlyloadnever{ae}{cm-super, lmodern}
\LWR@earlyloadnever{aecompl}{cm-super, lmodern}
\LWR@earlyloadnever{aecc}{cm-super, lmodern}
\LWR@earlyloadnever{boxedminipage}{boxedminipage2e}
\LWR@earlyloadnever{caption2}{caption}
% \LWR@earlyloadnever{ccaption}{caption}% might be preloaded by memoir
\@ifpackageloaded{xeCJK}{}{
    \LWR@earlyloadnever{CJK}{ctex, xeCJK}
    \LWR@earlyloadnever{CJKutf8}{ctex, xeCJK}
}
\LWR@earlyloadnever{fancyheadings}{fancyhdr}
\LWR@earlyloadnever{glossary}{glossaries}
\LWR@earlyloadnever{t1enc}{fontenc, inputenc, inputenx}
\LWR@earlyloadnever{wasysym}{textcomp, amssymb, amsfonts, mnsymbol, fdsymbol}
```

27.3 Enforcing package loading after lwarp

Packages which should only be loaded after lwarp are tested here to trip an error of they have already been loaded.

The following packages must be loaded after lwarp:

```
\LWR@loadafter{2in1}
```

```
\LWR@loadafter{2up}
\LWR@loadafter{a4}
\LWR@loadafter{a4wide}
\LWR@loadafter{a5comb}
\LWR@notmemoirloadafter{abstract}
\LWR@loadafter{accsupp}
\LWR@loadafter{acro}
\LWR@loadafter{acronym}
\LWR@loadafter{adjmulticol}
\LWR@loadafter{addlines}
\LWR@loadafter{ae}
\LWR@loadafter{aecc}
\LWR@loadafter{afterpage}
\LWR@loadafter{algorithm2e}
\LWR@loadafter{algorithmicx}
\LWR@loadafter{alltt}
\LWR@loadafter{amsmath}
\LWR@loadafter{amsthm}
\LWR@loadafter{anonchap}
\LWR@loadafter{anysize}
\LWR@notmemoirloadafter{appendix}
\LWR@loadafter{arabicfront}
\LWR@notmemoirloadafter{array}
\LWR@loadafter{arydshln}
\LWR@loadafter{asymptote}
% \LWR@loadafter{atbegshi}% used by morewrites
\LWR@loadafter{attachfile}
\LWR@loadafter{attachfile2}
\LWR@loadafter{authblk}
\LWR@loadafter{axessibility}
\LWR@loadafter{axodraw2}
\LWR@loadafter{backref}
\LWR@loadafter{balance}
\LWR@loadafter{bigdelim}
\LWR@loadafter{bigstrut}
\LWR@loadafter{bitpattern}
\LWR@loadafter{blowup}
\LWR@loadafter{booklet}
\LWR@loadafter{bookmark}
\LWR@notmemoirloadafter{booktabs}
\LWR@loadafter{bophook}
\LWR@loadafter{boxedminipage}
\LWR@loadafter{boxedminipage2e}
\LWR@loadafter{breakurl}
\LWR@loadafter{breqn}
\LWR@loadafter{bxpapersize}
\LWR@loadafter{bytefield}
\LWR@loadafter{cancel}
\LWR@loadafter{canoniclayout}
\LWR@loadafter{caption}
```

```
\LWR@loadafter{caption2}
\LWR@loadafter{cases}
% \LWR@loadafter{ccaption}% may be preloaded by memoir
\LWR@loadafter{changebar}
\LWR@notmemoirloadafter{changepage}
\LWR@notmemoirloadafter{chngpage}
\LWR@loadafter{chappg}
\LWR@loadafter{chapterbib}
\LWR@loadafter{chemfig}
\LWR@loadafter{chemformula}
\LWR@loadafter{chemgreek}
\LWR@loadafter{chemmacros}
\LWR@loadafter{chemnum}
\LWR@loadafter{chkfloat}
\LWR@loadafter{cite}
\LWR@loadafter{cmdtrack}
\LWR@loadafter{color}
\LWR@loadafter{colortbl}
\LWR@loadafter{continue}
\LWR@loadafter{copyrightbox}
\LWR@notmemoirloadafter{crop}
% ctex must be loaded before lwarp
\LWR@loadafter{cuted}
\LWR@loadafter{cutwin}
\LWR@loadafter{dblfloatfix}
\LWR@loadafter{dblfnote}
\LWR@notmemoirloadafter{dcolumn}
\LWR@loadafter{diagbox}
\LWR@loadafter{dprogress}
\LWR@loadafter{draftcopy}
\LWR@loadafter{draftfigure}
\LWR@loadafter{draftwatermark}
\LWR@loadafter{easy-todo}
\LWR@loadafter{ebook}
\LWR@loadafter{ellipsis}
\LWR@loadafter{emptypage}
\LWR@loadafter{endfloat}
\LWR@loadafter{endheads}
\LWR@loadafter{endnotes}
\LWR@notmemoirloadafter{enumerate}
\LWR@loadafter{enumitem}
\LWR@notmemoirloadafter{epigraph}
\LWR@loadafter{epsfig}
\LWR@loadafter{epstopdf}
\LWR@loadafter{epstopdf-base}
\LWR@loadafter{errata}
\LWR@loadafter{eso-pic}
\LWR@loadafter{everypage}
\LWR@loadafter{everyshi}
\LWR@loadafter{extramarks}
```

```
\LWR@loadafter{fancybox}
\LWR@loadafter{fancyhdr}
\LWR@loadafter{fancyheadings}
\LWR@loadafter{fancyref}
\LWR@loadafter{fancytabs}
\LWR@loadafter{fancyvrb}
\LWR@loadafter{figcaps}
\LWR@loadafter{figsize}
\LWR@loadafter{fix2col}
\LWR@loadafter{fixme}
\LWR@loadafter{fixmetodonotes}
\LWR@loadafter{flafter}
\LWR@loadafter{flippdf}
\LWR@loadafter{float}
\LWR@loadafter{floatflt}
\LWR@loadafter{floatpag}
\LWR@loadafter{floatrow}
\LWR@loadafter{fltrace}
\LWR@loadafter{flushend}
\LWR@loadafter{fnbreak}
\LWR@loadafter{fncychap}
\LWR@loadafter{fnlineno}
\LWR@loadafter{fnpos}
% fontenc must be loaded before lwarp
% fontspec must be loaded before lwarp
\LWR@loadafter{footmisc}
\LWR@loadafter{footnote}
\LWR@loadafter{footnotehyper}
\LWR@loadafter{footnpag}
\LWR@loadafter{forest}
\LWR@loadafter{framed}
\LWR@loadafter{ftnright}
\LWR@loadafter{fullminipage}
\LWR@loadafter{fullpage}
\LWR@loadafter{fullwidth}
\LWR@loadafter{fwlw}
\LWR@loadafter{geometry}
\LWR@loadafter{glossaries}
% \LWR@loadafter{graphics}% pre-loaded by xunicode
% \LWR@loadafter{graphicx}% pre-loaded by xunicode
\LWR@loadafter{glossary}
\LWR@loadafter{grffile}
\LWR@loadafter{grid}
\LWR@loadafter{grid-system}
\LWR@loadafter{gridset}
\LWR@loadafter{hang}
\LWR@loadafter{hanging}
\LWR@loadafter{hypcap}
\LWR@loadafter{hypdestopt}
\LWR@loadafter{hypernat}
```

```
\LWR@loadafter{hyperref}
\LWR@loadafter{hyperxmp}
\LWR@loadafter{hyphenat}
\LWR@loadafter{idxlayout}
\LWR@loadafter{ifoddpage}
\LWR@loadafter{imakeidx}
\LWR@loadafter{indentfirst}
\LWR@notmemoirloadafter{index}
% inputenc must be loaded before lwarp
% inputenx must be loaded before lwarp
\LWR@loadafter{intopdf}
\LWR@loadafter{keyfloat}
\LWR@loadafter{layaureo}
\LWR@loadafter{layout}
\LWR@loadafter{leading}
\LWR@loadafter{letterspace}
\LWR@loadafter{lettrine}
\LWR@loadafter{lineno}
\LWR@loadafter{lips}
\LWR@loadafter{listings}
\LWR@loadafter{longtable}
\LWR@loadafter{lscape}
\LWR@loadafter{ltablex}
\LWR@loadafter{ltcaption}
\LWR@loadafter{ltxgrid}
\LWR@loadafter{ltxtable}
\LWR@loadafter{lua-check-hyphen}
\LWR@loadafter{lua-visual-debug}
\LWR@loadafter{luacolor}
\LWR@loadafter{luatodonotes}
\LWR@loadafter{magaz}
\LWR@notmemoirloadafter{makeidx}
\LWR@loadafter{marginfit}
\LWR@loadafter{marginfix}
\LWR@loadafter{marginnote}
\LWR@loadafter{mcaption}
\LWR@loadafter{mdframed}
\LWR@loadafter{memhfixc}
\LWR@loadafter{metalogo}
\LWR@loadafter{mhchem}
\LWR@loadafter{microtype}
\LWR@loadafter{midfloat}
\LWR@loadafter{midpage}
\LWR@loadafter{morefloats}
\LWR@notmemoirloadafter{moreverb}
% morewrites must be loaded before lwarp
\LWR@notmemoirloadafter{mparhack}
%\LWR@loadafter{multicol}% loaded by ltxdoc
\LWR@loadafter{multirow}
\LWR@loadafter{multitoc}
```

```
\LWR@loadafter{musicography}
\LWR@loadafter{nameref}
\LWR@loadafter{natbib}
\LWR@notmemoirloadafter{nccfancyhdr}
\LWR@notmemoirloadafter{needspace}
% newclude must be loaded before lwarp
\LWR@loadafter{newtxmath}
% newunicodechar must be loaded before lwarp
\LWR@notmemoirloadafter{nextpage}
\LWR@loadafter{nicefrac}
\LWR@loadafter{nonfloat}
\LWR@loadafter{nonumonpart}
\LWR@loadafter{nopageno}
\LWR@loadafter{notespages}
\LWR@loadafter{nowidow}
\LWR@loadafter{ntheorem}
\LWR@loadafter{octave}
\LWR@loadafter{overpic}
\LWR@loadafter{pagegrid}
\LWR@notmemoirloadafter{pagenote}
\LWR@loadafter{pagesel}
\LWR@loadafter{paralist}
\LWR@loadafter{parnotes}
\LWR@notmemoirloadafter{parskip}
\LWR@loadafter{pbox}
\LWR@loadafter{pdfcomment}
\LWR@loadafter{pdflscape}
\LWR@loadafter{pdfmarginpar}
\LWR@loadafter{pdfpages}
\LWR@loadafter{pdfprivacy}
\LWR@loadafter{pdfrender}
\LWR@loadafter{pdfsync}
\LWR@loadafter{pdftricks}
\LWR@loadafter{pdfx}
\LWR@loadafter{pfnote}
\LWR@loadafter{phfqit}
\LWR@loadafter{placeins}
\LWR@loadafter{prelim2e}
\LWR@loadafter{prettyref}
\LWR@loadafter{preview}
\LWR@loadafter{psfrag}
\LWR@loadafter{psfragx}
\LWR@loadafter{pst-eps}
\LWR@loadafter{pstool}
\LWR@loadafter{pstricks}
\LWR@loadafter{quotchap}
\LWR@loadafter{quoting}
\LWR@loadafter{ragged2e}
\LWR@loadafter{realscripts}
\LWR@loadafter{refcheck}
```

```
\LWR@loadafter{register}
\LWR@loadafter{relsize}
\LWR@loadafter{repeatindex}
\LWR@loadafter{resizegather}
\LWR@loadafter{romanbar}
\LWR@loadafter{romanbarpagenumber}
\LWR@loadafter{rotating}
\LWR@loadafter{rotfloat}
\LWR@loadafter{rviewport}
\LWR@loadafter{savetrees}
% \LWR@loadafter{scalefnt}% loaded by babel-french
\LWR@loadafter{schemata}
\LWR@loadafter{scrextend}
\LWR@loadafter{scrhack}
\LWR@loadafter{scrlayer}
\LWR@loadafter{scrlayer-notecolumn}
\LWR@loadafter{scrlayer-scrpage}
\LWR@loadafter{section}
\LWR@loadafter{sectionbreak}
\LWR@loadafter{sectsty}
\LWR@loadafter{semantic-markup}
\LWR@notmemoirloadafter{setspace}
\LWR@loadafter{shadow}
\LWR@notmemoirloadafter{showidx}
\LWR@loadafter{showkeys}
\LWR@loadafter{sidecap}
\LWR@loadafter{sidenotes}
\LWR@loadafter{SIunits}
\LWR@loadafter{siunitx}
\LWR@loadafter{soul}
\LWR@loadafter{soulpos}
\LWR@loadafter{soulutf8}
\LWR@loadafter{splitidx}
\LWR@loadafter{srcltx}
\LWR@loadafter{srctex}
\LWR@loadafter{stabular}
\LWR@loadafter{stfloats}
\LWR@loadafter{subfig}
\LWR@loadafter{subfigure}
\LWR@loadafter{supertabular}
\LWR@loadafter{t1inc}
\LWR@loadafter{tabls}
\LWR@notmemoirloadafter{tabularx}
\LWR@loadafter{tabulary}
\LWR@loadafter{textarea}
% \LWR@loadafter{textcomp}% maybe before lwarp with font packages
\LWR@loadafter{textfit}
\LWR@loadafter{textpos}
\LWR@loadafter{theorem}
\LWR@loadafter{thinsp}
```

```
\LWR@loadafter{threadcol}
\LWR@loadafter{threeparttable}
\LWR@loadafter{thumb}
\LWR@loadafter{thumbs}
\LWR@loadafter{tikz}
\LWR@loadafter{titleps}
\LWR@loadafter{titlesec}
\LWR@loadafter{titletoc}
\LWR@notmemoirloadafter{titling}
% \LWR@loadafter{tocbasic}% preloaded by koma-script classes
\LWR@notmemoirloadafter{tocbibind}
\LWR@loadafter{tocenter}
\LWR@notmemoirloadafter{tocloft}
\LWR@loadafter{tocstyle}
\LWR@loadafter{todo}
\LWR@loadafter{todonotes}
\LWR@loadafter{tram}
\LWR@loadafter{transparent}
\LWR@loadafter{trimclip}
\LWR@loadafter{trivfloat}
\LWR@loadafter{turnthepage}
\LWR@loadafter{twoup}

% \LWR@loadafter{typearea}% preloaded by koma-script classes
% \LWR@loadafter{ulem}% preloaded by ctexart and related classes
\LWR@loadafter{underscore}
\LWR@loadafter{units}
\LWR@loadafter{unitsdef}
\LWR@loadafter{upref}
\LWR@loadafter{url}
\LWR@loadafter{uspace}
\LWR@loadafter{varioref}% no lwarp package provided
\LWR@notmemoirloadafter{verse}
\LWR@loadafter{vertbars}
\LWR@loadafter{vmargin}
\LWR@loadafter{vowel}
\LWR@loadafter{vpe}
\LWR@loadafter{vwcol}
\LWR@loadafter{wallpaper}
\LWR@loadafter{wasysym}
\LWR@loadafter{watermark}
\LWR@loadafter{widows-and-orphans}
\LWR@loadafter{wrapfig}
\LWR@loadafter{xbmks}
\LWR@loadafter{xcolor}
\LWR@loadafter{xechangebar}
\LWR@loadafter{xellipsis}
\LWR@loadafter{xfrac}
\LWR@loadafter{xltabular}
```

```
\LWR@loadafter{xltxtra}
\LWR@loadafter{xmpincl}
\LWR@loadafter{xpiano}
\LWR@loadafter{xtab}
% xunicode must be loaded before lwarp
\LWR@loadafter{xurl}
\LWR@loadafter{xy}
\LWR@loadafter{zwpagelayout}
```

28 Required packages

These packages are automatically loaded by lwarp when generating HTML output. Some of them are also automatically loaded when generating print output, but some are not.

for HTML output:

```
\begin{warpHTML}
```

Load fontspec if necessary:

```
\ifxetexorluatex
\@ifpackageloaded{fontspec}{}{
    \usepackage[no-math]{fontspec}
}
```

The monospaced font is used for HTML tags, so turn off its TeX ligatures and common ligatures:

```
\defaultfontfeatures[\rmfamily]{Ligatures={NoCommon,TeX}}
\defaultfontfeatures[\sffamily]{Ligatures={NoCommon,TeX}}
\defaultfontfeatures[\ttfamily]{Ligatures=NoCommon}
\else
```

pdflatex only: Only pre-loaded if *pdflatex* is being used.

Pkg microtype

ligatures Older browsers don't display ligatures. Turn off letter ligatures, keeping LaTeX dash and quote ligatures, which may fail on older browers but at least won't corrupt written words.

```
\RequirePackage {microtype}

\microtypesetup{
    protrusion=false,
    expansion=false,
    tracking=false,
```

```
    kerning=false,
    spacing=false}

\DisableLigatures[f,q,t,T,Q]{encoding = *,family = *}

\fi

\end{warpHTML}
```

Pkg `geometry` Tactics to avoid unwanted page breaks and margin overflow:

- Uses a very long and wide page to minimize page breaks and margin overflow.
- Uses a scriptsize font.
- Uses extra space at the margin to avoid HTML tag overflow off the page.
- Forces a new PDF page before some environments.
- Forces line break between major pieces of long tags.

for HTML output:

```
\begin{warpHTML}
\RequirePackage[paperheight=190in,paperwidth=20in,%
left=2in,right=6in,%
top=1in,bottom=1in,%
]{geometry}
\@twosidefalse
\@mparswitchfalse
\end{warpHTML}
```

for HTML & PRINT:

```
\begin{warpall}
```

Pkg `xparse`

LaTeX3 command argument parsing

```
\RequirePackage{xparse}
```

Pkg `calc`

```
\RequirePackage{calc}

\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

Pkg expl3

LaTeX3 programming

```
\RequirePackage{expl3}
```

Pkg gettitlestring

Used to emulate \nameref.

```
\RequirePackage{gettitlestring}
```

Pkg everyhook

everyhook is used to patch paragraph handling.

```
\RequirePackage{everyhook}
\end{warpHTML}
```

for HTML & PRINT:

```
\begin{warpall}
```

Pkg filecontents

Used to write helper files, done in print mode.

Patched to work with morewrites, per https://tex.stackexchange.com/questions/312830/does-morewrites-not-support-filecontents-and-can-i-write-body-of-environment-us/312910

```
\RequirePackage{filecontents}

\@ifpackagelater{filecontents}{2011/10/09}%
{}
{
\newwrite\fcwrite
\let\LWR@origfilec@ntents\filec@ntents
\def\filec@ntents{\def\chardef##1\write{\let\reserved@c\fcwrite}\LWR@origfilec@ntents}
}

\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

Pkg xifthen

```
\RequirePackage{xifthen}
```

Pkg verbatim

```
\RequirePackage{verbatim}
```

Pkg refcount

Provides \setcounterref, \setcounterpageref, etc.

```
\RequirePackage{refcount}
```

Pkg newfloat

```
\RequirePackage{newfloat}
```

```
\end{warpHTML}
```

for HTML & PRINT:

```
\begin{warpall}
```

Pkg xstring

```
\RequirePackage{xstring}
```

Pkg environ Used to encapsulate math environments for re-use in HTML <alt> text.

```
\RequirePackage{environ}
```

```
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

Pkg zref Used for cross-references.

```
\RequirePackage{zref}
```

Pkg printlen Used to convert lengths for image width/height options.

```
\RequirePackage{printlen}
```

\LWR@printlength {⟨*length*⟩}

Prints a length using a locally-controlled unit and space. Rounding is used unless the length is small.

```
\newrobustcmd*{\LWR@printlength}[1]{%
\begingroup%
\uselengthunit{PT}%
\renewcommand*{\unitspace}{}%
```

```
\ifdimless{#1}{10pt}{%
    \printlength{#1}%
}{%
    \rndprintlength{#1}%
}%
\endgroup%
}

\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
```

Pkg `varwidth` Used for print-mode `lateximage`:

```
\RequirePackage{varwidth}

\end{warpprint}
```

29 Loading packages

for HTML output:

```
\begin{warpHTML}
```

Remember the original `\RequirePackage`:

```
\LetLtxMacro\LWR@origRequirePackage\RequirePackage
```

`\LWR@requirepackagenames` Stores the list of required package names.

```
\newcommand*{\LWR@requirepackagenames}{}
```

`\LWR@parsedrequirepackagenames` Stores the parsed list of required package names after spaces are removed and `lwarp-` is prepended.

```
\newcommand*{\LWR@parsedrequirepackagenames}{}
```

`\LWR@findword` `[`⟨*1: separator*⟩`]` `{`⟨*2: list*⟩`}` `{`⟨*3: index*⟩`}` `[`⟨*4: destination*⟩`]`

Note that argument 4 is passed directly to `\StrBetween`.

```
\newcommand*\LWR@findword[3][,]{%
    \StrBetween[#3,\numexpr#3+1]{#1#2#1}{#1}{#1}%
}
```

\LWR@lookforpackagename {⟨*index*⟩}

If this is an lwarp-supported package name, re-direct it to the lwarp version by renaming it `lwarp-` followed by the original name.

Looks `index` deep into the list of package names, `\LWR@requirepackagenames`, and builds `\LWR@parsedrequirepackagenames` which is the modified list of names.

```
\newcommand*{\LWR@lookforpackagename}[1]{%
```

Find the `index`'th package name from the list:

```
\LWR@findword{\LWR@requirepackagenames}{#1}[\LWR@strresult]%
```

Remove blanks. The original name with blanks is in `LWR@strresult` and the final name with no blanks goes into `LWR@strresulttwo`.

```
\StrSubstitute[100]{\LWR@strresult}{ }{}[\LWR@strresulttwo]%
```

See if the package name was found:

```
\IfStrEq{\LWR@strresulttwo}{}%
{%
}% no filename
{% yes filename
```

If found, and if an lwarp-equivalent name exists, use `lwarp-*` instead.

```
    \IfFileExists{lwarp-\LWR@strresulttwo.sty}%
    {% lwarp-* file found
        \ifdefvoid{\LWR@parsedrequirepackagenames}{%
            \edef\LWR@parsedrequirepackagenames{lwarp-\LWR@strresulttwo}%
        }{%
            \edef\LWR@parsedrequirepackagenames{%
                \LWR@parsedrequirepackagenames,lwarp-\LWR@strresulttwo%
            }%
        }%
    }%
    {%


        \ifdefvoid{\LWR@parsedrequirepackagenames}{%
            \edef\LWR@parsedrequirepackagenames{\LWR@strresulttwo}%
        }{%
            \edef\LWR@parsedrequirepackagenames{%
                \LWR@parsedrequirepackagenames,\LWR@strresulttwo%
            }%
        }%
    }% no lwarp-* file
```

```
}% yes filename
}
```

`\RequirePackage` `[`⟨*1: options*⟩`] {`⟨*2: package names*⟩`} [`⟨*3: version*⟩`]`

For each of many package names in a comma-separated list, if an lwarp version of a package exists, select it instead of the LaTeX version.

```
\RenewDocumentCommand{\RequirePackage}{o m o}{%
```

Redirect up to twenty names:[16]

```
\renewcommand*{\LWR@requirepackagenames}{#2}%
\renewcommand*{\LWR@parsedrequirepackagenames}{}%
\LWR@lookforpackagename{1}%
\LWR@lookforpackagename{2}%
\LWR@lookforpackagename{3}%
\LWR@lookforpackagename{4}%
\LWR@lookforpackagename{5}%
\LWR@lookforpackagename{6}%
\LWR@lookforpackagename{7}%
\LWR@lookforpackagename{8}%
\LWR@lookforpackagename{9}%
\LWR@lookforpackagename{10}%
\LWR@lookforpackagename{11}%
\LWR@lookforpackagename{12}%
\LWR@lookforpackagename{13}%
\LWR@lookforpackagename{14}%
\LWR@lookforpackagename{15}%
\LWR@lookforpackagename{16}%
\LWR@lookforpackagename{17}%
\LWR@lookforpackagename{18}%
\LWR@lookforpackagename{19}%
\LWR@lookforpackagename{20}%
```

`\RequirePackage` depending on the options and version:

```
\IfValueTF{#1}%
{% options given
    \IfValueTF{#3}% version given?
    {\LWR@origRequirePackage[#1]{\LWR@parsedrequirepackagenames}[#3]}%
    {\LWR@origRequirePackage[#1]{\LWR@parsedrequirepackagenames}}%
}%
{% no options given
    \IfValueTF{#3}% version given?
    {\LWR@origRequirePackage{\LWR@parsedrequirepackagenames}[#3]}%
```

[16] This was originally nine names, but then I came across a package which used twelve...

```
    {\LWR@origRequirePackage{\LWR@parsedrequirepackagenames}}%
}%
}
\LetLtxMacro\usepackage\RequirePackage
```

\LWR@ProvidesPackagePass {⟨*pkgname*⟩} [⟨*version*⟩]

Uses the original package, including options.

```
\NewDocumentCommand{\LWR@ProvidesPackagePass}{m o}{
\PackageInfo{lwarp}{Using package ‘#1’ and adding lwarp modifications, including options,}%
\IfValueTF{#2}
{\ProvidesPackage{lwarp-#1}[#2]}
{\ProvidesPackage{lwarp-#1}}
\DeclareOption*{\PassOptionsToPackage{\CurrentOption}{#1}}
\ProcessOptions\relax
\IfValueTF{#2}
{\LWR@origRequirePackage{#1}[#2]}
{\LWR@origRequirePackage{#1}}
```

In some cases, the following seems to be required to avoid an “unknown option” error, such as when loading xcolor with options.

```
\DeclareOption*{}%
\ProcessOptions\relax
}
```

\LWR@ProvidesPackageDrop {⟨*pkgname*⟩} [⟨*version*⟩]

Ignores the original package and uses lwarp’s version instead. Drops/discards all options.

```
\NewDocumentCommand{\LWR@ProvidesPackageDrop}{m o}{
\PackageInfo{lwarp}{Replacing package ‘#1’ with the lwarp version, discarding options,}%
\IfValueTF{#2}
{\ProvidesPackage{lwarp-#1}[#2]}
{\ProvidesPackage{lwarp-#1}}
```

Ignore all options.

```
\DeclareOption*{}
```

Nullifies then processes the options. Seems to be required when options contain curly braces, which were causing “`Missing \begin{document}`”.

```
% \ProcessOptions\relax% original LaTeX code
\let\ds@\@empty%         from the original \ProcessOptions
```

```
\edef\@curroptions{}%    lwarp modification to \ProcessOptions
\@process@ptions\relax%  from the original \ProcessOptions
}

\end{warpHTML}
```

30 Additional required packages

for HTML output:

```
\begin{warpHTML}
```

Pkg caption

```
\RequirePackage{caption}%

\end{warpHTML}
```

31 File handles

Defines file handles for writes.

for HTML & PRINT:

```
\begin{warpall}
```

`\LWR@quickfile` For quick temporary use only. This is reused in several places.

```
\newwrite\LWR@quickfile%

\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

`\LWR@lateximagesfile` For `lateximages.txt`.

```
\newwrite\LWR@lateximagesfile

\end{warpHTML}
```

32 Include a file

During HTML output, `\include{<filename>}` causes the following to occur:

1. lwarp creates `<filename>_html_inc.tex` whose contents are:
   ```
   \input <filename>.tex
   ```
2. `<filename>_html_inc.tex` is then `\included` instead of `<filename>.tex`.
3. `<filename>_html_inc.aux` is automatically generated and used by LaTeX.

for HTML output:
```
\begin{warpHTML}
```

`\include` {⟨*filename*⟩}

`\@include` {⟨*filename*⟩} Modified to load `_html_inc` files.

```
\def\@include#1 {%
\immediate\openout\LWR@quickfile #1_html_inc.tex% lwarp
\immediate\write\LWR@quickfile{\string\input{#1.tex}}% lwarp
\immediate\closeout\LWR@quickfile% lwarp
\LWR@origclearpage% \changed
\if@filesw
    \immediate\write\@mainaux{\string\@input{#1_html_inc.aux}}% changed
\fi
\@tempswatrue
\if@partsw
    \@tempswafalse
    \edef\reserved@b{#1}%
    \@for\reserved@a:=\@partlist\do
    {\ifx\reserved@a\reserved@b\@tempswatrue\fi}%
\fi
\if@tempswa
    \let\@auxout\@partaux
    \if@filesw
        \immediate\openout\@partaux #1_html_inc.aux % changed
        \immediate\write\@partaux{\relax}%
    \fi
    \@input@{#1_html_inc.tex}% changed
    \LWR@origclearpage% changed
    \@writeckpt{#1}%
    \if@filesw
        \immediate\closeout\@partaux
    \fi
\else
    \deadcycles\z@
```

```
    \@nameuse{cp@#1}%
\fi
\let\@auxout\@mainaux%
}

\end{warpHTML}
```

33 Copying a file

for HTML output:

```
\begin{warpHTML}
```

`\LWR@copyfile` {⟨*source filename*⟩} {⟨*destination filename*⟩}

Used to copy the `.toc` file to `.sidetoc` to re-print the TOC in the sideTOC navigation pane.

```
\newwrite\LWR@copyoutfile  % open the file to write to
\newread\LWR@copyinfile      % open the file to read from

\newcommand*{\LWR@copyfile}[2]{%
\LWR@traceinfo{LWR@copyfile: copying #1 to #2}

\immediate\openout\LWR@copyoutfile=#2
\openin\LWR@copyinfile=#1
\begingroup\endlinechar=-1
\makeatletter

\LWR@traceinfo{LWR@copyfile: about to loop}

\loop\unless\ifeof\LWR@copyinfile
  \LWR@traceinfo{LWR@copyfile: one line}
  \read\LWR@copyinfile to\LWR@fileline  % Read one line and store it into \LWR@fileline
%   \LWR@fileline\par                   % print the content into the pdf
% print the content:
  \immediate\write\LWR@copyoutfile{\unexpanded\expandafter{\LWR@fileline}}%
\repeat
\immediate\closeout\LWR@copyoutfile
\LWR@traceinfo{LWR@copyfile: done}
\endgroup
}

\end{warpHTML}
```

34 Debugging messages

HTML comments

To have the HTML output include additional HTML comments, such as which `<div>` is closing, use

```
\booltrue{HTMLDebugComments}
```

debugging information

To have debug information written to the log, use

```
\tracinglwarp
```

for HTML & PRINT:

```
\begin{warpall}
```

Bool `LWR@tracinglwarp`

True if tracing is turned on.

```
\newbool{LWR@tracinglwarp}
```

`\tracinglwarp`

Turns on the debug tracing messages.

```
\newcommand{\tracinglwarp}{\booltrue{LWR@tracinglwarp}}
```

`\LWR@traceinfo` `{`⟨*text*⟩`}`

If tracing is turned on, writes the text to the `.log` file.

```
\newcommand{\LWR@traceinfo}[1]{%
\ifbool{LWR@tracinglwarp}%
{%
    \typeout{*** lwarp: #1}%
}%
{}%
}
```

Bool `HTMLDebugComments`

Default: `false`

Add comments in HTML about closing `<div>`s, sections, etc.

```
\newbool{HTMLDebugComments}
\boolfalse{HTMLDebugComments}
```

If `\tracinglwarp`, show where preamble hooks occur:

```
\AfterEndPreamble{
\LWR@traceinfo{AfterEndPreamble}
}

\AtBeginDocument{
\LWR@traceinfo{AtBeginDocument}
}
```

```
\end{warpall}
```

35 Defining print and HTML versions of macros and environments

The following refers to defining objects inside lwarp, and is not for the user's document.

Many macros and environments must be provided as both print and HTML versions.

While generating the print version of a document, the original macros as defined by LaTeX and its packages are used as-is.

While generating the HTML version of a document, the original macro or environment is redefined to call a new HTML version or a copy of the original print version. The new HTML versions of macros and environments are used most of the time. Copies of the print versions are used inside a `latexmage` environment, which draws and remembers an image of the printed output, and also several other places. The copies of the print versions may also be used by the HTML versions, such as when the HTML version merely encloses the print version inside HTML tags.

The general structure for providing print and HTML versions of a macro or environment is as follows:

For a preexisting macro, not defined with xparse: An HTML version is provided with a special name, inside a `warpHTML` environment, then `\LWR@formatted` is used to redefine and patch various macros:

```
\begin{warpHTML}
\newcommand{\LWR@HTML@name}{...}% may also use xparse

\LWR@formatted{name}
\end{warpHTML}
```

`\LWR@formatted{name}` copies the original print version, then redefines `\name` to use either the print or HTML version depending on which mode lwarp is using. xparse may be used to define the new HTML version, even if the original did not use xparse.

For a preexisiting environment, not defined with xparse: The process is similar. Note the use of `\LWR@formattedenv` instead of `\LWR@formatted`.

```
\begin{warpHTML}
\newenvironment{LWR@HTML@name}{...}% may also use xparse

\LWR@formattedenv{name}
\end{warpHTML}
```

If the original used xparse: A copy must be made using a new name:

```
\begin{warpHTML}
\NewDocumentCommand{\LWR@print@name}{..}{..}% copy the original

\NewDocumentCommand{\LWR@HTML@name}{..}{..}% or use \newcommand

\LWR@formatted{name}
\end{warpHTML}
```

Similar for an environment, using `\LWR@formattedenv`. (`\LWR@formatted` and `\LWR@formattedenv` use `\LetLtxMacro` to copy the original print definiton, which may not work with macros and environments created by xparse, so the print version must be manually recreated in the lwarp source.)

For a new macro or environment, not using xparse for the print version:

```
\begin{warpall}
\newcommand{\name}{...}% NOT xparse!
\end{warpall}

\begin{warpHTML}
\newcommand{\LWR@HTML@name}{...}% may use xparse for HTML

\LWR@formatted{name}
\end{warpHTML}
```

Similar for an environment. The plain `\name` or environment `name` is used for the printed version, and is placed inside `warpall`. xparse may be used for the `\LWR@HTML@<name>` version.

For a new macro or environment, using xparse: It is possible to use xparse for an entirely new macro or environment by defining the `\LWR@print@<name>` version with xparse, along with `\name` defined without xparse to refer directly to the `\LWR@print` version:

```
\begin{warpall}
\NewDocumentCommand{\LWR@print@name}{...} {...}%      -or-
\NewDocumentEnvironment{\LWR@print@name}{...} {...} {...}
```

```
% Simply a call to \LWR@print@name:
\newcommand{\name}{\LWR@print@name}%        -or-
\newenvironment{name}{\LWR@print@name}{\endLWR@print@name}
\end{warpall}

\begin{warpHTML}
\NewDocumentCommand{\LWR@HTML@name}{...} {...}%      -or-
\NewDocumentEnvironment{\LWR@HTML@name}{...} {...} {...}

\LWR@formatted{name}%    -or-
\LWR@formattedenv{name}
\end{warpHTML}
```

In general, `\LWR@formatted` or `\LWR@formattedenv` are placed inside a `warpHTML` environment, and while producing an HTML document they do the following:

- Macros are modified:
  1. The pre-existing print version `\name` is saved as `\LWR@print@<name>`, unless `\LWR@print@<name>` is already defined.
  2. The original `\name` is redefined to call either the print or HTML version depending on which format is in use at the moment, as set by `\LWR@formatting`, which is defined as either "`print`" or "`HTML`".
- When lwarp is producing a print document, the original definitions are used, as well as any new definitions defined in `warpall` above.
- When lwarp is generating HTML output, `\LWR@formatting` is set to "`HTML`", and `\name` is directed to `\LWR@HTML@<name>`.
- When lwarp is generating HTML output but enters a `lateximage` environment, or for some other reason needs to draw images using the original print defintions, `\LWR@formatting` is changed to "`print`" and `\name` is then redirected to `\LWR@print@<name>`, which was the original `\name`.

Since arguments are not handled by the new `\name`, any star and other arguments are processed by the print or HTML version.

Expandable versions are also provided as well. These usually are necessary for anything which could appear inside a `tabular`, without which a "`Misplaced \omit`" error may occur.

⚠ Misplaced `\omit` error

```
\LWR@expandableformatted
\LWR@expandableformattedenv
```

(Older versions of lwarp used \LetLtxMacro for everything, but this could fail when using macros defined by xparse. This older system is still in use for many definitions.)

for HTML output:

```
\begin{warpHTML}
```

\LWR@formatting Remembers if selected print/HTML formatting.

Used while \LWR@restoreorigformatting, such as in an lateximage. May be set to either "print" or "HTML".

```
\newcommand*{\LWR@formatting}{HTML}
```

\LWR@formatted {⟨*macroname*⟩} No backslash in the macro name.

If not yet defined, defines \LWR@print@<name> as the original print-mode \<name>. Also redefines \<name> to use \LWR@<format>@<name>, where <format> is set by \LWR@formatting, and is print or HTML.

```
\newcommand*{\LWR@formatted}[1]{%
    \ifcsundef{LWR@print@#1}{%
        \expandafter\LetLtxMacro\csname LWR@print@#1\expandafter\endcsname%
            \csname#1\endcsname%
    }{}%
    \ifcsundef{#1}{%
        \expandafter\newrobustcmd\csname #1\endcsname{%
            \@nameuse{LWR@\LWR@formatting @#1}%
        }%
    }{%
        \expandafter\renewrobustcmd\csname #1\endcsname{%
            \@nameuse{LWR@\LWR@formatting @#1}%
        }%
    }%
}
```

\LWR@expandableformatted {⟨*macroname*⟩} No backslash in the macro name.

An expandable version of \LWR@formatted.

```
\newcommand*{\LWR@expandableformatted}[1]{%
    \ifcsundef{LWR@print@#1}{%
        \expandafter\LetLtxMacro\csname LWR@print@#1\expandafter\endcsname%
            \csname#1\endcsname%
    }{}%
    \ifcsundef{#1}{%
        \expandafter\newcommand\csname #1\endcsname{%
            \@nameuse{LWR@\LWR@formatting @#1}%
        }%
```

```
    }{%
        \expandafter\renewcommand\csname #1\endcsname{%
            \@nameuse{LWR@\LWR@formatting @#1}%
        }%
    }%
}
```

`\LWR@formattedenv` {⟨*environmentname*⟩}

If not yet defined, defines the environment `LWR@print@<name>` as the original print-mode `<name>`. Also redefines the environment `<name>` to use environment `LWR@<format>@<name>`, where <format> is set by `\LWR@formatting`, and is `print` or `HTML`.

```
\newcommand*{\LWR@formattedenv}[1]{%
    \ifcsundef{LWR@print@#1}{%
        \expandafter\LetLtxMacro\csname LWR@print@#1\expandafter\endcsname%
            \csname#1\endcsname%
        \csletcs{endLWR@print@#1}{end#1}%
    }{}%
    \DeclareDocumentEnvironment{#1}{}%
    {\@nameuse{LWR@\LWR@formatting @#1}}%
    {\@nameuse{endLWR@\LWR@formatting @#1}}%
}
```

`\LWR@expandableformattedenv` {⟨*environmentname*⟩}

An expandable version of `LWR@formattedenv`.

```
\newcommand*{\LWR@expandableformattedenv}[1]{%
    \ifcsundef{LWR@print@#1}{%
        \expandafter\LetLtxMacro\csname LWR@print@#1\expandafter\endcsname%
            \csname#1\endcsname%
        \csletcs{endLWR@print@#1}{end#1}%
    }{}%
    \DeclareExpandableDocumentEnvironment{#1}{}%
    {\@nameuse{LWR@\LWR@formatting @#1}}%
    {\@nameuse{endLWR@\LWR@formatting @#1}}%
}

\end{warpHTML}
```

36 HTML-conversion output modifications

These booleans modify the HTML output in various ways to improve conversion to EPUB or word processor imports.

for HTML & PRINT:

```
\begin{warpall}
```

36.1 User-level controls

Bool `FormatEPUB`
Default: `false`

Changes HTML output for easy EPUB conversion via an external program. Removes per-file headers, footers, and nav. Adds footnotes per chapter/section.

```
\newbool{FormatEPUB}
\boolfalse{FormatEPUB}
```

Bool `FormatWP`
Default: `false`

Changes HTML output for easier conversion by a word processor. Removes headers and nav, prints footnotes per section, and also forces single-file output and turns off HTML debug comments.

```
\newbool{FormatWP}
\boolfalse{FormatWP}
```

Bool `WPMarkFloats`
Default: `false`

Adds

```
=== begin table ===
...
=== end ===
```

or

```
=== begin figure ===
...
=== end ===
```

around floats while formatting for word processors. This helps identify boundaries of floats to be manually converted to word-processor frames and captions. [17]

```
\newbool{WPMarkFloats}
\boolfalse{WPMarkFloats}
```

Bool `WPMarkMinipages`
Default: `false`

Adds

```
=== begin minipage ===
...
=== end minipage ===
```

[17] Perhaps some day word processors will have HTML import options for identifying `<figure>` and `<figcaption>` tags for figures and tables.

around minipages while formatting for word processors. This helps identify boundaries of minipages to be manually converted to word-processor frames.

```
\newbool{WPMarkMinipages}
\boolfalse{WPMarkMinipages}
```

Bool `WPMarkTOC` Default: `true`

While formatting for word processors, adds

```
=== table of contents ===
```

where the Table of Contents would have been. This helps identify where to insert the actual TOC.

If set `false`, the actual TOC is printed instead.

```
\newbool{WPMarkTOC}
\booltrue{WPMarkTOC}
```

Bool `WPMarkLOFT` Default: `false`

While formatting for word processors, adds

```
=== list of figures ===
=== list of tables ===
```

and / or

where each of these lists would have been. This helps identify where to insert the actual lists.

If set `false`, the actual lists are printed instead.

```
\newbool{WPMarkLOFT}
\boolfalse{WPMarkLOFT}
```

Bool `WPMarkMath` Default: `false`

While formatting for word processors, prints math as LaTeX code instead of creating SVG images or MathJax. This is useful for cut/paste into the *LibreOffice Writer TeXMaths* extension.

```
\newbool{WPMarkMath}
\boolfalse{WPMarkMath}
```

Bool `WPTitleHeading` Default: `false`

While formatting for word processors, `true` sets the document title to `<h1>`, which is expected for HTML documents, but also causes the lower-level section headings to start at **Heading 2** when imported into LibreOffice. Set to `false` to cause the title to be plain text, and the section headings to begin at **Heading 1**.

See table 8 on page 187.

```
\newbool{WPTitleHeading}
\boolfalse{WPTitleHeading}
```

```
\end{warpall}
```

36.2 Heading adjustments

If formatting the HTML for a word processor, adjust heading levels.

If `WPTitleHeading` is true, adjust so that `part` is **Heading 1**.

If `WPTitleHeading` is false, use `<h1>` for the title, and set `part` to **Heading 2**.

for HTML output:

```
\begin{warpHTML}

\AtBeginDocument{
\ifbool{FormatWP}{
\@ifundefined{chapter}{
\ifbool{WPTitleHeading}{% part and section starting at h2
\renewcommand*{\LWR@tagtitle}{h1}
\renewcommand*{\LWR@tagtitleend}{/h1}
\renewcommand*{\LWR@tagpart}{h2}
\renewcommand*{\LWR@tagpartend}{/h2}
\renewcommand*{\LWR@tagsection}{h3}
\renewcommand*{\LWR@tagsectionend}{/h3}
\renewcommand*{\LWR@tagsubsection}{h4}
\renewcommand*{\LWR@tagsubsectionend}{/h4}
\renewcommand*{\LWR@tagsubsubsection}{h5}
\renewcommand*{\LWR@tagsubsubsectionend}{/h5}
\renewcommand*{\LWR@tagparagraph}{h6}
\renewcommand*{\LWR@tagparagraphend}{/h6}
\renewcommand*{\LWR@tagsubparagraph}{span class="subparagraph"}
\renewcommand*{\LWR@tagsubparagraphend}{/span}
}% WPTitleHeading
{% not WPTitleHeading, part and section starting at h1
\renewcommand*{\LWR@tagtitle}{div class="title"}
\renewcommand*{\LWR@tagtitleend}{/div}
\renewcommand*{\LWR@tagpart}{h1}
\renewcommand*{\LWR@tagpartend}{/h1}
\renewcommand*{\LWR@tagsection}{h2}
\renewcommand*{\LWR@tagsectionend}{/h2}
\renewcommand*{\LWR@tagsubsection}{h3}
\renewcommand*{\LWR@tagsubsectionend}{/h3}
\renewcommand*{\LWR@tagsubsubsection}{h4}
\renewcommand*{\LWR@tagsubsubsectionend}{/h4}
\renewcommand*{\LWR@tagparagraph}{h5}
\renewcommand*{\LWR@tagparagraphend}{/h5}
\renewcommand*{\LWR@tagsubparagraph}{h6}
\renewcommand*{\LWR@tagsubparagraphend}{/h6}
}% not WPTitleHeading
}% chapter undefined
```

```
{% chapter defined
\ifbool{WPTitleHeading}{}
{% not WPTitleHeading, part and chapter starting at h1
\renewcommand*{\LWR@tagtitle}{div class="title"}
\renewcommand*{\LWR@tagtitleend}{/div}
\renewcommand*{\LWR@tagpart}{h1}
\renewcommand*{\LWR@tagpartend}{/h1}
\renewcommand*{\LWR@tagchapter}{h2}
\renewcommand*{\LWR@tagchapterend}{/h2}
\renewcommand*{\LWR@tagsection}{h3}
\renewcommand*{\LWR@tagsectionend}{/h3}
\renewcommand*{\LWR@tagsubsection}{h4}
\renewcommand*{\LWR@tagsubsectionend}{/h4}
\renewcommand*{\LWR@tagsubsubsection}{h5}
\renewcommand*{\LWR@tagsubsubsectionend}{/h5}
\renewcommand*{\LWR@tagparagraph}{h6}
\renewcommand*{\LWR@tagparagraphend}{/h6}
\renewcommand*{\LWR@tagsubparagraph}{span class="subparagraph"}
\renewcommand*{\LWR@tagsubparagraphend}{/span}
}% not WPTitleHeading
}% chapter defined
}{}% FormatWP
}% AtBeginDocument

\end{warpHTML}
```

37 Remembering original formatting macros

for HTML output:

```
\begin{warpHTML}
```

Remember original definitions of formatting commands. Will be changed to HTML commands for most uses. Will be temporarily restored to original meaning inside any lateximage environment. Also nullify unused commands.

Some packages redefine \#, which is used to generate HTML, so the original must be remembered here.

```
\chardef\LWR@origpound=`\#

\let\LWR@origcomma\,
\let\LWR@origthinspace\thinspace
\let\LWR@orignegthinspace\negthinspace
\let\LWR@origtilde~
\let\LWR@origenskip\enskip
\let\LWR@origquad\quad
\let\LWR@origqquad\qquad
```

```
\let\LWR@orighfil\hfil
\let\LWR@orighss\hss
\let\LWR@origllap\llap
\let\LWR@origrlap\rlap
\let\LWR@orighfilneg\hfilneg

\let\LWR@origmedskip\medskip
\let\LWR@origbigskip\bigskip

\let\LWR@origtextellipsis\textellipsis

\LetLtxMacro\LWR@origrmfamily\rmfamily
\LetLtxMacro\LWR@origsffamily\sffamily
\LetLtxMacro\LWR@origttfamily\ttfamily
\LetLtxMacro\LWR@origbfseries\bfseries
\LetLtxMacro\LWR@origmdseries\mdseries
\LetLtxMacro\LWR@origupshape\upshape
\LetLtxMacro\LWR@origslshape\slshape
\LetLtxMacro\LWR@origscshape\scshape
\LetLtxMacro\LWR@origitshape\itshape
\LetLtxMacro\LWR@origem\em
\LetLtxMacro\LWR@orignormalfont\normalfont

\let\LWR@origonecolumn\onecolumn

\let\LWR@origsp\sp
\let\LWR@origsb\sb
\LetLtxMacro\LWR@origtextsuperscript\textsuperscript
\LetLtxMacro\LWR@orig@textsuperscript\@textsuperscript

\AtBeginDocument{
\LetLtxMacro\LWR@origtextsubscript\textsubscript
\LetLtxMacro\LWR@orig@textsubscript\@textsubscript
}

\LetLtxMacro\LWR@origunderline\underline


\let\LWR@orignewpage\newpage

\let\LWR@origpagestyle\pagestyle
\let\LWR@origthispagestyle\thispagestyle
\LetLtxMacro\LWR@origpagenumbering\pagenumbering

\let\LWR@orignewline\newline


\AtBeginDocument{% in case packages change definition
\let\LWR@orig@trivlist\@trivlist
\let\LWR@origtrivlist\trivlist
```

```
\let\LWR@origendtrivlist\endtrivlist
\LetLtxMacro\LWR@origitem\item
\LetLtxMacro\LWR@origitemize\itemize
\LetLtxMacro\LWR@endorigitemize\enditemize
\LetLtxMacro\LWR@origenumerate\enumerate
\LetLtxMacro\LWR@endorigenumerate\endenumerate
\LetLtxMacro\LWR@origdescription\description
\LetLtxMacro\LWR@endorigdescription\enddescription
\let\LWR@orig@mklab\@mklab
\let\LWR@origmakelabel\makelabel
\let\LWR@orig@donoparitem\@donoparitem
\LetLtxMacro\LWR@orig@item\@item
\let\LWR@orig@nbitem\@nbitem
}

\let\LWR@origpar\par

\LetLtxMacro\LWR@origfootnote\footnote
\let\LWR@orig@mpfootnotetext\@mpfootnotetext

\let\LWR@origclearpage\clearpage


\AtBeginDocument{% in case packages change definition
\LetLtxMacro\LWR@orighline\hline%
\LetLtxMacro\LWR@origcline\cline%
}

\end{warpHTML}
```

38 Accents

Native LaTeX accents such as `\"` will work, but many more kinds of accents are available when using Unicode-aware XeLaTeX and LuaLaTeX.

for HTML output:

```
\begin{warpHTML}
```

Without `\AtBeginDocument`, `\t` was being re-defined somewhere.

```
\AtBeginDocument{
```

The following are restored for print when inside a `lateximage`.

For Unicode engines, only `\t` needs to be redefined:

```
\LetLtxMacro\LWR@origt\t
```

For pdfLaTeX, additional work is required:

```
\ifPDFTeX% pdflatex or dvi latex
\LetLtxMacro\LWR@origequalaccent\=
\LetLtxMacro\LWR@origdotaccent\.
\LetLtxMacro\LWR@origu\u
\LetLtxMacro\LWR@origv\v
\LetLtxMacro\LWR@origc\c
\LetLtxMacro\LWR@origd\d
\LetLtxMacro\LWR@origb\b
```

The HTML redefinitions follow.

For pdfLaTeX, Unicode diacritical marks are used:

```
\renewcommand*{\=}[1]{#1\HTMLunicode{0305}}
\renewcommand*{\.}[1]{#1\HTMLunicode{0307}}
\renewcommand*{\u}[1]{#1\HTMLunicode{0306}}
\renewcommand*{\v}[1]{#1\HTMLunicode{030C}}
\renewcommand*{\c}[1]{#1\HTMLunicode{0327}}
\renewcommand*{\d}[1]{#1\HTMLunicode{0323}}
\renewcommand*{\b}[1]{#1\HTMLunicode{0331}}
\fi
```

For all engines, a Unicode diacritical tie is used:

```
\def\LWR@t#1#2{#1\HTMLunicode{0361}#2}
\renewcommand*{\t}[1]{\LWR@t#1}
```

`\LWR@restoreorigaccents` Called from `\restoreoriginalformatting` when a `latexmage` is begun.

```
\ifPDFTeX% pdflatex or dvi latex
\newcommand*{\LWR@restoreorigaccents}{%
\LetLtxMacro\=\LWR@origequalaccent%
\LetLtxMacro\.\LWR@origdotaccent%
\LetLtxMacro\u\LWR@origu%
\LetLtxMacro\v\LWR@origu%
\LetLtxMacro\t\LWR@origt%
\LetLtxMacro\c\LWR@origc%
\LetLtxMacro\d\LWR@origd%
\LetLtxMacro\b\LWR@origb%
}%
\else% XeLaTeX, LuaLaTeX:
\newcommand*{\LWR@restoreorigaccents}{%
\LetLtxMacro\t\LWR@origt%
}%
\fi%
}% AtBeginDocument
```

```
\end{warpHTML}
```

39 Configuration Files

39.1 Decide whether to generate configuration files

Configuration files are only written if processing the print version of the document, and not processing a pstool image. pstool uses an additional compile for each image using the original document's preamble, which includes lwarp, so the lwarp configuration files are turned off if `-pstool` is part of the `\jobname`.

Default to no configuration files:

```
\excludecomment{LWRwriteconf}
```

Generate configuration files if print mode and not `-pstool`:

for PRINT output:

```
\begin{warpprint}
\fullexpandarg%
\IfSubStr*{\jobname}{-pstool}
    {
        \typeout{lwarp: jobname with -pstool is found,}%
        \typeout{lwarp: \space\space not generating configuration files.}%
    }
    {
        \typeout{lwarp: generating configuration files}
        \includecomment{LWRwriteconf}
    }
\end{warpprint}
```

39.2 `project_html.tex`

File `project_html.tex` Used to allow an HTML version of the document to exist alongside the print version.

Config file:

```
\begin{LWRwriteconf}
\immediate\openout\LWR@quickfile=\jobname_html.tex
\immediate\write\LWR@quickfile{%
\detokenize{\PassOptionsToPackage}%
{warpHTML,BaseJobname=\jobname}{lwarp}%
}
\immediate\write\LWR@quickfile{%
\detokenize{\input}\string{\jobname.tex\string }%
}
```

```
\immediate\closeout\LWR@quickfile
\end{LWRwriteconf}
```

39.3 *lwarpmk* configuration files

Config file:
```
\begin{LWRwriteconf}
```

`\LWR@lwarpconfversion` The version number of the configuration file, allowing *lwarpmk* to detect an obsolete configuration file format. Incremented by one each time the configuration file format changes. (This is NOT the same as the lwarp version number.)

```
\newcommand*{\LWR@lwarpconfversion}{1}% also in lwarpmk.lua
```

39.3.1 Helper macros

`\LWR@shellescapecmd` The LaTeX compile option for shell escape, if used.

```
\ifshellescape
    \def\LWR@shellescapecmd{--shell-escape }
\else
    \def\LWR@shellescapecmd{}
\fi
```

`\LWR@compilecmd` {⟨*engine*⟩} {⟨*suffix*⟩}

Used to form the basic compilation command for a document, adding the optional shell escape.

Engine is *pdflatex*, etc. Suffix is empty or `_html`

```
\newcommand*{\LWR@compilecmd}[2]{%
    #1 \LWR@shellescapecmd \jobname#2%
}
```

`\LWR@addcompilecmd` {⟨*cmd*⟩} {⟨*suffix*⟩}

Adds to the compilation command.

Cmd is *dvipdfmx*, etc. Suffix is empty or `_html`

```
\newcommand*{\LWR@addcompilecmd}[2]{%
    \LWRopseq
    #1 \jobname#2%
}
```

\LWR@unknownengine Error message if not sure which LaTeX engine is being used.

```
\newcommand*{\LWR@unknownengine}{%
    \PackageError{lwarp}
    {Unknown LaTeX engine.}
    {Lwarp only knows about pdflatex, dvi latex, xelatex, and lualatex.}
}
```

\LWR@latexmkvar {⟨*varname*⟩} {⟨*value*⟩}

Adds a *latexmk* variable assignment.

```
\newcommand*{\LWR@latexmkvar}[2]{%
    -e
    \LWRopquote%
    \LWRdollar #1=q/#2/%
    \LWRopquote
}
```

\LWR@latexmkcmd {⟨*latexmk options*⟩}

Sets a call to *latexmk* with the given options, possibly adding `--shell-escape`, and also adding the indexing program.

```
\newcommand*{\LWR@latexmkcmd}[1]{%
    latexmk  \space \LWR@shellescapecmd \space  #1 \space
    -recorder \space
    \LWR@latexmkvar{makeindex}{\LWR@LatexmkIndexCmd}
}
```

\LWR@latexmkdvipdfm {⟨*dvipdfm or dvipdfmx*⟩}

Adds the options settings for *dvipdfm* or *dvipdfmx*.

```
\newcommand*{\LWR@latexmkdvipdfm}[1]{%
    -pdfdvi \space
    \LWR@latexmkvar{dvipdf}{%
        #1
        \@percentchar O
        -o \@percentchar D
        \@percentchar S%
    }
}
```

\LWR@PrintLatexCmd
\LWR@HTMLLatexCmd
If not set by the user, the following sets the command to use to compile the source to PDF form.

If using *latexmk*, a complicated string is created, eventually resulting in something such as:

For *xelatex* with `--shell-escape`:

```
[[latexmk   -xelatex   --shell-escape  -recorder
    -e '$makeindex = q/makeindex -s lwarp.ist/'  <jobname>_html]]
```

For *dvipdfmx*:

```
[[latexmk   -pdfdvi  -e '$dvipdf=q/dvipdfmx %O -o %D %S/'
    -recorder
    -e '$makeindex=q/makeindex -s lwarp.ist/'   <jobname>_html]]
```

For the following, temporary values are computed, but the permanent values are only set if the originals were not assigned by the user.

```
\ifbool{LWR@latexmk}{
```

For *latexmk* with *pdflatex* or *lualatex*:

```
    \ifpdf
```

For *latexmk* with *pdflatex*:

```
        \ifPDFTeX
            \def\LWR@latexcmd{\LWR@latexmkcmd{-pdf -dvi- -ps-}}
        \else
```

For *latexmk* with *lualatex*:

```
            \ifLuaTeX
                \def\LWR@latexcmd{\LWR@latexmkcmd{-lualatex}}
            \else
                \LWR@unknownengine
            \fi
        \fi
    \else% \ifpdf
```

For *latexmk* with *xelatex* or DVI *latex*:

```
        \ifXeTeX
```

For *latexmk* with *xelatex*:

```
            \def\LWR@latexcmd{\LWR@latexmkcmd{-xelatex}}
        \else% \ifXeTeX
```

For *latexmk* with DVI *latex*:

```
            \ifbool{LWR@dvipdfm}{
                \def\LWR@latexcmd{%
                    \LWR@latexmkcmd{%
                        \LWR@latexmkdvipdfm{dvipdfm}%
                    }
                }
            }{
                \ifbool{LWR@dvipdfmx}{
                    \def\LWR@latexcmd{%
                        \LWR@latexmkcmd{%
                            \LWR@latexmkdvipdfm{dvipdfmx}%
                        }
                    }
                }{
                    \def\LWR@latexcmd{\LWR@latexmkcmd{-pdfps}}
                }
            }
        \fi
    \fi% \ifpdf
```

The final assignment if *latexmk*:

```
    \def\LWR@tempprintlatexcmd{\LWR@latexcmd \space \jobname}
    \def\LWR@tempHTMLlatexcmd{\LWR@latexcmd \space \jobname_html}
}% latexmk
```

Without *latexmk*, the compiling command is simply the compiler name and the optional shell escape:

```
{% not latexmk
    \ifpdf
```

For *pdflatex* or *lualatex*:

```
        \ifPDFTeX
```

For *pdflatex*:

```
            \def\LWR@tempprintlatexcmd{\LWR@compilecmd{pdflatex}{}}
            \def\LWR@tempHTMLlatexcmd{\LWR@compilecmd{pdflatex}{_html}}
        \else
            \ifLuaTeX
```

For *lualatex*:

```
                \def\LWR@tempprintlatexcmd{\LWR@compilecmd{lualatex}{}}
                \def\LWR@tempHTMLlatexcmd{\LWR@compilecmd{lualatex}{_html}}
            \else
                \LWR@unknownengine
            \fi
        \fi
    \else% \ifpdf
```

For DVI *latex* or *xelatex*:

```
        \ifXeTeX
```

For *xelatex*:

```
            \def\LWR@tempprintlatexcmd{\LWR@compilecmd{xelatex}{}}
            \def\LWR@tempHTMLlatexcmd{\LWR@compilecmd{xelatex}{_html}}
        \else
```

For DVI *latex*. Default to *dvips*, unless told to use *dvipdfm* or *dvipdfmx*:

```
            \ifbool{LWR@dvipdfm}{
```

For DVI *latex* with *dvipdfm*:

```
                \def\LWR@tempprintlatexcmd{%
                    \LWR@compilecmd{latex}{}
                    \LWR@addcompilecmd{dvipdfm}{}
                }
                \def\LWR@tempHTMLlatexcmd{%
                    \LWR@compilecmd{latex}{_html}
                    \LWR@addcompilecmd{dvipdfm}{_html}
                }
            }{
                \ifbool{LWR@dvipdfmx}{
```

For DVI *latex* with *dvipdfmx*:

```
                    \def\LWR@tempprintlatexcmd{%
                        \LWR@compilecmd{latex}{}
                        \LWR@addcompilecmd{dvipdfmx}{}
                    }
                    \def\LWR@tempHTMLlatexcmd{%
                        \LWR@compilecmd{latex}{_html}
                        \LWR@addcompilecmd{dvipdfmx}{_html}
                    }
                }{% dvips
```

For DVI *latex* with *dvips* and *ps2pdf*:

```
                    \def\LWR@tempprintlatexcmd{%
                        \LWR@compilecmd{latex}{}
                        \LWR@addcompilecmd{dvips}{}
                        \LWR@addcompilecmd{ps2pdf}{}.ps
                    }
                    \def\LWR@tempHTMLlatexcmd{%
                        \LWR@compilecmd{latex}{_html}
                        \LWR@addcompilecmd{dvips}{_html}
                        \LWR@addcompilecmd{ps2pdf}{_html}.ps
                    }
                }
            }
        \fi% \ifXeTeX
    \fi% \ifpdf
}% latexmk
```

Only make the setting permanent if the original was empty:

```
    \ifdefempty{\LWR@PrintLatexCmd}{
        \def\LWR@PrintLatexCmd{\LWR@tempprintlatexcmd}
    }{}
    \ifdefempty{\LWR@HTMLLatexCmd}{
        \def\LWR@HTMLLatexCmd{\LWR@tempHTMLlatexcmd}
    }{}
```

`\LWR@writeconf` {⟨*filename*⟩}

Common code for each of `lwarpmk.conf` and `<project>.lwarpmkconf`. Each entry is a variable name, the equal sign, and a quoted string inside `[[` and `]]`, which are *lua*'s long quote characters, allowing the use of single and double quotes inside.

```
\newcommand{\LWR@writeconf}[1]{
\ifcsdef{LWR@quickfile}{}{\newwrite{\LWR@quickfile}}
\immediate\openout\LWR@quickfile=#1
\immediate\write\LWR@quickfile{confversion = [[\LWR@lwarpconfversion]]}
\ifbool{usingOSWindows}{
    \immediate\write\LWR@quickfile{opsystem = [[Windows]]}
}{
    \immediate\write\LWR@quickfile{opsystem = [[Unix]]}
}
\immediate\write\LWR@quickfile{sourcename = [[\jobname]]}
\immediate\write\LWR@quickfile{homehtmlfilename = [[\HomeHTMLFilename]]}
\immediate\write\LWR@quickfile{htmlfilename = [[\HTMLFilename]]}
\immediate\write\LWR@quickfile{latexmk = [[\ifbool{LWR@latexmk}{true}{false}]]}
\immediate\write\LWR@quickfile{printlatexcmd = [[\LWR@PrintLatexCmd]]}
\immediate\write\LWR@quickfile{HTMLlatexcmd = [[\LWR@HTMLLatexCmd]]}
```

```
\immediate\write\LWR@quickfile{printindexcmd = [[\LWR@PrintIndexCmd]]}
\immediate\write\LWR@quickfile{HTMLindexcmd = [[\LWR@HTMLIndexCmd]]}
\immediate\write\LWR@quickfile{latexmkindexcmd = [[\LWR@LatexmkIndexCmd]]}
\immediate\write\LWR@quickfile{glossarycmd = [[\LWR@GlossaryCmd]]}
\immediate\write\LWR@quickfile{pdftotextenc = [[\LWR@pdftotextEnc]]}
\immediate\closeout\LWR@quickfile
}

\end{LWRwriteconf}
```

39.3.2 `lwarpmk.conf`

File `lwarpmk.conf`

`lwarpmk.conf` is automatically (re-)created by the lwarp package when executing
`pdflatex <project.tex>`,
or similar for *xelatex* or *lualatex*, in print-document generation mode, which is the default unless the `warpHTML` option is given. `lwarpmk.conf` is then used by the utility *lwarpmk*.

Config file:

```
\begin{LWRwriteconf}

\AtBeginDocument{\LWR@writeconf{lwarpmk.conf}}

\end{LWRwriteconf}
```

39.3.3 `<project>.lwarpmkconf`

File `project.lwarpmkconf`

A project-specific configuration file for *lwarpmk*.

The `makeindex` and `xindy` options have already been handled for `lwarp.conf`.

Config file:

```
\begin{LWRwriteconf}

\AtBeginDocument{\LWR@writeconf{\jobname.lwarpmkconf}}

\end{LWRwriteconf}
```

39.4 `lwarp.css`

File `lwarp.css`

This is the base CSS layer used by lwarp.

This must be present both when compiling the project and also when distributing the HTML files.

Config file:

```
\begin{LWRwriteconf}
\begin{filecontents*}{lwarp.css}
/*
  CSS stylesheet for the LaTeX lwarp package
  Copyright 2016-2018 Brian Dunn -- BD Tech Concepts LLC
*/


/* a fix for older browsers: */
header, section, footer, aside, nav, main,
    article, figure { display: block; }


A:link {color:#000080 ; text-decoration: none ; }
A:visited {color:#800000 ; }
A:hover {color:#000080 ; text-decoration: underline ;}
A:active {color:#800000 ; }

a.tocpart {display: inline-block ; margin-left: 0em ;
    font-weight: bold ;}
a.tocchapter {display: inline-block ; margin-left: 0em ;
    font-weight: bold ;}
a.tocsection {display: inline-block ; margin-left: 1em ;
    text-indent: -.5em ; font-weight: bold ; }
a.tocsubsection {display: inline-block ; margin-left: 2em ;
    text-indent: -.5em ; }
a.tocsubsubsection {display: inline-block ; margin-left: 3em ;
    text-indent: -.5em ; }
a.tocparagraph {display: inline-block ; margin-left: 4em ;
    text-indent: -.5em ; }
a.tocsubparagraph {display: inline-block ; margin-left: 5em ;
    text-indent: -.5em ; }
a.tocfigure {margin-left: 0em}
a.tocsubfigure {margin-left: 2em}
a.toctable {margin-left: 0em}
a.tocsubtable {margin-left: 2em}
a.toctheorem {margin-left: 0em}
a.toclstlisting {margin-left: 0em}

body {
    font-family: "DejaVu Serif", "Bitstream Vera Serif",
        "Lucida Bright", Georgia, serif;
    background: #FAF7F4 ;
    color: black ;
    margin:0em ;
    padding:0em ;
    font-size: 100% ;
    line-height: 1.2 ;
}

```

```
p {margin: 1.5ex 0em 1.5ex 0em ;}
table p {margin: .5ex 0em .5ex 0em ;}

/* Holds a section number to add space between it and the name */
span.sectionnumber { margin-right: 0em }

/* Inserted in front of index lines */
span.indexitem {margin-left: 0em}
span.indexsubitem {margin-left: 2em}
span.indexsubsubitem {margin-left: 4em}

div.hidden, span.hidden { display: none ; }

kbd, span.texttt {
    font-family: "DejaVu Mono", "Bitstream Vera Mono", "Lucida Console",
        "Nimbus Mono L", "Liberation Mono", "FreeMono", "Andale Mono",
        "Courier New", monospace;
    font-size: 100% ;
}

pre { padding: 3pt ; }

span.strong, span.textbf, div.strong, div.textbf { font-weight: bold; }

span.textit, div.textit { font-style: italic; }

span.textmd, div.textmd { font-weight: normal; }

span.textsc, div.textsc {
    font-variant: small-caps;
    font-variant-numeric: oldstyle-nums ;
}

span.textsl, div.textsl { font-style: oblique; }

span.textup, div.textup {
    font-style: normal;
    font-variant: normal;
    font-variant-numeric: normal ;
}

span.textrm, div.textrm {
    font-family: "DejaVu Serif", "Bitstream Vera Serif",
    "Lucida Bright", Georgia, serif;
}

span.textsf, div.textsf {
     font-family: "DejaVu Sans", "Bitstream Vera Sans",
        Geneva, Verdana, sans-serif ;
}
```

```
1468
1469 span.textcircled { border: 1px solid black ; border-radius: 1ex ; }
1470
1471 span.underline {
1472     text-decoration: underline ;
1473     text-decoration-skip: auto ;
1474 }
1475
1476 span.overline {
1477     text-decoration: overline ;
1478     text-decoration-skip: auto ;
1479 }
1480
1481 /* for diagbox */
1482 div.diagboxtitleN { border-bottom: 1px solid gray }
1483 div.diagboxtitleS { border-top: 1px solid gray }
1484
1485 div.diagboxE {
1486     padding-left: 2em ;
1487     text-align: right ;
1488 }
1489
1490 div.diagboxW {
1491     padding-right: 2em ;
1492     text-align: left ;
1493 }
1494
1495
1496
1497 /* For realscripts */
1498 .supsubscript {
1499     display: inline-block;
1500     text-align:left ;
1501 }
1502
1503 .supsubscript sup,
1504 .supsubscript sub {
1505     position: relative;
1506     display: block;
1507     font-size: .5em;
1508     line-height: 1;
1509 }
1510
1511 .supsubscript sup {
1512     top: .5em;
1513 }
1514
1515 .supsubscript sub {
1516     top: .5em;
1517 }
```

```
1518
1519 div.attribution p {
1520     text-align: right ;
1521     font-size: 80%
1522 }
1523
1524 span.poemtitle {
1525   font-size: 120% ; font-weight: bold;
1526 }
1527
1528 pre.tabbing {
1529     font-family: "Linux Libertine Mono O", "Lucida Console",
1530         "Droid Sans Mono", "DejaVu Mono", "Bitstream Vera Mono",
1531         "Liberation Mono", "FreeMono", "Andale Mono",
1532         "Nimbus Mono L", "Courier New", monospace;
1533 }
1534
1535 blockquote {
1536     margin-left: 0px ;
1537     margin-right: 0px ;
1538 }
1539
1540 /* quotchap is for the quotchap package */
1541 div.quotchap {
1542   font-style: oblique ;
1543   overflow-x: auto ;
1544   margin-left: 2em ;
1545   margin-right: 2em ;
1546 }
1547
1548 blockquote p, div.quotchap p {
1549   line-height: 1.5;
1550     text-align: left ;
1551     font-size: .85em ;
1552     margin-left: 3em ;
1553     margin-right: 3em ;
1554 }
1555
1556 /* qauthor is for the quotchap package */
1557 div.qauthor {
1558   display: block ;
1559   text-align: right ;
1560   margin-left: auto ;
1561   margin-right: 2em ;
1562   font-size: 80% ;
1563   font-variant: small-caps;
1564 }
1565
1566 div.qauthor p {
1567   text-align: right ;
```

```
}

blockquotation {
    margin-left: 0px ;
    margin-right: 0px ;
}

blockquotation p {
  line-height: 1.5;
    text-align: left ;
    font-size: .85em ;
    margin-left: 3em ;
    margin-right: 3em ;
}

div.epigraph, div.dictum {
  line-height: 1.2;
    text-align: left ;
    padding: 3ex 1em 0ex 1em ;
/*     margin: 3ex auto 3ex auto ; */ /* Epigraph centered */
    margin: 3ex 1em 3ex auto ; /* Epigraph to the right */
/*    margin: 3ex 1em 3ex 1em ; */ /* Epigraph to the left */
    font-size: .85em ;
    max-width: 27em ;
}

div.epigraphsource, div.dictumauthor {
    text-align:right ;
    margin-left:auto ;
/*     max-width: 50% ; */
    border-top: 1px solid #A0A0A0 ;
    padding-bottom: 3ex ;
    line-height: 1.2;
}

div.epigraph p, div.dictum p { padding: .5ex ; margin: 0ex ;}
div.epigraphsource p, div.dictumauthor p { padding: .5ex 0ex 0ex 0ex ; margin: 0ex ;}
div.dictumauthor { font-style:italic }


/* copyrightbox package */
div.copyrightbox { margin: .5ex .5em }
div.copyrightbox p {margin: 0px .5em ; padding: 0px}
div.copyrightboxnote {text-align: left ; font-size: 60%}


/* lettrine package: */
span.lettrine { font-size: 4ex ; float: left ; }
span.lettrinetext { font-variant: small-caps ; }

```

```
/* ulem and soul packages: */
span.uline {
    text-decoration: underline ;
    text-decoration-skip: auto ;
}

span.uuline {
    text-decoration: underline ;
    text-decoration-skip: auto ;
    text-decoration-style: double ;
}

span.uwave {
    text-decoration: underline ;
    text-decoration-skip: auto ;
    text-decoration-style: wavy ;
}

span.sout {
    text-decoration: line-through ;
}

span.xout {
    text-decoration: line-through ;
}

span.dashuline {
    text-decoration: underline ;
    text-decoration-skip: auto ;
    text-decoration-style: dashed ;
}

span.dotuline {
    text-decoration: underline ;
    text-decoration-skip: auto ;
    text-decoration-style: dotted ;
}

span.letterspacing { letter-spacing: .2ex ; }

span.capsspacing {
    font-variant: small-caps ;
    letter-spacing: .1ex ;
}

span.highlight { background: #F8E800 ; }
```

```
1668 html body {
1669   margin: 0 ;
1670   line-height: 1.2;
1671 }
1672
1673
1674 body div {
1675   margin: 0ex;
1676 }
1677
1678
1679 h1, h2, h3, h4, h5, h6, span.paragraph, span.subparagraph
1680 {
1681     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1682         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1683         "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
1684         "Times New Roman", serif;
1685     font-style: normal ;
1686     font-weight: bold ;
1687     text-align: left ;
1688 }
1689
1690 h1 {    /* title of the entire website, used on each page */
1691     text-align: center ;
1692     font-size: 2.5em ;
1693     padding: .4ex 0em 0ex 0em ;
1694 }
1695 h2 { font-size: 2.25em }
1696 h3 { font-size: 2em }
1697 h4 { font-size: 1.75em }
1698 h5 { font-size: 1.5em }
1699 h6 { font-size: 1.25em }
1700 span.paragraph {font-size: 1em ; font-variant: normal ;
1701     margin-right: 1em ; }
1702 span.subparagraph {font-size: 1em ; font-variant: normal ;
1703     margin-right: 1em ;  }
1704
1705 div.minisec {
1706     font-family: "DejaVu Sans", "Bitstream Vera Sans",
1707         Geneva, Verdana, sans-serif ;
1708     font-style: normal ;
1709     font-weight: bold ;
1710     text-align: left ;
1711 }
1712
1713 /* Title of the file */
1714 h1 {
1715   margin: 0ex 0em 0ex 0em ;
1716   line-height: 1.3;
1717   text-align: center ;
```

```
}

/* Part */
h2 {
  margin: 1ex 0em 1ex 0em ;
  line-height: 1.3;
  text-align: center ;
}

/* Chapter */
h3 {
  margin: 3ex 0em 1ex 0em ;
  line-height: 1.3;
}

/* Section */
h4 {
  margin: 3ex 0em 1ex 0em ;
  line-height: 1.3;
}

/* Sub-Section */
h5 {
  margin: 3ex 0em 1ex 0em ;
  line-height: 1.3;
}

/* Sub-Sub-Section */
h6 {
  margin: 3ex 0em 1ex 0em ;
  line-height: 1.3;
}


div.titlepage {
  text-align: center ;
}

.footnotes {
    text-align: left ;
    font-size: .85em ;
    margin: 3ex 2em 0ex 2em ;
    border-top: 1px solid silver ;
}

.marginpar, .marginparblock {
    max-width:50%;
    float:right;
    text-align:left;
    margin: 1ex 0.5em 1ex 1em ;
```

```
1768     padding: 1ex 0.5em 1ex 0.5em ;
1769     font-size: 85% ;
1770     border-top: 1px solid silver ;
1771     border-bottom: 1px solid silver ;
1772     overflow-x: auto;
1773 }
1774
1775 .marginpar br { margin-bottom: 2ex ; }
1776
1777 div.marginblock, div.marginparblock {
1778     max-width:50%;
1779     float:right;
1780     text-align:left;
1781     margin: 1ex 0.5em 1ex 1em ;
1782     padding: 1ex 0.5em 1ex 0.5em ;
1783     overflow-x: auto;
1784 }
1785
1786 div.marginblock div.minipage,
1787 div.marginparblock div.minipage {
1788     display: block ;
1789     margin: 0pt auto 0pt auto ;
1790 }
1791
1792 div.marginblock div.minipage p ,
1793 div.marginparblock div.minipage p
1794     { font-size: 85%}
1795
1796 div.marginblock br ,
1797 div.marginparblock br
1798     { margin-bottom: 2ex ; }
1799
1800
1801 section.textbody div.footnotes{
1802     margin: 3ex 2em 0ex 2em ;
1803     border-bottom: 2px solid silver ;
1804 }
1805
1806 .footnoteheader {
1807     border-top: 2px solid silver ;
1808     margin-top: 3ex ;
1809     padding-top: 1ex ;
1810     font-weight: bold ;
1811 }
1812
1813 .mpfootnotes {
1814     text-align: left ;
1815     font-size: .85em ;
1816     margin-left: 1em ;
1817     border-top: 1px solid silver ;
```

```
}

/* Remove footnote top border in the title page. */
div.titlepage div.mpfootnotes {
    border-top: none ;
}



ol {
  margin: 1ex 1em 1ex 0em;
  line-height: 1.2;
}

ul, body dir, body menu {
  margin: 3ex 1em 3ex 0em;
  line-height: 1.2;
}

li { margin: 0ex 0em 1ex 0em; }

html {
  margin: 0;
  padding: 0;
}

.programlisting {
  font-family: "DejaVu Mono", "Bitstream Vera Mono", "Lucida Console",
        "Nimbus Mono L", "Liberation Mono", "FreeMono", "Andale Mono",
        "Courier New", monospace;
  margin: 1ex 0ex 1ex 0ex ;
  padding: .5ex 0pt .5ex 0pt ;
  overflow-x: auto;
}

section.textbody>pre.programlisting {
border-top: 1px solid silver ;
border-bottom: 1px solid silver ;
}


div.displaymath {
    text-align: center ;
}

div.displaymathnumbered {
    text-align: right ;
    margin-left: 5% ;
    margin-right: 5% ;
    min-width: 2.5in ;
```

```
}

@media all and (min-width: 400px) {
    div.displaymathnumbered {
        margin-left: 10% ;
        margin-right: 10% ;
    }
}

@media all and (min-width: 800px) {
    div.displaymathnumbered {
        margin-right: 20% ;
    }
}

@media all and (min-width: 1200px) {
    div.displaymathnumbered {
        margin-right: 30% ;
    }
}


.inlineprogramlisting {
  font-family: "DejaVu Mono", "Bitstream Vera Mono", "Lucida Console",
        "Nimbus Mono L", "Liberation Mono", "FreeMono", "Andale Mono",
        "Courier New", monospace;
  overflow-x: auto;
}

span.listinglabel {
    display: inline-block ;
    font-size: 70% ;
    width: 4em ;
    text-align: right ;
    margin-right: 2em ;
}

div.abstract {
  margin: 2em 5% 2em 5% ;
  padding: 1ex 1em 1ex 1em ;
/*  font-weight: bold ; */
  font-size: 90% ;
    text-align: left ;
}

div.abstract dl {line-height:1.5;}
div.abstract dt {color:#304070;}

div.abstracttitle{
    font-family: "URW Classico", Optima, "Linux Biolinum O",
```

```
        "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    font-weight:bold;
    font-size:1.25em;
    text-align: center ;
}

span.abstractrunintitle{
    font-family: "URW Classico", Optima, "Linux Biolinum O",
        "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    font-weight:bold;
}


.verbatim {
    overflow-x: auto ;
}

.alltt {
    overflow-x: auto ;
}


.bverbatim {
    margin: 1ex 0pt 1ex 0pt ;
    padding: .5ex 0pt .5ex 0pt ;
    overflow-x: auto ;
}

.lverbatim {
    margin: 1ex 0pt 1ex 0pt ;
    padding: .5ex 0pt .5ex 0pt ;
    overflow-x: auto ;
}

.fancyvrb {
    font-size:.85em ;
    margin: 3ex 0pt 3ex 0pt
}

.fancyvrblabel {
    font-weight:bold;
    text-align: center ;
}


.verse {
    font-family: "Linux Libertine Mono O", "Lucida Console",
        "Droid Sans Mono", "DejaVu Mono", "Bitstream Vera Mono",
```

```
1968         "Liberation Mono", "FreeMono", "Andale Mono",
1969         "Nimbus Mono L", "Courier New", monospace;
1970     margin-left: 1em ;
1971 }
1972
1973
1974 div.singlespace { line-height: 1.2 ; }
1975 div.onehalfspace { line-height: 1.5 ; }
1976 div.doublespace { line-height: 2 ; }
1977
1978
1979 /* Word processor format output: */
1980 div.wpfigure { border: 1px solid red ; margin: .5ex ; padding: .5ex ; }
1981 div.wptable { border: 1px solid blue ; margin: .5ex ; padding: .5ex ; }
1982 div.wpminipage { border: 1px solid green ; margin: .5ex ; padding: .5ex ;}
1983
1984
1985
1986
1987 /* Minipage environments, vertically aligned to top, center, bottom: */
1988 .minipage, .fminipage, .fcolorminipage {
1989     /* display: inline-block ; */
1990         /* Mini pages which follow each other will be tiled. */
1991     margin: .25em .25em .25em .25em;
1992     padding: .25em .25em .25em .25em;
1993     display: inline-flex;
1994     flex-direction: column ;
1995     overflow: auto;
1996 }
1997
1998 /* Paragraphs in the flexbox did not collapse their margins. */
1999 /* Have not yet researched this. */
2000 .minipage p {margin: .75ex 0em .75ex 0em ;}
2001
2002 .fboxBlock .minipage, .colorbox .minipage, .colorboxBlock .minipage,
2003 .fcolorbox .minipage, .fcolorboxBlock .minipage
2004     {border: none ; background: none;}
2005
2006 .fbox, .fboxBlock { border: 1px solid black ; }
2007
2008 .fbox, .fboxBlock, .fcolorbox, .fcolorboxBlock, .colorbox, .colorboxBlock,
2009 .fminipage, .fcolorminipage
2010     {display: inline-block}
2011
2012 .shadowbox, .shabox {
2013   border: 1px solid black;
2014     box-shadow: 3px 3px 3px #808080 ;
2015      border-radius: 0px ;
2016     padding: .4ex .3em .4ex .3em ;
2017     margin: 0pt .3ex 0pt .3ex ;
```

```
  display: inline-block ;
}

.doublebox {
   border: 3px double black;
     border-radius: 0px ;
    padding: .4ex .3em .4ex .3em ;
    margin: 0pt .3ex 0pt .3ex ;
  display: inline-block ;
}

.ovalbox, .Ovalbox {
   border: 1px solid black;
     border-radius: 1ex ;
    padding: .4ex .3em .4ex .3em ;
    margin: 0pt .3ex 0pt .3ex ;
  display: inline-block ;
}

.Ovalbox { border-width: 2px ; }

.framebox {
   border: 1px solid black;
     border-radius: 0px ;
    padding: .3ex .2em 0ex .2em ;
    margin: 0pt .1ex 0pt .1ex ;
  display: inline-block ;
}


.mdframed {
/*     padding: 0ex ; */
/*    border: 1px solid blafck; */
/*      border-radius: 0px ; */
    padding: 0ex ;
    margin: 3ex 5% 3ex 5% ;
/*   display: inline-block ; */
}

.mdframed p { padding: 0ex .5em 0ex .5em ; }

.mdframed dl { padding: 0ex .5em 0ex .5em ; }

.mdframedtitle {
    padding: .5em ;
    display: block ;
    font-size: 130% ;
    margin-bottom: 1ex ;
}

```

```
.mdframedsubtitle {
    padding: 0ex .5em 0ex .5em ;
    display: block ;
    font-size: 115% ;
}

.mdframedsubsubtitle {
    padding: 0ex .5em 0ex .5em ;
    display: block ;
}

.mdtheorem {
    padding: 0ex .5em 0ex .5em ;
    margin: 3ex 5% 3ex 5% ;
/*   display: inline-block ; */
}


/* framed package */
.framed, pre.boxedverbatim, fcolorbox {
    margin: 3ex 0em 3ex 0em ;
   border: 1px solid black;
     border-radius: 0px ;
    padding: .3ex 1em 0ex 1em ;
  display: block ;
}

.shaded {
    margin: 3ex 0em 3ex 0em ;
    padding: .3ex 1em .3ex 1em ;
    display: block ;
}

.snugframed {
    margin: 3ex 0em 3ex 0em ;
   border: 1px solid black;
     border-radius: 0px ;
  display: block ;
}

.framedleftbar {
    margin: 3ex 0em 3ex 0em ;
   border-left: 3pt solid black;
     border-radius: 0px ;
    padding: .3ex .2em .3ex 1em ;
  display: block ;
}

.framedtitle {
    margin: 0em ;
```

```
2118     padding: 0em ;
2119     font-size: 130%
2120 }
2121
2122 .framedtitle p { padding: .3em }
2123
2124
2125
2126 dl {
2127   margin: 1ex 2em 1ex 0em;
2128   line-height: 1.3;
2129 }
2130
2131 dl dt {
2132     margin-top: 1ex;
2133     margin-left: 1em ;
2134     font-weight: bold;
2135 }
2136
2137 dl dd p { margin-top: 0em; }
2138
2139
2140 nav {
2141     font-family: "URW Classico", Optima, "Linux Biolinum O",
2142         "DejaVu Sans", "Bitstream Vera Sans",
2143         Geneva, Verdana, sans-serif ;
2144     margin-bottom: 4ex ;
2145 }
2146
2147 nav p {
2148     line-height: 1.2 ;
2149     margin-top:.5ex ;
2150     margin-bottom:.5ex;
2151     font-size: .9em ;
2152 }
2153
2154
2155
2156 img, img.hyperimage, img.borderimage {
2157     max-width: 600px;
2158     border: 1px solid silver;
2159     box-shadow: 3px 3px 3px #808080 ;
2160     padding: .5% ;
2161     margin: .5% ;
2162     background: none ;
2163 }
2164
2165 img.inlineimage{
2166     padding: 0px ;
2167     box-shadow: none ;
```

```
2168     border: none ;
2169     background: none ;
2170     margin: 0px ;
2171     display: inline-block ;
2172     border-radius: 0px ;
2173 }
2174
2175 img.logoimage{
2176     max-width: 300px ;
2177     box-shadow: 3px 3px 3px #808080 ;
2178     border: 1px solid black ;
2179     background:none ;
2180     padding:0 ;
2181     margin:.5ex ;
2182     border-radius: 10px ;
2183 }
2184
2185
2186 .section {
2187 /*
2188     To have each section float relative to each other:
2189 */
2190 /*
2191     display: block ;
2192     float: left ;
2193     position: relative ;
2194     background: white ;
2195     border: 1px solid silver ;
2196     padding: .5em ;
2197 */
2198     margin: 0ex .5em 0ex .5em ;
2199     padding: 0 ;
2200 }
2201
2202
2203 figure {
2204     margin: 5ex auto 5ex auto ;
2205     padding: 1ex 1em 1ex 1em ;
2206     overflow-x: auto ;
2207 }
2208
2209
2210 /* To automatically center images in figures: */
2211 /*
2212 figure img.inlineimage {
2213     margin: 0ex auto 0ex auto ;
2214     display: block ;
2215 }
2216 */
2217
```

```
/* To automatically center minipages in figures: */
/*
figure div.minipage, figure div.minipage div.minipage {
    margin: 1ex auto 1ex auto ;
    display: block ;
}
*/

figure figure { margin: 0pt }

figure div.minipage p { font-size: 85% ; }

figure.subfigure, figure.subtable  {
    display: inline-block ; margin: 3ex 1em 3ex 1em ;
}

figcaption .minipage { margin:0 ; padding: 0 }

div.minipage figure { border: none ; box-shadow: none ; }
div.minipage figure.table { margin: 0ex }
div.minipage div.footnotes { margin: 1ex 2em 0ex 2em }

div.floatrow { text-align: center; }

div.floatrow figure { display: inline-block ; margin: 1ex 2% ; }

div.floatfoot { font-size: .85em ;
    border-top: 1px solid silver ; line-height: 1.2 ; }

figcaption , .lstlistingtitle {
    font-size: .85em ;
    text-align: center ;
    font-weight: bold ;
    margin-top: 1ex ;
    margin-bottom: 1ex ;
}

figure.subfigure figcaption, figure.subtable figcaption  {
    border-bottom: none ; background: none ;
}

div.nonfloatcaption {
    margin: 1ex auto 1ex auto ;
    font-size: .85em ;
    text-align: center ;
    font-weight: bold ;
}

/* For a \RawCaption inside a minipage inside a figure's floatrow: */
figure div.floatrow div.minipage figcaption {
```

```
2268     border: none ;
2269     background: none ;
2270 }
2271
2272
2273 /* For packages such as float, rotfloat, and algorithm2e: */
2274
2275 figure.boxed, figure.boxruled {
2276     border: 1px solid black ;
2277 }
2278
2279 figure.ruled {
2280     border-top: 1px solid black ;
2281     border-bottom: 1px solid black ;
2282     border-left: 0px ;
2283     border-right: 0px ;
2284     border-radius: 0px ;
2285     background: none ;
2286     box-shadow: none ;
2287 }
2288
2289 figure.ruled figcaption, figure.boxruled figcaption {
2290     border-top: 1px solid silver ;
2291     border-bottom: 1px solid silver ;
2292 }
2293
2294
2295 table {
2296     margin: 1ex auto 1ex auto ;
2297     border-collapse: separate ;
2298     border-spacing: 0px ;
2299     line-height: 1.3 ;
2300     }
2301
2302 tr.hline td {border-top: 1px solid #808080 ; margin-top: 0ex ;
2303     margin-bottom: 0ex ; } /* for \hline */
2304
2305 tr.tbrule td {border-top: 1px solid black ; margin-top: 0ex ;
2306     margin-bottom: 0ex ; } /* for \toprule, \bottomrule */
2307
2308 td {padding: .5ex .5em .5ex .5em ;}
2309
2310 table td.tdl { text-align: left ; vertical-align: middle ; }
2311 table td.tdc { text-align: center ; vertical-align: middle ; }
2312 table td.tdat { text-align: center ; vertical-align: middle ; padding: 0px ; margin: 0px ; }
2313 table td.tdbang { text-align: center ; vertical-align: middle ; }
2314 table td.tdr { text-align: right ; vertical-align: middle ; }
2315 table td.tdp { text-align: left ; vertical-align: bottom ; }
2316 table td.tdm { text-align: left ; vertical-align: middle ; }
2317 table td.tdb { text-align: left ; vertical-align: top ; }
```

```
table td.tdP { text-align: center ; vertical-align: bottom ; }
table td.tdM { text-align: center ; vertical-align: middle ; }
table td.tdB { text-align: center ; vertical-align: top ; }

table td.tvertbarl { border-left: 1px solid black }
table td.tvertbarldouble { border-left: 4px double black }
table td.tvertbarr { border-right: 1px solid black }
table td.tvertbarrdouble { border-right: 4px double black }

table td.tvertbarldash { border-left: 1px dashed black }
table td.tvertbarldoubledash { border-left: 2px dashed black }
table td.tvertbarrdash { border-right: 1px dashed black }
table td.tvertbarrdoubledash { border-right: 2px dashed black }


/* for cmidrules: */
table td.tdrule {
    border-top: 1px solid #A0A0A0 ;
}

table td.tdrulel {
    border-top-left-radius:.5em ;
    border-top: 1px solid #A0A0A0 ;
}

table td.tdruler {
    border-top-right-radius:.5em ;
    border-top: 1px solid #A0A0A0 ;
}

table td.tdrulelr {
    border-top-left-radius:.5em ;
    border-top-right-radius:.5em ;
    border-top: 1px solid #A0A0A0 ;
}


/* Margins of paragraphs inside table cells: */
td.tdp p , td.tdprule p , td.tdP p , td.tdPrule p { padding-top: 1ex ;
    padding-bottom: 1ex ; margin: 0ex ; }
td.tdm p , td.tmbrule p , td.tdM p , td.tdMrule p { padding-top: 1ex ;
    padding-bottom: 1ex ; margin: 0ex ; }
td.tdb p , td.tdbrule p , td.tdB p , td.tdBrule p { padding-top: 1ex ;
    padding-bottom: 1ex ; margin: 0ex ; }

td.tdp , td.tdprule , td.tdP , td.tdPrule
    { padding: 0ex .5em 0ex .5em ; }
td.tdm , td.tdmrule , td.tdM , td.tdMrule
    { padding: 0ex .5em 0ex .5em ; }
td.tdb , td.tdbrule , td.tdB , td.tdBrule
```

```
    { padding: 0ex .5em 0ex .5em ; }


/* table notes: */
.tnotes {
    margin: 0ex 5% 1ex 5% ;
    padding: 0.5ex 1em 0.5ex 1em;
    font-size:.85em;
    text-align: left ;
}

.tnotes dl dt p {margin-bottom:0px;}

.tnoteitemheader {margin-right: 1em;}


/* for colortbl and cell color */
div.cellcolor {
    width: 100% ;
    padding: .5ex .5em .5ex .5em ;
    margin: -.5ex -.5em -.5ex -.5em ;
}


/* for bigdelim */
.ldelim, .rdelim { font-size: 200% }


/* center, flushleft, flushright environments */
div.center{text-align:center;}
div.center table {margin-left:auto;margin-right:auto;}
div.flushleft{text-align:left;}
div.flushleft table {margin-left:0em ; margin-right:auto;}
div.flushright{text-align:right;}
div.flushright table {margin-left:auto ; margin-right: 0em ;}


/* Fancybox */
div.Btrivlist table tr td {
    padding: .2ex 0em ;
}


/* program listing callouts: */
span.callout {
     font-family: "DejaVu Sans", "Bitstream Vera Sans",
        Geneva, Verdana, sans-serif ;
    border-radius: .5em;
    background-color:black;
    color:white;
```

```
2418     padding:0px .25em 0px .25em;
2419     margin: 0 ;
2420     font-weight: bold;
2421     font-size:.72em ;
2422 }
2423
2424 div.programlisting pre.verbatim span.callout{
2425     font-size: .85em ;
2426 }
2427
2428 span.verbatim {
2429     font-family: "DejaVu Mono", "Bitstream Vera Mono", "Lucida Console",
2430         "Nimbus Mono L", "Liberation Mono", "FreeMono", "Andale Mono",
2431         "Courier New", monospace;
2432 }
2433
2434
2435
2436 div.published
2437 {
2438     text-align: center ;
2439     font-variant: normal ;
2440     font-style: italic ;
2441     font-size: 1em ;
2442     margin: 1ex 0em 1ex 0em ;
2443 }
2444
2445 div.subtitle
2446 {
2447     text-align: center ;
2448     font-variant: normal ;
2449     font-style: italic ;
2450     font-size: 1.25em ;
2451     margin: 1ex 0em 1ex 0em ;
2452 }
2453
2454 div.subtitle p { margin: 1ex ; }
2455
2456 div.author
2457 {
2458     font-variant: normal ;
2459     font-style: normal ;
2460     font-size: 1em ;
2461     margin: 1ex 0em 1ex 0em ;
2462 }
2463
2464 div.oneauthor {
2465     display: inline-block ;
2466     margin: 0ex 1em 0ex 1em ;
2467 }
```

```
2468
2469 /*
2470 div.author table {
2471     margin: 1ex auto 0ex auto ;
2472     background: none ;
2473 }
2474
2475 div.author table tbody tr td { padding: .25ex ; }
2476 */
2477
2478 span.affiliation {font-size: .85em ; font-variant: small-caps; }
2479
2480 div.titledate {
2481     text-align: center ;
2482     font-size: .85em ;
2483     font-style: italic;
2484     margin: 1ex 0em 1ex 0em ;
2485 }
2486
2487
2488 nav.topnavigation{
2489     text-align: left ;
2490     padding: 0.5ex 1em 0.5ex 1em ;
2491 /*     margin: 2ex 0em 3ex 0em ; */
2492     margin: 0 ;
2493     border-bottom: 1px solid silver ;
2494     border-top: 1px solid silver ;
2495     clear:right ;
2496 }
2497
2498 nav.botnavigation{
2499     text-align: left ;
2500     padding: 0.5ex 1em 0.5ex 1em ;
2501 /*     margin: 3ex 0em 2ex 0em ; */
2502     margin: 0 ;
2503     border-top: 1px solid silver ;
2504     border-bottom: 1px solid silver ;
2505     clear:right ;
2506 }
2507
2508
2509 header{
2510     line-height: 1.2 ;
2511     font-size: 1em ;
2512 /*     border-bottom: 2px solid silver ; */
2513     margin: 0px ;
2514     padding: 0ex 1em 0ex 1em ;
2515     text-align:center ;
2516 }
2517
```

```
header p {margin:0ex;padding:4ex 0em 2ex 0em ;text-align:center;}


footer{
    font-size: .85em ;
    line-height: 1.2 ;
    margin-top: 1ex ;
    border-top: 2px solid silver ;
    padding: 2ex 1em 2ex 1em ;
    clear:right ;
    text-align:left ;
}


a.linkhome { font-weight:bold ; font-size: 1em ;}


div.lateximagesource { padding: 0px ; margin: 0px ; display: none; }

img.lateximage{
    padding: 0pt ;
    margin: 0pt ;
    box-shadow: none ;
    border: none ;
    background: none ;
    max-width: 100% ;
    border-radius: 0ex ;
    border: none ;
}



nav.sidetoc {
    font-family: "DejaVu Serif", "Bitstream Vera Serif",
        "Lucida Bright", Georgia, serif;
    float:right ;
    width: 20%;
    border-left: 1px solid silver;
    border-top: 1px solid silver;
    border-bottom: 1px solid silver;
/*     border-top: 2px solid #808080 ; */
    background: #FAF7F4 ;
    padding: 2ex 0em 2ex 1em ;
    margin: 0ex 0em 2ex 1em ;
    font-size:.9em ;
    border-radius: 20px 0px 0px 20px ;
    }

div.sidetoccontents {
/*     border-top: 1px solid silver ; */
```

```
    overflow-y: auto ;
    width: 100% ;
    text-align: left ;
}


nav.sidetoc p {line-height:1.2 ; margin: 1ex .5em 1ex .5em ;
    text-indent: 0 ; }

nav.sidetoc p a {color:black ; font-size: .7em ;}

div.sidetoctitle {font-size: 1.2em; font-weight:bold; text-align:center;
    border-bottom: 1px solid silver ;    }

nav.sidetoc a:hover {text-decoration: underline ; }



section.textbody { margin: 0ex 1em 0ex 1em ;}


div.multicolsheading { -webkit-column-span: all;
    -moz-column-span: all; column-span: all; }
div.multicols { -webkit-columns: 3 380px ;
    -moz-columns: 3 380px ; columns: 3 380px ; }
div.multicols p {margin-top: 0ex}


/* Used for xfrac and nicefrac: */
span.numerator {
    font-size: 60% ;
    vertical-align: .4em ;
}

span.denominator {
    font-size: 60%
}


/* Used for algorithm2e: */
div.alg2evline{
    margin-left: 1em ;
    padding-left: 1em ;
    border-left: 1px solid black ;
    border-radius: 0px 0px 0px 1ex ;
}

div.alg2evsline{
    margin-left: 1em ;
    padding-left: 1em ;
```

```
    border-left: 1px solid black ;
}

div.alg2enoline{
    margin-left: 1em ;
    padding-left: 1em ;
}

span.alg2elinenumber{
    margin-right: .5em ;
    font-size: 50% ;
    color: red ;
}


/* Used for algorithmicx: */
span.floatright { float: right ; }




/* Native LaTeX theorems: */

.theoremcontents { font-style: italic; margin-top: 3ex ; margin-bottom: 3ex ; }
.theoremlabel { font-style: normal; font-weight: bold ; margin-right: .5em ; }


/* theorem, amsthm, and ntheorem packages */

span.theoremheader,
span.theoremheaderplain,
span.theoremheaderdefinition,
span.theoremheaderbreak,
span.theoremheadermarginbreak,
span.theoremheaderchangebreak,
span.theoremheaderchange,
span.theoremheadermargin
{
    font-style:normal ; font-weight: bold ; margin-right: 1em ;
}

span.amsthmnameplain,
span.amsthmnamedefinition,
span.amsthmnumberplain,
span.amsthmnumberdefinition
{
    font-style:normal ; font-weight: bold ;
}


```

```
span.amsthmnameremark,
span.amsthmnumberremark
{font-style:italic ; font-weight: normal ; }


span.amsthmnoteplain,
span.amsthmnotedefinition
{font-style:normal ;}


span.theoremheaderremark,
span.theoremheaderproof,
span.amsthmproofname
{font-style:italic ; font-weight: normal ; margin-right: 1em ; }

span.theoremheadersc
{
    font-style:normal ;
    font-variant: small-caps ;
    font-weight: normal ;
    margin-right: 1em ;
}

.theoremendmark {float:right}

div.amsthmbodyplain, div.theorembodyplain, div.theorembodynonumberplain,
div.theorembodybreak, div.theorembodynonumberbreak,
div.theorembodymarginbreak,
div.theorembodychangebreak,
div.theorembodychange,
div.theorembodymargin
{
    font-style:italic;
    margin-top: 3ex ; margin-bottom: 3ex ;
}

div.theorembodydefinition, div.theorembodyremark, div.theorembodyproof,
div.theorembodyplainupright, nonumberplainuprightsc,
div.amsthmbodydefinition, div.amsthmbodyremark,
div.amsthmproof
{
    font-style: normal ;
    margin-top: 3ex ; margin-bottom: 3ex ;
}

span.amsthmnoteremark {}


/*
For CSS LaTeX and related logos:
```

```
Based on spacing demonstrated by the metafont package.
*/

.latexlogofont {
    font-family: "Linux Libertine O", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    font-variant: normal ;
}

.latexlogo {
    font-family: "Linux Libertine O", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    font-size: 1.1em;
}

.latexlogosup {
  text-transform: uppercase;
  letter-spacing: .03em ;
  font-size: 0.7em;
  vertical-align: 0.25em;
  margin-left: -0.4em;
  margin-right: -0.15em;
}

.latexlogosub {
  text-transform: uppercase;
  vertical-align: -0.27ex;
  margin-left: -0.08em;
  margin-right: -0.07em;
  font-size: 1em;
}

.latexlogotwoe {
  text-transform: none ;
  font-variant-numeric: oldstyle-nums ;
}

.latexlogotwoesub {
  font-style:italic ;
  vertical-align: -0.27ex;
  margin-left: -0.11em;
  margin-right: -0.1em;
  font-size: 1em;
}

.xelatexlogo {
    font-family: "Linux Libertine O", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    letter-spacing: .03em ;
    font-size: 1.1em;
```

```
}

.xelatexlogosub {
  vertical-align: -0.27ex;
  margin-left: -0.0667em;
  margin-right: -.05em;
  font-size: 1em;
  letter-spacing: .03em ;
}

.amslogo {
    font-family: "TeXGyreChorus","URW Chancery L",
        "Apple Chancery","ITC Zapf Chancery","Monotype Corsiva",
        "Linux Libertine O", "Nimbus Roman No 9 L",  "FreeSerif",
        "Hoefler Text", Times, "Times New Roman", serif ;
    font-style: italic ;
}

.lyxlogo {
    font-family: "URW Classico", Optima, "Linux Biolinum O",
        "DejaVu Sans", "Bitstream Vera Sans", Geneva,
        Verdana, sans-serif ;
}


/* Only display top and bottom navigation if a small screen: */
/* Hide the sidetoc if a small screen: */
nav.topnavigation { display:none; }
nav.botnavigation { display:none; }

@media screen and (max-width: 45em) {
/*     nav.sidetoc {display:none;} */
    nav.sidetoc {
        float: none ;
        width: 100% ;
        margin: 5ex 0px 5ex 0px ;
        padding: 0 ;
        border-radius: 0 ;
        border-bottom: 1px solid black ;
        border-top: 1px solid black ;
        box-shadow: none ;
    }
/*     nav.topnavigation { display:block } */
    nav.botnavigation { display:block }
    .marginpar {
        max-width: 100%;
        float: none;
        display:block ;
        margin: 1ex 1em 1ex 1em ;
    }
```

```
}

@media print {
    body {
        font-family: "Linux Libertine O",
        "DejaVu Serif", "Bitstream Vera Serif",
        "Liberation Serif", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    }
    nav.sidetoc { display:none; }
    nav.topnavigation { display: none; }
    nav.botnavigation { display: none; }
}

@media handheld {
    nav.sidetoc { display:none; }
    nav.topnavigation { display:block }
    nav.botnavigation { display:block }
}

@media projection {
    nav.sidetoc { display:none; }
    nav.topnavigation { display:block }
    nav.botnavigation { display:block }
}
\end{filecontents*}
% \end{Verbatim}% for syntax highlighting
\end{LWRwriteconf}
```

39.5 lwarp_sagebrush.css

File `lwarp_sagebrush.css` An optional css which may be used for a semi-modern appearance.

If used, this must be present both when compiling the project and also when distributing the HTML files.

Config file:

```
\begin{LWRwriteconf}
\begin{filecontents*}{lwarp_sagebrush.css}
@import url("lwarp.css") ;


A:link {color:#105030 ; text-decoration: none ; }
A:visited {color:#705030 ; text-shadow:1px 1px 2px #a0a0a0;}
A:hover {color:#006000 ; text-decoration: underline ; text-shadow:0px 0px 2px #a0a0a0;}
A:active {color:#00C000 ; text-shadow:1px 1px 2px #a0a0a0;}


```

```
h1, h2, h3, h4, h5, h6, span.paragraph, span.subparagraph
{
    font-family: "URW Classico", Optima, "Linux Biolinum O",
        "Linux Libertine O", "Liberation Serif",
        "Nimbus Roman No 9 L",  "FreeSerif",
        "Hoefler Text", Times, "Times New Roman", serif;
    font-variant: small-caps ;
    font-weight: normal ;
    color: #304070 ;
    text-shadow: 2px 2px 3px #808080;
}

h1 {    /* title of the entire website, used on each page */
    font-variant: small-caps ;
    color: #304070 ;
    text-shadow: 2px 2px 3px #808080;
    background-color: #F7F7F0 ;
    background-image: linear-gradient(to bottom, #F7F7F0, #C0C0C4);
}

h1 {
  border-bottom: 1px solid #304070;
  border-top: 2px solid #304070;
}

h2 {
  border-bottom: 1px solid #304070;
  border-top: 2px solid #304070;
    background-color: #F7F7F0 ;
    background-image: linear-gradient(to bottom, #F7F7F0, #DAD0C0);
}



div.abstract {
    background: #f5f5eb ;
    background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);

  border: 1px solid silver;
    border-radius: 1em ;
}

div.abstract dl {line-height:1.5;}
div.abstract dt {color:#304070;}

div.abstracttitle{
    font-family: "URW Classico", Optima, "Linux Biolinum O",
        "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    font-weight:bold;
```

```
    font-variant: small-caps ;
    font-size:1.5em;
    border-bottom: 1px solid silver ;
    color: #304070 ;
    text-align: center ;
    text-shadow: 1px 1px 2px #808080;
}

span.abstractrunintitle{
    font-family: "URW Classico", Optima, "Linux Biolinum O",
        "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    font-weight:bold;
}


div.epigraph, div.dictum {
    background: #f5f5eb ;
    background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);

    border: 1px solid silver ;
    border-radius: 1ex ;
    box-shadow: 3px 3px 3px #808080 ;
}


.example {
    background-color: #f5f5eb ;
    background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);

}

div.exampletitle{
    font-family: "URW Classico", Optima, "Linux Biolinum O",
        "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
        "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
    font-weight:bold;
    font-variant: small-caps ;
    border-bottom: 1px solid silver ;
    color: #304070 ;
    text-align: center ;
    text-shadow: 1px 1px 2px #808080;
}


.sidebar {
    background-color: #f5f5eb ;
    background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);

}
```

```
2958
2959 div.sidebartitle{
2960     font-family: "URW Classico", Optima, "Linux Biolinum O",
2961         "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
2962         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
2963     font-weight:bold;
2964     font-variant: small-caps ;
2965     border-bottom: 1px solid silver ;
2966     color: #304070 ;
2967     text-align: center ;
2968     text-shadow: 1px 1px 2px #808080;
2969 }
2970
2971
2972 .fancyvrblabel {
2973     font-family: "URW Classico", Optima, "Linux Biolinum O",
2974         "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
2975         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
2976     font-weight:bold;
2977     font-variant: small-caps ;
2978     font-size: 1.5em ;
2979     color: #304070 ;
2980     text-align: center ;
2981     text-shadow: 1px 1px 2px #808080;
2982 }
2983
2984 div.minipage {
2985     background-color: #eeeee7 ;
2986     border: 1px solid silver ;
2987     border-radius: 1ex ;
2988 }
2989
2990 table div.minipage { background: none ; border: none ; }
2991
2992 div.framebox div.minipage {border:none ; background:none}
2993
2994 section.textbody > div.minipage {
2995     box-shadow: 3px 3px 3px #808080 ;
2996 }
2997
2998 div.fboxBlock div.minipage { box-shadow: none ; }
2999
3000 .framed .minipage , .framedleftbar .minipage {
3001     border: none ;
3002     background: none ;
3003     padding: 0ex ;
3004     margin: 0ex ;
3005 }
3006
3007 figure.figure .minipage, figcaption .minipage { border: none; }
```

```
3008
3009 div.marginblock div.minipage ,
3010 div.marginparblock div.minipage
3011     { border: none; }
3012
3013 figure , div.marginblock {
3014     background-color: #eeeee7 ;
3015     border: 1px solid silver ;
3016     border-radius: 1ex ;
3017     box-shadow: 3px 3px 3px #808080 ;
3018 }
3019
3020 figure figure {
3021     border: 1px solid silver ;
3022     margin: 0em ;
3023     box-shadow: none ;
3024 }
3025
3026 /*
3027 figcaption {
3028     border-top: 1px solid silver ;
3029     border-bottom: 1px solid silver ;
3030     background-color: #e8e8e8 ;
3031 }
3032 */
3033
3034
3035 div.table {
3036     box-shadow: 3px 3px 3px #808080 ;
3037 }
3038
3039 /*
3040 .tnotes {
3041     background: #e8e8e8;
3042     border: 1px solid silver;
3043 }
3044 */
3045
3046
3047 nav.topnavigation{
3048     background-color: #b0b8b0 ;
3049     background-image: linear-gradient(to bottom,#e0e0e0,#b0b8b0) ;
3050 }
3051
3052 nav.botnavigation{
3053     background-color: #b0b8b0 ;
3054     background-image: linear-gradient(to top,#e0e0e0,#b0b8b0) ;
3055 }
3056
3057
```

```
3058
3059 header{
3060     background-color: #F7F7F0 ;
3061     background-image: linear-gradient(to top, #F7F7F0, #b0b8b0);
3062 }
3063
3064 footer{
3065     background-color: #F7F7F0 ;
3066     background-image: linear-gradient(to bottom, #F7F7F0, #b0b8b0);
3067 }
3068
3069
3070
3071 nav.sidetoc {
3072     background-color: #F7F7F0 ;
3073     background-image: linear-gradient(to bottom, #F7F7F0, #C0C0C0);
3074     box-shadow: 3px 3px 3px #808080 ;
3075     border-radius: 0px 0px 0px 20px ;
3076     }
3077
3078 div.sidetoctitle {color: #304070 ; }
3079
3080 nav.sidetoc a:hover {
3081     color:#006000 ;
3082     text-decoration: none ;
3083     text-shadow:0px 0px 2px #a0a0a0;
3084 }
3085
3086
3087 @media screen and (max-width: 45em) {
3088     nav.sidetoc { border-radius: 0 ; }
3089 }
3090
3091
3092 \end{filecontents*}
3093 % \end{Verbatim}% for syntax highlighting
3094 \end{LWRwriteconf}
```

39.6 lwarp_formal.css

File `lwarp_formal.css` An optional css which may be used for a more formal appearance.

If used, this must be present both when compiling the project and also when distributing the HTML files.

Config file:

```
3095 \begin{LWRwriteconf}
3096 \begin{filecontents*}{lwarp_formal.css}
3097 @import url("lwarp.css") ;
```

```
3098
3099
3100
3101 A:link {color:#802020 ; text-decoration:none; }
3102 A:visited {color:#802020 ; text-shadow:none ;}
3103 A:hover {color:#400000 ; text-shadow:none ;}
3104 A:active {color:#C00000 ; text-shadow:none ;}
3105
3106
3107 body {
3108     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
3109         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
3110         "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
3111         "Times New Roman", serif;
3112     background: #fffcf5;
3113 }
3114
3115 span.textrm {
3116     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
3117         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
3118         "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
3119         "Times New Roman", serif;
3120 }
3121
3122 span.textsf {
3123      font-family: "DejaVu Sans", "Bitstream Vera Sans",
3124         Geneva, Verdana, sans-serif ;
3125 }
3126
3127
3128
3129 h1, h2, h3, h4, h5, h6, span.paragraph, span.subparagraph
3130 {
3131     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
3132         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
3133         "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
3134         "Times New Roman", serif;
3135     color: #800000 ;
3136     text-shadow: none ;
3137 }
3138
3139 h1, h2 {
3140     background-color: #fffcf5 ;
3141     background-image: none ;
3142     border-bottom: 1px solid #808080;
3143     border-top: 2px solid #808080;
3144 }
3145
3146 div.abstracttitle {
3147     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
```

```
        "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
        "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
        "Times New Roman", serif;
    color: black ;
    text-shadow: none ;
}

span.abstractrunintitle {
    font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
        "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
        "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
        "Times New Roman", serif;
    color: black ;
    text-shadow: none ;
}

div.abstract { font-size: 100% }

.sidebar {
    background: #fffcf5;
    background-image: none ;
  margin: 2em 5% 2em 5%;
  padding: 0.5em 1em;
  border: none ;
  border-top : 1px solid silver;
  border-bottom : 1px solid silver;
  font-size: 90% ;
}

div.sidebartitle{
    font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
        "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
        "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
        "Times New Roman", serif;
    color: #800000 ;
    text-shadow: none ;
    border: none ;
}

.example {
    background: #fffcf5;
    background-image: none ;
  margin: 2em 5% 2em 5%;
  padding: 0.5em 1em;
  border: none ;
  border-top : 1px solid silver;
  border-bottom : 1px solid silver;
}

div.exampletitle{
```

```
3198     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
3199         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
3200         "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
3201         "Times New Roman", serif;
3202     color: #800000 ;
3203     text-shadow: none ;
3204     border: none ;
3205 }
3206
3207 div.fancyvrblabel{
3208     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
3209         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
3210         "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
3211         "Times New Roman", serif;
3212     color: #800000 ;
3213     text-shadow: none ;
3214     border: none ;
3215 }
3216
3217
3218
3219 figure {
3220     margin: 5ex 5% 5ex 5% ;
3221     padding: 1ex 1em 1ex 1em ;
3222     background-color: #fffcf5 ;
3223     overflow-x: auto ;
3224     border: none ;
3225 /*     border-top: 1px solid silver; */
3226 /*     border-bottom: 1px solid silver; */
3227 }
3228
3229
3230 figcaption , .lstlisting {
3231     border: none ;
3232 /*     border-top: 1px solid silver ; */
3233 /*     border-bottom: 1px solid silver ; */
3234     background-color: #fffcf5 ;
3235 }
3236
3237 .tnotes {
3238     background: #fffcf5 ;
3239 }
3240
3241 .theorem {
3242         background: none ;
3243 }
3244
3245 .minipage {
3246     background-color: #fffcf5 ;
3247     border: none ;
```

```
}

div.floatrow figure { border: none ; }

figure figure { border: none ; }


nav.toc, nav.lof, nav.lot, nav.lol {
    font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
        "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
        "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
        "Times New Roman", serif;
}

nav.sidetoc {
    font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
        "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
        "Liberation Serif", "Nimbus Roman No 9 L",  "FreeSerif", Times,
        "Times New Roman", serif;
    background-image: linear-gradient(to bottom, #fffcf5, #C0C0C0);
    border-radius: 0px 0px 0px 20px ;
}

div.sidetoctitle{
    color: #800000 ;
}

header{
    background-color: #e0e0e0 ;
    background-image: linear-gradient(to top, #fffcf5, #b0b0b0);
    text-align:center ;
}

footer{
    background-color: #e0e0e0 ;
    background-image: linear-gradient(to bottom, #fffcf5, #b0b0b0);
    padding: 2ex 1em 2ex 1em ;
    clear:right ;
    text-align:left ;
}

nav.botnavigation {
    background: #dedcd5 ;
    border-top: 1px solid black ;
}
\end{filecontents*}
% \end{Verbatim}% for syntax highlighting
\end{LWRwriteconf}
```

39.7 sample_project.css

File `sample_project.css` The project-specific CSS file. Use with `\CSSFilename`.

If used, this must be present both when compiling the project and also when distributing the HTML files.

Config file:

```
\begin{LWRwriteconf}
\begin{filecontents*}{sample_project.css}
/* ( --- Start of project.css --- ) */
/* ( --- A sample project-specific CSS file for lwarp --- ) */

/* Uncomment one of the following: */
@import url("lwarp.css") ;
/* @import url("lwarp_formal.css") ; */
/* @import url("lwarp_sagebrush.css") ; */

/* Project-specific CSS setting follow here. */
/* . . . */

/* ( --- End of project.css --- ) */
\end{filecontents*}
% \end{Verbatim}% for syntax highlighting
\end{LWRwriteconf}
```

39.8 lwarp.ist

File `lwarp.ist` Used to modify the index for lwarp.

This must be present when compiling the project, but does not need to be present when distributing the resulting HTML files.

The page compositor line is for memoir's `\specialindex`.

Config file:

```
\begin{LWRwriteconf}
\begin{filecontents*}{lwarp.ist}
preamble
"\\begin{theindex}
  \\providecommand*\\lettergroupDefault[1]{}
  \\providecommand*\\lettergroup[1]{%
      \\par\\textbf{#1}\\par
      \\nopagebreak
  }
"
headings_flag 1
heading_prefix "
  \\lettergroup{"
```

```
heading_suffix "}"
delim_0 ", \\hyperindexref{"
delim_1 ", \\hyperindexref{"
delim_2 ", \\hyperindexref{"
delim_n "}, \\hyperindexref{"
delim_r "} -- \\hyperindexref{"
delim_t "}"
page_compositor "."
\end{filecontents*}
% \end{Verbatim}% for syntax highlighting
\end{LWRwriteconf}
```

39.9 `lwarp.xdy`

File `lwarp.xdy` Used to modify the index for lwarp.

This must be present when compiling the project, but does not need to be present when distributing the resulting HTML files.

See:
https://tex.stackexchange.com/questions/80300/how-can-i-convince-hyperref-and-xindy-to-play-together-nicely

Config file:

```
\begin{LWRwriteconf}
\begin{filecontents*}{lwarp.xdy}
(require "tex/inputenc/latin.xdy")
(merge-rule "\\PS *" "Postscript")
(require "texindy.xdy")
(require "page-ranges.xdy")
(require "book-order.xdy")
(define-location-class "arabic-page-numbers"
    ("arabic-numbers") :min-range-length 1)
(require "makeindex.xdy")
(define-attributes (("hyperindexref")))
(markup-locref :open "\hyperindexref{" :close "}")
(markup-locref :open "\hyperindexref{" :close "}" :attr "hyperpage")
(markup-locref :open "\textbf{\hyperindexref{" :close "}}" :attr "textbf")
(markup-locref :open "\textit{\hyperindexref{" :close "}}" :attr "textit")
(define-location-class-order ("roman-page-numbers"
                  "arabic-page-numbers"
                  "alpha-page-numbers"
                  "Roman-page-numbers"
                  "Alpha-page-numbers"
                  "see"
                  "seealso"))
\end{filecontents*}
% \end{Verbatim}% for syntax highlighting
\end{LWRwriteconf}
```

39.10 lwarp_one_limage.cmd

File lwarp_one_limage.cmd Used by lwarp to help make lateximages when using WINDOWS.

This must be present when compiling the project, but does not need to be present when distributing the resulting HTML files.

The arguments are each of the three fields from lateximages.txt, and also the base name of the source file.

MikTeX does not allow file lwarp_one_limage.cmd to be created directly by *lwarpmk*, so lwarp_one_limage.txt is created instead, then copied to lwarp_one_limage.cmd by *lwarpmk*. This occurs each time *lwarpmk* used to create lateximages.

Config file:

```
\begin{LWRwriteconf}
\begin{filecontents*}{lwarp_one_limage.txt}
@echo off
pdfseparate -f %1 -l %1 %4_html.pdf lateximages\lateximagetemp-%%d.pdf
pdfcrop  --hires  lateximages\lateximagetemp-%1.pdf lateximages\%3.pdf
pdftocairo  -svg -noshrink  lateximages\%3.pdf lateximages\%3.svg
del lateximages\%3.pdf
del lateximages\lateximagetemp-%1.pdf
exit
\end{filecontents*}
\end{LWRwriteconf}
```

39.11 lwarp_mathjax.txt

File lwarp_mathjax.txt Used by lwarp when using MATHJAX.

This must be present when compiling the project, but does not need to be present when distributing the resulting HTML files.

Config file:

```
\begin{LWRwriteconf}
\begin{filecontents*}{lwarp_mathjax.txt}
<!-- https://groups.google.com/forum/#!topic/
                                mathjax-users/jUtewUcE2bY -->
<script type="text/x-mathjax-config">
MathJax.Hub.Register.StartupHook("TeX AMSmath Ready",function () {
    var seteqsectionDefault = {name: "", num: 0};
    var seteqsections = {}, seteqsection = seteqsectionDefault;
    var TEX = MathJax.InputJax.TeX, PARSE = TEX.Parse;
    var AMS = MathJax.Extension["TeX/AMSmath"];
    TEX.Definitions.Add({
    macros: {
        seteqsection: "mySection",
        seteqnumber: "mySetEqNumber"
```

```
    }
    });

    PARSE.Augment({
    mySection: function (name) {
        seteqsection.num = AMS.number;
        var n = this.GetArgument(name);
        if (n === "") {
            seteqsection = seteqsectionDefault;
        } else {
            if (!seteqsections["_"+n])
                seteqsections["_"+n] = {name:n, num:0};
            seteqsection = seteqsections["_"+n];
        }
        AMS.number = seteqsection.num;
    },
    mySetEqNumber: function (name) {
        var n = this.GetArgument(name);
        if (!n || !n.match(/^ *[0-9]+ *$/))
            n = "";
        else
            n = parseInt(n)-1;
        <!-- $ syntax highlighting -->
        if (n === "" || n < 1)
            TEX.Error
            ("Argument to "+name+" should be a positive integer");
        AMS.number = n;
    }
    });
    MathJax.Hub.Config({
    TeX: {
        equationNumbers: {
            formatTag: function (n) {
                <!-- if not numeric, don't include the chapter -->
                if (!n.match(/^ *[0-9]+ *$/ ))
                <!-- $ syntax highlighting -->
                    return "("+(n).replace(/^\./,"")+")" ;
                else
                    return "("+(seteqsection.name+"."+n).replace(/^\./,"")+")" ;
            },
            formatID: function (n) {
                n = (seteqsection.name+'.'+n).replace
                    (/[:"'<>&]/g,"").replace(/^\./,"");
                return 'mjx-eqn-' + n;
            }
        }
    }
    });
});
</script>
```

```
<!-- http://docs.mathjax.org/en/latest/options/ThirdParty.html -->
<script type="text/x-mathjax-config">
  MathJax.Ajax.config.path["Contrib"] =
    "https://cdn.mathjax.org/mathjax/contrib";
</script>

<script type="text/x-mathjax-config">
MathJax.Hub.Config({
    TeX: {
    equationNumbers: {
        autoNumber: "AMS"
    }
    }
});
</script>

<!-- Alternative CDN provider: -->
<script type="text/javascript" async
src="https://cdnjs.cloudflare.com/ajax/libs/mathjax/2.7.4/MathJax.js?config=TeX-AMS_HTML-full">
</script>

<!-- No longer supported after April 30, 2017: -->
<!--
<script
  src="https://cdn.mathjax.org/mathjax/latest/MathJax.js?config=TeX-AMS_HTML-full">
</script>
-->

\end{filecontents*}
% \end{Verbatim}% for syntax highlighting
\end{LWRwriteconf}
```

39.12 `lwarpmk.lua` — `lwarpmk` option

Opt `lwarpmk` Creates a local copy of *lwarpmk*.

Prog `lwarpmk` Command-line utility to process lwarp files and images.

parallel processing `latexi`mages and SVG math images are generated using multiple processes in parallel. For UNIX and LINUX, every 32 images the `wait` command is issued to wait for the previous batch of images to finish processing before starting a new batch. For WINDOWS, every 32 images one task is dispatched with

```
START /B /WAIT /BELOWNORMAL
```

which causes the operating system to wait until this lesser-priority tasks finishes, hopefully also waiting for the normal priority tasks which were already in progress to also complete. Afterwards, the next batch of images is started.

The following is only generated if the `lwarpmk` option was given to lwarp.

```
\begin{LWR@createlwarpmk}

\begin{filecontents*}{lwarpmk.lua}
#!/usr/bin/env texlua

-- Copyright 2016-2018 Brian Dunn


printversion = "v0.62"
requiredconfversion = "1" -- also at *lwarpmk.conf

function printhelp ()
print ("lwarpmk: Use lwarpmk -h or lwarpmk --help for help.") ;
end


function printusage ()
--
-- Print the usage of the lwarpmk command:
--
print ( [[

lwarpmk print [-p project]: Compile the print version if necessary.
lwarpmk print1 [-p project]: Forced single compile of the print version.
lwarpmk printindex [-p project]: Process print indexes.
lwarpmk printglossary [-p project]: Process the glossary for the print version.
lwarpmk html [-p project]: Compile the HTML version if necessary.
lwarpmk html1 [-p project]: Forced single compile of the HTML version.
lwarpmk htmlindex [-p project]: Process HTML indexes.
lwarpmk htmlglossary [-p project]: Process the glossary for the html version.
lwarpmk again [-p project]: Touch the source code to trigger recompiles.
lwarpmk limages [-p project]: Process the "lateximages" created by lwarp.sty.
lwarpmk pdftohtml [-p project]:
    For use with latexmk or a Makefile:
    Converts project_html.pdf to project_html.html and individual HTML files.
    Finishes the HTML conversion even if there was a compile error.
lwarpmk pdftosvg <list of file names>: Converts each PDF file to SVG.
lwarpmk epstopdf <list of file names>: Converts each EPS file to PDF.
lwarpmk clean [-p project]: Remove *.aux, *.toc, *.lof/t,
    *.idx, *.ind, *.log, *_html_inc.*, .gl*
lwarpmk cleanall [-p project]: Remove auxiliary files, project.pdf, *.html
lwarpmk cleanlimages: Removes all images from the "lateximages" directory.
lwarpmk -h: Print this help message.
```

```
lwarpmk --help: Print this help message.

]] )
-- printconf ()
end


function splitfile (destfile,sourcefile)
--
-- Split one large sourcefile into a number of files,
-- starting with destfile.
-- The file is split at each occurance of <!--|Start file|newfilename|*
--
print ("lwarpmk: Splitting " .. sourcefile .. " into " .. destfile) ;
local sfile = io.open(sourcefile)
io.output(destfile)
for line in sfile:lines() do
i,j,copen,cstart,newfilename = string.find (line,"(.*)|(.*)|(.*)|") ;
if ( (i~= nil) and (copen == "<!--") and (cstart == "Start file")) then
    -- split the file
    io.output(newfilename) ;
else
    -- not a splitpoint
    io.write (line .. "\n") ;
end
end -- do
io.close(sfile)
end -- function


function cvalueerror ( line, linenum , cvalue )
--
-- Incorrect value, so print an error and exit.
--
    print ("lwarpmk: ===")
    print ("lwarpmk: " .. linenum .. " : " .. line ) ;
    print (
        "lwarpmk: incorrect variable value \"" .. cvalue ..
        "\" in lwarpmk.conf.\n"
    ) ;
    print ("lwarpmk: ===")
--    printconf () ;
    os.exit(1) ;
end


function ignoreconf ()
-- Global argument index
argindex = 2
end
```

```
3561
3562 function loadconf ()
3563 --
3564 -- Load settings from the project's "lwarpmk.conf" file:
3565 --
3566 -- Default configuration filename:
3567 local conffile = "lwarpmk.conf"
3568 local confroot = "lwarpmk"
3569 -- Global argument index
3570 argindex = 2
3571 -- Optional configuration filename:
3572 if ( arg[argindex] == "-p" ) then
3573     argindex = argindex + 1
3574     confroot = arg[argindex]
3575     conffile = confroot..".lwarpmkconf"
3576     argindex = argindex + 1
3577 end
3578 -- Additional defaults:
3579 confversion = "0"
3580 opsystem = "Unix"
3581 latexmk = "false"
3582 printlatexcmd = ""
3583 HTMLlatexcmd = ""
3584 printindexcmd = ""
3585 HTMLindexcmd = ""
3586 latexmkindexcmd = ""
3587 -- to be removed:
3588 -- indexprog = "makeindex"
3589 -- makeindexstyle = "lwarp.ist"
3590 -- xindylanguage = "english"
3591 -- xindycodepage = "utf8"
3592 -- xindystyle = "lwarp.xdy"
3593 -- pdftotextenc = "UTF-8"
3594 glossarycmd = "makeglossaries"
3595 -- Verify the file exists:
3596 if (lfs.attributes(conffile,"mode")==nil) then
3597     -- file not exists
3598     print ("lwarpmk: ===")
3599     print ("lwarpmk: File \"" .. conffile .."\" does not exist.")
3600     print ("lwarpmk: Move to the project's source directory,")
3601     print ("lwarpmk: recompile using pdflatex, xelatex, or lualatex,")
3602     print ("lwarpmk: then try using lwarpmk again.")
3603     if ( arg[argindex] ~= nil ) then
3604         print (
3605             "lwarpmk: (\"" .. confroot ..
3606             "\" does not appear to be a project name.)"
3607         )
3608     end
3609     print ("lwarpmk: ===")
3610     printhelp () ;
```

```
    os.exit(1) -- exit the entire lwarpmk script
else -- file exists
-- Read the file:
print ("lwarpmk: Reading " .. conffile ..".")
local cfile = io.open(conffile)
-- Scan each line, parsing each line as: name = [[string]]
local linenum = 0
for line in cfile:lines() do -- scan lines
linenum = linenum + 1
i,j,cvarname,cvalue = string.find (line,"([%w-_]*)%s*=%s*%[%[([^%]]*)%]%]") ;
-- Error if incorrect enclosing characters:
if ( i == nil ) then
    print ("lwarpmk: ===")
    print ("lwarpmk: " ..  linenum .. " : " .. line ) ;
    print ("lwarpmk: Incorrect entry in " .. conffile ..".\n" ) ;
    print ("lwarpmk: ===")
--    printconf () ;
    os.exit(1) ;
end -- nil
if ( cvarname == "confversion" ) then
    confversion = cvalue
elseif ( cvarname == "opsystem" ) then
    -- Verify choice of opsystem:
    if ( (cvalue == "Unix") or (cvalue == "Windows") ) then
        opsystem = cvalue
    else
        cvalueerror ( line, linenum , cvalue )
    end
elseif ( cvarname == "sourcename" ) then sourcename = cvalue
elseif ( cvarname == "homehtmlfilename" ) then homehtmlfilename = cvalue
elseif ( cvarname == "htmlfilename" ) then htmlfilename = cvalue
elseif ( cvarname == "latexmk" ) then latexmk = cvalue
elseif ( cvarname == "printlatexcmd" ) then printlatexcmd = cvalue
elseif ( cvarname == "HTMLlatexcmd" ) then HTMLlatexcmd = cvalue
elseif ( cvarname == "printindexcmd" ) then printindexcmd = cvalue
elseif ( cvarname == "HTMLindexcmd" ) then HTMLindexcmd = cvalue
elseif ( cvarname == "latexmkindexcmd" ) then latexmkindexcmd = cvalue
elseif ( cvarname == "glossarycmd" ) then glossarycmd = cvalue
elseif ( cvarname == "pdftotextenc" ) then pdftotextenc = cvalue
else
    print ("lwarpmk: ===")
    print ("lwarpmk: " .. linenum .. " : " .. line ) ;
    print (
        "lwarpmk: Incorrect variable name \"" .. cvarname .. "\" in " ..
        conffile ..".\n"
    ) ;
    print ("lwarpmk: ===")
--    printconf () ;
os.exit(1) ;
end -- cvarname
```

```
end -- do scan lines
io.close(cfile)
end -- file exists
-- Error if sourcename is "lwarp".
-- This could happen if a local copy of lwarp has recently been recompiled.
if sourcename=="lwarp" then
    print ("lwarpmk: ===")
    print ("lwarpmk: lwarp.sty has recently been recompiled in this directory,")
    print ("lwarpmk: and \"lwarpmk.conf\" is no longer set for your own project.")
    print ("lwarpmk: Recompile your own project using pdf/lua/xelatex <projectname>.")
    print ("lwarpmk: After a recompile, \"lwarpmk.conf\" will be set for your project,")
    print ("lwarpmk: and you may again use lwarpmk.")
    print ("lwarpmk: ===")
    os.exit(1)
end -- sourcename of "lwarp"
-- Select some operating-system commands:
if opsystem=="Unix" then  -- For Unix / Linux / Mac OS:
    rmname = "rm"
    mvname = "mv"
    cpname = "cp"
    touchnamepre = "touch"
    touchnamepost = ""
    newtouchname = "touch"
    dirslash = "/"
    opquote= "\'"
    cmdgroupopenname = " ( "
    cmdgroupclosename = " ) "
    seqname = " && "
    bgname = " &"
elseif opsystem=="Windows" then -- For Windows
    rmname = "DEL"
    mvname = "MOVE"
    cpname = "COPY"
    touchnamepre = "COPY /b"
    touchnamepost = "+,,"
    newtouchname = "echo empty >"
    dirslash = "\\"
    opquote= "\""
    cmdgroupopenname = ""
    cmdgroupclosename = ""
    seqname = " & "
    bgname = ""
else
    print ("lwarpmk: ===")
    print ("lwarpmk: Select Unix or Windows for opsystem." )
    print ("lwarpmk: ===")
    os.exit(1)
end --- for Windows
-- Warning if the operating system does not appear to be correct,
-- in case files were transferred to another system.
```

```
3711 if ( (package.config:sub(1,1)) ~= dirslash ) then
3712     print ("lwarpmk: ===")
3713     print ("lwarpmk: It appears that lwarpmk.conf is for a different operating system." )
3714     print ("lwarpmk: To adjust lwarpmk.conf for the current operating system," )
3715     print ("lwarpmk:   recompile the original document using xe/lua/pdflatex." )
3716     print ("lwarpmk: ")
3717     print ("lwarpmk: lwarpmk shall attempt to continue...")
3718     print ("lwarpmk: ===")
3719 end
3720 -- Error if the configuration file's version is not current:
3721 if ( confversion ~= requiredconfversion ) then
3722     print ("lwarpmk: ===")
3723     print ("lwarpmk: The configuration files lwarpmk.conf and "..sourcename..".lwarpmkconf" )
3724     print ("lwarpmk:   must be updated.  To update the configuration files," )
3725     print ("lwarpmk:   recompile "..sourcename..".tex using xe/lua/pdflatex," )
3726     print ("lwarpmk:   then use lwarpmk again.")
3727     print ("lwarpmk: ===")
3728     os.exit(1)
3729 end
3730 end -- loadconf
3731
3732
3733 function executecheckerror ( executecommands , errormessage )
3734 --
3735 -- Execute an operating system call,
3736 -- and maybe exit with an error message.
3737 --
3738 local err
3739 err = os.execute ( executecommands )
3740 if ( err ~= 0 ) then
3741     print ("lwarpmk: ===")
3742     print ("lwarpmk: " .. errormessage )
3743     print ("lwarpmk: ===")
3744     os.exit(1)
3745 end
3746 end -- executecheckerror
3747
3748
3749 function refreshdate ()
3750 os.execute(touchnamepre .. " " .. sourcename .. ".tex " .. touchnamepost)
3751 end
3752
3753
3754
3755 function reruntoget (filesource)
3756 --
3757 -- Scan the LaTeX log file for the phrase "Rerun to get",
3758 -- indicating that the file should be compiled again.
3759 -- Return true if found.
3760 --
```

```
local fsource = io.open(filesource)
for line in fsource:lines() do
if ( string.find(line,"Rerun to get") ~= nil ) then
    io.close(fsource)
    return true
end -- if
end -- do
io.close(fsource)
return false
end


function onetime (latexcmd, fsuffix)
--
-- Compile one time, return true if should compile again.
-- fsuffix is "" for print, "_html" for HTML output.
--
print("lwarpmk: Compiling with: " .. latexcmd)
executecheckerror (
    latexcmd ,
    "Compile error."
)
return (reruntoget(sourcename .. fsuffix .. ".log") ) ;
end


function manytimes (latexcmd, fsuffix)
--
-- Compile up to five times.
-- fsuffix is "" for print, "_html" for HTML output
--
if onetime(latexcmd, fsuffix) == true then
if onetime(latexcmd, fsuffix) == true then
if onetime(latexcmd, fsuffix) == true then
if onetime(latexcmd, fsuffix) == true then
if onetime(latexcmd, fsuffix) == true then
end end end end end
end


function verifyfileexists (filename)
--
-- Exit if the given file does not exist.
--
if (lfs.attributes ( filename , "modification" ) == nil ) then
    print ("lwarpmk: ===")
    print ("lwarpmk: " .. filename .. " not found." ) ;
    print ("lwarpmk: ===")
    os.exit (1) ;
```

```
end
end


function pdftohtml ()
--
-- Convert <project>_html.pdf into HTML files:
--
-- Convert to text:
print ("lwarpmk: Converting " .. sourcename
    .."_html.pdf to " .. sourcename .. "_html.html")
os.execute("pdftotext  -enc " .. pdftotextenc .. "  -nopgbrk  -layout "
    .. sourcename .. "_html.pdf " .. sourcename .. "_html.html")
-- Split the result into individual HTML files:
splitfile (homehtmlfilename .. ".html" , sourcename .. "_html.html")
end


function removeaux ()
--
-- Remove auxiliary files:
-- All .aux files are removed since there may be many bbl*.aux files.
--
os.execute ( rmname .. " *.aux " ..
    sourcename ..".toc " .. sourcename .. "_html.toc " ..
    sourcename ..".lof " .. sourcename .. "_html.lof " ..
    sourcename ..".lot " .. sourcename .. "_html.lot " ..
    " *.idx " ..
    " *.ind " ..
    sourcename ..".ps " .. sourcename .."_html.ps " ..
    sourcename ..".log " .. sourcename .. "_html.log " ..
    sourcename ..".gl* " .. sourcename .. "_html.gl* " ..
    " *_html_inc.* "
    )
end

function checkhtmlpdfexists ()
--
-- Error if the HTML document does not exist.
-- The lateximages are drawn from the HTML PDF version of the document,
-- so "lwarpmk html" must be done before "lwarpmk limages".
--
local htmlpdffile = io.open(sourcename .. "_html.pdf", "r")
if ( htmlpdffile == nil ) then
    print ("")
    print ("lwarpmk: ===")
    print ("lwarpmk: The HTML version of the document does not exist.")
    print ("lwarpmk: Enter \"lwarpmk html\" to compile the HTML version.")
    print ("lwarpmk: ===")
```

```
3861     os.exit(1)
3862 end
3863 io.close (htmlpdffile)
3864 end -- checkhtmlpdfexists
3865
3866
3867 function warnlimages ()
3868 --
3869 -- Warning of a missing lateximages.txt file:
3870 --
3871     print ("lwarpmk: ===")
3872     print ("lwarpmk: \"lateximages.txt\" does not exist.")
3873     print ("lwarpmk: Your project does not use SVG math or other lateximages,")
3874     print ("lwarpmk: or the file has been deleted somehow.")
3875     print ("lwarpmk: Use \"lwarpmk html\" to recompile your project")
3876     print ("lwarpmk: and recreate \"lateximages.txt\".")
3877     print ("lwarpmk: If your project does not use SVG math or other lateximages,")
3878     print ("lwarpmk: then \"lateximages.txt\" will never exist, and")
3879     print ("lwarpmk: \"lwarpmk limages\" will not be necessary.")
3880     print ("lwarpmk: ===")
3881 end -- warnlimages
3882
3883
3884 function checklimages ()
3885 --
3886 -- Check lateximages.txt to see if need to recompile first.
3887 -- If any entry has a page number of zero, then there were incorrect images.
3888 --
3889 print ("lwarpmk: Checking for a valid lateximages.txt file.")
3890 local limagesfile = io.open("lateximages.txt", "r")
3891 if ( limagesfile == nil ) then
3892     warnlimages ()
3893     os.exit(1)
3894 end
3895 -- Track warning to recompile if find a page 0
3896 local pagezerowarning = false
3897 -- Scan lateximages.txt
3898 for line in limagesfile:lines() do
3899     -- lwimgpage is the page number in the PDF which has the image
3900     -- lwimghash is true if this filename is a hash
3901     -- lwimgname is the lateximage filename root to assign for the image
3902     i,j,lwimgpage,lwimghash,lwimgname = string.find (line,"|(.*)|(.*)|(.*)|")
3903     -- For each entry:
3904     if ( (i~=nil) ) then
3905         -- If the page number is 0, image references are incorrect
3906         --  and must recompile the soure document:
3907         if ( lwimgpage == "0" ) then
3908             pagezerowarning = true
3909         end
3910     end -- if i~=nil
```

```
end -- do
if ( pagezerowarning ) then
    print ("")
    print ("lwarpmk: ===")
    print ("lwarpmk: The document must be recompiled before creating the lateximages.")
    print ("lwarpmk: Enter \"lwarpmk html\" again, then try \"lwarpmk limages\" again.")
    print ("lwarpmk: ===")
    os.exit(1) ;
end -- pagezerowarning
end -- checklimages


function createuniximage ( lwimgfullname )
--
-- Create one lateximage for Unix / Linux / Mac OS.
--
executecheckerror (
    cmdgroupopenname ..
    "pdfseparate -f " .. lwimgpage .. " -l " .. lwimgpage .. " " ..
        sourcename .."_html.pdf " ..
        "lateximages" .. dirslash .."lateximagetemp-%d" .. ".pdf" ..
        seqname ..
    -- Crop the image:
    "pdfcrop  --hires  lateximages" .. dirslash .. "lateximagetemp-" ..
        lwimgpage .. ".pdf " ..
        "lateximages" .. dirslash .. lwimgname .. ".pdf" ..
        seqname ..
    -- Convert the image to svg:
    "pdftocairo -svg  -noshrink  lateximages" .. dirslash .. lwimgname .. ".pdf " ..
        "lateximages" .. dirslash .. lwimgname ..".svg" ..
        seqname ..
    -- Remove the temporary files:
    rmname .. " lateximages" .. dirslash .. lwimgname .. ".pdf" .. seqname ..
    rmname .. " lateximages" .. dirslash .. "lateximagetemp-" .. lwimgpage .. ".pdf" ..
    cmdgroupclosename .. " >/dev/null " .. bgname
    ,
    "File error trying to convert " .. lwimgfullname
)
-- Every 32 images, wait for completion at below normal priority,
--  allowing other image tasks to catch up.
numimageprocesses = numimageprocesses + 1
if ( numimageprocesses > 32 ) then
    numimageprocesses = 0
    print ( "lwarpmk: waiting" )
    executecheckerror ( "wait" , "File error trying to wait.")
end
end -- createuniximage


function createwindowsimage ( lwimgfullname )
```

```
--
-- Create one lateximage for Windows.
--
-- Every 32 images, wait for completion at below normal priority,
--  allowing other image tasks to catch up.
numimageprocesses = numimageprocesses + 1
if ( numimageprocesses > 32 ) then
    numimageprocesses = 0
    thiswaitcommand = "/WAIT /BELOWNORMAL"
    print ( "lwarpmk: waiting" )
else
    thiswaitcommand = ""
end
-- Execute the image generation command
executecheckerror (
    "start /B " .. thiswaitcommand .. " \"\" lwarp_one_limage " ..
    lwimgpage .. " " ..
    lwimghash .. " " ..
    lwimgname .. " " ..
    sourcename .. " <nul >nul"
    ,
    "File error trying to create image."
)
end -- createwindowsimage


function createonelateximage ( line )
--
-- Given the next line of lateximages.txt, convert a single image.
--
-- lwimgpage is the page number in the PDF which has the image
-- lwimghash is true if this filename is a hash
-- lwimgname is the lateximage filename root to assign for the image
i,j,lwimgpage,lwimghash,lwimgname = string.find (line,"|(.*)|(.*)|(.*)|")
-- For each entry:
if ( (i~=nil) ) then
    -- Skip if the page number is 0:
    if ( lwimgpage == "0" ) then
        pagezerowarning = true
    else
        -- Skip is this image is hashed and already exists:
        local lwimgfullname = "lateximages" .. dirslash .. lwimgname .. ".svg"
        if (
            (lwimghash ~= "true") or
            (lfs.attributes(lwimgfullname,"mode")==nil) -- file not exists
        )
        then -- not hashed or not exists:
            -- Print the name of the file being generated:
            print ( "lwarpmk: " .. lwimgname )
            -- Touch/create the dest so that only once instance tries to build it:
```

```
            executecheckerror (
                newtouchname .. " " .. lwimgfullname ,
                "File error trying to touch " .. lwimgfullname
            )
            -- Separate out the image into its own single-page pdf:
            if opsystem=="Unix" then
                createuniximage (lwimgfullname)
            elseif opsystem=="Windows" then
                createwindowsimage (lwimgfullname)
            end
        end -- not hashed or not exists
    end -- not page 0
end -- not nil
end -- createonelateximage


function createlateximages ()
--
-- Create lateximages based on lateximages.txt:
--
-- See if the document must be recompiled first:
checklimages ()
-- See if the print version exists:
checkhtmlpdfexists ()
-- Attempt to create the lateximages:
print ("lwarpmk: Creating lateximages.")
local limagesfile = io.open("lateximages.txt", "r")
if ( limagesfile == nil ) then
    warnlateximages ()
    os.exit(1)
end
-- Create the lateximages directory, ignore error if already exists
err = os.execute("mkdir lateximages")
-- For Windows, create lwarp_one_limage.cmd from lwarp_one_limage.txt:
if opsystem=="Windows" then
    executecheckerror (
        cpname .. " lwarp_one_limage.txt lwarp_one_limage.cmd" ,
        "File error trying to copy lwarp_one_limage.txt to lwarp_one_limage.cmd"
    )
end -- create lwarp_one_limage.cmd
-- Track the number of parallel processes
numimageprocesses = 0
-- Track warning to recompile if find a page 0
pagezerowarning = false
-- Scan lateximages.txt
for line in limagesfile:lines() do
    createonelateximage ( line )
end -- do
io.close(limagesfile)
print ( "lwarpmk limages: ===")
```

```
print ( "lwarpmk limages: Wait a moment for the images to complete" )
print ( "lwarpmk limages:   before reloading the page." )
print ( "lwarpmk limages: ===")
print ( "lwarpmk limages: Done." )
if ( pagezerowarning == true ) then
    print ( "lwarpmk limages: WARNING: Images will be incorrect." )
    print ( "lwarpmk limages:   Enter \"lwarpmk cleanlimages\", then" )
    print ( "lwarpmk limages:   recompile the document one more time, then" )
    print ( "lwarpmk limages:   repeat \"lwarpmk images\" again." )
end -- pagezerowarning
end -- function


function convertepstopdf ()
--
-- Converts EPS files to PDF files.
-- The filenames are arg[argindex] and up.
-- arg[1] is the command "pdftosvg".
--
ignoreconf ()
for i = argindex , #arg do
    if (lfs.attributes(arg[i],"mode")==nil) then
        print ("lwarpmk: File \"" .. arg[i] .. "\" does not exist.")
    else
        print ("lwarpmk: Converting \"" .. arg[i] .. "\"")
        os.execute ( "epstopdf " .. arg[i] )
    end -- if
end -- do
end --function


function convertpdftosvg ()
--
-- Converts PDF files to SVG files.
-- The filenames are arg[argindex] and up.
-- arg[1] is the command "pdftosvg".
--
ignoreconf ()
for i = argindex , #arg do
    if (lfs.attributes(arg[i],"mode")==nil) then
        print ("lwarpmk: File \"" .. arg[i] .. "\" does not exist.")
    else
        print ("lwarpmk: Converting \"" .. arg[i] .. "\"")
        os.execute ( "pdftocairo -svg " .. arg[i] )
    end -- if
end -- do
end --function


-- Force an update and conclude processing:
```

```
function updateanddone ()
print ("lwarpmk: Forcing an update of " .. sourcename ..".tex.")
refreshdate ()
print ("lwarpmk: " .. sourcename ..".tex is ready to be recompiled.")
print ("lwarpmk: Done.")
end -- function


-- Start of the main code: --


-- lwarpmk --version :

if (arg[1] == "--version") then
print ( "lwarpmk: " .. printversion )

else -- not --version


-- print intro:

print ("lwarpmk: " .. printversion .. "  Automated make for the LaTeX lwarp package.")


-- lwarpmk print:

if arg[1] == "print" then
loadconf ()
if ( latexmk == "true" ) then
    print ("lwarpmk: Compiling with: " .. printlatexcmd)
    executecheckerror (
        printlatexcmd ,
        "Compile error."
    )
    print ("lwarpmk: Done.")
else -- not latexmk
    verifyfileexists (sourcename .. ".tex") ;
    -- See if up to date:
    if (
        ( lfs.attributes ( sourcename .. ".pdf" , "modification" ) == nil ) or
        (
            lfs.attributes ( sourcename .. ".tex" , "modification" ) >
            lfs.attributes ( sourcename .. ".pdf" , "modification" )
        )
    ) then
        -- Recompile if not yet up to date:
        manytimes(printlatexcmd, "")
        print ("lwarpmk: Done.") ;
    else
        print ("lwarpmk: " .. sourcename .. ".pdf is up to date.") ;
```

```
4161     end
4162 end -- not latexmk
4163
4164
4165 -- lwarpmk print1:
4166
4167 elseif arg[1] == "print1" then
4168     loadconf ()
4169     verifyfileexists (sourcename .. ".tex") ;
4170     onetime(printlatexcmd, "")
4171     print ("lwarpmk: Done.") ;
4172
4173
4174 -- lwarpmk printindex:
4175 -- Compile the index then touch the source
4176 -- to trigger a recompile of the document:
4177
4178 elseif arg[1] == "printindex" then
4179 loadconf ()
4180 os.execute ( printindexcmd )
4181 print ("lwarpmk: -------")
4182 updateanddone ()
4183
4184
4185 -- lwarpmk printglossary:
4186 -- Compile the glossary then touch the source
4187 -- to trigger a recompile of the document:
4188
4189 elseif arg[1] == "printglossary" then
4190 loadconf ()
4191 print ("lwarpmk: Processing the glossary.")
4192
4193 os.execute(glossarycmd .. " " .. sourcename)
4194 updateanddone ()
4195
4196
4197 -- lwarpmk html:
4198
4199 elseif arg[1] == "html" then
4200 loadconf ()
4201 if ( latexmk == "true" ) then
4202     print ("lwarpmk: Compiling with: " .. HTMLlatexcmd)
4203     executecheckerror (
4204         HTMLlatexcmd ,
4205         "Compile error."
4206     )
4207     pdftohtml ()
4208     print ("lwarpmk: Done.")
4209 else -- not latexmk
4210     verifyfileexists ( sourcename .. ".tex" ) ;
```

```
4211     -- See if exists and is up to date:
4212     if (
4213         ( lfs.attributes ( homehtmlfilename .. ".html" , "modification" ) == nil ) or
4214         (
4215             lfs.attributes ( sourcename .. ".tex" , "modification" ) >
4216             lfs.attributes ( homehtmlfilename .. ".html" , "modification" )
4217         )
4218     ) then
4219         -- Recompile if not yet up to date:
4220         manytimes(HTMLlatexcmd, "_html")
4221         pdftohtml ()
4222         print ("lwarpmk: Done.")
4223     else
4224         print ("lwarpmk: " .. homehtmlfilename .. ".html is up to date.")
4225     end
4226 end -- not latexmk
4227
4228
4229 -- lwarpmk html1:
4230
4231 elseif arg[1] == "html1" then
4232     loadconf ()
4233     verifyfileexists ( sourcename .. ".tex" ) ;
4234     onetime(HTMLlatexcmd, "_html")
4235     pdftohtml ()
4236     print ("lwarpmk: Done.")
4237
4238
4239 -- lwarpmk pdftohtml:
4240 elseif arg[1] == "pdftohtml" then
4241     loadconf ()
4242     pdftohtml ()
4243
4244
4245 -- lwarpmk htmlindex:
4246 -- Compile the index then touch the source
4247 -- to trigger a recompile of the document:
4248
4249 elseif arg[1] == "htmlindex" then
4250 loadconf ()
4251 os.execute ( HTMLindexcmd )
4252 print ("lwarpmk: -------")
4253 updateanddone ()
4254
4255
4256 -- lwarpmk htmlglossary:
4257 -- Compile the glossary then touch the source
4258 -- to trigger a recompile of the document.
4259 -- The <sourcename>.xdy file is created by the glossaries package.
4260
```

```
elseif arg[1] == "htmlglossary" then
loadconf ()
print ("lwarpmk: Processing the glossary.")
os.execute(glossarycmd .. " " .. sourcename .. "_html")
updateanddone ()


-- lwarpmk limages:
-- Scan the lateximages.txt file to create lateximages.

elseif arg[1] == "limages" then
loadconf ()
print ("lwarpmk: Processing images.")
createlateximages ()
print ("lwarpmk: Done.")


-- lwarpmk again:
-- Touch the source to trigger a recompile.

elseif arg[1] == "again" then
loadconf ()
updateanddone ()


-- lwarpmk clean:
-- Remove project.aux, .toc, .lof, .lot, .log, *.idx, *.ind, *_html_inc.*, .gl*

elseif arg[1] == "clean" then
loadconf ()
removeaux ()
print ("lwarpmk: Done.")


-- lwarpmk cleanall
-- Remove project.aux, .toc, .lof, .lot, .log, *.idx, *.ind, *_html_inc.*, .gl*
--    and also project.pdf, project.dvi, *.html

elseif arg[1] == "cleanall" then
loadconf ()
removeaux ()
os.execute ( rmname .. " " ..
    sourcename .. ".pdf " .. sourcename .. "_html.pdf " ..
    sourcename .. ".dvi " .. sourcename .. "_html.dvi " ..
    "*.html"
    )
print ("lwarpmk: Done.")


-- lwarpmk cleanlimages
```

```
-- Remove images from the lateximages directory.

elseif arg[1] == "cleanlimages" then
loadconf ()
os.execute ( rmname .. " lateximages/*" )
print ("lwarpmk: Done.")

-- lwarpmk epstopdf <list of file names>
-- Convert EPS files to PDF using epstopdf
elseif arg[1] == "epstopdf" then
convertepstopdf ()
print ("lwarpmk: Done.")


-- lwarpmk pdftosvg <list of file names>
-- Convert PDF files to SVG using pdftocairo
elseif arg[1] == "pdftosvg" then
convertpdftosvg ()
print ("lwarpmk: Done.")


-- lwarpmk with no argument :

elseif (arg[1] == nil) then
printhelp ()


-- lwarpmk -h or lwarpmk --help :

elseif (arg[1] == "-h" ) or (arg[1] == "--help") then
printusage ()


-- Unknown command:

else
printhelp ()
print ("\nlwarpmk: ****** Unknown command \""..arg[1].."\". ******\n")
end

end -- not --version
\end{filecontents*}
% \end{Verbatim}% for syntax highlighting

\end{LWR@createlwarpmk}
```

40 Stacks

for HTML output:
```
\begin{warpHTML}
```

Stacks are used to remember how to close sections and list items. Before a new section is started, previously nested sections and items must be closed out (un-nested) in proper order. Note that starting a new section may close several levels of previously nested items at the same time. For example, starting a new `\section` would close any currently open subsection, subsubsection, and paragraph. General environments are not nested on the stack since they have their own close mechanism. List environments are nested, and items inside those environments are nested one level deeper still. List environments may be nested inside other list environments, and list items are nested inside list environments as well. Thus, the stack may have items which are not necessarily in order, since a description may contain an enumerate, for example. Depths to be recorded in `\LWR@closedepthone`, etc.

40.1 Assigning depths

initial depths for empty stack entries:

```
\newcommand*{\LWR@depthnone}{-5}
```

all sectioning depths are deeper than `LWR@depthfinished`:

```
\newcommand*{\LWR@depthfinished}{-4}
\newcommand*{\LWR@depthpart}{-1}
\newcommand*{\LWR@depthchapter}{0}
\newcommand*{\LWR@depthsection}{1}
\newcommand*{\LWR@depthsubsection}{2}
\newcommand*{\LWR@depthsubsubsection}{3}
\newcommand*{\LWR@depthparagraph}{4}
\newcommand*{\LWR@depthsubparagraph}{5}
```

used by `\itemize`, `\enumerate`, `\description`:

```
\newcommand*{\LWR@depthlist}{6}
```

used by `\item`:

```
\newcommand*{\LWR@depthlistitem}{7}
```

40.2 Closing actions

A stack to record the action to take to close each nesting level: Add more levels of stack if necessary for a very deeply nested document, adding to `\pushclose` and `\popclose` as well.

```
\newcommand*{\LWR@closeone}{}% top of the stack
\newcommand*{\LWR@closetwo}{}
\newcommand*{\LWR@closethree}{}
\newcommand*{\LWR@closefour}{}
\newcommand*{\LWR@closefive}{}
\newcommand*{\LWR@closesix}{}
\newcommand*{\LWR@closeseven}{}
\newcommand*{\LWR@closeeight}{}
\newcommand*{\LWR@closenine}{}
\newcommand*{\LWR@closeten}{}
\newcommand*{\LWR@closeeleven}{}
\newcommand*{\LWR@closetwelve}{}
```

40.3 Closing depths

A stack to record the depth of each level:

Note that nested LaTeX structures may push depths which are non-sequential.

Ex:

```
\begin{itemize}
   \item{A}
   \begin{description}
      \item{B}
   \end{description}
\end{itemize}
```

```
\newcommand*{\LWR@closedepthone}{\LWR@depthnone}% top of the stack
\newcommand*{\LWR@closedepthtwo}{\LWR@depthnone}
\newcommand*{\LWR@closedepththree}{\LWR@depthnone}
\newcommand*{\LWR@closedepthfour}{\LWR@depthnone}
\newcommand*{\LWR@closedepthfive}{\LWR@depthnone}
\newcommand*{\LWR@closedepthsix}{\LWR@depthnone}
\newcommand*{\LWR@closedepthseven}{\LWR@depthnone}
\newcommand*{\LWR@closedepheight}{\LWR@depthnone}
\newcommand*{\LWR@closedepthnine}{\LWR@depthnone}
```

```
\newcommand*{\LWR@closedepthten}{\LWR@depthnone}
\newcommand*{\LWR@closedepththeleven}{\LWR@depthnone}
\newcommand*{\LWR@closedepthtwelve}{\LWR@depthnone}
```

40.4 Pushing and popping the stack

`\pushclose` {⟨*action*⟩} {⟨*depth*⟩}

Pushes one return action and its LaTeX depth onto the stacks.

```
\NewDocumentCommand{\pushclose}{m m}
{
\global\let\LWR@closetwelve\LWR@closeeleven
\global\let\LWR@closeeleven\LWR@closeten
\global\let\LWR@closeten\LWR@closenine
\global\let\LWR@closenine\LWR@closeeight
\global\let\LWR@closeeight\LWR@closeseven
\global\let\LWR@closeseven\LWR@closesix
\global\let\LWR@closesix\LWR@closefive
\global\let\LWR@closefive\LWR@closefour
\global\let\LWR@closefour\LWR@closethree
\global\let\LWR@closethree\LWR@closetwo
\global\let\LWR@closetwo\LWR@closeone
\global\let\LWR@closeone#1
\global\let\LWR@closedepthtwelve\LWR@closedepththeleven
\global\let\LWR@closedepththeleven\LWR@closedepthten
\global\let\LWR@closedepthten\LWR@closedepthnine
\global\let\LWR@closedepthnine\LWR@closedepththeight
\global\let\LWR@closedepththeight\LWR@closedepthseven
\global\let\LWR@closedepthseven\LWR@closedepthsix
\global\let\LWR@closedepthsix\LWR@closedepthfive
\global\let\LWR@closedepthfive\LWR@closedepthfour
\global\let\LWR@closedepthfour\LWR@closedepththree
\global\let\LWR@closedepththree\LWR@closedepthtwo
\global\let\LWR@closedepthtwo\LWR@closedepthone
\global\let\LWR@closedepthone#2
}
```

`\popclose` Pops one action and its depth off the stacks.

```
\newcommand*{\popclose}
{
\global\let\LWR@closeone\LWR@closetwo
\global\let\LWR@closetwo\LWR@closethree
\global\let\LWR@closethree\LWR@closefour
\global\let\LWR@closefour\LWR@closefive
```

```
\global\let\LWR@closefive\LWR@closesix
\global\let\LWR@closesix\LWR@closeseven
\global\let\LWR@closeseven\LWR@closeeight
\global\let\LWR@closeeight\LWR@closenine
\global\let\LWR@closenine\LWR@closeten
\global\let\LWR@closeten\LWR@closeeleven
\global\let\LWR@closeeleven\LWR@closetwelve
\global\let\LWR@closedepthone\LWR@closedepthtwo
\global\let\LWR@closedepthtwo\LWR@closedepththree
\global\let\LWR@closedepththree\LWR@closedepthfour
\global\let\LWR@closedepthfour\LWR@closedepthfive
\global\let\LWR@closedepthfive\LWR@closedepthsix
\global\let\LWR@closedepthsix\LWR@closedepthseven
\global\let\LWR@closedepthseven\LWR@closedeptheight
\global\let\LWR@closedeptheight\LWR@closedepthnine
\global\let\LWR@closedepthnine\LWR@closedepthten
\global\let\LWR@closedepthten\LWR@closedeptheleven
\global\let\LWR@closedeptheleven\LWR@closedepthtwelve
}

\end{warpHTML}
```

41 Data arrays

These macros are similar to the arrayjobx package, except that `\LWR@setexparray`'s argument is expanded only once when assigned.

`name` has no backslash, `index` can be a number or a text name, and an empty `value` must be `\relax` instead of empty.

To assign an empty value:

```
\LWR@setexparray{name}{index}{}
```

for HTML output:

```
\begin{warpHTML}
```

`\LWR@setexparray` {⟨*name*⟩} {⟨*index*⟩} {⟨*contents*⟩}

```
\NewDocumentCommand{\LWR@setexparray}{m m m}{%
    \xdef\LWR@thisexparrayname{#1#2}%
    \ifstrempty{#3}%
    {\csgdef{\LWR@thisexparrayname}{}}%
    {\csxdef{\LWR@thisexparrayname}{#3}}%
}
```

\LWR@getexparray {⟨*name*⟩} {⟨*index*⟩}

```
\newcommand*{\LWR@getexparray}[2]{%
    \@nameuse{#1#2}%
}
```

```
\end{warpHTML}
```

42 Localizing catcodes

for HTML & PRINT:

```
\begin{warpall}
```

⚠ Misplaced alignment tab character &

Place \StartDefiningTabulars and \StopDefiningTabulars before and after defining macros or environments which include the tabular & character in their definitions.

The catcode of & must be changed before the definitions begin, and must be restored afterwards. Doing so avoids the error

```
Misplaced alignment tab character &.
```

\StartDefiningTabulars Place before defining something with & in it.

```
\newcommand{\StartDefiningTabulars}{%
\LWR@traceinfo{StartDefiningTabulars}%
\warpHTMLonly{\catcode`\&=\active}%
}
```

\StopDefiningTabulars Place after defining something with & in it.

```
\newcommand{\StopDefiningTabulars}{%
\LWR@traceinfo{StopDefiningTabulars}%
\warpHTMLonly{\catcode`\&=4}%
}
```

Bool LWR@mathmacro True if currently defining math macros. Used to disable SVG math hashing and MathJax math contents while defining a macro using inline math. Begin a macro, it is not guaranteed that the contents are static, and so the image must be unique. The contents also almost certainly will not be parsed correctly by MathJax.

```
\newbool{LWR@mathmacro}
\boolfalse{LWR@mathmacro}
```

\StartDefiningMath Place before defining something with $ in it.

```
\newcommand{\StartDefiningMath}{%
\LWR@traceinfo{StartDefiningMath}%
\warpHTMLonly{\catcode`\$=\active}%
}
```

\StopDefiningMath Place after defining something with $ in it.

```
\newcommand{\StopDefiningMath}{%
\LWR@traceinfo{StopDefiningMath}%
\warpHTMLonly{\catcode`\$=3}% math shift
}
```

```
\end{warpall}
```

43 Localizing dynamic math

Inline SVG math usually uses a hash of its contents to generate `lateximages` which are reusable for multiple instances with the same contents. If the contents may change for each use, such as depending on the current value of a counter, then `\inlinemathother` must be used before the inline math expression, and `\inlinemathnormal` must be used after.

For MathJax, the inline math expression is usually printed for MathJax to interpret. When marked as dynamic math, the following inline math expression will be displayed as an unhashed inline SVG image instead.

For existing code and packages, it may be possible to patch macros after they have been defined, using the xpatch package, which is pre-loaded by lwarp:

```
\xpatchcmd{\macroname}
    {$math expression$}
    {\inlinemathother$math expression$\inlinemathnormal}
    {}
    {\typeout{Error patching macroname.}}
```

for HTML & PRINT:

```
\begin{warpall}
```

Bool `LWR@dynamicmath` True to mark inline math which is dynamic in nature, thus should not be hashed for reuse.
Default: `false`

```
\newbool{LWR@dynamicmath}
\boolfalse{LWR@dynamicmath}
```

`\inlinemathother` Place before using `$ ... $` or `\( ...\)` if the contents of the math are not static, depending on counters or dynamic macros.

```
\newcommand{\inlinemathother}{%
\LWR@traceinfo{inlinemathother}%
\booltrue{LWR@dynamicmath}%
}
```

`\inlinemathnormal` Place after using `$ ... $` or `\( ...\)` with dynamic contents.

```
\newcommand{\inlinemathnormal}{%
\LWR@traceinfo{inlinemathnormal}%
\boolfalse{LWR@dynamicmath}%
}
```

```
\end{warpall}
```

44 Sanitizing labels and filenames

Special handling for underscores in labels and filenames.

for HTML output:

```
\begin{warpHTML}
```

`\LWR@sanitized` The sanitized version of what was given to `\LWR@sanitize`. Characters are set to their detokenized versions. Required for underscores in labels and filenames.

```
\newcommand*{\LWR@sanitized}{}
```

`\LWR@sanitize` {⟨*text*⟩}

Sanitizes the text and returns the result in `\LWR@sanitized`.

```
\newcommand*{\LWR@sanitize}[1]{%
\LWR@traceinfo{LWR@sanitize: !#1!}%
\edef\LWR@sanitized{#1}%
\LWR@traceinfo{LWR@sanitize expanded: !\LWR@sanitized!}%
\edef\LWR@sanitized{\detokenize\expandafter{\LWR@sanitized}}%
\LWR@traceinfo{LWR@sanitize result: !\LWR@sanitized!}%
}
```

```
\end{warpHTML}
```

45 HTML entities

for HTML output:

```
\begin{warpHTML}
```

HTML Unicode entities:

```
\let\LWR@origampersand\&
```

`\HTMLentity` {⟨*entitytag*⟩}

```
\newcommand*{\HTMLentity}[1]{%
% \LWR@traceinfo{HTMLentity \detokenize{#1}}%
\begingroup%
\LWR@FBcancel%
\LWR@origampersand#1;%
\endgroup%
% \LWR@traceinfo{HTMLentity done}%
}
```

`\HTMLunicode` {⟨*hex_unicode*⟩}

```
\newcommand*{\HTMLunicode}[1]{\HTMLentity{\LWR@origpound{}x#1}}
```

`\&`

```
\renewrobustcmd*{\&}{\HTMLentity{amp}}
```

`\textless`
`\textgreater`

```
\let\LWR@origtextless\textless
\renewcommand*{\textless}{\HTMLentity{lt}}

\let\LWR@origtextgreater\textgreater
\renewcommand*{\textgreater}{\HTMLentity{gt}}
```

```
\end{warpHTML}
```

46 HTML filename generation

The filename of the homepage is set to `\HomeHTMLFilename.html`. The filenames of additional sections start with `\HTMLFilename`, to which is appended a section number or a simplified section name, depending on `FileSectionNames`.

for HTML & PRINT:

```
\begin{warpall}
```

`\BaseJobname` The `\jobname` of the printed version, even if currently compiling the HTML version. I.e. this is the `\jobname` without `_html` appended. This is used to set `\HomeHTMLFilename` if the user did not provide one.

```
\providecommand*{\BaseJobname}{\jobname}
```

`\HTMLFilename` The prefix for all generated HTML files other than the home page, defaulting to empty. See section 8.4.1.

```
\providecommand*{\HTMLFilename}{}
```

`\HomeHTMLFilename` The filename of the home page, defaulting to the `\BaseJobname`. See section 8.4.1.

```
\providecommand*{\HomeHTMLFilename}{\BaseJobname}
```

`\SetHTMLFileNumber` `{`⟨*number*⟩`}`

Sets the file number for the next file to be generated. 0 is the home page. Use just before the next sectioning command, and set it to one less than the desired number of the next section. May be used to generate numbered groups of nodes such as 100+ for one chapter, 200+ for another chapter, etc.

```
\newcommand*{\SetHTMLFileNumber}[1]{%
\setcounter{LWR@htmlfilenumber}{#1}%
}
```

Bool `FileSectionNames` Selects how to create HTML file names.

Defaults to use section names in the filenames.

```
\newbool{FileSectionNames}
\booltrue{FileSectionNames}
```

```
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

Ctr `LWR@htmlfilenumber` Records the number of each HTML file as it is being created. Number 0 is the home page.

```
\newcounter{LWR@htmlfilenumber}
\setcounter{LWR@htmlfilenumber}{0}
```

\LWR@htmlsectionfilename {⟨*htmlfilenumber or name*⟩}

Prints the filename for a given section: \HTMLFilename{}filenumber/name.html

```
\newcommand*{\LWR@htmlsectionfilename}[1]{%
\LWR@traceinfo{LWR@htmlsectionfilename A !\detokenize{#1}!}%
```

Section 0 or empty is given the home filename. The filename must be detokenized for underscores.

```
% \LWR@traceinfo{about to assign temp}%
\edef\LWR@tempone{#1}%
\LWR@traceinfo{about to compare with ??}%
\ifthenelse{\equal{\LWR@tempone}{??}}%
{\LWR@traceinfo{found ??}}%
{\LWR@traceinfo{not found ??}}%
\LWR@traceinfo{about to compare with zero or empty}%
\ifthenelse{%
    \equal{\LWR@tempone}{0}%
    \OR \equal{\LWR@tempone}{}%
    \OR \equal{\LWR@tempone}{??}%
}%
{%
    \LWR@traceinfo{LWR@htmlsectionfilename B \HomeHTMLFilename.html}%
    \HomeHTMLFilename.html%
}%
```

For a LaTeX section named “Index” or “index” without a prefix, create a filename with a leading underscore to avoid colliding with the HTML filename index.html:

```
{%
    \LWR@traceinfo{LWR@htmlsectionfilename C \LWR@tempone}%
    \ifthenelse{%
        \equal{\HTMLFilename}{} \AND
        \equal{\LWR@tempone}{Index} \OR
        \equal{\LWR@tempone}{index}%
    }%
    {%
        \LWR@traceinfo{Prefixing the index name with an underscore.}%
        \_#1.html%
    }%
```

Otherwise, create a filename with the chosen prefix:

```
    {\HTMLFilename\LWR@isolate{#1}.html}%
}%
\LWR@traceinfo{LWR@htmlsectionfilename Z}%
}
```

\LWR@htmlrefsectionfilename {⟨*label*⟩}

Prints the filename for the given label

```
\newcommand*{\LWR@htmlrefsectionfilename}[1]{%
\LWR@traceinfo{LWR@htmlrefsectionfilename: !\detokenize{#1}!}%
```

\LWR@nullfonts to allow math in a section name.

```
\begingroup%
\LWR@nullfonts%
\LWR@htmlsectionfilename{\LWR@htmlfileref{#1}}%
\endgroup%
\LWR@traceinfo{LWR@htmlrefsectionfilename: done}%
}
```

```
\end{warpHTML}
```

47 Homepage link

for HTML output:

```
\begin{warpHTML}
```

\LinkHome May be used wherever you wish to place a link back to the homepage. The filename must be detokenized for underscores.

```
\newcommand*{\LinkHome}{%
\LWR@subhyperrefclass{\HomeHTMLFilename.html}{Home}{linkhome}%
}
```

\LWR@topnavigation Creates a link to the homepage at the top of the page for use when the window is too narrow for the sideTOC.

```
\newcommand*{\LWR@topnavigation}{
\LWR@htmlelementclassline{nav}{topnavigation}{\LinkHome}
}
```

\LWR@botnavigation Creates a link to the homepage at the bottom of the page for use when the window is too narrow for the sideTOC.

```
\newcommand*{\LWR@botnavigation}{
\LWR@htmlelementclassline{nav}{botnavigation}{\LinkHome}
}
```

```
\end{warpHTML}
```

48 \LWRPrintStack diagnostic tool

⚠ Diagnostics tool: Prints the LaTeX nesting depth values for the stack levels. \LWR@startpars is used before printing the stack, so that \LWRPrintStack may be called from anywhere in the normal text flow.

for HTML output:

```
\begin{warpHTML}
```

\LWRPrintStack Prints the closedepth stack.

```
\newcommand*{\LWR@subprintstack}{
\LWR@closedepthone\ \LWR@closedepthtwo\ \LWR@closedepththree\
\LWR@closedepthfour\ \LWR@closedepthfive\ \LWR@closedepthsix\
\LWR@closedepthseven\ \LWR@closedeptheight\ \LWR@closedepthnine\
\LWR@closedepthten\ \LWR@closedepthteleven\ \LWR@closedepthtwelve\
}

\newcommand*{\LWRPrintStack}{
\LWR@startpars
\LWR@subprintstack
}

\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}

\newcommand*{\LWRPrintStack}{}

\end{warpprint}
```

49 Closing stack levels

for HTML output:

```
\begin{warpHTML}
```

Close one nested level:

```
\newcommand*{\LWR@closeoneprevious}{%

\LWR@closeone

\popclose
}
```

\LWR@closeprevious {⟨*depth*⟩} Close everything up to the given depth:

```
\newcommand*{\LWR@closeprevious}[1]{
\LWR@traceinfo{LWR@closeprevious to depth #1, depths are \LWR@subprintstack}%
```

Close any pending paragraph:

```
\LWR@stoppars%
```

Close anything nested deeper than the desired depth. First close anything deeper, then at most one of the same level.

```
\whileboolexpr{test{\ifnumcomp{\LWR@closedepthone}{>}{#1}}}%
{%
    \LWR@traceinfo{LWR@closeprevious: closing out depth \LWR@closedepthone}%
    \LWR@closeoneprevious%
}%
\ifboolexpr{test{\ifnumcomp{\LWR@closedepthone}{=}{#1}}}%
{%
    \LWR@traceinfo{LWR@closeprevious: closing out depth \LWR@closedepthone}%
    \LWR@closeoneprevious%
}{}%
\LWR@traceinfo{LWR@closeprevious: done, depths are \LWR@subprintstack}%
}
```

```
\end{warpHTML}
```

50 PDF pages and styles

for HTML output:

```
\begin{warpHTML}
```

\LWR@forcenewpage New PDF page a before major environment.

This is used just before major environments, such as `verse`. Reduces the chance of an environment overflowing the HTML PDF output page.

```
\newcommand{\LWR@forcenewpage}{%
\LWR@traceinfo{LWR@forcenewpage}%
\ifinner\else%
\LWR@stoppars\LWR@orignewpage\LWR@startpars%
\fi%
}
```

`\pagestyle`, etc. are nullified for HTML output.

`\pagestyle` {⟨*style*⟩}

```
\renewcommand*{\pagestyle}[1]{}
```

`\thispagestyle` {⟨*style*⟩}

```
\renewcommand*{\thispagestyle}[1]{}
```

`\markboth` {⟨*left*⟩} {⟨*right*⟩}

```
\renewcommand*{\markboth}[2]{}
```

`\markright` {⟨*right*⟩}

```
\renewcommand*{\markright}[1]{}
```

`\raggedbottom`

```
\renewcommand*{\raggedbottom}{}
```

`\flushbottom`

```
\renewcommand*{\flushbottom}{}
```

`\sloppy`

```
\renewcommand*{\sloppy}{}
```

`\fussy`

```
\renewcommand*{\fussy}{}
```

`\pagenumbering` * {⟨*commands*⟩}

```
\RenewDocumentCommand{\pagenumbering}{s m}{}
\end{warpHTML}
```

51 HTML tags, spans, divs, elements

for HTML output:

```
\begin{warpHTML}
```

51.1 Mapping LaTeX sections to HTML sections

```
\newcommand*{\LWR@tagtitle}{h1}
\newcommand*{\LWR@tagtitleend}{/h1}
\newcommand*{\LWR@tagpart}{h2}
\newcommand*{\LWR@tagpartend}{/h2}
\newcommand*{\LWR@tagchapter}{h3}
\newcommand*{\LWR@tagchapterend}{/h3}
\newcommand*{\LWR@tagsection}{h4}
\newcommand*{\LWR@tagsectionend}{/h4}
\newcommand*{\LWR@tagsubsection}{h5}
\newcommand*{\LWR@tagsubsectionend}{/h5}
\newcommand*{\LWR@tagsubsubsection}{h6}
\newcommand*{\LWR@tagsubsubsectionend}{/h6}
\newcommand*{\LWR@tagparagraph}{span class="paragraph"}
\newcommand*{\LWR@tagparagraphend}{/span}
\newcommand*{\LWR@tagsubparagraph}{span class="subparagraph"}
\newcommand*{\LWR@tagsubparagraphend}{/span}

\newcommand*{\LWR@tagregularparagraph}{p}
```

51.2 Babel-French tag modifications

Adjust babel-french for HTML spaces. So far, this only works for *pdflatex* and *xelatex*.

(*Emulates or patches code by* Daniel Flipo.)

```
\providecommand*{\LWR@FBcancel}{}

\AtBeginDocument{%
\@ifundefined{frenchbsetup}%
{}%
{%
    \frenchbsetup{FrenchFootnotes=false}%

%
    \LetLtxMacro\LWR@FBcancel\NoAutoSpacing%
    \renewrobustcmd*{\FBcolonspace}{%
        \begingroup%
        \LWR@FBcancel%
        \LWR@origampersand{}nbsp;%
        \endgroup%
    }%
    \renewrobustcmd*{\FBthinspace}{%
        \begingroup%
        \LWR@FBcancel%
        \LWR@origampersand\LWR@origpound{}x202f;% \,
        \endgroup%
```

```
    }%
    \renewrobustcmd*{\FBguillspace}{%
        \begingroup%
        \LWR@FBcancel%
        \LWR@origampersand{}nbsp;% ~,  for \og xyz \fg{}
        \endgroup%
    }%
    \DeclareDocumentCommand{\FBmedkern}{}{%
        \begingroup%
        \LWR@FBcancel%
        \LWR@origampersand\LWR@origpound{}x202f;% \,
        \endgroup%
    }%
    \DeclareDocumentCommand{\FBthickkern}{}{%
        \begingroup%
        \LWR@FBcancel%
        \LWR@origampersand{}nbsp;% ~
        \endgroup%
    }%
    \renewrobustcmd*{~}{\HTMLentity{nbsp}}% was overwritten by babel-french
    \ifFBunicode%
    \else%
        \DeclareTextSymbol{\FBtextellipsis}{LY1}{133}%
        \DeclareTextCommandDefault{\FBtextellipsis}{\textellipsis\xspace}%
    \fi%
}%
}
```

51.3 HTML tags

`\LWR@htmltagc` {⟨*tag*⟩} Break ligatures and use upright apostrophes in HTML tags.

`\protect` is in case the tag appears in TOC, LOF, LOT.

```
\newcommand*{\LWR@htmltagc}[1]{%
\LWR@traceinfo{LWR@htmltagc !\detokenize{#1}!}%
\begingroup%
\LWR@FBcancel%
\ifmmode\else\protect\LWR@origttfamily\fi%
\protect\LWR@origtextless%
\LWR@isolate{#1}%
\protect\LWR@origtextgreater%
\endgroup%
% \LWR@traceinfo{LWR@htmltagc: done}%
}
```

Env `LWR@nestspan` Disable `minipage`, `\parbox`, and HTML `<div>`s inside a `<span>`.

⚠ \begin{LWR@nestspan} must follow the opening tag to allow a paragraph to start if the span is at the beginning of a new paragraph.

⚠ \end{LWR@nestspan} must follow the or a <p> may appear inside the span.

```
\newcommand*{\LWR@nestspanitem}{%
\if@newlist\else{\LWR@htmltagc{br /}}\fi%
\LWR@origitem%
}

\newenvironment*{LWR@nestspan}
{%
\LWR@traceinfo{LWR@nestspan starting}%
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
{%
    \LWR@traceinfo{LWR@nestspan: inside a lateximage}%
}%
{% not in a lateximage
    \LWR@traceinfo{LWR@nestspan: NOT inside a lateximage}%
    \addtocounter{LWR@spandepth}{1}%
    \RenewDocumentEnvironment{minipage}{O{t} o O{t} m}{}{}%
    \RenewDocumentEnvironment{BlockClass}{o m}{}{}%
    \renewcommand{\BlockClassSingle}[2]{##2}%
    \renewcommand{\LWR@forcenewpage}{}%
    \renewcommand{\LWR@liststart}{%
        \let\item\LWR@nestspanitem%
    }%
    \renewcommand{\LWR@listend}{\LWR@htmltagc{br /}\LWR@htmltagc{br /}}%
}% not in a lateximage
\LWR@traceinfo{LWR@nestspan starting: done}%
}% starting env
{% ending env
\LWR@traceinfo{LWR@nestspan ending}%
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
{}%
{\addtocounter{LWR@spandepth}{-1}}%
\LWR@traceinfo{LWR@nestspan ending: done}%
}

\AfterEndEnvironment{LWR@nestspan}{\global\let\par\LWR@closeparagraph}
```

\LWR@htmlspan {⟨*tag*⟩} {⟨*text*⟩}

⚠ \LWR@spandepth is used to ensure that paragraph tags are not generated inside a span. The exact sequence of when to add and subtract the counter is important to correctly handle the paragraph tags before and after the span.

```
\NewDocumentCommand{\LWR@htmlspan}{m +m}{%
\LWR@ensuredoingapar%
```

```
\LWR@htmltagc{#1}%
\begin{LWR@nestspan}%
#2%
\LWR@htmltagc{/#1}%
\end{LWR@nestspan}%
}
```

\LWR@htmlspanclass [⟨*style*⟩] {⟨*class*⟩} {⟨*text*⟩}

```
\NewDocumentCommand{\LWR@htmlspanclass}{o m +m}{%
\LWR@traceinfo{LWR@htmlspanclass |#1|#2|}%
\LWR@ensuredoingapar%
\LWR@subhtmlelementclass{span}[#1]{#2}%
\begin{LWR@nestspan}%
#3%
\LWR@htmltagc{/span}%
\LWR@traceinfo{LWR@htmlspanclass done}%
\end{LWR@nestspan}%
}
```

\LWR@htmltag {⟨*tag*⟩}

Print an HTML tag: <tag>

```
\newcommand*{\LWR@htmltag}[1]{%
% \LWR@traceinfo{LWR@htmltagb !\detokenize{#1}!}%
\LWR@htmltagc{#1}%
% \LWR@traceinfo{LWR@htmltagb: done}%
}
```

51.4 Block tags and comments

In the following, \origttfamily breaks ligatures, which may not be used for HTML codes:

\LWR@htmlopencomment
\LWR@htmlclosecomment

```
\newcommand*{\LWR@htmlopencomment}{%
{%
% \LWR@traceinfo{LWR@htmlopencomment}%
\begingroup%
\LWR@FBcancel%
\ifmmode\else\protect\LWR@origttfamily\fi%
\LWR@print@mbox{\LWR@origtextless{}!{-}{-}}%
```

```
\endgroup%
}%
}

\newcommand*{\LWR@htmlclosecomment}{%
{%
% \LWR@traceinfo{LWR@htmlclosecomment}%
\begingroup%
\LWR@FBcancel%
\ifmmode\else\protect\LWR@origttfamily\fi%
\LWR@print@mbox{{-}{-}\LWR@origtextgreater}%
\endgroup%
}%
}
```

`\LWR@htmlcomment` {⟨*comment*⟩}

```
\newcommand{\LWR@htmlcomment}[1]{%
\LWR@htmlopencomment{}%
{%
\LWR@origttfamily% break ligatures
#1%
}%
\LWR@htmlclosecomment{}}
```

`\LWR@htmlblockcomment` {⟨*comment*⟩}

```
\newcommand{\LWR@htmlblockcomment}[1]
{\LWR@stoppars\LWR@htmlcomment{#1}\LWR@startpars}
```

`\LWR@htmlblocktag` {⟨*tag*⟩} print a stand-alone HTML tag

```
\newcommand*{\LWR@htmlblocktag}[1]{%
\LWR@stoppars%
\LWR@htmltag{#1}%
\LWR@startpars%
}
```

51.5 Div class and element class

`\LWR@subhtmlelementclass` {⟨*element*⟩} [⟨*style*⟩] {⟨*class*⟩}

Factored and reused in several places.

The trailing spaces allow more places for a line break.

```
\NewDocumentCommand{\LWR@subhtmlelementclass}{m O{} m}{%
\LWR@traceinfo{LWR@subhtmlelementclass !#1!#2!#3!}%
\ifblank{#2}%
{\LWR@htmltag{#1 class="#3"}}% empty option
{\LWR@htmltag{#1 class="#3" style="#2"}}% non-empty option
\LWR@traceinfo{LWR@subhtmlelementclass done}%
}
```

`\LWR@htmlelementclass` {⟨*element*⟩} {⟨*class*⟩} [⟨*style*⟩]

```
\NewDocumentCommand{\LWR@htmlelementclass}{m o m}{%
\LWR@stoppars%
\LWR@subhtmlelementclass{#1}[#2]{#3}%
\LWR@startpars%
}
```

`\LWR@htmlelementclassend` {⟨*element*⟩} {⟨*class*⟩}

```
\newcommand*{\LWR@htmlelementclassend}[2]{%
\LWR@stoppars%
\LWR@htmltag{/#1}%
\ifbool{HTMLDebugComments}{%
    \LWR@htmlcomment{End of #1 ``#2''}%
}{}%
\LWR@startpars%
}
```

`\LWR@htmldivclass` [⟨*style*⟩] {⟨*class*⟩}

```
\NewDocumentCommand{\LWR@htmldivclass}{o m}{%
\LWR@htmlelementclass{div}[#1]{#2}%
}
```

`\LWR@htmldivclassend` {⟨*class*⟩}

```
\newcommand*{\LWR@htmldivclassend}[1]{%
\LWR@htmlelementclassend{div}{#1}%
}
```

51.6 Single-line elements

A single-line element, without a paragraph tag for the line of text:

\LWR@htmlelementclassline {⟨*element*⟩} [⟨*style*⟩] {⟨*class*⟩} {⟨*text*⟩}

```
\NewDocumentCommand{\LWR@htmlelementclassline}{m o m +m}{%
\LWR@stoppars
\LWR@subhtmlelementclass{#1}[#2]{#3}%
#4%
\LWR@htmltag{/#1}
\LWR@startpars
}
```

51.7 HTML5 semantic elements

\LWR@htmlelement {⟨*element*⟩}

```
\newcommand*{\LWR@htmlelement}[1]{%
\LWR@htmlblocktag{#1}
}
```

\LWR@htmlelementend {⟨*element*⟩}

```
\newcommand*{\LWR@htmlelementend}[1]{%
\LWR@stoppars
\LWR@htmltag{/#1}
\LWR@startpars
}

\end{warpHTML}
```

51.8 High-level block and inline classes

These are high-level commands which allow the creation of arbitrary block or inline sections which may be formatted with css.

Nullified versions are provided for print mode.

For other direct-formatting commands, see section 88.

Env BlockClass [⟨*style*⟩] {⟨*class*⟩} High-level interface for `<div>` classes.

Ex: `\begin{BlockClass}{class} text \end{BlockClass}`

for PRINT output:

```
\begin{warpprint}
\NewDocumentEnvironment{BlockClass}{o m}{}{}%
```

```
\end{warpprint}
```

for HTML output:

```
\begin{warpHTML}
\NewDocumentEnvironment{LWR@print@BlockClass}{o m}{}{}%
\NewDocumentEnvironment{LWR@HTML@BlockClass}{o m}%
{%
    \LWR@origpar%
    \LWR@htmldivclass[#1]{#2}%
}
{\LWR@htmldivclassend{#2}}

\LWR@formattedenv{BlockClass}
\end{warpHTML}
```

`\BlockClassSingle` {⟨*class*⟩} {⟨*text*⟩} A single-line `<div>`, without a paragraph tag for the line of text.

for HTML & PRINT:

```
\begin{warpall}
\newcommand{\BlockClassSingle}[2]{#2}
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
\newcommand{\LWR@HTML@BlockClassSingle}[2]{%
\LWR@origpar%
\LWR@htmlelementclassline{div}{#1}{#2}%
}

\LWR@formatted{BlockClassSingle}
\end{warpHTML}
```

`\InlineClass` (⟨*WP style*⟩) [⟨*style*⟩] {⟨*class*⟩} {⟨*text*⟩}

High-level interface for inline span classes.

(⟨*WP style*⟩) is css styling to add when formatting for a word processor import.

[⟨*style*⟩] is the css styling to add when not formatting for a word processor.

for PRINT output:

```
\begin{warpprint}
\NewDocumentCommand{\InlineClass}{D{(}{)}{} o m +m}{#4}%
\end{warpprint}
```

for HTML output:

```
\begin{warpHTML}
\NewDocumentCommand{\LWR@print@InlineClass}{D{(}{)}{} o m +m}{#4}%

\NewDocumentCommand{\LWR@HTML@InlineClass}{D{(}{)}{} o m +m}{%
\ifbool{FormatWP}{%
    \LWR@htmlspanclass[#1]{#3}{#4}%
}{%
```

```
    \LWR@htmlspanclass[#2]{#3}{#4}%
}%
}

\LWR@formatted{InlineClass}
\end{warpHTML}
```

Env `LWR@BlockClassWP` {⟨*WPstyle*⟩} {⟨*HTMLstyle*⟩} {⟨*class*⟩} Low-level interface for `<div>` classes with an automatic float ID. These are often used when `\ifbool{FormatWP}`.

for PRINT output:

```
\begin{warpprint}
\NewDocumentEnvironment{LWR@BlockClassWP}{m m m}{}{}%
\end{warpprint}
```

for HTML output:

```
\begin{warpHTML}
\NewDocumentEnvironment{LWR@print@LWR@BlockClassWP}{m m m}{}{}%
\NewDocumentEnvironment{LWR@HTML@LWR@BlockClassWP}{m m m}%
{%
\LWR@stoppars%
\ifbool{FormatWP}%
{%
    \addtocounter{LWR@thisautoidWP}{1}%
    \LWR@htmltag{%
        div class="#3" %
        id="\LWR@print@mbox{autoidWP-\arabic{LWR@thisautoidWP}}"%
        \ifblank{#1}{}{ style="#1"}%
    }%
}% FormatWP
{% not FormatWP
    \LWR@htmltag{%
        div class="#3"%
        \ifblank{#2}{}{ style="#2"}%
    }%
}% not FormatWP
\LWR@startpars%
}
{\LWR@htmldivclassend{#3}}

\LWR@formattedenv{LWR@BlockClassWP}
\end{warpHTML}
```

51.9 Closing HTML tags

for HTML output:

```
\begin{warpHTML}
```

Sections H1, H2, etc. do not need a closing HTML tag, but we add a comment for readability:

```
\newcommand*{\LWR@printclosepart}
    {\ifbool{HTMLDebugComments}{\LWR@htmlcomment{Closing part}}{}}
\newcommand*{\LWR@printclosechapter}
    {\ifbool{HTMLDebugComments}{\LWR@htmlcomment{Closing chapter}}{}}
\newcommand*{\LWR@printclosesection}
    {\ifbool{HTMLDebugComments}{\LWR@htmlcomment{Closing section}}{}}
\newcommand*{\LWR@printclosesubsection}
    {\ifbool{HTMLDebugComments}{\LWR@htmlcomment{Closing subsection}}{}}
\newcommand*{\LWR@printclosesubsubsection}
    {\ifbool{HTMLDebugComments}{\LWR@htmlcomment{Closing subsubsection}}{}}
\newcommand*{\LWR@printcloseparagraph}
    {\ifbool{HTMLDebugComments}{\LWR@htmlcomment{Closing paragraph}}{}}
\newcommand*{\LWR@printclosesubparagraph}
    {\ifbool{HTMLDebugComments}{\LWR@htmlcomment{Closing subparagraph}}{}}
```

Lists require closing HTML tags:

```
\newcommand*{\LWR@printcloselistitem}
    {\LWR@htmltag{/li}}
\newcommand*{\LWR@printclosedescitem}
    {\LWR@htmltag{/dd}}
\newcommand*{\LWR@printcloseitemize}
    {\LWR@htmltag{/ul}}
\newcommand*{\LWR@printcloseenumerate}
    {\LWR@htmltag{/ol}}
\newcommand*{\LWR@printclosedescription}
    {\LWR@htmltag{/dl}}

\end{warpHTML}
```

52 Paragraph handling

These commands generate the HTML paragraph tags when allowed and required.

Paragraph tags are or are not allowed depending on many conditions. Section 53 has high-level commands which allow paragraph-tag generation to start/stop. Even when allowed (`\LWR@doingstartpars`), tags are not generated until a LaTeX paragraph is being used (`\LWR@doingapar`). `LWR@lateximagedepth` is used to prevent nesting tags inside a `lateximage`. `LWR@spandepth` is used to prevent nesting paragraph tags inside a paragraph, which became important inside `\fbox` commands and other spans.

for HTML output:

```
\begin{warpHTML}
```

Ctr `LWR@spandepth` Do not create paragraph tags inside of an HTML span.

```
\newcounter{LWR@spandepth}
\setcounter{LWR@spandepth}{0}
```

Bool `LWR@doingstartpars` Tells whether paragraphs may be generated.

```
\newbool{LWR@doingstartpars}
\boolfalse{LWR@doingstartpars}
```

Bool `LWR@doingapar` Tells whether have actually generated and are currently processing paragraph text.

```
\newbool{LWR@doingapar}
\global\boolfalse{LWR@doingapar}
```

`\LWR@ensuredoingapar` If are about to print something visible, and if allowed to start a new paragraph, ensure that are `LWR@doingapar`, so that paragraph tags are placed:

```
\newcommand*{\LWR@ensuredoingapar}{%
\ifbool{LWR@doingstartpars}%
{\global\booltrue{LWR@doingapar}}%
{}%
}
```

`\PN@parnotes@auto` Redefined by parnotes to print paragraph notes at the end of each paragraph.

```
\def\PN@parnotes@auto{}%
```

`\LWR@openparagraph`

```
\newcommand*{\LWR@openparagraph}
{%
```

See if paragraph handling is enabled:

```
\ifbool{LWR@doingstartpars}%
{% handling pars
```

See if have already started a `lateximage` or a `<span>`. If so, do not generate nested paragraph tags.

```
    \ifboolexpr{
        test {\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}} or
        test {\ifnumcomp{\value{LWR@spandepth}}{>}{0}}
    }% nested par tags?
```

If so: Do nothing if already started a lateximage page. Cannot nest a lateximage. Also do nothing if already inside a . Do not nest paragraph tags inside a .

```
    {}% no nested par tags
```

Else: No lateximage or has been started yet, so it's OK to generate paragraph tags.

```
    {% yes nest par tags
```

If parnotes is used, paragraph notes are inserted before starting the next paragraph:

```
        \PN@parnotes@auto%
```

The opening paragraph tag:

```
        \LWR@htmltagc{\LWR@tagregularparagraph}%
```

Now have started a paragraph.

```
        \global\booltrue{LWR@doingapar}%
```

At the endof each paragraph, generate closing tag and do regular /par stuff. (Attempting to use the everyhook cr hook for \LWR@closeparagraph does not work well.)

```
        \let\par\LWR@closeparagraph%
    }% end of yes nest par tags
}% end of handling pars
{}% not handling pars
}
```

\LWR@closeparagraph

```
\newcommand*{\LWR@closeparagraph}
{%
% \LWR@traceinfo{LWR@closeparagraph}%
```

See if paragraph handling is enabled:

```
\ifbool{LWR@doingapar}%
```

If currently in paragraph mode:

```
{% handling pars
```

See if already started a lateximage or a :

```
    \ifboolexpr{
        test {\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}} or
        test {\ifnumcomp{\value{LWR@spandepth}}{>}{0}}
    }%
```

Do nothing if already started a lateximage or a , but add a parbreak if in a span but not a lateximage.

```
    {% no nested par tags
        \ifboolexpr{
            test {\ifnumcomp{\value{LWR@spandepth}}{>}{0}} and
            test {\ifnumcomp{\value{LWR@lateximagedepth}}{=}{0}}
        }%
        {\ifbool{LWR@intabularmetadata}{}{\unskip\LWR@htmltagc{br /}}}%
        {}%
    }% no nested par tags
```

If have not already started a lateximage or a :

```
    {% yes nest par tags
```

Print a closing tag and some extra vertical space.

```
        \unskip%
        \LWR@htmltagc{/\LWR@tagregularparagraph}%
        \LWR@orignewline%
```

No longer doing a paragraph:

```
        \global\boolfalse{LWR@doingapar}%
```

Disable the special minipage & \hspace interaction until a new minipage is found:

```
        \global\boolfalse{LWR@minipagethispar}%
```

If parnotes is used, paragraph notes are inserted after ending the previous paragraph:

```
        \PN@parnotes@auto%
    }% end of yes nest par tags
}% end of handling pars
```

Add a parbreak if in a span, but not in a table outside a row:

```
{% not handling pars
    \ifnumcomp{\value{LWR@spandepth}}{>}{0}%
```

```
    {\ifbool{LWR@intabularmetadata}{}{\unskip\LWR@htmltagc{br /}}}%
    {}%
}% not handling pars
```

In most cases, finish with a LaTeX \par, but in the case of paragraphs between lines in a tabular fetch the next token instead:

```
\ifboolexpr{%
    not bool {LWR@doingapar} and
    test {\ifnumcomp{\value{LWR@tabulardepth}}{>}{0}} and
    test {
        \ifnumcomp{\value{LWR@tabulardepth}}{=}{\value{LWR@tabularpardepth}}
    } and
    bool {LWR@intabularmetadata} and
    not bool {LWR@tableparcell} and
    test {\ifnumcomp{\value{LWR@lateximagedepth}}{=}{0}}
}%
{%
    \LWR@getmynexttoken%
}{%
    \LWR@origpar%
}%
}

\end{warpHTML}
```

53 Paragraph start/stop handling

These commands allow/disallow the generation of HTML paragraph tags.

Section 52 has the commands which actually generate the tags.

The everyhook package is used to generate the opening paragraph tags. The closing tags are generated by \par.

for HTML output:

```
\begin{warpHTML}
```

\LWR@startpars Begin handling HTML paragraphs. This allows an HTML paragraph to start, but one has not yet begun.

```
\newcommand*{\LWR@startpars}%
{%
% \LWR@traceinfo{LWR@startpars}%
```

Ignore if inside a span:

```
\ifnumcomp{\value{LWR@spandepth}}{>}{0}%
{}%
{%
```

See if currently handling HTML paragraphs:

```
    \ifbool{LWR@doingstartpars}%
```

If already in paragraph mode, do nothing.

```
    {}%
```

If not currently in paragraph mode:

```
    {%
```

At the start of each paragraph, generate an opening tag:

```
        \PushPreHook{par}{\LWR@openparagraph}%
```

At the end of each paragraph, generate closing tag and do regular /par actions:

```
        \let\par\LWR@closeparagraph

    }% an intentionally blank line
```

Are now handling paragraphs, but have not yet actually started one:

```
    \global\setbool{LWR@doingstartpars}{true}%
```

No <par> tag yet to undo:

```
    \global\boolfalse{LWR@doingapar}%
}% nestspan
% \LWR@traceinfo{LWR@startpars: done}%
}
```

`\LWR@stoppars` Stop handling HTML paragraphs. Any currently open HTML paragraph is closed, and no more will be opened.

```
\newcommand*{\LWR@stoppars}%
{%
```

Ignore if inside a span:

```
\ifnumcomp{\value{LWR@spandepth}}{>}{0}%
```

```
{}%
{%
```

See if currently handling HTML paragraphs:

```
    \ifbool{LWR@doingapar}%
```

if currently in an HTML paragraph:

```
    {%
```

Print a closing tag:

```
        \unskip%
        \LWR@htmltagc{/\LWR@tagregularparagraph}%
        \LWR@orignewline%
```

No longer have an open HTML paragraph:

```
        \global\boolfalse{LWR@doingapar}%
```

Disable the special `minipage` & `\hspace` interaction until a new minipage is found:

```
        \global\boolfalse{LWR@minipagethispar}

    }% an intentionally blank line
```

If was not in an HTML paragraph:

```
    {}%
```

See if currently allowing HTML paragraphs:

```
    \ifbool{LWR@doingstartpars}%
```

If so: clear the `par` hook to no longer catch paragraphs:

```
        {\ClearPreHook{par}}%
```

Else: Do nothing:

```
        {}%
```

No longer in paragraph mode:

```
    \global\setbool{LWR@doingstartpars}{false}%
```

No <p> tag to undo:

```
    \global\boolfalse{LWR@doingapar}%
}% nestspan
}
```

```
\end{warpHTML}
```

54 Page headers and footers

for HTML & PRINT:

```
\begin{warpall}
```

In the following, catcode is manually changed back and forth without groups, since new macros are being defined which must not be contained within the groups.

```
\newcommand{\LWR@firstpagetop}{} % for the home page alone
\newcommand{\LWR@pagetop}{} % for all other pages
\newcommand{\LWR@pagebottom}{}
```

`\HTMLFirstPageTop` {⟨*text and logos*⟩}

```
\newcommand{\HTMLFirstPageTop}[1]{%
    \renewcommand{\LWR@firstpagetop}{#1}%
}
```

`\HTMLPageTop` {⟨*text and logos*⟩}

```
\newcommand{\HTMLPageTop}[1]{%
    \renewcommand{\LWR@pagetop}{#1}%
}
```

`\HTMLPageBottom` {⟨*text and logos*⟩}

```
\newcommand{\HTMLPageBottom}[1]{%
    \renewcommand{\LWR@pagebottom}{#1}%
}
```

```
\end{warpall}
```

55 CSS

for HTML output:
```
\begin{warpHTML}
```

`\LWR@currentcss` The CSS filename to use. This may be changed mid-document using `\CSSFilename`, allowing different CSS files to be used for different sections of the document.

```
\newcommand*{\LWR@currentcss}{lwarp.css}
```

`\CSSFilename` {⟨*new-css-filename.css*⟩} Assigns the CSS file to be used by the following HTML pages.

```
\newcommand*{\CSSFilename}[1]{%
\renewcommand*{\LWR@currentcss}{#1}%
\@onelevel@sanitize\LWR@currentcss%
}

\end{warpHTML}
```

for PRINT output:
```
\begin{warpprint}
\newcommand*{\CSSFilename}[1]{}
\end{warpprint}
```

56 Title, HTML meta author, HTML meta description

for HTML output:
```
\begin{warpHTML}
```

`\title` {⟨*title*⟩} Modified to remember `\thetitle`, which is used to set the HTML page titles.

```
\let\LWR@origtitle\title

\renewcommand*{\title}[1]{%
    \LWR@origtitle{#1}%
    \begingroup%
        \renewcommand{\thanks}[1]{}%
        \protected@xdef\thetitle{#1}%
    \endgroup%
}

\end{warpHTML}
```

for HTML & PRINT:
```
\begin{warpall}
```

`\HTMLTitle` `{`⟨*Titlename*⟩`}` The Title to place into an HTML meta tag. The default is to use the document `\title`'s setting.

```
\providecommand{\thetitle}{}

\newcommand{\theHTMLTitle}{\thetitle}

\newcommand{\HTMLTitle}[1]{\renewcommand{\theHTMLTitle}{#1}}
```

`\HTMLAuthor` `{`⟨*authorname*⟩`}` The author to place into an HTML meta tag. If none given, the default is `\theauthor`, which is empty unless the titling package is used.

```
\providecommand{\theauthor}{}

\newcommand{\theHTMLAuthor}{\theauthor}

\newcommand{\HTMLAuthor}[1]{\renewcommand{\theHTMLAuthor}{#1}}
```

This is placed inside an HTML meta tag at the start of each file. This may be changed mid-document using `\HTMLDescription`, allowing different HTML descriptions to be used for different sections of the document.

⚠ HTML author Do not use double quotes, and do not exceed 150 characters.

`\HTMLDescription` `{`⟨*New HTML meta description.*⟩`}` Assigns the HTML file's description meta tag.

```
\newcommand{\LWR@currentHTMLDescription}{}

\newcommand{\HTMLDescription}[1]{%
\renewcommand{\LWR@currentHTMLDescription}{#1}
}

\end{warpall}
```

57 Footnotes

lwarp uses native LaTeX footnote code, although with its own `\box` to avoid the LaTeX output routine. The usual functions mostly work as-is.

The footmisc `stable` option is emulated by lwarp.

⚠ sectioning commands

When using footnotes in sectioning commands, to generate consistent results between print and HTML, use the footmisc package with the `stable` option, provide a short TOC entry, and `\protect` the `\footnote`:

```
\usepackage[stable]{footmisc}
...
\subsection[Subsection Name]
    {Subsection Name\protect\footnote{A footnote.}}
```

⚠ memoir

If using memoir class, with which lwarp preloads footmisc, the `stable` option must be declared before lwarp is loaded:

```
\PassOptionsToPackage{stable}{footmisc}
\usepackage{lwarp}
...
```

Do not use a starred sectioning command. As an alternative, it may be possible to adjust `\secnumdepth` instead.

Several kinds of footnotes are used: in a regular page, in a minipage, or as thanks in the titlepage. Each of these is handle differently.

57.1 Regular page footnotes

In HTML documents, footnotes are placed at the bottom of the web page or the section, depending on `FootnoteDepth`, using the LaTeX box `\LWR@footnotes`. Using this instead of the original `\footins` box avoids having footnotes be printed by the output routine, since footnotes should be printed per HTML page instead of per PDF page.

See section 57.4 for the implementation.

57.2 Minipage footnotes

See section 57.5 for how minipage footnotes are gathered. See section 87.3 for how minipage footnotes are placed into the document.

57.3 Titlepage thanks

See section 64.7 for titlepage footnotes.

57.4 Regular page footnote implementation

for HTML & PRINT:

```
\begin{warpall}
```

Ctr `FootnoteDepth`
Default: 3

Determines how deeply to place footnotes in the HTML files, similar to `tocdepth`. The default of 3 places footnotes before each `\subsubsection` or higher. See table 9 for a table of LaTeX section headings.

```
\newcounter{FootnoteDepth}
\setcounter{FootnoteDepth}{3}
```

```
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

Patch LaTeX footnotes to use a new `\box` instead of an insert for lwarp footnotes. This avoids having the original `\footins` appear at the bottom of a `lateximage`, which is on its own new page.

```
\newbox\LWR@footnotes
```

Much of the following has unneeded print-mode formatting removed.

`\@makefntext` {⟨*text*⟩}

```
\long\def\@makefntext#1{\textsuperscript{\@thefnmark}~#1}
```

`\@makefnmark`

```
\def\@makefnmark{%
    \textsuperscript{\@thefnmark}%
}
```

Footnotes may be in regular text, in which case paragraphs are tagged, or in a table data cell or `lateximage`, in which case paragraph tags must be added manually.

In a `lateximage` during HTML output, the `lateximage` is placed inside a print-mode `minipage`, but the footnotes are broken out by:

```
\def\@mpfn{footnote}
\def\thempfn{\thefootnote}
\let\@footnotetext\LWR@footnotetext
```

`\LWR@footnotetext` {⟨*text*⟩}

```
\long\def\LWR@footnotetext#1{%
\LWR@traceinfo{LWR@footnotetext}%
\global\setbox\LWR@footnotes=\vbox{%
```

Add to any current footnotes:

```
    \unvbox\LWR@footnotes%
```

Remember the footnote number for `\ref`:

```
    \protected@edef\@currentlabel{%
        \csname p@footnote\endcsname\@thefnmark%
    }% @currentlabel
```

Open a group:

```
    \color@begingroup%
```

Use HTML superscripts in the footnote even inside a `lateximage`:

```
    \renewrobustcmd{\textsuperscript}[1]{\LWR@htmlspan{sup}{##1}}%
```

Use paragraph tags if in a tabular data cell or a `lateximage`:

```
    \ifthenelse{%
        \boolean{LWR@doingstartpars} \AND%
        \cnttest{\value{LWR@lateximagedepth}}{=}{0}%
    }%
    {}%
    {\LWR@htmltagc{\LWR@tagregularparagraph}}%
```

Append the footnote to the list:

```
    \@makefntext{#1}%
```

Closing paragraph tag:

```
    \ifthenelse{%
        \boolean{LWR@doingstartpars} \AND%
        \cnttest{\value{LWR@lateximagedepth}}{=}{0}%
    }%
    {\par}%
    {%
        \LWR@htmltagc{/\LWR@tagregularparagraph}%
        \LWR@orignewline%
    }%
```

Close the group:

```
    \color@endgroup%
}% vbox
```

Paragraph handling:

```
\LWR@ensuredoingapar%
}%
```

`\@footnotetext` {⟨*text*⟩}

```
\LetLtxMacro\@footnotetext\LWR@footnotetext
```

57.5 Minipage footnote implementation

Patch LaTeX minipage footnotes to use a new `\box` instead of an insert for lwarp minipage footnotes. This avoids having the original `\@mpfootins` appear at the bottom of a `lateximage`, which is on its own new page.

```
\newbox\LWR@mpfootnotes
```

`\@mpfootnotetext` {⟨*text*⟩}

```
\long\def\@mpfootnotetext#1{%
\LWR@traceinfo{@mpfootnotetext}%
\global\setbox\LWR@mpfootnotes\vbox{%
    \unvbox\LWR@mpfootnotes%
    \reset@font\footnotesize%
    \hsize\columnwidth%
    \@parboxrestore%
    \protected@edef\@currentlabel%
        {\csname p@mpfootnote\endcsname\@thefnmark}%
    \color@begingroup%
```

Use paragraph tags if in a tabular data cell or a `lateximage`:

```
    \ifthenelse{%
        \boolean{LWR@doingstartpars} \AND%
        \cnttest{\value{LWR@lateximagedepth}}{=}{0}%
    }%
    {}%
    {\LWR@htmltagc{\LWR@tagregularparagraph}}%
```

```
    \@makefntext{%
        \ignorespaces#1%
    }%
```

Don't add the closing paragraph tag if are inside a `lateximage`:

```
    \ifthenelse{\cnttest{\value{LWR@lateximagedepth}}{>}{0}}%
    {}%
    {%
        \LWR@htmltagc{/\LWR@tagregularparagraph}%
        \LWR@orignewline%
    }%
    \color@endgroup%
}% vbox
```

Paragraph handling:

```
\LWR@ensuredoingapar%
\LWR@traceinfo{@mpfootnotetext: done}%
}
```

`\thempfootnote` Redefined to remove the `\itshape`, which caused an obscure compiling error in some situations.

```
\AtBeginDocument{
\def\thempfootnote{\@alph\c@mpfootnote}
}
```

57.6 Printing pending footnotes

`\LWR@printpendingfootnotes` Enclose the footnotes in a class, print, then clear.

```
\newcommand*{\LWR@printpendingfootnotes}{%
\ifvoid\LWR@footnotes\else
    \LWR@forcenewpage
    \begin{BlockClass}{footnotes}
    \LWR@origmedskip
    \unvbox\LWR@footnotes
    \setbox\LWR@footnotes=\vbox{}
    \end{BlockClass}
\fi
}
```

\LWR@maybeprintpendingfootnotes {⟨*depth*⟩} Used to print footnotes before sections only if formatting for an EPUB or word processor:

```
\newcommand*{\LWR@maybeprintpendingfootnotes}[1]{%
\ifboolexpr{
    not test{\ifnumcomp{#1}{>}{\value{FootnoteDepth}}} or
    bool{FormatEPUB} or
    bool{FormatWP}
}%
{\LWR@printpendingfootnotes}%
{}%
}
```

\LWR@printpendingmpfootnotes Enclose the minipage footnotes in a class, print, then clear.

```
\newcommand*{\LWR@printpendingmpfootnotes}{%
\ifvoid\LWR@mpfootnotes\else
    \LWR@forcenewpage
    \begin{BlockClass}{footnotes}
    \LWR@print@vspace*{\baselineskip}
    \unvbox\LWR@mpfootnotes
    \setbox\LWR@mpfootnotes=\vbox{}
    \end{BlockClass}
\fi
}
```

```
\end{warpHTML}
```

58 Marginpars

\marginpar [⟨*left*⟩] {⟨*right*⟩} \marginpar may contains paragraphs, but in order to remain inline with the surrounding text lwarp nullifies block-related macros inside the \marginpar. Paragraph breaks are converted to <br /> tags.

\marginparBlock [⟨*left*⟩] {⟨*right*⟩} To include block-related macros, use \marginparBlock, which takes the same arguments but creates a instead of a . A line break will occur in the text where the \marginBlock occurs.

for HTML output:

```
\begin{warpHTML}
```

\marginpar [⟨*left*⟩] {⟨*right*⟩}

```
\renewcommand{\marginpar}[2][]{%
\ifbool{FormatWP}%
```

```
{%
\begin{LWR@BlockClassWP}{width:2in; float:right; margin:10pt}{}{marginblock}
#2
\end{LWR@BlockClassWP}
}%
{%
    \LWR@htmlspanclass{marginpar}{#2}%
}%
}
```

\marginparBlock [⟨*left*⟩] {⟨*right*⟩}

For use when the marginpar will be more than one paragraph, and/or contains more than simple text.

HTML version.

```
\newcommand{\marginparBlock}[2][]{%
\ifbool{FormatWP}%
{%
\begin{LWR@BlockClassWP}{width:2in; float:right; margin:10pt}{}{marginblock}
#2
\end{LWR@BlockClassWP}
}%
{%
\begin{BlockClass}[width:2in; float:right; margin:10pt]{marginparblock}
#2
\end{BlockClass}
}%
}
```

\reversemarginpar

```
\renewcommand*{\reversemarginpar}{}
```

\normalmarginpar

```
\renewcommand*{\normalmarginpar}{}
```

```
\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
```

\marginparBlock [⟨*left*⟩] {⟨*right*⟩}

For use when the marginpar will be more than one paragraph, and/or contains more than simple text.

Print version.

```
\LetLtxMacro\marginparBlock\marginpar
```

```
\end{warpprint}
```

59 Splitting HTML files

- Files are split according to `FileDepth` and `CombineHigherDepths`.
- Filenames are sanitized by `\LWR@filenamenoblanks`.
- `\LWR@newhtmlfile` finishes an HTML page, adds a comment to tell where and how to split the file, then starts a new HTML page.

for HTML & PRINT:

```
\begin{warpall}
```

Ctr `FileDepth` {⟨*section depth*⟩} determines how deeply to break into new HTML files, similar to `tocdepth`. The default of -5 produces one large HTML file.

```
\newcounter{FileDepth}
\setcounter{FileDepth}{-5}
```

Bool `CombineHigherDepths` Combile higher-level sections together into one file?

```
\newbool{CombineHigherDepths}
\booltrue{CombineHigherDepths}
```

```
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

`\LWR@thisfilename` The currently-active filename or number.

```
\newcommand*{\LWR@thisfilename}{}
```

`\LWR@thisnewfilename` The filename being sanitized.

```
\newcommand*{\LWR@thisnewfilename}{}
```

`\LWR@filenamenoblanks` {⟨*filename*⟩}

Convert blanks into dashes, removes short words, store result in \LWR@thisfilename.

⚠ filename collision
⚠ section names

Be sure that this does not result in filename collisions! Use the optional TOC caption entry parameter for formatting. Remember to \protect LaTeX commands which appear in section names and TOC captions.

```
\newcommand*{\LWR@filenamenoblanks}[1]{%
\begingroup
```

Locally temporarily disable direct-formatting commands, not used in filenames:

```
\LWR@nullfonts%
\renewcommand*{\LWR@htmltagc}[1]{}%
```

Replaces common symbols and short words with hyphens:

```
\edef\LWR@thisnewfilename{#1}%
\LWR@traceinfo{LWR@filenamenoblanks edef: !\LWR@thisnewfilename!}%
\fullexpandarg%
```

Convert spaces into hyphens:

```
\StrSubstitute{\LWR@thisnewfilename}{\ }{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{ }{-}[\LWR@thisnewfilename]
```

Convert punctutation into hyphens:

```
\StrSubstitute{\LWR@thisnewfilename}{,}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{'}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}%
    {\LWR@origampersand}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{+}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{,}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{/}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{:}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{;}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{=}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{?}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{@}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{"}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}%
    {\textless}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}%
    {\textgreater}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{\LWR@origpound}{-}[\LWR@thisnewfilename]
```

```
\StrSubstitute{\LWR@thisnewfilename}{\_}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{\%}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{\{}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{\}}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{|}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}%
    {\textbackslash}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{^}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{~}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{~{}}{-}[\LWR@thisnewfilename]
%     "~{}" for babel
\StrSubstitute{\LWR@thisnewfilename}{[}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{]}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{`}{-}[\LWR@thisnewfilename]
```

Convert short words:

```
\StrSubstitute{\LWR@thisnewfilename}{-s-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-S-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-a-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-A-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-an-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-AN-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-to-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-TO-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-by-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-BY-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-of-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-OF-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-and-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-AND-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-for-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-FOR-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-the-}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-THE-}{-}[\LWR@thisnewfilename]
```

Convert multiple hyphens:

```
\StrSubstitute{\LWR@thisnewfilename}{-----}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{----}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{---}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{--}{-}[\LWR@thisnewfilename]
```

If pdfLaTeX and not `utf8` encoding, don't try to convert emdash, endash:

```
\ifPDFTeX% pdflatex or dvi latex
\ifdefstring{\inputencodingname}{utf8}{%
\StrSubstitute{\LWR@thisnewfilename}{--}{-}[\LWR@thisnewfilename]
%     emdash
```

```
\StrSubstitute{\LWR@thisnewfilename}{-}{-}[\LWR@thisnewfilename]
%     endash
}{}%
\else% not PDFTeX
\StrSubstitute{\LWR@thisnewfilename}{--}{-}[\LWR@thisnewfilename]
\StrSubstitute{\LWR@thisnewfilename}{-}{-}[\LWR@thisnewfilename]
\fi%
```

Return the result:

```
\global\let\LWR@thisfilename\LWR@thisnewfilename% return a global result
\endgroup%
\LWR@traceinfo{LWR@filenamenoblanks: result is \LWR@thisfilename}%
}
```

Ctr `LWR@previousautopagelabel` Remembers which autopage label was most recently generated. Used to avoid duplicates.

```
\newcounter{LWR@previousautopagelabel}
\setcounter{LWR@previousautopagelabel}{-1}
```

`\LWR@newautopagelabel` {⟨*pagenumber counter*⟩}

```
\newcommand*{\LWR@newautopagelabel}[1]{%
\ifnumequal{\value{LWR@previousautopagelabel}}{\value{page}}%
{}% no action if this autopage label has already been defined
{%
    \label{autopage-\arabic{#1}}%
    \setcounter{LWR@previousautopagelabel}{\value{page}}
}%
}
```

59.1 Customizing MathJax

`\LWR@customizedMathJax` Additional MathJax definitions to be added to the start of each HTML page.

```
\newcommand*{\LWR@customizedMathJax}{}
```

`\CustomizeMathJax` MathJax does not have preexisting support every possible math function. Additional MathJax function definitions may be defined. These will be declared at the start of each HTML page, and thus will have a global effect.

Examples:

```
\CustomizeMathJax{
    \newcommand{\expval}[1]{\langle#1\rangle}
    \newcommand{\abs}[1]{\lvert#1\rvert}
}
\CustomizeMathJax{\newcommand{\arsinh}{\text{arsinh}}}
\CustomizeMathJax{\newcommand{\arcosh}{\text{arcosh}}}
\CustomizeMathJax{\newcommand{\NN}{\mathbb{N}}}
```

```
\newcommand*{\CustomizeMathJax}[1]{%
   \appto{\LWR@customizedMathJax}{%
      \(#1\)\par
   }%
}
```

\LWR@customizeMathJax

```
\newcommand{\LWR@customizeMathJax}{%
\ifbool{mathjax}{

\LWR@stoppars
\LWR@htmlcomment{Nullify \textbackslash{}ensuremath, footnotes for MathJax:}

\(\newcommand\ensuremath[1]{##1}\)

\(\newcommand\footnote[2][]{\text{( Footnote ##1 )}}\)

\(\newcommand\footnotemark[1][]{\text{( Footnote ##1 )}}\)

\LWR@htmlcomment{Additional customizations for MathJax:}

\LWR@customizedMathJax

\LWR@startpars
}{}
}

\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
```

\CustomizeMathJax The print-mode version:

```
\newcommand*{\CustomizeMathJax}[1]{}

\end{warpprint}
```

for HTML output:

```
\begin{warpHTML}
```

\LWR@newhtmlfile {⟨*section name*⟩}

Finishes the current HTML page with footnotes, footer, navigation, then starts a new HTML page with an HTML comment telling where to split the page and what the new filename and CSS are, then adds navigation, side TOC, header, and starts the text body.

```
\newcommand*{\LWR@newhtmlfile}[1]{
\LWR@traceinfo{LWR@newhtmlfile}
```

At the bottom of the ending file:

```
\LWR@htmlelementclassend{section}{textbody}

\LWR@printpendingfootnotes

```

No footer between files if EPUB:

```
\ifbool{FormatEPUB}
{}
{
    \LWR@htmlelement{footer}

    \LWR@pagebottom

    \LWR@htmlelementend{footer}
}
```

No bottom navigation if are finishing the home page or formatting for EPUB or a word-processor.

```
\ifthenelse{\boolean{FormatEPUB}\OR\boolean{FormatWP}}
{}
{\ifnumcomp{\value{LWR@htmlfilenumber}}{>}{0}{\LWR@botnavigation}{}}
```

End of this HTML file:

```
\LWR@stoppars
\LWR@htmltag{/body}\LWR@orignewline
\LWR@htmltag{/html}\LWR@orignewline
\LWR@traceinfo{LWR@newhtmlfile: about to LWR@orignewpage}
\LWR@orignewpage

\addtocounter{LWR@htmlfilenumber}{1}%
```

If using a filename, create a version without blanks. The filename without blanks will be placed into \LWR@thisfilename. If not using a filename, the file number will be used instead.

```
\ifbool{FileSectionNames}%
{\LWR@filenamenoblanks{#1}}
{\renewcommand*{\LWR@thisfilename}{\arabic{LWR@htmlfilenumber}}}
```

Include an HTML comment to instruct lwarpmk where to split the files apart. Uses pipe-separated fields for `split_html.gawk`. Uses monospaced font with ligatures disabled for everything except the title.

```
\LWR@traceinfo{LWR@newhtmlfile: about to print start file}%
```

\LWR@nullfonts to allow math in a section name.

```
\begingroup%
\LWR@nullfonts%
\LWR@htmlblockcomment{%
|Start file|%
\LWR@htmlsectionfilename{\LWR@thisfilename}|%
}
\endgroup%
```

At the top of the starting file:

```
\LWR@stoppars

```

Start a new file with the given section name:

```
\LWR@filestart[#1]

```

Track the page numbers:

```
\setcounter{LWR@latestautopage}{\value{page}}%
\LWR@newautopagelabel{LWR@latestautopage}%
```

No navigation between files if formatting for an EPUB or word processor:

```
\ifthenelse{\boolean{FormatEPUB}\OR\boolean{FormatWP}}
{}
{\LWR@topnavigation}

```

No header if between files if formatting for an EPUB or word processor:

```
\ifthenelse{\boolean{FormatEPUB}\OR\boolean{FormatWP}}
{}
{
    \LWR@htmlelement{header}

    \LWR@pagetop

    \LWR@htmlelementend{header}
}

```

Print title only if there is one. Skip if formatting for an EPUB or word processor:

```
\ifthenelse{\boolean{FormatEPUB}\OR\boolean{FormatWP}}
{}
{\ifcsvoid{thetitle}{}{\LWR@printthetitle}}

```

No sideTOC if formatting for an EPUB or word processor:

```
\ifthenelse{\boolean{FormatEPUB}\OR\boolean{FormatWP}}
{}
{\LWR@sidetoc}

```

Start of the <textbody>:

```
\LWR@htmlelementclass{section}{textbody}

```

Keep paragraph tags disabled for now:

```
\LWR@stoppars

```

If using MATHJAX, disable \ensuremath by printing a nullified definition at the start of each file, and add further customizations:

```
\LWR@customizeMathJax

\LWR@traceinfo{LWR@newhtmlfile: done}
}

\end{warpHTML}
```

60 Sectioning

Sectioning and cross-references have been emulated from scratch, rather than try to patch several layers of existing LaTeX code and packages. Formatting is handled by CSS, so the emulated code has much less work to do than the print versions.

Unicode

⚠ accents in filenames

Section names and the resulting filenames with accented characters are partially supported, depending on the ability of *pdflatex* to generate characters and *pdftotext* to read them. If extra symbols appear in the text, it may be that *pdflatex* is actually producing a symbol over or under a character, resulting in *pdftotext* picking up the accent symbol separately.

XeLaTeX and LuaLaTeX directly support accented section and file names.

for HTML output:

```
\begin{warpHTML}
```

60.1 User-level starred section commands

`\ForceHTMLPage`

For HTML output, forces the next section to be on its own HTML page, if `FileDepth` allows, even if starred. For use with `\printindex` and others which generate a starred section which should be on its own HTML page. Also see `\ForceHTMLTOC`.

For print output, no effect.

```
\newbool{LWR@forcinghtmlpage}
\boolfalse{LWR@forcinghtmlpage}

\newcommand*{\ForceHTMLPage}{%
\global\booltrue{LWR@forcinghtmlpage}%
}
```

`\ForceHTMLTOC`

For HTML output, forces the next section to have a TOC entry, even if starred. For use with `\printindex` and others which generate a starred section which should be in the TOC so that it may be accessed via HTML. Not necessary if used with tocbibind. Also see `\ForceHTMLPage`.

For print output, no effect.

```
\newbool{LWR@forcinghtmltoc}
\boolfalse{LWR@forcinghtmltoc}

\newcommand*{\ForceHTMLTOC}{%
\global\booltrue{LWR@forcinghtmltoc}%
}
```

```
\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
\newcommand*{\ForceHTMLPage}{}
\newcommand*{\ForceHTMLTOC}{}
\end{warpprint}
```

for HTML output:

```
\begin{warpHTML}
```

60.2 Book class commands

`\mainmatter` ⚠ Declare the main matter section of the document. Does not reset the page number, which must be consecutive arabic numbers for the HTML conversion.

```
\newbool{LWR@mainmatter}
\DeclareDocumentCommand{\mainmatter}{}{%
\booltrue{LWR@mainmatter}%
}
```

`\frontmatter` Declare the front matter section of the document, using arabic numbering for the internal numbering. Does not reset the page number.

```
\DeclareDocumentCommand{\frontmatter}{}{%
\boolfalse{LWR@mainmatter}%
}
```

`\backmatter` Declare the back matter section of the document. Does not reset the page number.

```
\DeclareDocumentCommand{\backmatter}{}{%
\boolfalse{LWR@mainmatter}
}
```

60.3 Sectioning support macros

`\LWR@sectionumber` {⟨*section type*⟩}

Typeset a section number and its trailing space with css formatting:

```
\newcommand*{\LWR@sectionnumber}[1]{%
\InlineClass{sectionnumber}{#1}%
}
```

autosec A tag used by the TOC and index.

\LWR@createautosec {⟨*section type*⟩}

Create an autosection tag.

```
\newcommand*{\LWR@createautosec}[1]{%
\LWR@htmltag{#1 id="\LWR@print@mbox{autosec-\arabic{page}}"}%
}
```

\LWR@pushoneclose {⟨*depth*⟩} {⟨*printclose*⟩} Stacks the new sectioning level's closing tag, to be used when this section is closed some time later.

⚠ \LWR@stoppars must be executed first.

```
\NewDocumentCommand{\LWR@pushoneclose}{m m}{%
\LWR@traceinfo{LWR@pushoneclose #1}%
    \pushclose{#2}{#1}%
}
```

\LWR@startnewdepth {⟨*depth*⟩} {⟨*printclose*⟩}

Closes currently stacked tags of a lesser level, then opens the new nesting level by saving this new sectioning level's closing tag for later use.

⚠ \LWR@stoppars must be executed first.

```
\NewDocumentCommand{\LWR@startnewdepth}{m m}{%
```

Close any stacked sections up to this new one.

```
\LWR@closeprevious{#1}%
```

Push a new section depth:

```
\LWR@pushoneclose{#1}{#2}%
}
```

Ctr LWR@prevFileDepth Remembers the previous LWR@FileDepth.

Initialized to a deep level so that any section will trigger a new HTML page after the home page.

```
\newcounter{LWR@prevFileDepth}
\setcounter{LWR@prevFileDepth}{\LWR@depthsubparagraph}
```

\@seccntformat {⟨*sectiontype*⟩}

```
5499 \def\@seccntformat#1{\csname the#1\endcsname\protect\quad}
```

\simplechapterdelim Used by tocbibind and anonchap.

```
5500 \newcommand*{\simplechapterdelim}{}
```

\@chapcntformat {⟨*sectiontype*⟩}

\let to \@seccntformat by default, but may be redefined by \simplechapter and \restorechapter from tocbibind or anonchap.

```
5501 \let\@chapcntformat\@seccntformat
```

\@partcntformat {⟨*sectiontype*⟩}

\let to \@seccntformat by default, but may be redefined by ctex.

```
5502 \let\@partcntformat\@seccntformat
```

\@partnameformat Prints "Part" for part sections.

Nullified by ctex.

```
5503 \newcommand*{\@partnameformat}{\LWR@isolate{\partname}~}%
```

Ctr LWR@currentautosec Records the page number when the section was created. If a math expression is included in the section name, and SVG math is used, the corresponding lateximage will cause the page number to change by the time the following autosec label is created.

```
5504 \newcounter{LWR@currentautosec}
```

\LWR@section * [⟨*TOC name*⟩] {⟨*name*⟩} {⟨*sectiontype*⟩}

The common actions for the high-level sectioning commands.

```
5505 \DeclareDocumentCommand{\LWR@section}{m m m m}{%
5506 \LWR@traceinfo{LWR@section: starting}%
5507 \LWR@stoppars%
```

Cancel special minipage horizontal space interaction:

```
5508 \global\boolfalse{LWR@minipagethispar}%
```

Start a new HTML file unless starred, and if is a shallow sectioning depth.

Exception: Also start a new HTML file for \part*, for appendix.

Generate a new LaTeX page so that TOC and index page number points to the section:

```
\LWR@traceinfo{LWR@section: testing whether to start a new HTML file}%
\IfBooleanT{#1}{\LWR@traceinfo{LWR@section: starred}}%
\ifbool{LWR@forcinghtmlpage}{\LWR@traceinfo{LWR@section: forcinghtmlpage}}{}%
\ifthenelse{%
    \(%
        \(\NOT\equal{#1}{\BooleanTrue}\)\OR%
        \(\cnttest{\@nameuse{LWR@depth#4}}{=}{\LWR@depthpart}\)\OR%
        \(\boolean{LWR@forcinghtmlpage}\)%
    \)%
    \AND%
    \cnttest{\@nameuse{LWR@depth#4}}{<=}{\value{FileDepth}}%
    \AND%
    \(%
        \NOT\boolean{CombineHigherDepths}\OR%
        \cnttest{\@nameuse{LWR@depth#4}}{<=}{\value{LWR@prevFileDepth}}%
    \)%
    \AND%


    \(% phantomsection
        \NOT\isempty{#3}%
        \OR%
        \(\NOT\equal{#1}{\BooleanTrue}\)%
    \)%
}%
```

If so: start a new HTML file:

```
{% new file
    \LWR@traceinfo{LWR@section: new HTML file}%
```

See if there was an optional TOC name entry:

```
    \IfNoValueTF{#2}%
```

If no optional entry

```
    {\LWR@newhtmlfile{#3}}%
```

If yes an optional entry

```
    {\LWR@newhtmlfile{#2}}%
}% new file
```

Else: No new HTML file:

```
{% not new file
```

Generate a new LaTeX page so that TOC and index page number points to the section:

```
    \LWR@traceinfo{LWR@section: not a new HTML file, about to LWR@orignewpage}%
    \LWR@orignewpage%

}% not new file
```

Remember this section's name for `\nameref`:

```
\IfValueT{#3}{%
\LWR@traceinfo{LWR@section: about to LWR@setlatestname}%
\IfValueTF{#2}{\LWR@setlatestname{#2}}{\LWR@setlatestname{#3}}%
}%
```

Print an opening comment with the level and the name; ex: "section" "Introduction" Footnotes may be used in section names, which would also appear in the HTML section opening comments, so the short TOC entry is used if possible, and a limited opening comment is made if the sectional unit is starred.

```

\ifbool{HTMLDebugComments}{%
    \begingroup%
    \LWR@nullfonts%
    \IfBooleanTF{#1}% starred
    {\LWR@htmlcomment{Opening #4*}}%
    {%
        \IfNoValueTF{#2}% short TOC
            {\LWR@htmlcomment{Opening #4 ``#3''}}%
            {\LWR@htmlcomment{Opening #4 ``#2''}}%
    }
    \endgroup%
}{}%

```

For inline sections paragraph and subparagraph, start a new paragraph now:

```
\ifthenelse{%
    \cnttest{\@nameuse{LWR@depth#4}}{>=}{\LWR@depthparagraph}%
}%
{\LWR@startpars}%
{}%
```

Create the opening tag with an autosec:

```
\LWR@traceinfo{LWR@section: about to LWR@createautosec}%
\LWR@createautosec{\@nameuse{LWR@tag#4}}%

\setcounter{LWR@currentautosec}{\value{page}}%
```

Check if starred:

```
\IfBooleanTF{#1}%
{%
    \LWR@traceinfo{LWR@section: starred}%
```

Starred, but also forcing a TOC entry, so add unnumbered TOC name or regular name:

```
    \ifbool{LWR@forcinghtmltoc}%
    {%
        \addcontentsline{toc}{#4}{%
            \IfValueTF{#2}{\LWR@isolate{#2}}{\LWR@isolate{#3}}%
        }%
    }%
    {}%
}% starred
```

Not starred, so step counter and add to TOC:

```
{% not starred
```

Only add a numbered TOC entry if section number is not too deep:

```
    \ifthenelse{%
        \cnttest{\@nameuse{LWR@depth#4}}{<=}{\value{secnumdepth}}%
    }%
    {% if secnumdepth
```

If in the main matter, step the counter and add the TOC entry. For `article` class, lwarp assumes that all is mainmatter.

```
        \LWR@traceinfo{LWR@section: about to test main matter}%
        \ifbool{LWR@mainmatter}%
        {%
            \LWR@traceinfo{LWR@section: yes mainmatter}%
            \refstepcounter{#4}%
```

Add main matter numbered TOC entry with the TOC name or the regular name:

```
            \LWR@traceinfo{LWR@section: about to addcontentsline}%
            \addcontentsline{toc}{#4}%
            {%
```

```
                \protect\numberline{\@nameuse{the#4}}%
                {%
                    \ignorespaces%
                    \IfValueTF{#2}{\LWR@isolate{#2}}{\LWR@isolate{#3}}\protect\relax%
                }%
            }%
            \LWR@traceinfo{LWR@section: finished addcontentsline}%
        }% end of if main matter
```

If not main matter, add unnumbered TOC name or regular name:

```
        {% not main matter
            \LWR@traceinfo{LWR@section: no main matter}%
            \addcontentsline{toc}{#4}{%
                \IfValueTF{#2}{\LWR@isolate{#2}}{\LWR@isolate{#3}}%
            }%
        }% end of not main matter
    }% end of secnumdepth
```

Deeper than secnumdepth, so add an unnumbered TOC entry:

```
    {%
        \addcontentsline{toc}{#4}{%
            \IfValueTF{#2}{\LWR@isolate{#2}}{\LWR@isolate{#3}}%
        }%
    }%
```

For part, print “Part”:

```
    \ifbool{LWR@mainmatter}%
    {%
        \ifthenelse{%
            \(\cnttest{\@nameuse{LWR@depth#4}}{<=}%
                {\value{secnumdepth}}\) \AND%
            \(\cnttest{\@nameuse{LWR@depth#4}}{<=}{\LWR@depthpart}\)%
        }%
        {\@partnameformat}%
        {}%
```

Print the section number:

```
        \LWR@traceinfo{LWR@section: about to print section number}%
        \ifthenelse{%
            \cnttest{\@nameuse{LWR@depth#4}}{<=}{\value{secnumdepth}}%
        }%
        {%
            \ifstrequal{#4}{part}%
            {%
                \protect\LWR@sectionnumber{\@partcntformat{#4}}%
```

```
            }{%
                \ifstrequal{#4}{chapter}%
                    {\protect\LWR@sectionnumber{\@chapcntformat{#4}}}%
                    {\protect\LWR@sectionnumber{\@seccntformat{#4}}}%
            }%
        }%
        {}%
        \LWR@traceinfo{LWR@section: finished print section number}%
    }{}%
}% end of not starred
```

Print the section name:

```
\LWR@traceinfo{LWR@section: about to print the section name}%
\LWR@isolate{#3}%
```

Close the heading tag, such as /H2:

```
\LWR@traceinfo{LWR@section: about to close the heading tag}%
\LWR@htmltag{\@nameuse{LWR@tag#4end}}%
```

Generate a LaTeX label:

```
\LWR@traceinfo{LWR@section: about to create the LaTeX label}%
\LWR@newautopagelabel{LWR@currentautosec}%
```

Start paragraph handing unless is an inline paragraph or subparagraph:

```
\ifthenelse{%
    \cnttest{\@nameuse{LWR@depth#4}}{<}{\LWR@depthparagraph}%
}%
{\LWR@startpars}%
{}%
```

If not starred, remember the previous depth to possibly trigger a new HTML page.

HOWEVER, allow a `\part*` to start a new HTML page. This is used by appendix.

A starred section does not trigger a new HTML page at the beginning of this macro, so it should not affect it here at the end either. This became an issue when a `\listoftables` was tested in the middle of the document. The `\chapter*` for the list was not allowing a new HTML page for the section following it while `CombineHigherDepths` was true.

```
\ifthenelse{%
    \NOT\equal{#1}{\BooleanTrue}\OR%
    \cnttest{\@nameuse{LWR@depth#4}}{=}{\LWR@depthpart}%
}%
```

```
{% not starred
    \setcounter{LWR@prevFileDepth}{\@nameuse{LWR@depth#4}}%
}% not starred
{}%
```

Reset to defaults if not a phantomsection:

```
\ifstrempty{#3}%
{}%
{%
\global\boolfalse{LWR@forcinghtmlpage}%
\global\boolfalse{LWR@forcinghtmltoc}%
}%
%
\LWR@traceinfo{LWR@section: done}%
}
```

60.4 `\section` and friends

`\part` * [⟨*TOC name*⟩] {⟨*name*⟩}

```
\newcommand{\part@preamble}{}% for koma-script

\DeclareDocumentCommand{\part}{s o m}{%
\LWR@maybeprintpendingfootnotes{\LWR@depthpart}%
\LWR@stoppars%

\LWR@startnewdepth{\LWR@depthpart}{\LWR@printclosepart}%

\LWR@section{#1}{#2}{#3}{part}%

\part@preamble% for koma-script
\renewcommand{\part@preamble}{}%
}
```

`\chapter` * [⟨*TOC name*⟩] [⟨*heading name*⟩] {⟨*name*⟩}

```
\let\@printcites\relax% for quotchap package

\newcommand{\chapter@preamble}{}% for koma-script

\@ifundefined{chapter}
{}
{%
\DeclareDocumentCommand{\chapter}{s o o m}{%
```

```
\IfValueTF{#2}{
\LWR@traceinfo{chapter #2}%
}{
\LWR@traceinfo{chapter #4}%
}
\LWR@maybeprintpendingfootnotes{\LWR@depthchapter}%
\LWR@stoppars%

\LWR@startnewdepth{\LWR@depthchapter}{\LWR@printclosechapter}%

\LWR@section{#1}{#2}{#4}{chapter}%

\@printcites% for quotchap package

\chapter@preamble% for koma-script
\renewcommand{\chapter@preamble}{}%
}
}
```

`\section` `* [⟨TOC name⟩] [⟨heading name⟩] {⟨name⟩}`

```
\DeclareDocumentCommand{\section}{s o o m}{%
\LWR@traceinfo{section: starting}%
\LWR@maybeprintpendingfootnotes{\LWR@depthsection}%
\LWR@stoppars%

\LWR@startnewdepth{\LWR@depthsection}{\LWR@printclosesection}%

\LWR@section{#1}{#2}{#4}{section}%
}
```

`\subsection` `* [⟨TOC name⟩] {⟨name⟩}`

```
\DeclareDocumentCommand{\subsection}{s o m}{%
\LWR@maybeprintpendingfootnotes{\LWR@depthsubsection}%
\LWR@stoppars%

\LWR@startnewdepth{\LWR@depthsubsection}{\LWR@printclosesubsection}%

\LWR@section{#1}{#2}{#3}{subsection}%
}
```

`\subsubsection` `* [⟨TOC name⟩] {⟨name⟩}`

```
\DeclareDocumentCommand{\subsubsection}{s o m}{%
\LWR@maybeprintpendingfootnotes{\LWR@depthsubsubsection}%
\LWR@stoppars%

```

```
\LWR@startnewdepth{\LWR@depthsubsubsection}%
{\LWR@printclosesubsubsection}%

\LWR@section{#1}{#2}{#3}{subsubsection}%
}
```

\paragraph * [⟨*TOC name*⟩] {⟨*name*⟩}

```
\DeclareDocumentCommand{\paragraph}{s o m}{%
\LWR@maybeprintpendingfootnotes{\LWR@depthparagraph}%
\LWR@stoppars%

\LWR@startnewdepth{\LWR@depthparagraph}{\LWR@printcloseparagraph}%

\LWR@section{#1}{#2}{#3}{paragraph}%
}
```

\subparagraph * [⟨*TOC name*⟩] {⟨*name*⟩}

```
\DeclareDocumentCommand{\subparagraph}{s o m}{%
\LWR@maybeprintpendingfootnotes{\LWR@depthsubparagraph}%
\LWR@stoppars%

\LWR@startnewdepth{\LWR@depthsubparagraph}{\LWR@printclosesubparagraph}%

\LWR@section{#1}{#2}{#3}{subparagraph}%
}
```

```
\end{warpHTML}
```

61 Starting a new file

for HTML & PRINT:

```
\begin{warpall}
```

\HTMLLanguage Default language for the HTML `lang` tag.

```
\newcommand*{\LWR@currentHTMLLanguage}{en-US}

\newcommand*{\HTMLLanguage}[1]{%
\renewcommand*{\LWR@currentHTMLLanguage}{#1}%
}
```

\theHTMLTitleSeparator May be used inside \theHTMLTitleSection to separate the website's overall HTML title and the particular page's section name.

```
\ifPDFTeX% pdflatex or dvi latex
\ifdefstring{\inputencodingname}{utf8}{%
    \newcommand*{\theHTMLTitleSeparator}{ -- }% EMdash
}{%
    \newcommand*{\theHTMLTitleSeparator}{ - }% hyphen
}%
\else%
    \newcommand*{\theHTMLTitleSeparator}{ -- }% EMdash
\fi%
```

\HTMLTitleBeforeSection Sets the HTML page's meta `title` tag to show the website title before the section name.

```
\newcommand*{\HTMLTitleBeforeSection}{%
    \def\theHTMLTitleSection{%
        \theHTMLTitle\theHTMLTitleSeparator\theHTMLSection%
    }
}
```

\HTMLTitleAfterSection Sets the HTML page's meta `title` tag to show the section name before the website title.

```
\newcommand*{\HTMLTitleAfterSection}{%
    \def\theHTMLTitleSection{%
        \theHTMLSection\theHTMLTitleSeparator\theHTMLTitle%
    }
}
```

\theHTMLTitleSection Forms the HTML page's meta `title` tag. The default is to show the website title before the section name.

```
\HTMLTitleBeforeSection
```

\theHTMLSection The section name is passed to \LWR@filestart, which then sets \theHTMLSection for use inside \theHTMLTitleSection to create an HTML meta `title` tag.

```
\newcommand*{\theHTMLSection}{}
```

```
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

`\LWR@filestart` [⟨*sectionname*⟩] Creates the opening HTML tags.

```
\newcommand*{\LWR@filestart}[1][]{%
\LWR@traceinfo{LWR@filestart !#1!}%
```

Locally temporarily disable direct-formatting commands:

```
\begingroup%
\LWR@nullfonts%
```

Save the section name for use while creating the HTML meta `title` tag:

```
\edef\theHTMLSection{#1}%
```

Create the page's HTML header:

```
\LWR@htmltag{!DOCTYPE html}\LWR@orignewline
```

The language is user-adjustable:

```
\LWR@htmltag{html lang="\LWR@currentHTMLLanguage"}\LWR@orignewline
```

Start of the meta data:

```
\LWR@htmltag{head}\LWR@orignewline
```

Charset is fixed at UTF-8:

```
\LWR@htmltag{meta charset="UTF-8" /}\LWR@orignewline
```

Author:

```
\ifthenelse{\equal{\theHTMLAuthor}{}}%
{}%
{\LWR@htmltag{meta name="author" content="\theHTMLAuthor" /}\LWR@orignewline}%
```

lwarp is the generator:

```
\LWR@htmltag{meta name="generator" content="LaTeX lwarp package" /}%
    \LWR@orignewline
```

If there is a description, add it now:

```
\ifdefempty{\LWR@currentHTMLDescription}{}{%
\LWR@htmltag{%
meta name="description" content="\LWR@currentHTMLDescription" /}%
    \LWR@orignewline
}%
```

Mobile-friendly viewport:

```
\LWR@htmltag{meta name="viewport" %
content="width=device-width, initial-scale=1.0" /}%
    \LWR@orignewline
```

IE patch:

```
\LWR@htmltag{!{-}{-}[if lt IE 9]}\LWR@orignewline
\LWR@htmltag{%
script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"}%
\LWR@htmltag{/script}\LWR@orignewline
\LWR@htmltag{![endif]{-}{-}}\LWR@orignewline
```

The page's title, if there is one. A section name is also added if given.

```
\ifthenelse{\equal{\theHTMLTitle}{}}%
{}%
{%
    \LWR@htmltag{title}%
    \ifdefempty{\theHTMLSection}%
        {\theHTMLTitle}%
        {\theHTMLTitleSection}%
    \LWR@htmltag{/title}\LWR@orignewline%
}%
```

The page's stylesheet:

```
\LWR@htmltag{%
link rel="stylesheet" type="text/css" href="\LWR@currentcss" /}%
\LWR@orignewline
```

Optional MathJax support. The HTML tags must be turned off during the verbatim input, and the paragraph handling which was turned on at the end of verbatim input must be immediately turned off again.

```
\ifbool{mathjax}%
{%
    \begingroup%
    \LWR@restoreoriglists%
    \boolfalse{LWR@verbtags}%

        \verbatiminput{lwarp_mathjax.txt}%

    \booltrue{LWR@verbtags}%
    \endgroup%
    \LWR@stoppars%
}% end of mathjax
```

```
{}%
```

End of the header:

```
\LWR@htmltag{/head}\LWR@orignewline
```

Start of the body:

```
\LWR@htmltag{body}\LWR@orignewline
\endgroup
\LWR@traceinfo{LWR@filestart: done}
}

\end{warpHTML}
```

62 Starting HTML output

for HTML output:

```
\begin{warpHTML}
```

\LWR@LwarpStart Executed at the beginning of the entire document.

```
\catcode`\$=\active
\newcommand*{\LWR@LwarpStart}
{%
\LWR@traceinfo{LWR@lwarpStart}
```

If formatting for a word processor, force filedepth to single-file only, force HTML debug comments off.

```
\ifbool{FormatWP}{%
    \setcounter{FileDepth}{-5}%
    \boolfalse{HTMLDebugComments}%
}{}
```

Expand and detokenize \HomeHTMLFilename and \HTMLFilename:

```
\edef\LWR@strresult{\HomeHTMLFilename}
\edef\HomeHTMLFilename{\detokenize\expandafter{\LWR@strresult}}
\edef\LWR@strresult{\HTMLFilename}
\edef\HTMLFilename{\detokenize\expandafter{\LWR@strresult}}
```

Force onecolumn and empty page style:

```
\LWR@origonecolumn%
\LWR@origpagestyle{empty}%
```

No black box for overfull lines:

```
\overfullrule=0pt
```

Reduce chance of line overflow in verbatim environments:

```
\LWR@print@scriptsize%
```

In PDF output, don't allow line breaks to interfere with HTML tags:

```
\LWR@print@raggedright%
\LetLtxMacro{\\}{\LWR@endofline}%
```

Spread the lines for *pdftotext* to read them well:

```
\linespread{1.3}%
```

For *pdftotext* to reliably identify paragraph splits:

```
\setlength{\parindent}{0pt}
\setlength{\parskip}{2ex}
```

For the `lateximages` record file:

```
\immediate\openout\LWR@lateximagesfile=lateximages.txt
```

Removes space around the caption in the HTML:

```
\setlength{\belowcaptionskip}{0ex}
\setlength{\abovecaptionskip}{0ex}
```

Redefine the plain page style to be empty when used by index pages:

```
\renewcommand{\ps@plain}{}
```

Plug in some new actions. This is done just before the document start so that they won't be over-written by some other package.

Tabular:

```
\LetLtxMacro\LWR@origtabular\tabular
\LetLtxMacro\LWR@origendtabular\endtabular
\LetLtxMacro\tabular\LWR@tabular
\LetLtxMacro\endtabular\endLWR@tabular
```

Float captions:

```
\let\LWR@origcaption\caption
```

Label in HTML

Labels: `\ltx@label` is used in amsmath environments and is also patched by cleveref.

```
\let\LWR@origltx@label\ltx@label
\let\ltx@label\LWR@htmlmathlabel
```

Logos:

```
\LetLtxMacro\TeX\LWR@TeX
\LetLtxMacro\LaTeX\LWR@LaTeX
\LetLtxMacro\LuaTeX\LWR@LuaTeX
\LetLtxMacro\LuaLaTeX\LWR@LuaLaTeX
\LetLtxMacro\XeTeX\LWR@XeTeX
\LetLtxMacro\XeLaTeX\LWR@XeLaTeX
\LetLtxMacro\ConTeXt\LWR@ConTeXt
```

Not yet started any paragraph handling:

```
\global\boolfalse{LWR@doingapar}
\global\boolfalse{LWR@doingstartpars}
```

Document and page settings:

```
\mainmatter
\LWR@origpagenumbering{arabic}
```

Start a new HTML file and a header:

```
\LWR@traceinfo{LWR@lwarpStart: Starting new file.}
\LWR@filestart
\LWR@traceinfo{LWR@lwarpStart: Generating first header.}
\LWR@htmltag{header}\LWR@orignewline
\LWR@startpars
\LWR@firstpagetop
\LWR@stoppars
\LWR@htmltag{/header}\LWR@orignewline
\LWR@traceinfo{LWR@lwarpStart: Generating textbody.}
\LWR@htmltag{section class="textbody"}
```

Patch the `itemize`, `enumerate`, and `description` environments and `\item`. This works with the native LaTeX environments, as well as those provided by enumitem, enumerate, and paralist.

```
\LWR@patchlists
```

Ensure that math mode is active to call lwarp's patches:

```
\catcode`\$=\active
```

Required for \nameref to work with SVG math:

```
\immediate\write\@mainaux{\catcode`\string$\active}%
\LetLtxMacro\LWR@syntaxhighlightone$% balance for editor syntax highlighting
```

Allow HTML paragraphs to begin:

```
\LWR@startpars
```

If using MATHJAX, disable \ensuremath by printing a nullified definition at the start of each file, and add further customizations:

```
\LWR@customizeMathJax

\LWR@traceinfo{LWR@lwarpStart: done}
}
\catcode`\$=3% math shift until lwarp starts

\end{warpHTML}
```

63 Ending HTML output

for HTML output:

```
\begin{warpHTML}
```

\LWR@requesttoc {⟨*boolean*⟩} {⟨*suffix*⟩} Requests that a TOC, LOF, or LOTbe generated.

```
\newcommand*{\LWR@requesttoc}[2]{%
\ifbool{#1}
{
    \expandafter\newwrite\@nameuse{tf@#2}
    \immediate\openout \@nameuse{tf@#2} \jobname.#2\relax
}{}
}
```

\LWR@LwarpEnd Final stop of all HTML output:

```
\newcommand*{\LWR@LwarpEnd}
{
\LWR@stoppars
\LWR@closeprevious{\LWR@depthfinished}
```

At the bottom of the ending file:

Close the textbody:

```
\LWR@htmlelementclassend{section}{textbody}
```

Print any pending footnotes:

```
\LWR@printpendingfootnotes
```

Create the footer:

```
\LWR@htmlelement{footer}

\LWR@pagebottom

\LWR@htmlelementend{footer}
```

No bottom navigation if are finishing the home page, or if formatting for an EPUB or word processor.

Presumably has a table-of-contents.

```
\ifthenelse{\boolean{FormatEPUB}\OR\boolean{FormatWP}}
{}
{
    \ifnumcomp{\value{LWR@htmlfilenumber}}{>}{0}{\LWR@botnavigation}{}
}

\LWR@stoppars% final stop of all paragraphs
```

Finish the HTML file:

```
\LWR@htmltag{/body}\LWR@orignewline
\LWR@htmltag{/html}\LWR@orignewline
```

Seems to be required sometimes:

```
\LWR@orignewpage
```

For `lateximage` commands:

```
\immediate\closeout\LWR@lateximagesfile
}

\end{warpHTML}
```

64 Title page

package support
⚠ load order

lwarp supports the native LaTeX titling commands, and also supports the packages authblk and titling. If both are used, authblk should be loaded before titling.

\published and \subtitle

If using the titling package, additional titlepage fields for \published and \subtitle may be added by using \AddSubtitlePublished in the preamble. See section 64.8.

affiliation

lwarp provides for the \author macro an additional \affiliation macro to provide an affiliation and other additional information for each author in the title page. The affiliation information is removed when using titlingpage's \theauthor in the main text.

reusing titlepage information

The titling package maintains the definitions of \thetitle, \theauthor, etc., after the title has been typeset. These commands are to be used to refer to the document's title and author, etc., in the main text. These definitions have the \thanks and \affiliation removed, and for \author the \and is replaced to generate a simple inline list of authors separated by commas. Note: \theauthor does not work well with authblk unless the traditional LaTeX syntax is used.

⚠ \theauthor, authblk

custom titlepages

\printtitle, \printauthor, etc., are provided for use inside a custom titlepage or titlingpage environment, and these retain the \thanks and \affiliation.

\printthanks

\printthanks has been added to force the printing of thanks inside a titlingpage environment when \maketitle is not used.

⚠ \thanks

Inside a \titlepage or \titlingpage environment, use \thanks instead of \footnote for acknowledgements, etc.

64.1 Setting the title, etc.

The following provide setting commands for both HTML and print outputs.

\author {⟨*author*⟩} While using \maketitle and print mode, the author is treated as a single-column tabular and the \and feature finishes the current tabular then starts a new one for the next author. Each author thus is placed into its own tabular, and an affiliation may be placed on its own line such as

\and

```
\author{Name \\ Affiliation \and Second Name \\ Second Affiliation}
```

For HTML, the entire author block is placed inside a of class author, and each individual author is inside a of class oneauthor.

\@title
\@author
\@date

\@title, \@author, etc. store the values as originally assigned, including any \thanks, \and, or \affiliation. These are low-level macros intended to be used by

other macros only inside a `titlepage` or `titlingpage`, and are used by `\maketitle`. The author is printed inside a single-column `tabular`, which becomes multiple single-column `tabulars` if multiples authors are included. For HTML, these `tabulars` become side-by-side `<div>`s of class `oneauthor`, all of which are combined into one `<div>` of class `author`.

`\printtitle` `\printauthor` `\printdate`

`\printtitle`, etc. are user-level macros intended to be used in custom `titlepage` or `titlingpage` environments in cases where `\maketitle` is not desired. These commands preserve the `\thanks`, etc., and should not be used in the main text.

`\thetitle` `\theauthor` `\thedate`

`\thetitle`, `\theauthor`, and `\thedate` are available if titling has been loaded, and are sanitized user-level versions from which have been removed the `\thanks` and `\affiliation`, and `\and` is changed for inline text usage. The author is printed inline without `\affiliation` or `\thanks`, with `\and` placing commas between multiple authors. Thus, these commands are to be used in the main text whenever the user wishes to refer to the document's title and such. One practical use for this is to place the authors at the bottom of each HTML page, such as:

`\HTMLPageBottom` `{`⟨*text*⟩`}`

```
\HTMLPageBottom{
\begin{center}\textcopyright~2016 \theauthor\end{center}
}
```

⚠ `\theauthor`, authblk

`\theauthor` does not work well if authblk is used. If `\theauthor` is important, it is recommended to use the standard LaTeX syntax for `\author`, optionally with lwarp's `\affiliation` macro as well.

⚠ affiliations

After `\maketitle` has completed, `\theauthor` retains the definition of the author, but `\and` is changed to become a comma and a space, intending to print the authors names separated by spaces. This fails when affiliations are included on their own table rows.

`\affiliation`

A solution, provide here, is to define a macro `\affiliation` which, during `\maketitle`, starts a new row and adds the affiliation, but after `\maketitle` is finished `\affiliation` is re-defined to discard its argument, thus printing only the author names when `\author` is later used inline.

64.2 `\if@titlepage`

for HTML & PRINT: 5930 `\begin{warpall}`

\if@titlepage Some classes do not provide \if@titlepage. In this case, provide it and force it false.

```
\ifcsvoid{@titlepagefalse}{
    \newif\if@titlepage
    \@titlepagefalse
}{}

\end{warpall}
```

64.3 Changes for \affiliation

\affiliation {⟨*text*⟩}

Adds the affiliation to the author for use in \maketitle.

Inside titlepage, this macro prints its argument. Outside, it is null.

for HTML & PRINT:

```
\begin{warpall}
\providerobustcmd{\affiliation}[1]{}
\end{warpall}
```

for PRINT output:

```
\begin{warpprint}

\AtBeginEnvironment{titlepage}{
\renewrobustcmd{\affiliation}[1]{\\ \textsc{\small#1}}
}

\AtBeginDocument{
\@ifpackageloaded{titling}{
\AtBeginEnvironment{titlingpage}{
\renewrobustcmd{\affiliation}[1]{\\ \textsc{\small#1}}
}
}{}% titling loaded
}% AtBeginDocument

\end{warpprint}
```

for HTML output:

```
\begin{warpHTML}
```

Env titlepage Sets up a of class titlepage. Provided even for memoir class, since it is used by \maketitle.

```
\DeclareDocumentEnvironment{titlepage}{}
{
```

```
\renewrobustcmd{\affiliation}[1]{\\ \InlineClass{affiliation}{##1}}
\LWR@printpendingfootnotes
\LWR@forcenewpage
\BlockClass{titlepage}
}
{
\endBlockClass
\LWR@printpendingfootnotes
}

\end{warpHTML}
```

64.4 Printing the thanks

for HTML & PRINT:

```
\begin{warpall}
```

`\printthanks` Forces the `\thanks` to be printed.

This is necessary in a `titlingpage` environment when `\maketitle` was not used.

```
\newcommand*{\printthanks}{\@thanks}

\end{warpall}
```

64.5 Printing the title, etc. in HTML

The following are for printing the title, etc. in a `titlepage` or a `titlingpage` in HTML:

for HTML output:

```
\begin{warpHTML}
```

`\printtitle`

```
\newcommand*{\printtitle}
{
\LWR@stoppars
\LWR@htmltag{\LWR@tagtitle}%
\@title%
\LWR@htmltag{\LWR@tagtitleend}
\LWR@startpars
}
```

\LWR@printthetitle A private version which prints the title without footnotes, used to title each HTML page.

```
\newcommand*{\LWR@printthetitle}
{
\LWR@stoppars
\LWR@htmltag{\LWR@tagtitle}%
\thetitle%
\LWR@htmltag{\LWR@tagtitleend}
\LWR@startpars
}
```

\printauthor HTML version.

```
\newcommand*{\printauthor}{
```

The entire author block is contained in a named author:

```
\begin{BlockClass}{author}
```

\and finishes one author and starts the next:

```
\renewcommand{\and}{%
\end{BlockClass}
\begin{BlockClass}{oneauthor}
}
```

Individual authors are contained in a named oneauthor:

```
\begin{BlockClass}{oneauthor}
\@author
\end{BlockClass}
\end{BlockClass}
}
```

\printdate

```
\newcommand*{\printdate}{%
\begin{BlockClass}{titledate}
\@date
\end{BlockClass}
}
```

```
\end{warpHTML}
```

64.6 Printing the title, etc. in print form

The following are for printing the title, etc. in a `titlepage` or a `titlingpage` in print form:

for PRINT output:

```
\begin{warpprint}
```

`\printtitle`

```
\newcommand*{\printtitle}{{\Huge\@title}}
```

`\printauthor` Print mode.

```
\newcommand*{\printauthor}
    {{\large\begin{tabular}[t]{c}\@author\end{tabular}}}
```

`\printdate`

```
\newcommand*{\printdate}{{\small\textit{\@date}}}
```

```
\end{warpprint}
```

64.7 `\maketitle` for HTML output

An HTML `<div>` of class `titlepage` is used.

`\thanks` are a form of footnotes used in the title page. See section 57 for other kinds of footnotes.

See `\thanksmarkseries{series}`, below, to set the style of the footnote marks.

for HTML output:

```
\begin{warpHTML}
```

```
\@ifclassloaded{memoir}
{
\newcommand{\LWR@setfootnoteseries}{%
    \renewcommand\thefootnote{\@arabic\c@footnote}%
}
}{% not memoir
\if@titlepage
\newcommand{\LWR@setfootnoteseries}{%
    \renewcommand\thefootnote{\@arabic\c@footnote}%
}
\else
```

```
\newcommand{\LWR@setfootnoteseries}{%
    \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
}
\fi
}% not memoir
```

`\LWR@maketitlesetup` Patches `\thanks` macros.

```
\newcommand*{\LWR@maketitlesetup}{%
```

Redefine the footnote mark:

```
\LWR@setfootnoteseries%
\def\@makefnmark{\textsuperscript{\thefootnote}}
```

`\thefootnote` ⇒ `\nameuse`{arabic}{footnote}, or
`\thefootnote` ⇒ `\nameuse`{fnsymbol}{footnote}

Redefine the footnote text:

```
\long\def\@makefntext##1{%
```

Make the footnote mark and some extra horizontal space for the tags:

```
\textsuperscript{\@thefnmark}~%
```

`\makethanksmark` ⇒ `\thanksfootmark` ⇒ `\tamark` ⇒ `\@thefnmark` ⇒ `\itshape` a (or similar)

Print the text:

```
##1%
}%
}
```

`\@fnsymbol` {⟨*counter*⟩}

Re-defined to use an HTML entity for the double vertical bar symbol. The original definition used `\|` which was not being seen by *pdftotext*.

```
\def\@fnsymbol#1{\ifcase#1\or *\or \HTMLentity{dagger}\or \HTMLentity{Dagger}\or
   \HTMLentity{sect}\or \HTMLentity{para}\or \text{\HTMLunicode{2016}}\or
   **\or \HTMLentity{dagger}\HTMLentity{dagger} \or
   \HTMLentity{Dagger}\HTMLentity{Dagger} \else\@ctrerr\fi}
```

\maketitle HTML mode. Creates an HTML titlepage div and typesets the title, etc.

Code from the titling package is adapted, simplified, and modified for HTML output.

```
\renewcommand*{\maketitle}{%
```

An HTML titlepage is used for all classes.

```
\begin{titlepage}
```

Set up special patches:

```
\LWR@maketitlesetup
```

Typeset the title, etc:

```
\@maketitle
```

Immediately generate any \thanks footnotes:

```
\@thanks
```

Close the HTML titlepage div and cleanup:

```
\end{titlepage}
\setcounter{footnote}{0}%
\global\let\thanks\relax
\global\let\maketitle\relax
\global\let\@maketitle\relax
\global\let\@thanks\@empty
\global\let\@author\@empty
\global\let\@date\@empty
\global\let\@title\@empty
\global\let\title\relax
\global\let\author\relax
\global\let\date\relax
\global\let\and\relax
}
```

\@maketitle HTML mode. Typesets the title, etc.:

```
\DeclareDocumentCommand{\@maketitle}{}{%
    \LWR@stoppars\LWR@htmltag{\LWR@tagtitle}
    \@title
    \LWR@htmltag{\LWR@tagtitleend}\LWR@startpars
    \begin{BlockClass}{author}
```

For IEEEtran class:

```
    \renewcommand*{\cr}{}
    \renewcommand*{\crcr}{}
    \renewcommand*{\noalign}{}

        \renewcommand{\and}{
            \end{BlockClass}
            \begin{BlockClass}{oneauthor}
        }
        \begin{BlockClass}{oneauthor}
            \@author
        \end{BlockClass}
    \end{BlockClass}
    \begin{BlockClass}{titledate}
    \@date
    \end{BlockClass}
}
```

`\LWR@titlingmaketitle` `\maketitle` for use inside an HTML `titlingpage` environment.

```
\newcommand*{\LWR@titlingmaketitle}{%
```

Keep pending footnotes out of the title block:

```
\@thanks
```

Set up special patches:

```
\LWR@maketitlesetup
```

Typeset the title, etc:

```
\@maketitle
```

Immediately generate any `\thanks` footnotes:

```
\@thanks
}

\end{warpHTML}
```

64.8 `\published` and `\subtitle`

`\subtitle` and `\published` To add `\subtitle` and `\published` to the titlepage, load the titling package and

use \AddSubtitlePublished in the preamble.

The default lwarp.css has definitions for the published and subtitle classes.

If titling is loaded, \AddSubtitlePublished creates a number of additional macros, and also assigns some of the titling hooks. If titling is not loaded, \AddSubtitlePublished creates null macros.

⚠ titling hooks Do not use \AddSubtitlePublished if the user has patched the titling hooks for some other reason. Portions are marked \warpprintonly to reduce extra tags in HTML. Similarly, BlockClass has no effect in print mode. Thus, the following may be marked warpall.

for HTML & PRINT:

```
\begin{warpall}
```

\AddSubtitlePublished Adds \published and \subtitle, and related.

```
\newcommand*{\AddSubtitlePublished}{%
\@ifpackageloaded{titling}{% yes titling package
    \newcommand{\@published}{}%
    \newcommand{\published}[1]{\gdef\@published{##1}}%
    \renewcommand*{\maketitlehooka}{\printpublished}%
    \newcommand*{\printpublished}{%
        \warpprintonly{\begin{center}\unskip}%
        \begin{BlockClass}{published}%
        \warpprintonly{\large\itshape}%
        \@published%
        \end{BlockClass}%
        \warpprintonly{\end{center}}%
    }%
    \newcommand{\@subtitle}{}%
    \newcommand{\subtitle}[1]{\gdef\@subtitle{##1}}%
    \renewcommand*{\maketitlehookb}{\printsubtitle}%
    \newcommand*{\printsubtitle}{%
        \warpprintonly{\begin{center}\unskip}%
        \begin{BlockClass}{subtitle}%
        \warpprintonly{\Large\itshape}%
        \@subtitle%
        \end{BlockClass}%
        \warpprintonly{\end{center}}%
    }%
}% yes titling package
{% no titling package
    \newcommand{\published}[1]{}%
    \newcommand*{\printpublished}{}%
    \newcommand{\subtitle}{}%
    \newcommand*{\printsubtitle}%
}% no titling package
}% \AddSubtitlePublished
```

```
\end{warpall}
```

65 Abstract

The following code replaces the LaTeX default, and will itself be replaced later if the abstract package is loaded.

for HTML output:

```
\begin{warpHTML}
```

`\abstractname` User-redefinable title for the abstract.

Also over-written by the babel package.

```
\providecommand*{\abstractname}{Abstract}
```

Some classes allow an optional name, so it is allowed here.

Env `abstract`

```
\DeclareDocumentEnvironment{abstract}{O{\abstractname}}
{
\LWR@forcenewpage
\BlockClass{abstract}
\BlockClassSingle{abstracttitle}{#1}
}
{
\endBlockClass
}
```

```
\end{warpHTML}
```

66 Quote and verse

66.1 Attributions

`\attribution` For use with quote, quotation, verse:

Ex: `"A quotation." \attribution{\textsc{Author Name}\\\textsl{Book Title}}`

for HTML output:

```
\begin{warpHTML}
```

```
\newcommand{\attribution}[1]{%
    \begin{BlockClass}{attribution}
    #1
    \end{BlockClass}
}
\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
\newcommand{\attribution}[1]{
    \begin{flushright}
    \unskip
    #1
    \end{flushright}%
}
\end{warpprint}
```

66.2 Quotes, quotations

for HTML output:

```
\begin{warpHTML}
```

Env `quote`

```
\renewenvironment*{quote}
{
\LWR@forcenewpage
\LWR@htmlblocktag{blockquote}
}
{\LWR@htmlblocktag{/blockquote}}

\renewenvironment*{quotation}
{
\LWR@forcenewpage
\LWR@htmlblocktag{blockquotation}
}
{\LWR@htmlblocktag{/blockquotation}}

\end{warpHTML}
```

66.3 Verse

When using verse or memoir, always place a \\ after each line.

`\attrib` The documentation for the verse and memoir packages suggest defining an `\attrib` command, which may already exist in current documents, but it will only work for

print output. lwarp provides \attribution, which works for both print and HTML output. To combine the two so that \attrib is used for print and \attribution is used for HTML:

```
\begin{warpHTML}
\let\attrib\attribution
\end{warpHTML}
```

Len \vleftskip
Len \vleftmargini
Len \HTMLvleftskip
Len \HTMLleftmargini

These lengths are used by verse and memoir to control the left margin, and they may already be set by the user for print output. New lengths \HTMLvleftskip and \HTMLleftmargini are provided to control the margins in HTML output. These new lengths may be set by the user before any verse environment, and persist until they are manually changed again. One reason to change \HTMLleftmargini is if there is a wide \flagverse in use, such as the word "Chorus", in which case the value of \HTMLleftmargini should be set to a wide enough length to contain "Chorus". The default is wide enough for a stanza number.

⚠ spacing

Horizontal spacing relies on *pdftotext*'s ability to discern the layout (-layout option) of the text in the HTML-tagged PDF output. For some settings of \HTMLleftmargini or \HTMLleftskip the horizontal alignment may not work out exactly, in which case a label may be shifted by one space.

66.3.1 LaTeX core verse environment

for HTML output:

```
\begin{warpHTML}
```

Env verse

```
\renewenvironment{verse}
               {\let\\\newline% lwarp
                \list{}{\itemsep      \z@
                        \itemindent   -1.5em%
                        \listparindent\itemindent
                        \rightmargin  \leftmargin
                        \advance\leftmargin 1.5em}%
                \item\relax}
               {\endlist}
```

```
\end{warpHTML}
```

for HTML & PRINT:

```
\begin{warpall}
```

66.3.2 verse and memoir

The following lengths are used by verse and memoir. They may be set in either print or HTML output, but are only used in HTML. This allows the user to set `\vleftskip` and `\leftmargini` for print output, and optionally select different values for HTML.

Len `\HTMLvleftskip` Sets `\vleftskip` inside a `verse` environment in HTML.

```
\newlength{\HTMLvleftskip}
\setlength{\HTMLvleftskip}{1em}
```

Len `\HTMLleftmargini` Sets `\leftmargini` inside a `verse` environment in HTML.

```
\newlength{\HTMLleftmargini}
\setlength{\HTMLleftmargini}{4.5em}
```

```
\end{warpall}
```

67 Verbatim and tabbing

for HTML & PRINT:

```
\begin{warpall}
```

Len `\VerbatimHTMLWidth` Width to use in HTML `Verbatim` environment.

This width is used when placing line numbers to the right. Ignored during print output.

```
\newlength{\VerbatimHTMLWidth}
\setlength{\VerbatimHTMLWidth}{4in}
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

Bool `LWR@verbtags` Used to temporarily turn off verbatim tags while doing `\verbatiminput` in the HTML head.

```
\newbool{LWR@verbtags}
\booltrue{LWR@verbtags}
```

`\LWR@atbeginverbatim` `[`⟨*1: style*⟩`]` `{`⟨*2: negative* `\baselineskip` `\vspace`⟩`}` `{`⟨*3: class*⟩`}`

Encloses a verbatim environment with the given CSS class.

```
\newcommand*{\LWR@atbeginverbatim}[3][]
{%
```

Avoid excessive space between lines:

```
\setlength{\parskip}{0ex}%
```

Stop generating HTML paragraph tags:

```
\LWR@stoppars%
```

Create a new `pre` of the given class. The tags may temporarily be turned off for internal use, such as loading the MathJax script.

```
\ifbool{LWR@verbtags}{%
    \LWR@htmltag{pre class="#3"
        \ifthenelse{\equal{#1}{}}{}{style="#1"}%
    }%
    \LWR@orignewline% pre
    \leavevmode\unskip\LWR@print@vspace*{-#2\baselineskip}%
}{}%
```

Use a mono-spaced font to preserve horizontal positioning. If horizontal alignment is important for the user, use a mono-spaced font in the CSS for the `verse` class.

```
\begingroup%
```

```
% \LWR@print@normalsize%
\LWR@origttfamily%
\LWR@print@small%
```

Since inside a `<pre>`, restore the original list processing:

```
\LWR@restoreoriglists%
```

Turn off babel-french extra space before punctuation:

```
\LWR@FBcancel%
```

Do not produce HTML tags for `\hspace` inside a verse `par`. Restore plain LaTeX `\hspace` functionality:

```
\LWR@select@print@hspace%
}
```

`\LWR@afterendverbatim` {⟨*negative* `\baselineskip` `\vspace`⟩}

Finishes enclosing a verbatim environment.

```
\newcommand*{\LWR@afterendverbatim}[1]{%
\endgroup%
\par%
```

At the end of the environment, close the `pre`:

```
\ifbool{LWR@verbtags}{%
    \LWR@print@vspace*{-#1\baselineskip}%
    \noindent\LWR@htmltag{/pre}\LWR@orignewline% pre
}{}%
```

Resume regular paragraph handling:

```
\LWR@startpars%
}
```

`\verbatiminput` {⟨*filename*⟩}

Patch `\verbatiminput` to add HTML tags:

```
\let\LWRV@origverbatim@input\verbatim@input

\renewcommand{\verbatim@input}[2]{%
\ifbool{LWR@verbtags}{\LWR@forcenewpage}{}%
\LWR@atbeginverbatim{2.5}{Verbatim}%
\LWRV@origverbatim@input{#1}{#2}%
\LWR@afterendverbatim{1.5}%
}
```

Env `verbatim`

```
\AfterEndPreamble{
\LWR@traceinfo{Patching verbatim.}
\AtBeginEnvironment{verbatim}{%
\LWR@forcenewpage%
\LWR@atbeginverbatim{2.5}{verbatim}%
}
\AfterEndEnvironment{verbatim}{%
    \LWR@afterendverbatim{1}%
}
}
```

Env `tabbing` The `tabbing` environment works, except that SVG math and `lateximages` do not yet work inside the environment.

⚠ math in `tabbing` If math is used inside `tabbing`, place `tabbing` inside a `lateximage` environment,

which will render the entire environment as a single SVG image.

```
\newcommand*{\LWR@HTML@tabbing}{%
\LWR@forcenewpage%
\LWR@atbeginverbatim{3}{tabbing}%
\LWR@print@tabbing%
}

\newcommand*{\LWR@HTML@endtabbing}{%
    \LWR@print@endtabbing%
    \LWR@afterendverbatim{1}%
}

\LWR@formatted{tabbing}
\LWR@formatted{endtabbing}

\end{warpHTML}
```

68 Theorems

`\newtheorem` {⟨*text*⟩} [⟨*counter*⟩] -or- [⟨*oldname*⟩] {⟨*text*⟩}

A few minor changes are made to supply HTML tags.

- The entire theorem is placed into a `<div>` of class `theoremcontents`.
- The label for each theorem is placed inside a `<span>` of class `theoremlabel`.
- The contents are placed inside a `<div>` of class theoremcontents.

for HTML output:

```
\begin{warpHTML}
```

`\@begintheorem` {⟨*name*⟩} {⟨*number*⟩}

```
\renewcommand{\@begintheorem}[2]{%
\LWR@forcenewpage
\BlockClass{theoremcontents}
\trivlist
\item[\InlineClass{theoremlabel}{#1\ #2\ }]\itshape
}
```

`\@opargbegintheorem` {⟨*name*⟩} {⟨*number*⟩} {⟨*oparg*⟩}

```
\renewcommand{\@opargbegintheorem}[3]{%
\LWR@forcenewpage
\BlockClass{theoremcontents}
\trivlist
\item[\InlineClass{theoremlabel}{#1\ #2\ (#3)\ }]\itshape
}
```

`\@endtheorem`

```
\renewcommand*{\@endtheorem}{%
\endtrivlist
\endBlockClass% theoremcontents
}
```

```
\end{warpHTML}
```

69 Lists

The environments `itemize`, `enumerate`, and `description` are patched when lwarp is started. These patches support the standard LaTeX environments, as well as those of enumerate, enumitem, and paralist, and at least the French version of babel. Additional patches are done on a package-specific basis.

The LaTeX source for `itemize` and `enumerate` are found in `source2e`, but the source for `description` is found in `article.cls`, etc.

empty item

To have an empty item, use `\mbox{}` or a trailing backslash. This forces a new line in print output, matching the new line which will appear in HTML output. Ex:

```
begin{itemize}
item \mbox{}
    \begin{itemize}
...
    \end{itemize}
item \
    \begin{itemize}
  ...
    \end{itemize}
```

`\makelabel`

While inside a list environment, lwarp nullifies a number of TeX horizontal skip and fill commands, allowing the user to define `\makelabel` for print mode while HTML mode ignores those commands.

⚠ label font When defining `\makelabel` in a `list` environment, use `\textbf` etc. instead of `\bfseries`.

69.1 List environment

for HTML output:

```
\begin{warpHTML}
```

`\LWR@printcloselist` May be locally redefined by `enumerate` or `description`.

```
\newcommand*{\LWR@printcloselist}{\LWR@printcloseitemize}
```

`\LWR@printopenlist` May be locally redefined by `enumerate` or `description`.

```
\newcommand*{\LWR@printopenlist}{ul style="\LWR@print@mbox{list-style-type:none}"}
```

`\@mklab` Removes PDF spacing.

```
\AtBeginDocument{
\def\@mklab#1{%
%     \hfil %
    #1}
\let\makelabel\@mklab
}
```

`\@donoparitem` Modified for HTML output by replacing TEX boxes with plain text. Also removes PDF spacing.

```
\def\@donoparitem{%
  \@noparitemfalse
%   \global\setbox\@labels\hbox{\hskip -\leftmargin
%                               \unhbox\@labels
%                                \hskip \leftmargin}%
%   \if@minipage\else
%     \@tempskipa\lastskip
%     \vskip -\lastskip
%     \advance\@tempskipa\@outerparskip
%     \advance\@tempskipa -\parskip
%     \vskip\@tempskipa
%   \fi
}
```

`\@item` Modified for HTML output by replacing TEX boxes with plain text. Also removes PDF spacing.

```
\def\LWR@HTML@item[#1]{%
\LWR@traceinfo{@item}
  \if@noparitem
    \@donoparitem
  \else
%     \if@inlabel
%       \indent
        \par
%     \fi
    \ifhmode
%       \unskip\unskip
        \par
    \fi
    \if@newlist
      \if@nobreak
        \@nbitem
      \else
%         \addpenalty\@beginparpenalty
%         \addvspace\@topsep
%         \addvspace{-\parskip}%
      \fi
    \else
%       \addpenalty\@itempenalty
%       \addvspace\itemsep
    \fi
    \global\@inlabeltrue
  \fi
%   \everypar{%
    \@minipagefalse
    \global\@newlistfalse

%     \if@inlabel
%       \global\@inlabelfalse

%       {\setbox\z@\lastbox
%        \ifvoid\z@
%          \kern-\itemindent
%        \fi}%

%       \box\@labels
%       \penalty\z@
%     \fi

%     \if@nobreak
%       \@nobreakfalse
%       \clubpenalty \@M
%     \else
%       \clubpenalty \@clubpenalty
%       \everypar{}%
```

```
%     \fi}%

  \if@noitemarg
    \@noitemargfalse
    \if@nmbrlist

      \refstepcounter\@listctr
    \fi
  \fi

    \makelabel{#1} % extra space
%   \sbox\@tempboxa{\makelabel{#1}%
%   \global\setbox\@labels\hbox{%
%     \unhbox\@labels
%     \hskip \itemindent
%     \hskip -\labelwidth
%     \hskip -\labelsep
%     \ifdim \wd\@tempboxa >\labelwidth
%       \box\@tempboxa

%     \else
%       \hbox to\labelwidth {\unhbox\@tempboxa}%
%     \fi
%     \hskip \labelsep}%
  \ignorespaces%
}
```

`\@nbitem`

```
\def\@nbitem{%
%   \@tempskipa\@outerparskip
%   \advance\@tempskipa -\parskip
%   \addvspace\@tempskipa
}
```

`\LWR@listitem` [⟨*label*⟩]

Handles `\item` inside a `list`, `itemize`, or `enumerate`.

See `\LWR@openparagraph` where extra `\hspace` is used to leave room for the label while inside a list during paragraph construction.

```
\newcommand*{\LWR@listitem}{%
\LWR@stoppars%
\LWR@startnewdepth{\LWR@depthlistitem}{\LWR@printcloselistitem}%
\LWR@htmltag{li}%
\LWR@startpars%
```

```
\LWR@origitem%
}
```

`\LWR@nulllistfills` Nullifies various TEX fill commands, in case they are used inside `\makelabel`. Problems are caused when these are nullified all the time.

```
\newcommand*{\LWR@nulllistfills}{%
\renewcommand*{\hss}{}%
\renewcommand*{\llap}[1]{##1}%
\renewcommand*{\rlap}[1]{##1}%
\renewcommand*{\hfil}{}%
\renewcommand*{\hfilneg}{}%
\renewcommand*{\hfill}{}%
}
```

Env `list` {⟨*label*⟩} {⟨*commands*⟩}

```
\newcommand*{\LWR@liststart}{%
\LWR@traceinfo{LWR@liststart}%
\LWR@stoppars%
\LWR@pushoneclose{\LWR@depthlist}{\LWR@printcloselist}%
\LWR@htmltag{\LWR@printopenlist}\LWR@orignewline%
\LWR@startpars%
\setlength{\topsep}{0pt}%
\setlength{\partopsep}{0pt}%
\setlength{\itemsep}{0pt}%
\setlength{\parsep}{0pt}%
\setlength{\leftmargin}{0pt}%
\setlength{\rightmargin}{0pt}%
\setlength{\listparindent}{0pt}%
\setlength{\itemindent}{0pt}%
\setlength{\labelsep}{1em}%
\LWR@nulllistfills%
}

\newcommand*{\LWR@listend}{%
\LWR@traceinfo{LWR@listend}%
\LWR@stoppars%
\LWR@closeprevious{\LWR@depthlist}%
\LWR@startpars%
}
```

69.2 Itemize

`\LWR@itemizeitem` [⟨*label*⟩]

Handles \item inside an itemize or enumerate.

See \LWR@openparagraph where extra \hspace is used to leave room for the label while inside a list during paragraph construction.

```
\newcommand*{\LWR@itemizeitem}{%
\LWR@stoppars%
\LWR@startnewdepth{\LWR@depthlistitem}{\LWR@printcloselistitem}%
\LWR@htmltag{li}%
\LWR@startpars%
\LWR@origitem%
}
```

Env `itemize` [⟨*options*⟩]

```
\newcommand*{\LWR@itemizestart}{%
\renewcommand*{\LWR@printcloselist}{\LWR@printcloseitemize}
\renewcommand*{\LWR@printopenlist}{ul style="\LWR@print@mbox{list-style-type:none}"}
\let\item\LWR@itemizeitem%
\LWR@nulllistfills%
}
```

69.3 Enumerate

An HTML unordered list is used with customized LaTeX-generated labels.

Env `enumerate` [⟨*options*⟩]

```
\newcommand*{\LWR@enumeratestart}{%
\renewcommand*{\LWR@printcloselist}{\LWR@printcloseitemize}
\renewcommand*{\LWR@printopenlist}{ul style="\LWR@print@mbox{list-style-type:none}"}
\let\item\LWR@itemizeitem%
\LWR@nulllistfills%
}
```

69.4 Description

`\LWR@descitem` [⟨*label*⟩] Handles an \item inside a description.

```
\newcommand*{\LWR@descitem}[1][]%
{%
\LWR@stoppars%
```

```
\LWR@setlatestname{#1}%
\LWR@startnewdepth{\LWR@depthlistitem}{\LWR@printclosedescitem}%
```

Temporarily disable `\hspace`, which `article.cls`, etc. use per `\item` for `description`s only. This causes lwarp to mistakenly place an empty span between HTML list tags.

```
\LWR@select@html@nohspace%
```

Process the original `\item` code:

```
\LWR@origitem[]%
```

Restore `\hspace` for use in the item text:

```
\LWR@select@html@hspace%

\LWR@htmltag{dt}#1\LWR@htmltag{/dt}%
\LWR@orignewline%
\LWR@htmltag{dd}%
\LWR@startpars%
}
```

Env `description` [⟨*options*⟩]

```
\newcommand*{\LWR@descriptionstart}{%
\renewcommand*{\LWR@printcloselist}{\LWR@printclosedescription}
\renewcommand*{\LWR@printopenlist}{dl}
\let\item\LWR@descitem%
\LWR@nulllistfills%
}
```

69.5 Patching the lists

`\LWR@patchlists` Patches list environments.

`\LWR@patchlists` remembers `\item` as defined by whatever packages have been loaded, then patches the `itemize`, `enumerate`, and `description` environments and `\item`. This works with the native LaTeX environments, as well as those provided by enumitem, enumerate, and paralist.

```
\newcommand*{\LWR@patchlists}{%
    \LetLtxMacro\item\LWR@listitem%
    \LetLtxMacro\@item\LWR@HTML@item%
    \renewcommand*{\@trivlist}{%
```

```
        \LWR@traceinfo{@trivlist start}%
        \LWR@liststart%
        \LWR@orig@trivlist%
        \LWR@traceinfo{@trivlist done}%
    }%
    \renewcommand*{\trivlist}{%
        \LWR@traceinfo{trivlist}%
        \LWR@origtrivlist%
    }%
    \renewcommand*{\endtrivlist}{%
        \LWR@traceinfo{endtrivlist start}%
        \LWR@origendtrivlist\LWR@listend%
        \LWR@traceinfo{endtrivlist done}%
    }%
    \renewcommand*{\itemize}{%
        \LWR@itemizestart\LWR@origitemize%
    }%
    \renewcommand*{\enumerate}{%
        \LWR@enumeratestart\LWR@origenumerate%
    }%
    \renewcommand*{\description}{%
        \LWR@descriptionstart\LWR@origdescription%
    }%
}
```

`\LWR@restoreoriglists` Restores the original `trivlist` environment.

```
\newcommand*{\LWR@restoreoriglists}{%
\LWR@traceinfo{LWR@restoreoriglists}%
\LetLtxMacro\item\LWR@origitem%
\LetLtxMacro\@item\LWR@orig@item%
\let\@trivlist\LWR@orig@trivlist%
\let\trivlist\LWR@origtrivlist%
\let\endtrivlist\LWR@origendtrivlist%
\LetLtxMacro\itemize\LWR@origitemize%
\LetLtxMacro\enditemize\LWR@endorigitemize%
\LetLtxMacro\enumerate\LWR@origenumerate%
\LetLtxMacro\endenumerate\LWR@endorigenumerate%
\LetLtxMacro\description\LWR@origdescription%
\LetLtxMacro\enddescription\LWR@endorigdescription%
\let\@mklab\LWR@orig@mklab%
\let\makelabel\LWR@origmakelabel%
\let\@donoparitem\LWR@orig@donoparitem%
\let\@nbitem\LWR@orig@nbitem%
}

\end{warpHTML}
```

70 Tabular

This is arguably the most complicated part of the entire package. Numerous tricks are employed to handle the syntax of the LaTeX core and the various tabular-related packages.

70.1 Limitations

Tabular mostly works as expected, but pay special attention to the following, especially if working with environments, macros inside tabulars, multirows, * column specifiers, siunitx S columns, or the packages multirow, longtable, supertabular, or xtab.

Defining environments:

⚠ Misplaced alignment tab character &

- When defining environments or macros which include `tabular` and instances of the `&` character, it may be necessary to make `&` active before the environment or macro is defined, then restore `&` to its default catcode after, using the following commands. These are are ignored in print mode.

```
\StartDefiningTabulars
<define macros or environments using tabular and &
here>
\StopDefiningTabulars
```

⚠ floatrow

This includes before and after defining any macro which used `\ttabbox` from floatrow.

⚠ `tabular` inside another environment

- When creating a new environment which contains a `tabular` environment, lwarp's emulation of the tabular does not automatically resume when the containing enviroment ends, resulting in corrupted HTML rows. To fix this, use `\ResumeTabular` as follows. This is ignored in print mode.

```
\StartDefiningTabulars % because & is used in a
definition
\newenvironment{outerenvironment}
{
\tabular{cc}
left & right \\
}
{
\TabularMacro\ResumeTabular
left & right \\
\endtabular
}
\StopDefiningTabulars
```

Cell contents:

⚠ \multirow

- For multirow, insert \mrowcell into any empty multi-row cells. This will be a null function for the print output, and is a placeholder for parsing the table for HTML output.

```
... &  \multirow{2}{.5in}{text}  & ...
... &  \mrowcell                 & ...
```

vposn

Note that recent versions of multirow include a new optional vposn argument.

- The multirow documentation regarding colored cells recommends using a negative number of rows. This will not work with lwarp, so \warpprintonly and \warpHTMLonly must be used to make versions for print and HTML.
- See section 299.2 for \multicolumrow.

⚠ \multicolumn & \multirow

lwarp does not support directly combining \multicolumn and \multirow. Use \multicolumnrow instead. To create a 2 column, 3 row cell:

```
\multicolumnrow{2}{c}[c]{3}[0]{1in}[0pt]{Text}
```

The two arguments for \multicolumn come first, followed by the five arguments for \multirow, many of which are optional, followed by the contents.

⚠ skipped cells

⚠ empty cells

As per \multirow, skipped cells to the right of the \multicolumnrow statement are not included in the source code on the same line. On the following lines, \mcolrowcell must be used for each cell of each column and each row to be skipped:

```
... &  \multicolumnrow{2}{c}[c]{3}[0]{1in}[0pt]{Text}  & ...
... &  \mcolrowcell          &          \mcolrowcell   & ...
... &  \mcolrowcell          &          \mcolrowcell   & ...
```

vposn

Note that recent versions of multirow include a new optional vposn argument.

⚠ macro in a table

- Using a custom macro inside a tabular data cell may result in an extra HTML data cell tag, corrupting the HTML table. To avoid this, use \TabularMacro just before the macro. This is ignored in print mode.

```
\TabularMacro\somemacro & more row contents \\
```

Column specifiers:

⚠ * column specification

- * in a column specification is not used (so far). Repeat the column type the correct number of times.

@ and !

- Only one each of @ and ! is used at each column, and they are used in that order.

\multirow

- In \multirow cells, the print version may have extra instances of <, >, @, and ! cells on the second and later rows in the \multirow which do not appear in the HTML version.

⚠ \newcolumntype

- \newcolumntype is ignored; unknown column types are set to l.

Rules:

- Doubled \hlines, \midrules, and vertical rules are supported.

vertical rules

- Vertical rules next to either side of an @ or ! column are displayed on both sides of the column.

width and trim

- Width options are honored. Trim options are converted to rounded top corners. Trim corners are not rounded with @ or ! columns, and full-width rules ignore trim.

full-width rules

- \toprule, \midrule, \bottomrule, and \hline ignore trim. When given an optional width, each cell is styled to create the custom border. Without an optional width, the entire row is given a class to assign the standard border.

combined rules

- If you wish to use \cmidrule followed by \bottomrule, it may be necessary to use:

```
\cmidrule{2-3} \\[-2ex]
\bottomrule
```

The optional -2ex is ignored in HTML, but improves the visual formatting in the print output.

⚠ \warpprintonly
⚠ Misplaced \noalign

- For \toprule and \bottomrule, when combined with a warpprint or warpHTML environment, if a "Misplaced \noalign" error occurs, change

```
This & That \endhead
```

to

```
\warpprintonly{This & That \endhead}
```

and likewise with the other \end headings. Keep the \endfirsthead row unchanged, as it is still relevent to HTML output.

colortbl:

⚠ row/cell color

Only use \rowcolor and \cellcolor at the start of a row, in that order.

colortbl ignores the overhang arguments.

Other:

- tabularx ignores the width, but X columns do produce paragraph columns or multicolumns.

longtable headings

- For longtable, place headings and footings which do not apply to HTML inside \warpprintonly{}.

⚠ S columns

- For S columns (from the siunitx package), while producing print output, anything non-numeric must be placed inside { } braces, including commands such as \multirow. While producing HTML output, though, anything placed inside braces is not seen by lwarp's tabular handling algorithm. To resolve this problem, make a copy of the row, with one version for print output, containing the extra braces, and another version

for HTML output, without the extra braces, such as:

```
\warpprintonly{1 & 2 & {\multirow{2}{2cm}{Text}} & 3 \\}
\warpHTMLonly{1 & 2 & \multirow{2}{2cm}{Text} & 3 \\}
```

for HTML output:

```
\begin{warpHTML}
```

70.2 Temporary package-related macros

These macros are temporary placeholders for macros defined by various packages. If the relevent package is not loaded, these placeholders are used instead.

70.2.1 arydshln

Emualated by the original LaTeX non-dashed versions.

```
\LetLtxMacro\hdashline\hline
\LetLtxMacro\cdashline\cline
\LetLtxMacro\firsthdashline\hline
\LetLtxMacro\lasthdashline\hline
```

70.3 Token lookahead

Used by `\LWR@futurenonspacelet` to look at the next token.

`\LWR@mynexttoken`

```
\newcommand\LWR@mynexttoken\relax
```

`\futurelet` copies the next token then executes a function to analyze

`\LWR@futurenonspacelet` does the same, but ignores intervening white space

Based on the booktabs style:

`\LWR@futurenonspacelet`

```
\def\LWR@futurenonspacelet#1{\def\LWR@cs{#1}%
\afterassignment\LWR@fnslone\let\nexttoken= }
\def\LWR@fnslone{\expandafter\futurelet\LWR@cs\LWR@fnsltwo}
\def\LWR@fnsltwo{%
```

```
\expandafter\ifx\LWR@cs\@sptoken\let\next=\LWR@fnslthree%
\else\let\next=\nexttoken\fi\next}
\def\LWR@fnslthree{\afterassignment\LWR@fnslone\let\next= }
```

`\LWR@getmynexttoken` Looks ahead and copies the next token into `\LWR@mynexttoken`.

```
\newcommand*{\LWR@getmynexttoken}{%
\LWR@traceinfo{LWR@getmynexttoken}%
% nothing must follow this next line
\LWR@futurenonspacelet\LWR@mynexttoken\LWR@tabledatacolumntag
}
```

70.4 Tabular variables

Bool `LWR@startedrow` True if should print a row tag before this column.

```
\newbool{LWR@startedrow}
\boolfalse{LWR@startedrow}
```

Bool `LWR@tabularcelladded` True if have added a data cell for this position.

```
\newbool{LWR@tabularcelladded}
\boolfalse{LWR@tabularcelladded}
```

Ctr `LWR@hlines` Number of `\hlines` or `\midrules` above the next row.

```
\newcounter{LWR@hlines}
```

Ctr `LWR@hdashedlines` Number of arydshln dashed lines above the next row.

```
\newcounter{LWR@hdashedlines}
```

Bool `LWR@doingtbrule` True if the next row will have a top/bottom rule above it.

```
\newbool{LWR@doingtbrule}
\boolfalse{LWR@doingtbrule}
```

Bool `LWR@doingcmidrule` True if the next row will have a cmidrule above it.

This is used by `\LWR@tabularfinishrow` to force a final empty row to create the border for the `\cmidrule`.

```
\newbool{LWR@doingcmidrule}
\boolfalse{LWR@doingcmidrule}
```

Bool `LWR@tableparcell` True if are handling a paragraph inside a table cell, so must close the paragraph tag before moving on.

```
\newbool{LWR@tableparcell}
```

Bool `LWR@skippingmrowcell` True if are doing an empty `\multirow` cell, and thus there is no data tag to close.

```
\newbool{LWR@skippingmrowcell}
```

Bool `LWR@skippingmcolrowcell` True if are doing an empty `\multicolumnrow` cell, and thus there is no data tag to close, and do not print `@` and `!` columns.

```
\newbool{LWR@skippingmcolrowcell}
```

Bool `LWR@skipatbang` True if just finished a `\multicolumn` so should not create the trailing `@` or `!` columns table data cells.

```
\newbool{LWR@skipatbang}
```

Bool `LWR@emptyatbang` True if finishing a row and should print empty `@` or `!` column table data cells.

```
\newbool{LWR@emptyatbang}
```

Bool `LWR@intabularmetadata` True if are in a tabular but not in a data cell. Used to prevent extra HTML breaks if not inside table data.

```
\newbool{LWR@intabularmetadata}
\boolfalse{LWR@intabularmetadata}
```

Ctr `LWR@tabularDepth` Tracks whether `&` is being used inside a `tabular`.

```
\newcounter{LWR@tabulardepth}
\setcounter{LWR@tabulardepth}{0}
```

Ctr `LWR@tabularpardepth` Tracks whether should look ahead at the next token when encountering a `\par` while processing tabular contents.

When `LWR@tabularpardepth` is deeper than `LWR@tabulardepth` then lwarp has started looking at the contents of the `tabular`, and thus any `\par`s encountered must be followed by another token lookahead.

```
\newcounter{LWR@tabularpardepth}
\setcounter{LWR@tabularpardepth}{0}
```

```
\newcommand*{\LWR@colsresult}{}%temp storage for column format results
\newcommand*{\LWR@pposition}{}
\newcommand*{\LWR@pleft}{}
\newcommand*{\LWR@pright}{}
```

LWR@tablecolspec Holds the parsed column specification, of total width LWR@tabletotalLaTeXcols, not counting @ and ! columns.

Will contain a string such as llrrccpc, exactly one letter per LaTeX table column, without @, !, >, <, or the vertical bar.

\LWR@strresult Holds the result of Str functions.

```
\providecommand*{\LWR@strresult}{}
\providecommand*{\LWR@strresulttwo}{}
```

\LWR@origcolspec Holds the original column specs given to tabular.

```
\newcommand*{\LWR@origcolspec}{}
```

Ctr LWR@tablecolspecwidth Holds the number of tokens in the table columns specification.

This is includes one for each @, !, <, > column, and also one for each of the parameters of p, @, !, <, > columns, and three for each D column.

(This is not the total # of LaTeX columns in the table.)

```
\newcounter{LWR@tablecolspecwidth}
```

Ctr LWR@tablecolspecindex While parsing the LaTeX table column specification, starts at 1 and is incremented per token of the specification.

```
\newcounter{LWR@tablecolspecindex}
```

Ctr LWR@tableLaTeXcolindex While producing the table, resets to 1 at the start of the table and also at each end of line, and is incremented by 1 by each ampersand.

```
\newcounter{LWR@tableLaTeXcolindex}
```

Ctr LWR@tabletotalLaTeXcols While parsing a table column specification, begins at 0 and increments by 1 per LaTeX table column. Eventually holds the final number of LaTeX table columns in each row, not counting @ and ! columns. (In HTML, @ and ! cells become their own columns, but are not included in LWR@tabletotalLaTeXcols.)

```
\newcounter{LWR@tabletotalLaTeXcols}
```

Ctr LWR@tabletotalLaTeXcolsnext Holds the next LaTeX table column index while parsing, equal to one more than LWR@tabletotalLaTeXcols.

```
\newcounter{LWR@tabletotalLaTeXcolsnext}
```

LWR@colatspec A data array of specifications for @ columns. The leftmost's index is leftedge, the others are counter values. See section 41.

LWR@colbangspec A data array of specifications for ! columns. The leftmost's index is leftedge, the others are counter values. See section 41.

LWR@colbeforespec A data array of specifications for > columns.

LWR@colafterspec A data array of specifications for < columns.

LWR@colbarspec A data array of specifications for vertical rules.

70.5 Handling &, @, !, and bar

For technical discussion regarding problems redefining \&, See:
http://tex.stackexchange.com/questions/11638/where-do-i-find-futurelets-nasty-behaviour-documented/11860#11860

\LWR@instertatbangcols

```
\newcommand*{\LWR@insertatbangcols}{%
\ifbool{LWR@skipatbang}%
{}%
{%
    \LWR@printatbang{at}{\arabic{LWR@tableLaTeXcolindex}}%
    \LWR@printatbang{bang}{\arabic{LWR@tableLaTeXcolindex}}%
}%
}
```

\LWR@closetabledatacell If LWR@skippingmrowcell or LWR@skippingmcolrowcell then there is no data tag to close. Otherwise, close any paragraphs, then close the data tag.

```
\newcommand*{\LWR@closetabledatacell}{%
\LWR@stoppars%
\global\booltrue{LWR@intabularmetadata}%
\ifbool{LWR@exitingtabular}{}%
{% not exiting tabular
    \ifboolexpr{bool{LWR@skippingmrowcell} or bool{LWR@skippingmcolrowcell}}%
    {%
```

If not skipping a \multicolumnrow cell, insert the @ and ! columns after this non-existant column.

```
        \ifbool{LWR@skippingmcolrowcell}%
            {}%
```

```
            {\LWR@insertatbangcols}%
    }%
    {% not skippingmrowcell
```

Insert any < then any @ and ! column contents, unless muted for the \bottomrule or a \multicolumn:

```
        \unskip%
        \ifboolexpr{%
            bool{LWR@tabularmutemods} or
            bool{LWR@skipatbang} or
            bool{LWR@emptyatbang}
        }%
        {}%
        {\LWR@getexparray{LWR@colafterspec}{\arabic{LWR@tableLaTeXcolindex}}}%
```

Close paragraphs:

```
        \ifbool{LWR@tableparcell}{\LWR@stoppars}{}%
        \global\boolfalse{LWR@tableparcell}%
```

Close the table data cell.

Close any color s.

```
        \whileboolexpr{test {\ifnumcomp{\value{LWR@cellcolordepth}}{>}{0}}}{%
            \LWR@htmltag{/div}\LWR@orignewline%
            \addtocounter{LWR@cellcolordepth}{-1}%
        }%
```

Skip the @ and ! cells if are closing a multicolumn cell.

```
        \leavevmode\unskip\LWR@htmltag{/td}\LWR@orignewline%
        \global\booltrue{LWR@tabularcelladded}%
        \LWR@insertatbangcols%
    }% not skipping mrowcell
}% not exiting tabular
\global\boolfalse{LWR@skippingmrowcell}%
\global\boolfalse{LWR@skippingmcolrowcell}%
\global\boolfalse{LWR@skipatbang}%
```

Color control. Column is set by >{} for each cell, so it must be cleared here.

```
\gdef\LWR@cellHTMLcolor{}
\gdef\LWR@columnHTMLcolor{}
\setcounter{LWR@cellcolordepth}{0}
}
```

When not used inside a `tabular`, `&` performs its original function as recorded here (with catcode 4).

```
\let\LWR@origampmacro&

\end{warpHTML}
```

70.5.1 Handling &

for HTML output:

```
\begin{warpHTML}
```

`&` Will behave depending on whether it is being used inside `tabular`.

`&` is redefined to test whether it is inside a tabular environment, in which case it performs special processing for HTML conversion. If not, it behaves normally.

```
\newcommand*{\LWR@tabularampersand}{%
\LWR@traceinfo{LWR@tabularampersand}%
\ifnumcomp{\value{LWR@tabulardepth}}{>}{0}%
{%
```

If not skipping a multirow cell, close the current data cell.

```
    \unskip%
    \LWR@closetabledatacell%
```

Move to the next column.

```
    \addtocounter{LWR@tableLaTeXcolindex}{1}%
```

Have not yet added data in this column:

```
    \global\boolfalse{LWR@tabularcelladded}%
```

Look at the next token to decide multi or single column data tag.

```
    \LWR@getmynexttoken%
}%
```

If not inside a tabular, performs the original action:

```
{\LWR@origampmacro}%
}
```

& is left with its original catcode for now.

tikz package seems to require & be left alone until after tikz has been loaded. Also, cleveref uses the ampersand in one of its options.

& is made active inside a tabular.

& is left alone when in math alignments.

70.5.2 Filling an unfinished row

\LWR@tabularfinishrow Adds empty table cells if necessary to finish the row.

At the end of the table, if any bottom rules are requested then an empty row must be generated to form the borders which show the rules.

```
\newcommand*{\LWR@tabularfinishrow}{%
```

If not exiting the tabular, or doing a rule, or have already started a row, finish this row:

```
\ifboolexpr{%
    not bool {LWR@exitingtabular} or%
    bool{LWR@doingtbrule} or%
    bool{LWR@doingcmidrule} or%
    test{\ifnumcomp{\value{LWR@hlines}}{>}{0}} or%
    test{\ifnumcomp{\value{LWR@hdashedlines}}{>}{0}} or%
    bool{LWR@startedrow}%
}{%
```

To temporarily turn off LWR@exitingtabular so that table data tags will still be generated:

If generating a final row for the \bottomrule borders, turn off the @, !, <, and > column output:

```
\ifbool{LWR@exitingtabular}{%
    \global\booltrue{LWR@tabularmutemods}%
}{%
    \global\boolfalse{LWR@tabularmutemods}%
}%
```

Locally reenable the table data tags until finished with the final row:

```
\global\boolfalse{LWR@exitingtabular}%
```

Generate table data tags and ampersands until the right edge:

```
\whileboolexpr{%
    test {
        \ifnumcomp{\value{LWR@tableLaTeXcolindex}}{<}{\value{LWR@tabletotalLaTeXcols}}
    } or %
    (%
        bool{LWR@intabularmetadata} and%
        not bool{LWR@tabularcelladded} and%
        test {
            \ifnumcomp{\value{LWR@tableLaTeXcolindex}}{=}{\value{LWR@tabletotalLaTeXcols}}
        }%
    )%
}%
{%
    \LWR@tabledatasinglecolumntag%
```

The following is essentially `\LWR@tabularampersand` with `LWR@emptyatbang` added to empty the following cells:

```
    \LWR@closetabledatacell%
    \addtocounter{LWR@tableLaTeXcolindex}{1}%
    \global\boolfalse{LWR@tabularcelladded}%
    \global\booltrue{LWR@emptyatbang}%
```

Starts the next cell:

```
    \ifnumcomp{\value{LWR@tableLaTeXcolindex}}{<}{\value{LWR@tabletotalLaTeXcols}}%
        {\LWR@getmynexttoken}%
        {}%
}%
```

Reenable the original `LWR@exitingtabular` to close the entire table:

```
\ifbool{LWR@tabularmutemods}{%
    \global\booltrue{LWR@exitingtabular}%
}{%
    \global\boolfalse{LWR@exitingtabular}%
}%
\global\boolfalse{LWR@tabularmutemods}%

\global\boolfalse{LWR@emptyatbang}%
}{}% ifboolexpr
}
```

70.6 Handling \\

Inside tabular, \\ is redefined to \LWR@tabularendofline

Throws away options \\[dim] or *

\LWR@tabularendofline

```
\NewDocumentCommand{\LWR@tabularendofline}{s o}{%
```

Finish the row:

```
\ifnumcomp{\value{LWR@tableLaTeXcolindex}}{<}{\value{LWR@tabletotalLaTeXcols}}%
    {\LWR@tabularfinishrow}%
    {\LWR@closetabledatacell}%
\LWR@htmltag{/tr}\LWR@orignewline%
```

xcolor row color support:

```
\@rowc@lors%
```

No longer inside a data cell:

```
\global\booltrue{LWR@intabularmetadata}%
```

Not yet started a table row:

```
\global\boolfalse{LWR@startedrow}%
```

Additional setup:

```
\setcounter{LWR@hlines}{0}%
\setcounter{LWR@hdashedlines}{0}%
\global\boolfalse{LWR@doingtbrule}%
\global\boolfalse{LWR@doingcmidrule}%
\LWR@clearmidrules%
\gdef\LWR@rowHTMLcolor{}%
```

Start at first column:

```
\setcounter{LWR@tableLaTeXcolindex}{1}%
```

Have not yet added data in this column:

```
\global\boolfalse{LWR@tabularcelladded}%
```

Allow TEX to flush the pending paragraph. Not doing so causes a slowdown for very large tables.

```
\LWR@stoppars
\LWR@origpar
```

Look at the next token to decide between single column data tag or a special case:

```
\LWR@getmynexttoken%
}
```

70.7 Looking ahead in the column specifications

`\LWR@columnspeclookahead` {⟨*offset*⟩}

Looks `offset` tokens ahead in the column specification, setting `\LWR@strresulttwo`.

The `w` column alignment will be seen as a single unit such as `{c}`.

```
\newcommand*{\LWR@columnspeclookahead}[1]{%
\setcounter{LWR@tempcountone}{\value{LWR@tablecolspecindex}}%
\addtocounter{LWR@tempcountone}{#1}%
\fullexpandarg%
\StrChar{\LWR@origcolspec}{\arabic{LWR@tempcountone}}[\LWR@strresulttwo]%
```

Get the contents of the first group in `\LWR@strresulttwo`:

```
\exploregroups%
\StrChar{\LWR@strresulttwo}{1}[\LWR@strresulttwo]%
\noexploregroups%
}
```

70.8 Parsing @, >, <, !, bar columns

Holds the parsed argument for `@`, `>`, `<`, or `!` columns:

```
\newcommand*{\LWR@colparameter}{}
```

`\LWR@parseatcolumn` Handles `@{text}` columns.

```
\newcommand*{\LWR@parseatcolumn}{%
```

Move to the next token after the '@':

```
\LWR@traceinfo{at column}%
\addtocounter{LWR@tablecolspecindex}{1}%
```

Read the next token into \LWR@colparameter, expanding once:

```
\LWR@traceinfo{about to read the next token:}%
\expandarg%
\StrChar{\LWR@origcolspec}%
    {\arabic{LWR@tablecolspecindex}}[\LWR@colparameter]
\fullexpandarg%
```

Store the result into a data array, expanding once out of \LWR@colparameter:

```
\LWR@traceinfo{have now read the next token}%
\ifnumcomp{\value{LWR@tabletotalLaTeXcols}}{=}{0}%
{% left edge of the table:
    \LWR@traceinfo{at the left edge}%
    \LWR@setexparray{LWR@colatspec}{leftedge}{\LWR@colparameter}%
    \LWR@traceinfo{at the left edge: %
    \LWR@getexparray{LWR@colatspec}{leftedge}}%
}%
{% not at the left edge:
    \LWR@traceinfo{not at the left edge}%
    \LWR@setexparray{LWR@colatspec}%
        {\arabic{LWR@tabletotalLaTeXcols}}{\LWR@colparameter}%
    \LWR@traceinfo{at \arabic{LWR@tabletotalLaTeXcols}: %
    \LWR@getexparray{LWR@colatspec}{\arabic{LWR@tabletotalLaTeXcols}}}%
}%
\let\LWR@colparameter\relax%
\global\booltrue{LWR@validtablecol}%
}
```

\LWR@parsebangcolumn Handles `!{text}` columns.

```
\newcommand*{\LWR@parsebangcolumn}{%
```

Move to the next token after the '!':

```
\LWR@traceinfo{bang column}%
\addtocounter{LWR@tablecolspecindex}{1}%
```

Read the next token into \LWR@colparameter, expanding once:

```
\LWR@traceinfo{about to read the next token:}%
\expandarg%
```

```
\StrChar{\LWR@origcolspec}%
    {\arabic{LWR@tablecolspecindex}}[\LWR@colparameter]
\fullexpandarg%
```

Store the result into a data array, expanding once out of `\LWR@colparameter`:

```
\LWR@traceinfo{have now read the next token}%
\ifnumcomp{\value{LWR@tabletotalLaTeXcols}}{=}{0}%
{% left edge of the table:
    \LWR@traceinfo{at the left edge}%
    \LWR@setexparray{LWR@colbangspec}{leftedge}{\LWR@colparameter}%
}%
{% not at the left edge:
    \LWR@traceinfo{not at the left edge}%
    \LWR@setexparray{LWR@colbangspec}%
        {\arabic{LWR@tabletotalLaTeXcols}}{\LWR@colparameter}%
    \LWR@traceinfo{bang \arabic{LWR@tabletotalLaTeXcols}: \LWR@colparameter!}%
}%
\let\LWR@colparameter\relax%
\global\booltrue{LWR@validtablecol}%
}
```

`\LWR@parsebeforecolumn` Handles `>{text}` columns.

```
\newcommand*{\LWR@parsebeforecolumn}{%
```

Move to the next token after the '>':

```
\addtocounter{LWR@tablecolspecindex}{1}%
```

Read the next token, expanding once into `\LWR@colparameter`:

```
\expandarg%
\StrChar{\LWR@origcolspec}%
    {\arabic{LWR@tablecolspecindex}}[\LWR@colparameter]%
\fullexpandarg%
```

Store the result into a data array, expanding once out of `\LWR@colparameter`:

```
\LWR@setexparray{LWR@colbeforespec}%
    {\arabic{LWR@tabletotalLaTeXcolsnext}}{\LWR@colparameter}%
\let\LWR@colparameter\relax%
\global\booltrue{LWR@validtablecol}%
}
```

`\LWR@parseaftercolumn` Handles `<{text}` columns.

```
\newcommand*{\LWR@parseaftercolumn}{%
```

Move to the next token after the '<':

```
\addtocounter{LWR@tablecolspecindex}{1}%
```

Read the next token, expanding once into `\LWR@colparameter`:

```
\expandarg%
\StrChar{\LWR@origcolspec}%
    {\arabic{LWR@tablecolspecindex}}[\LWR@colparameter]%
\fullexpandarg%
```

Store the result into a data array, expanding once out of `\LWR@colparameter`:

```
\LWR@setexparray{LWR@colafterspec}%
    {\arabic{LWR@tabletotalLaTeXcols}}{\LWR@colparameter}%
\let\LWR@colparameter\relax%
\global\booltrue{LWR@validtablecol}%
}
```

`\LWR@parsebarcolumn` Handles vertical rules.

```
\newcommand*{\LWR@parsebarcolumn}{%
\LWR@traceinfo{LWR@parsebarcolumn}%
```

Remember the bar at this position:

```
\ifnumcomp{\value{LWR@tabletotalLaTeXcols}}{=}{0}%
{% left edge of the table:
    \edef\LWR@tempone{\LWR@getexparray{LWR@colbarspec}{leftedge}}%
    \ifdefstring{\LWR@tempone}{tvertbarl}%
    {\LWR@setexparray{LWR@colbarspec}{leftedge}{tvertbarldouble}}%
    {\LWR@setexparray{LWR@colbarspec}{leftedge}{tvertbarl}}%
}%
{% not at the left edge:
    \edef\LWR@tempone{%
        \LWR@getexparray{LWR@colbarspec}{\arabic{LWR@tabletotalLaTeXcols}}%
    }%
    \ifdefstring{\LWR@tempone}{tvertbarr}%
    {%
        \LWR@setexparray{LWR@colbarspec}%
            {\arabic{LWR@tabletotalLaTeXcols}}{tvertbarrdouble}%
    }%
    {%
        \LWR@setexparray{LWR@colbarspec}%
            {\arabic{LWR@tabletotalLaTeXcols}}{tvertbarr}%
    }%
}%
\global\booltrue{LWR@validtablecol}%
```

```
}
```

`\LWR@parsecoloncolumn` Handles vertical rules.

```
\newcommand*{\LWR@parsecoloncolumn}{%
\LWR@traceinfo{LWR@parsecoloncolumn}%
```

Remember the bar at this position:

```
\ifnumcomp{\value{LWR@tabletotalLaTeXcols}}{=}{0}%
{% left edge of the table:
    \edef\LWR@tempone{\LWR@getexparray{LWR@colbarspec}{leftedge}}%
    \ifdefstring{\LWR@tempone}{tvertbarldash}%
    {\LWR@setexparray{LWR@colbarspec}{leftedge}{tvertbarldoubledash}}%
    {\LWR@setexparray{LWR@colbarspec}{leftedge}{tvertbarldash}}%
}%
{% not at the left edge:
    \edef\LWR@tempone{%
        \LWR@getexparray{LWR@colbarspec}{\arabic{LWR@tabletotalLaTeXcols}}%
    }%
    \ifdefstring{\LWR@tempone}{tvertbarrdash}%
    {\LWR@setexparray{LWR@colbarspec}%
        {\arabic{LWR@tabletotalLaTeXcols}}{tvertbarrdoubledash}}%
    {\LWR@setexparray{LWR@colbarspec}%
        {\arabic{LWR@tabletotalLaTeXcols}}{tvertbarrdash}}%
}%
\global\booltrue{LWR@validtablecol}%
}
```

`\LWR@parsesemicoloncolumn` Handles vertical rules.

```
\newcommand*{\LWR@parsesemicoloncolumn}{%
```

Treat ; as a : column:

```
\LWR@parsecoloncolumn%
```

Skip the following width token:

```
\addtocounter{LWR@tablecolspecindex}{1}%
}
```

70.9 Parsing 'l', 'c', or 'r' columns

`\LWR@parsenormalcolumn` {⟨*thiscolumn*⟩}

Add to the accumulated column specs, advance counters, and pre-clear another column of at, before, and after specs.

```
\newcommand*{\LWR@parsenormalcolumn}[1]{%
\addtocounter{LWR@tabletotalLaTeXcols}{1}%
\addtocounter{LWR@tabletotalLaTeXcolsnext}{1}%

\LWR@setexparray{LWR@tablecolspec}{\arabic{LWR@tabletotalLaTeXcols}}{#1}%

\LWR@traceinfo{normal column \arabic{LWR@tabletotalLaTeXcols}: #1}%
\LWR@setexparray{LWR@colatspec}{\arabic{LWR@tabletotalLaTeXcolsnext}}{}%
\LWR@setexparray{LWR@colbangspec}{\arabic{LWR@tabletotalLaTeXcolsnext}}{}%
\LWR@setexparray{LWR@colbeforespec}{\arabic{LWR@tabletotalLaTeXcolsnext}}{}%
\LWR@setexparray{LWR@colafterspec}{\arabic{LWR@tabletotalLaTeXcolsnext}}{}%
\LWR@setexparray{LWR@colbarspec}{\arabic{LWR@tabletotalLaTeXcolsnext}}{}%
\global\booltrue{LWR@validtablecol}%
}
```

70.10 Parsing 'p', 'm', or 'b' columns

`\LWR@parsepcolumn` {⟨*thiscolumn*⟩} The width will be ignored.

```
\newcommand*{\LWR@parsepcolumn}[1]{%
```

Converts to the given column type:

```
\LWR@parsenormalcolumn{#1}%
```

Skips the following width token:

```
\addtocounter{LWR@tablecolspecindex}{1}%
}
```

70.11 Parsing 'w' columns

`\LWR@parsewcolumn` The width will be ignored.

```
\newcommand*{\LWR@parsewcolumn}{%

\LWR@columnspeclookahead{1}%
\expandafter\LWR@parsenormalcolumn\expandafter{\LWR@strresulttwo}%
```

Table 10: Tabular baseline

l	p	m	b	r
			bot	
		mid	bot	
l	par	mid	bot	r
	par	mid		
	par			

Skips the following width and alignment tokens:

```
\addtocounter{LWR@tablecolspecindex}{2}%
}
```

70.12 Parsing 'D' columns

From the dcolumn package.

`\LWR@parseDcolumn` `{`⟨*thiscolumn*⟩`}` The three parameters will be ignored.

```
\newcommand*{\LWR@parseDcolumn}[1]{%
```

Converts to the given column type.

```
\LWR@parsenormalcolumn{#1}%
```

Skips the following three parameters.

```
\addtocounter{LWR@tablecolspecindex}{3}%
}
```

70.13 Parsing the column specifications

⚠ tabular baselines HTML CSS cannot exactly match the LaTeX concept of a baseline for a table row. Table 10 shows the LaTeX results for various vertical-alignment choices, with the baseline of the first column drawn across all the columns for comparison. See the p column specification in table 11 for details.

Table 11 describes how each kind of column is converted to HTML.

Table 11: Tabular HTML column conversions

l, r, c: Converted to table cells without paragraph tags.
Uses CSS `vertical-align:middle` so that top or bottom-aligned cells may go above or below this cell.

p: Converted to table cells with paragraph tags. Ref: Table 10, LaTeX places the top line of a parbox aligned with the rest of the text line, so CSS `vertical-align:bottom` is used to have the HTML result appear with the paragraph extending below the L, R, C cells at the middle, if possible. This may be confusing as a P cell may not top-align with an L,R,C cell in the HTML conversion, especially in the presence of a B cell, and two P cells side-by-side will be aligned at the bottom instead of the top. Some adjustment of the CSS may be desired, changing `td.tdp`, `td.tdP`, `td.tdprule`, and `td.tdPrule` to `vertical-align: middle`. Another possibility is to change L,R,C, and P to `vertical-align: top` and not worry about the alignment of B and M cells or trying to approximate LaTeX baselines.

m: With paragraph tags, CSS `vertical-align:middle`.

b: With paragraph tags, CSS `vertical-align:top` so that the bottom of the text is closest to the middle of the text line.

P, M, B: Horizontally-centered versions.

S: Converted to 'r'. Ignores optional argument. From the siunitx package.

D: Converted to 'c'. From the dcolumn package.

@, !, >, <: One each, in that order.

|: Vertical rule.

Unknown: Converted to 'l'.

`\newcolumn`: Currently treated as unknown.

Bool `LWR@validtablecol` True if found a valid table column type.

```
\newbool{LWR@validtablecol}
```

Bool `LWR@opttablecol` True if found a table column optional argument.

```
\newbool{LWR@opttablecol}
```

`\LWR@parsetablecols` {⟨*colspecs*⟩}

Scans the column specification left to right.

Builds `\LWR@tablecolspec` with the final specification, one LaTeX column per entry. The final number of LaTeX columns in each row is stored in `LWR@tabletotalLaTeXcols`, which is the number of `&` and `\\` in each line, but which does not include `@`, `!`, `<`, `>` specifications in the count.

```
\newcommand*{\LWR@parsetablecols}[1]{%
\LWR@traceinfo{LWR@parsetablecols}%
```

Remember the original supplied column spec:

```
\renewcommand*{\LWR@origcolspec}{#1}%
```

Remove spaces:

```
\expandarg%
\StrSubstitute{\LWR@origcolspec}{ }{}[\LWR@origcolspec]%
```

The parsed column spec data array, `LWR@tablecolspec`, will be overwritten with new values.

Total number of columns found so far. Also pre-initialize the first several columns of specs:

```
\setcounter{LWR@tabletotalLaTeXcols}{0}%
\setcounter{LWR@tabletotalLaTeXcolsnext}{1}%
\LWR@setexparray{LWR@colatspec}{leftedge}{}%
\LWR@setexparray{LWR@colatspec}{1}{}%
\LWR@setexparray{LWR@colatspec}{2}{}%
\LWR@setexparray{LWR@colatspec}{3}{}%
\LWR@setexparray{LWR@colbangspec}{leftedge}{}%
\LWR@setexparray{LWR@colbangspec}{1}{}%
\LWR@setexparray{LWR@colbangspec}{2}{}%
\LWR@setexparray{LWR@colbangspec}{3}{}%
\LWR@setexparray{LWR@colbeforespec}{1}{}%
\LWR@setexparray{LWR@colbeforespec}{2}{}%
```

```
\LWR@setexparray{LWR@colbeforespec}{3}{}%
\LWR@setexparray{LWR@colafterspec}{1}{}%
\LWR@setexparray{LWR@colafterspec}{2}{}%
\LWR@setexparray{LWR@colafterspec}{3}{}%
\LWR@setexparray{LWR@colbarspec}{leftedge}{}%
\LWR@setexparray{LWR@colbarspec}{1}{}%
\LWR@setexparray{LWR@colbarspec}{2}{}%
\LWR@setexparray{LWR@colbarspec}{3}{}%
```

Starting at the first column specification:

```
\setcounter{LWR@tablecolspecindex}{1}%
```

Place the colspecs string length into `\LWR@strresult`, and remember the number of characters in the column specification:

```
\expandarg%
\StrLen{\LWR@origcolspec}[\LWR@strresult]%
\fullexpandarg%
\LWR@traceinfo{original column spec length: \LWR@strresult}%
\setcounter{LWR@tablecolspecwidth}{\LWR@strresult}%
```

Haven't seen any optional arguments so far

```
\global\boolfalse{LWR@opttablecol}%
```

Scan through the column specifications:

```
\whileboolexpr{%
    not test{%
        \ifnumcomp{\value{LWR@tablecolspecindex}}{>}%
            {\value{LWR@tablecolspecwidth}}%
    }%
}%
{%
```

Place the next single-character column type into `\LWR@strresult`:

```
\expandarg%
\StrChar{\LWR@origcolspec}{\arabic{LWR@tablecolspecindex}}[\LWR@strresult]%
\LWR@traceinfo{position \arabic{LWR@tablecolspecindex}: \LWR@strresult}%
\fullexpandarg%
```

Not yet found a valid column type:

```
\global\boolfalse{LWR@validtablecol}%
```

Skip over any optional arguments, such as siunitx S column:

```
\IfStrEq{\LWR@strresult}{[}{\global\booltrue{LWR@opttablecol}}{}%
```

Throw away anything found inside the optional argument:

```
\ifbool{LWR@opttablecol}%
{}% inside an optional argument
{% not an optional tabular argument
```

Not inside an optional argument, so consider the column type:

```
\IfStrEq{\LWR@strresult}{l}{\LWR@parsenormalcolumn{l}}{}%
\IfStrEq{\LWR@strresult}{c}{\LWR@parsenormalcolumn{c}}{}%
\IfStrEq{\LWR@strresult}{r}{\LWR@parsenormalcolumn{r}}{}%
\IfStrEq{\LWR@strresult}{L}{\LWR@parsenormalcolumn{l}}{}%
\IfStrEq{\LWR@strresult}{C}{\LWR@parsenormalcolumn{c}}{}%
\IfStrEq{\LWR@strresult}{R}{\LWR@parsenormalcolumn{r}}{}%
\IfStrEq{\LWR@strresult}{J}{\LWR@parsenormalcolumn{l}}{}%

\IfStrEq{\LWR@strresult}{S}{\LWR@parsenormalcolumn{c}}{}%
\IfStrEq{\LWR@strresult}{s}{\LWR@parsenormalcolumn{c}}{}%

\IfStrEq{\LWR@strresult}{\detokenize{@}}{\LWR@parseatcolumn}{}%
\IfStrEq{\LWR@strresult}{!}{\LWR@parsebangcolumn}{}%
\IfStrEq{\LWR@strresult}{>}{\LWR@parsebeforecolumn}{}%
\IfStrEq{\LWR@strresult}{<}{\LWR@parseaftercolumn}{}%
\IfStrEq{\LWR@strresult}{|}{\LWR@parsebarcolumn}{}%
\IfStrEq{\LWR@strresult}{:}{\LWR@parsecoloncolumn}{}%
\IfStrEq{\LWR@strresult}{;}{\LWR@parsesemicoloncolumn}{}%

\IfStrEq{\LWR@strresult}{p}{\LWR@parsepcolumn{p}}{}%
\IfStrEq{\LWR@strresult}{m}{\LWR@parsepcolumn{m}}{}%
\IfStrEq{\LWR@strresult}{b}{\LWR@parsepcolumn{b}}{}%


\IfStrEq{\LWR@strresult}{w}{\LWR@parsewcolumn}{}%
\IfStrEq{\LWR@strresult}{W}{\LWR@parsewcolumn}{}%
```

From the dcolumn package:

```
\IfStrEq{\LWR@strresult}{D}{\LWR@parseDcolumn{c}}{}%
```

From the tabularx package. X column has no parameter, but will be given paragraph tags.

```
\IfStrEq{\LWR@strresult}{X}{\LWR@parsenormalcolumn{X}}{}%
```

Many people define centered versions “P”, “M”, and “B”:

```
\newcolumntype{P}[1]{>{\centering\arraybackslash}p{#1}}
```

```
\IfStrEq{\LWR@strresult}{P}{\LWR@parsepcolumn{P}}{}%
\IfStrEq{\LWR@strresult}{M}{\LWR@parsepcolumn{M}}{}%
\IfStrEq{\LWR@strresult}{B}{\LWR@parsepcolumn{B}}{}%
```

If this column was an invalid column type, convert it to an `l` column:

```
\ifbool{LWR@validtablecol}{}{%
    \LWR@traceinfo{invalid column type: \LWR@strresult}%
    \LWR@parsenormalcolumn{l}%
}%
}% not an optional column argument
```

If read the closing bracket, no longer inside the optional argument:

```
\IfStrEq{\LWR@strresult}{]}{\global\boolfalse{LWR@opttablecol}}{}%
```

Move to the next character:

```
\addtocounter{LWR@tablecolspecindex}{1}%
}% whiledo
}%
```

70.14 colortbl and xparse tabular color support

These macros provide a minimal emulation of some colortbl macros which might appear between table cells. If colortbl is loaded, these macros will be replaced with functional versions.

For each of the HTML colors below, the text for the HTML color is set if requested, but the macro is empty if none has been set.

`\rownum` Reserve a counter register.

```
\@ifundefined{rownum}{\newcount\rownum}{}
```

`\@rowcolors` Emulated in case xcolor is not used.

```
\newcommand*{\@rowcolors}{}
```

`\@rowc@lors` Emulated in case xcolor is not used.

```
\newcommand*{\@rowc@lors}{}
```

`\LWR@xcolorrowHTMLcolor` Emulated xcolor row color.

```
\newcommand*{\LWR@xcolorrowHTMLcolor}{}
```

`\LWR@columnHTMLcolor` HTMLstyle code for the column color.

```
\def\LWR@columnHTMLcolor{}
```

`\LWR@rowHTMLcolor` HTMLstyle code for the row color.

```
\def\LWR@rowHTMLcolor{}
```

`\LWR@cellHTMLcolor` HTMLstyle code for the cell color.

```
\def\LWR@cellHTMLcolor{}
```

`\LWR@ruleHTMLcolor` HTMLstyle code for the cell color.

```
\newcommand*{\LWR@ruleHTMLcolor}{}
```

`\rowcolor` `[`⟨*model*⟩`]` `{`⟨*color*⟩`}` `[`⟨*left overhang*⟩`]` `[`⟨*right overhang*⟩`]` Print version. The HTML version is in lwarp-colortbl. Used before starting a tabular data cell, thus `\LWR@getmynexttoken`.

```
\newcommand*{\rowcolor}{\LWR@getmynexttoken}%
```

`\arrayrulecolor` `[`⟨*model*⟩`]` `{`⟨*color*⟩`}`

`\arrayrulecolornexttoken` `[`⟨*model*⟩`]` `{`⟨*color*⟩`}`

Print versions for use outside and inside a `tabular`:

```
\newcommand{\arrayrulecolor}[2][named]{}
\newcommand{\arrayrulecolornexttoken}[2][named]{\LWR@getmynexttoken}
```

`\doublerulesepcolor` `[`⟨*model*⟩`]` `{`⟨*color*⟩`}`

\doublerulesepcolornexttoken [⟨*model*⟩] {⟨*color*⟩}

Print versions for use inside and outside a `tabular`:

```
\newcommand{\doublerulesepcolor}[2][named]{}
\newcommand{\doublerulesepcolornexttoken}[2][named]{\LWR@getmynexttoken}
```

70.15 Starting a new row

\LWR@maybenewtablerow If have not yet started a new table row, begin one now. Creates a new row tag, adding a class for `hline` or `tbrule` if necessary.

```
\newcommand*{\LWR@maybenewtablerow}
{%
\ifbool{LWR@startedrow}%
{}% started the row
{% not started the row
```

Remember that now have started the row:

```
    \global\booltrue{LWR@startedrow}%
```

Create the row tag, with a class if necessary.

```
    \global\booltrue{LWR@intabularmetadata}%
    \ifboolexpr{%
        test{\ifnumcomp{\value{LWR@hlines}}{>}{0}} or%
        test{\ifnumcomp{\value{LWR@hdashedlines}}{>}{0}}%
    }%
    {%
        \LWR@htmltag{tr class="hline" }%
        \LWR@orignewline%
    }%
    {% not doing hline
        \ifbool{LWR@doingtbrule}%
        {%
            \ifdefvoid{\LWR@ruleHTMLcolor}{%
                \LWR@htmltag{tr class="tbrule"}%
            }{%
                \LWR@htmltag{%
                    tr class="tbrule" % space
                    style="border-top: 1px solid % space
                        \LWR@origpound\LWR@ruleHTMLcolor "%
                }%
            }%
            \LWR@orignewline%
```

```
        }%
        {\LWR@htmltag{tr}\LWR@orignewline}%
    }% end of not doing hline
}% end of not started the row
}
```

70.16 Printing vertical bar tags

\LWR@printbartag {⟨*index*⟩}

Adds to a tabular data cell an HTML class name for a left/right vertical bar.

```
\newcommand*{\LWR@printbartag}[1]{%
\LWR@traceinfo{LWR@printbartag !#1!}%
\ifboolexpr{bool{LWR@tabularmutemods} or bool{LWR@emptyatbang}}%
{}% muting or empty
{% not muting
    \edef\LWR@tempone{\LWR@getexparray{LWR@colbarspec}{#1}}%
    \ifdefempty{\LWR@tempone}{}{ \LWR@tempone}%
}% not muting
\LWR@traceinfo{LWR@printbartag done}%
}
```

70.17 Printing at or bang tags

\LWR@printatbang {⟨*at -or- bang*⟩} {⟨*index*⟩}

```
\newcommand*{\LWR@printatbang}[2]{%
```

Fetch the column at or bang spec:

```
\xdef\LWR@atbangspec{\LWR@getexparray{LWR@col#1spec}{#2}}%
\LWR@traceinfo{atbang: #2 !\LWR@atbangspec!}%
```

Only generate if is not empty;

```
\ifdefempty{\LWR@atbangspec}%
{}%
{% not empty
    \LWR@htmltag{%
        td class="td#1%
        \LWR@subaddcmidruletrim{}{}%
        \LWR@printbartag{#2}%
```

```
        "%
        \LWR@tdstartstyles%
        \LWR@addcmidrulewidth%
        \LWR@addcdashline%
        \LWR@addtabularrulecolors%
        \LWR@tdendstyles%
    }%
```

Create an empty cell if muting for the `\bottomrule`:

```
    \ifboolexpr{bool{LWR@tabularmutemods} or bool{LWR@emptyatbang}}%
    {}%
    {\LWR@atbangspec}%
%
    \LWR@htmltag{/td}\LWR@orignewline%
    \global\booltrue{LWR@tabularcelladded}%
}% not empty
}%
```

`\LWR@addleftmostbartag`

```
\newcommand*{\LWR@addleftmostbartag}{%
\ifnumcomp{\value{LWR@tableLaTeXcolindex}}{=}{1}{%
    \LWR@printbartag{leftedge}%
}{}%
}
```

`\LWR@tabularleftedge`

```
\newcommand*{\LWR@tabularleftedge}{%
\ifnumcomp{\value{LWR@tableLaTeXcolindex}}{=}{1}%
{%
    \LWR@printatbang{at}{leftedge}%
    \LWR@printatbang{bang}{leftedge}%
}% left edge
{}% not left edge
}
```

70.18 Data opening tag

`\LWR@thiscolspec` Temporary storage.

```
\newcommand*{\LWR@thiscolspec}{}
```

\LWR@tabledatasinglecolumntag Print a table data opening tag with style for alignment and color.

```
\newcommand*{\LWR@tabledatasinglecolumntag}%
{%
\LWR@traceinfo{LWR@tabledatasinglecolumntag}%
\LWR@maybenewtablerow%
```

Don't start a new paragraph tag if have already started one:

```
\ifbool{LWR@intabularmetadata}%
{%
```

If have found the end of tabular command, do not create the next data cell:

```
    \ifbool{LWR@exitingtabular}{}%
    {% not exiting tabular
```

Print the `@` and `!` contents before first column:

```
        \LWR@tabularleftedge%
```

Fetch the current column's alignment character into `\LWR@strresult`:

```
        \xdef\LWR@strresult{%
            \LWR@getexparray{LWR@tablecolspec}{\arabic{LWR@tableLaTeXcolindex}}%
        }%
```

print the start of a new table data cell:

```
\LWR@traceinfo{LWR@tabledatasinglecolumntag: about to print td tag}%
        \LWR@htmltag{td class="td%
```

append this column's spec:

```
        \LWR@strresult%
```

If this column has a cmidrule, add "rule" to the end of the HTML class tag. Also add vertical bar tags.

```
        \LWR@addcmidruletrim%
        \LWR@addleftmostbartag%
        \LWR@printbartag{\arabic{LWR@tableLaTeXcolindex}}%
        "%
```

Add styles for rules, alignment:

```
        \LWR@tdstartstyles%
```

```
        \LWR@addcmidrulewidth%
        \LWR@addcdashline%

        \xdef\LWR@thiscolspec{%
            \LWR@getexparray{LWR@tablecolspec}{\arabic{LWR@tableLaTeXcolindex}}%
        }%
        \LWR@addformatwpalignment{\LWR@thiscolspec}%
```

Add styles for cell and rule colors:

```
        \LWR@addtabularrowcolor%
        \LWR@addtabularrulecolors%

        \LWR@tdendstyles%
        }% HTML td
        \LWR@traceinfo{LWR@tabledatasinglecolumntag: done printing td tag}%
```

If this is a p, m, b, or X column, allow paragraphs:

```
        \ifboolexpr{%
            test{ \ifdefstring{\LWR@strresult}{p} } or
            test{ \ifdefstring{\LWR@strresult}{m} } or
            test{ \ifdefstring{\LWR@strresult}{b} } or
            test{ \ifdefstring{\LWR@strresult}{P} } or
            test{ \ifdefstring{\LWR@strresult}{M} } or
            test{ \ifdefstring{\LWR@strresult}{B} } or
            test{ \ifdefstring{\LWR@strresult}{X} }
        }%
        {% allow pars
            \LWR@traceinfo{LWR@tabledatasinglecolumntag: about to LWR@startpars}%
            \global\booltrue{LWR@tableparcell}%
            \LWR@startpars%
            \LWR@traceinfo{LWR@tabledatasinglecolumntag: done with LWR@startpars}%
        }% allow pars
        {}% no pars
```

Print the > contents unless muted for the \bottomrule:

```
        \ifboolexpr{bool{LWR@tabularmutemods} or bool{LWR@emptyatbang}}%
        {}%
        {%
            \LWR@getexparray{LWR@colbeforespec}{\arabic{LWR@tableLaTeXcolindex}}%
        }%
        \global\boolfalse{LWR@intabularmetadata}%
    }% not exiting tabular
}{}% in tabular metadata
\LWR@traceinfo{LWR@tabledatasinglecolumntag: done}%
}%
```

70.19 Midrules

`LWR@midrules` `LWR@midrules` is a data array (section 41) of columns each containing a non-zero width if a midrule should be created for this column.

`LWR@trimlrules` `LWR@trimlrules` is a data array (section 41) of columns containing `l` if a midrule should be left trimmed for each column.

`LWR@trimrrules` `LWR@trimrrules` is a data array (section 41) of columns containing `r` if a midrule should be right trimmed for each column.

`LWR@cdashlines` `LWR@cdashlines` is a data array (section 41) of columns each containing a `Y` if an arydshln package "cdashed line" should be created for this column.

Ctr `LWR@midrulecounter` Indexes across the `LWR@midrules` and `LWR@trim<l/r>rules` data arrays.

```
\newcounter{LWR@midrulecounter}
```

Len `\LWR@heavyrulewidth` The default width of the rule.

```
\newlength{\LWR@heavyrulewidth}
\setlength{\LWR@heavyrulewidth}{.08em}
```

Len `\LWR@lightrulewidth` The default width of the rule.

```
\newlength{\LWR@lightrulewidth}
\setlength{\LWR@lightrulewidth}{.05em}
```

Len `\LWR@cmidrulewidth` The default width of the rule.

```
\newlength{\LWR@cmidrulewidth}
\setlength{\LWR@cmidrulewidth}{.03em}
```

Len `\LWR@thiscmidrulewidth` The width of the next rule, defaulting to `\LWR@cmidrulewidth`.

If not `\LWR@cmidrulewidth`, a style will be used to generate the custom width.

Assigned from the `LWR@midrules` array.

```
\newlength{\LWR@thiscmidrulewidth}
\setlength{\LWR@thiscmidrulewidth}{\LWR@cmidrulewidth}
```

`\LWR@clearmidrules` Start new midrules. Called at beginning of tabular and also at `\\`.

Clears all `LWR@midrules` and `LWR@trimrules` markers for this line.

```
\newcommand*{\LWR@clearmidrules}
```

```
{%
\setcounter{LWR@midrulecounter}{1}%
\whileboolexpr{%
    not test{%
        \ifnumcomp{\value{LWR@midrulecounter}}{>}%
            {\value{LWR@tabletotalLaTeXcols}}%
    }%
}%
{%
    \LWR@setexparray{LWR@midrules}{\arabic{LWR@midrulecounter}}{0pt}%
    \setlength{\LWR@thiscmidrulewidth}{\LWR@cmidrulewidth}%
    \LWR@setexparray{LWR@trimlrules}{\arabic{LWR@midrulecounter}}{}%
    \LWR@setexparray{LWR@trimrrules}{\arabic{LWR@midrulecounter}}{}%
    \LWR@setexparray{LWR@cdashlines}{\arabic{LWR@midrulecounter}}{N}%
    \addtocounter{LWR@midrulecounter}{1}%
}%
}
```

`\LWR@subcmidrule` {⟨*width*⟩} {⟨*trim*⟩} {⟨*leftcolumn*⟩} {⟨*rightcolumn*⟩}

Marks `LWR@midrules` data array elements to be non-zero widths from left to right columns. Also marks trimming for the L and/or R columns.

`LWR@doingcmidrule` is set to force an empty row at the end of the tabular to create the rule.

```
\newcommand*{\LWR@subcmidrule}[4]{%
\setcounter{LWR@midrulecounter}{#3}%
\whileboolexpr{%
    not test {%
        \ifnumcomp{\value{LWR@midrulecounter}}{>}{#4}%
    }%
}%
{%
    \LWR@setexparray{LWR@midrules}{\arabic{LWR@midrulecounter}}{#1}%
    \addtocounter{LWR@midrulecounter}{1}%
}% whiledo
\IfSubStr{#2}{l}{\LWR@setexparray{LWR@trimlrules}{#3}{l}}{}%
\IfSubStr{#2}{r}{\LWR@setexparray{LWR@trimrrules}{#4}{r}}{}%
\global\booltrue{LWR@doingcmidrule}%
}
```

`\LWR@docmidrule` [⟨*width*⟩] (⟨*trim*⟩) {⟨*leftcolumn-rightcolumn*⟩}

Marks `LWR@midrules` array elements to be a non-zero width from left to right columns. Also marks trimming for the L and/or R columns.

```
\NewDocumentCommand{\LWR@docmidrule}
```

```
    {O{\LWR@cmidrulewidth} D(){} >{\SplitArgument{1}{-}}m}
    {\LWR@subcmidrule{#1}{#2}#3}
```

`\LWR@subcdashline` {⟨*leftcolumn*⟩} {⟨*rightcolumn*⟩}

Marks `LWR@cdashlines` data array elements to be `Y` from left to right columns.

`LWR@doingcmidrule` is set to force an empty row at the end of the tabular to create the rule.

```
\newcommand*{\LWR@subcdashline}[2]{%
\setcounter{LWR@midrulecounter}{#1}%
\whileboolexpr{%
    not test {%
        \ifnumcomp{\value{LWR@midrulecounter}}{>}{#2}%
    }%
}%
{%
    \LWR@setexparray{LWR@cdashlines}{\arabic{LWR@midrulecounter}}{Y}%
    \addtocounter{LWR@midrulecounter}{1}%
}% whiledo
\global\booltrue{LWR@doingcmidrule}%
}
```

`\LWR@docdashline` {⟨*leftcolumn-rightcolumn*⟩}

Marks `LWR@cdashlines` data array elements to be `Y` from left to right columns.

```
\NewDocumentCommand{\LWR@docdashline}
    {>{\SplitArgument{1}{-}}m}%
    {%
        \LWR@subcdashline#1%
    }
```

Used to compute margins, tabular trims, column offsets:

```
\newlength{\LWR@templengthone}
\newlength{\LWR@templengthtwo}
\newlength{\LWR@templengththree}
\newcounter{LWR@tempcountone}
```

Used to add a style to a table data cell:

```
\newbool{LWR@tdhavecellstyle}
```

`\LWR@tdstartstyles` Begins possibly adding a table data cell style.

```
\newcommand*{\LWR@tdstartstyles}{\global\boolfalse{LWR@tdhavecellstyle}}
```

`\LWR@tdaddstyle` Starts adding a table data cell style.

```
\newcommand*{\LWR@tdaddstyle}{%
\ifbool{LWR@tdhavecellstyle}%
{; }%
{ style="}%
\booltrue{LWR@tdhavecellstyle}%
}
```

`\LWR@tdendstyles` Finishes possibly adding a table data cell style. Prints the closing quote.

```
\newcommand*{\LWR@tdendstyles}{%
\ifbool{LWR@tdhavecellstyle}{%
    "%
    \global\boolfalse{LWR@tdhavecellstyle}%
}{}%
}
```

`\LWR@subaddcmidruletrim` {⟨*lefttrim*⟩} {⟨*righttrim*⟩} Adds a `\cmidrule` with optional trim.

```
\newcommand*{\LWR@subaddcmidruletrim}[2]{%
\setlength{\LWR@templengthone}{%
        \LWR@getexparray{LWR@midrules}{\arabic{LWR@tableLaTeXcolindex}}%
}%
\ifdimcomp{\LWR@templengthone}{>}{0pt}%
{%
```

Print the class with left and right trim letters appended:

```
    \LWR@origtilde tdrule#1#2%
```

Remember the width of the rule:

```
    \setlength{\LWR@thiscmidrulewidth}{\LWR@templengthone}%
}%
{%
    \setlength{\LWR@thiscmidrulewidth}{0pt}%
}%
}
```

`\LWR@addcmidruletrim` Adds left or right trim to a `\cmidrule`.

```
\newcommand*{\LWR@addcmidruletrim}{%
\LWR@subaddcmidruletrim%
```

```
{\LWR@getexparray{LWR@trimlrules}{\arabic{LWR@tableLaTeXcolindex}}}%
{\LWR@getexparray{LWR@trimrrules}{\arabic{LWR@tableLaTeXcolindex}}}%
}
```

\LWR@addrulewidth {⟨*thiswidth*⟩} {⟨*defaultwidth*⟩}

If not default width, add a custom style with width and color depending on `thiswidth`.

Must be placed between `\LWR@tdstartstyles` and `\LWR@tdendstyles`.

```
\newcommand{\LWR@addrulewidth}[2]{%
```

Only add a custom width if `thiswidth` is different than the `defaultwidth`, or if a color is being used:

```
\ifboolexpr{%
    test{\ifdimcomp{#1}{=}{0pt}} or
    (
        ( test{\ifdimcomp{#1}{=}{#2}} and not bool{FormatWP} )
        and ( test {\ifdefvoid{\LWR@ruleHTMLcolor}} )
    )
}%
{}% default width and color
{% custom width and/or color
```

Ensure that the width is wide enough to display in the browser:

```
    \LWR@forceminwidth{#1}%
```

Begin adding another style:

```
    \LWR@tdaddstyle%
```

The style itself:

```
    border-top:\LWR@printlength{\LWR@atleastonept} solid %
```

If default gray, the darkness of the color depends on the thickness of the rule:

```
    \ifdefvoid{\LWR@ruleHTMLcolor}{%
        \ifdimcomp{#1}{<}{\LWR@lightrulewidth}%
        {\LWR@origpound{}A0A0A0}%
        {% lightrule or heaver
            \ifdimcomp{#1}{<}{\LWR@heavyrulewidth}%
            {\LWR@origpound{}808080}%
            {black}%
```

```
        }% lightrule or heavier
    }{%
        \LWR@origpound\LWR@ruleHTMLcolor%
    }
}% custom width and/or color
}
```

\LWR@addcmidrulewidth Adds a `style` for the rule width.

Must be placed between \LWR@tdstartstyles and \LWR@tdendstyles.

```
\newcommand{\LWR@addcmidrulewidth}{%
\LWR@addrulewidth{\LWR@thiscmidrulewidth}{\LWR@cmidrulewidth}%
}
```

\LWR@addcdashline Must be placed between \LWR@tdstartstyles and \LWR@tdendstyles.

```
\newcommand{\LWR@addcdashline}{%
\edef\LWR@tempone{%
    \LWR@getexparray{LWR@cdashlines}{\arabic{LWR@tableLaTeXcolindex}}%
}%
\ifdefstring{\LWR@tempone}{Y}{%
    \LWR@tdaddstyle%
    border-top: 1pt dashed %
    \ifdefvoid{\LWR@ruleHTMLcolor}%
        {black}%
        {\LWR@origpound\LWR@ruleHTMLcolor}%
}{}%
}
```

\LWR@WPcell {⟨*text-align*⟩} {⟨*vertical-align*⟩}

```
\newcommand*{\LWR@WPcell}[2]{%
\LWR@tdaddstyle%
\LWR@print@mbox{text-align:#1}; \LWR@print@mbox{vertical-align:#2}%
}
```

\LWR@addformatwpalignment If `FormatWP`, adds a `style` for the alignment.

Must be placed between \LWR@tdstartstyles and \LWR@tdendstyles.

```
\newcommand*{\LWR@addformatwpalignment}[1]{%
\ifbool{FormatWP}{%
\IfSubStr{#1}{l}{\LWR@WPcell{left}{middle}}{}%
\IfSubStr{#1}{c}{\LWR@WPcell{center}{middle}}{}%
\IfSubStr{#1}{r}{\LWR@WPcell{right}{middle}}{}%
```

```
\IfSubStr{#1}{p}{\LWR@WPcell{left}{bottom}}{}%
\IfSubStr{#1}{m}{\LWR@WPcell{left}{middle}}{}%
\IfSubStr{#1}{b}{\LWR@WPcell{left}{top}}{}%
\IfSubStr{#1}{P}{\LWR@WPcell{center}{bottom}}{}%
\IfSubStr{#1}{M}{\LWR@WPcell{center}{middle}}{}%
\IfSubStr{#1}{B}{\LWR@WPcell{center}{top}}{}%
}{}%
}
```

70.20 Cell colors

`\LWR@addtabularrowcolor` Adds a cell's row color style, if needed.

No color is added for the final row of empty cells which finishes each `tabular`.

```
\newcommand*{\LWR@addtabularrowcolor}{%
\ifbool{LWR@tabularmutemods}{}{%
    \ifdefvoid{\LWR@rowHTMLcolor}{%
        \ifdefvoid{\LWR@xcolorrowHTMLcolor}{}%
        {% xcolor row color
            \LWR@tdaddstyle%
            background:\LWR@origpound\LWR@xcolorrowHTMLcolor%
        }%
    }%
    {% explicit row color
        \LWR@tdaddstyle%
        background:\LWR@origpound\LWR@rowHTMLcolor%
    }%
}%
}
```

`\LWR@addtabularhrulecolor` Adds a cell's horizontal rule color style, if needed.

```
\newcommand*{\LWR@addtabularhrulecolor}{%
```

If either form of horizontal rule is requested:

```
\ifboolexpr{%
    test{\ifnumcomp{\value{LWR@hlines}}{>}{0}} or%
    test{\ifnumcomp{\value{LWR@hdashedlines}}{>}{0}} or%
    bool{LWR@doingtbrule}%
}{%
```

If there is a no custom color:

```
    \ifdefvoid{\LWR@ruleHTMLcolor}%
    {%
        \ifnumcomp{\value{LWR@hlines}}{>}{1}%
        {%
            \LWR@tdaddstyle%
            border-top: 4px double%
        }{% else
        \ifnumcomp{\value{LWR@hdashedlines}}{>}{1}%
        {%
            \LWR@tdaddstyle%
            border-top: 2px dashed%
        }{% else
        \ifnumcomp{\value{LWR@hdashedlines}}{=}{1}%
        {%
            \LWR@tdaddstyle%
            border-top: 1px dashed%
        }{}}}%
```

If no color and not doubled or dashed, then add nothing, since a simpler rule is the default.

```
    }%
```

If there is a custom color:

```
    {%
        \ifnumcomp{\value{LWR@hlines}}{>}{1}%
        {%
            \LWR@tdaddstyle%
            border-top: 4px double \LWR@origpound\LWR@ruleHTMLcolor%
        }{% else
        \ifnumcomp{\value{LWR@hdashedlines}}{>}{1}%
        {%
            \LWR@tdaddstyle%
            border-top: 2px dashed \LWR@origpound\LWR@ruleHTMLcolor%
        }{% else
        \ifnumcomp{\value{LWR@hdashedlines}}{=}{1}%
        {%
            \LWR@tdaddstyle%
            border-top: 1px dashed \LWR@origpound\LWR@ruleHTMLcolor%
        }{% else
            \LWR@tdaddstyle%
            border-top: 1px solid \LWR@origpound\LWR@ruleHTMLcolor%
        }}}%
    }%
}{}%
}
```

`\LWR@addtabularrulecolors` Adds a cell's rule color styles, if needed.

No color is added for the final row of empty cells which finishes each `tabular`.

```
\newcommand*{\LWR@addtabularrulecolors}{%
```

Custom horizonal rule color:

```
\LWR@addtabularhrulecolor%
```

No vertical rules if finishing the `tabular` with a row of empty cells:

```
\ifbool{LWR@tabularmutemods}{}{%
```

If at the leftmost cell, possibly add a leftmost vertical rule:

```
    \ifnumequal{\value{LWR@tableLaTeXcolindex}}{1}{%
```

Fetch the left edge's vertical bar specification:

```
        \edef\LWR@tempone{\LWR@getexparray{LWR@colbarspec}{leftedge}}%
```

Add a custom style if a vertical bar was requested:

```
        \ifdefstring{\LWR@tempone}{tvertbarl}{%
                \LWR@tdaddstyle%
                border-left: 1px solid % space
                    \LWR@origpound\LWR@vertruleHTMLcolor%
        }{}%
        \ifdefstring{\LWR@tempone}{tvertbarldouble}{%
                \LWR@tdaddstyle%
                border-left: 4px double % space
                    \LWR@origpound\LWR@vertruleHTMLcolor%
        }{}%
        \ifdefstring{\LWR@tempone}{tvertbarldash}{%
                \LWR@tdaddstyle%
                border-left: 1px dashed % space
                    \LWR@origpound\LWR@vertruleHTMLcolor%
        }{}%
        \ifdefstring{\LWR@tempone}{tvertbarldoubledash}{%
                \LWR@tdaddstyle%
                border-left: 2px dashed % space
                    \LWR@origpound\LWR@vertruleHTMLcolor%
        }{}%
    }{}%
```

Possibly add a right vertical rule for this cell:

```
    \edef\LWR@tempone{%
        \LWR@getexparray{LWR@colbarspec}{\arabic{LWR@tableLaTeXcolindex}}%
```

```
    }%
    \ifdefstring{\LWR@tempone}{tvertbarr}{%
```

Add a custom style if a vertical bar was requested:

```
            \LWR@tdaddstyle%
            border-right: 1px solid \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifdefstring{\LWR@tempone}{tvertbarrdouble}{%
            \LWR@tdaddstyle%
            border-right: 4px double \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifdefstring{\LWR@tempone}{tvertbarrdash}{%
            \LWR@tdaddstyle%
            border-right: 1px dashed \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifdefstring{\LWR@tempone}{tvertbarrdoubledash}{%
            \LWR@tdaddstyle%
            border-right: 2px dashed \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
}%
}
```

Ctr `LWR@cellcolordepth` Counts how many cell color `<div>`s were added to the current tabular data cell.

```
\newcounter{LWR@cellcolordepth}
```

`\LWR@subaddtabularcellcolor` {⟨*HTML color*⟩}

```
\newcommand*{\LWR@subaddtabularcellcolor}[1]{%
\LWR@htmltag{div class="cellcolor" style="%
    background:\LWR@origpound{}{}#1 %
" }%
\addtocounter{LWR@cellcolordepth}{1}%
}
```

`\LWR@addtabularcellcolor` Adds a cell color style, if needed.

```
\newcommand*{\LWR@addtabularcellcolor}{%
\ifdefvoid{\LWR@cellHTMLcolor}%
{%
    \ifdefvoid{\LWR@rowHTMLcolor}%
    {%
        \ifdefvoid{\LWR@xcolorrowHTMLcolor}%
        {%
            \ifdefvoid{\LWR@columnHTMLcolor}%
            {}%
```

```
            {\LWR@subaddtabularcellcolor{\LWR@columnHTMLcolor}}%
        }%
        {\LWR@subaddtabularcellcolor{\LWR@xcolorrowHTMLcolor}}%
    }%
    {\LWR@subaddtabularcellcolor{\LWR@rowHTMLcolor}}%
}%
{\LWR@subaddtabularcellcolor{\LWR@cellHTMLcolor}}%
}
```

70.21 Multicolumns

70.21.1 Parsing multicolumns

```
\newcounter{LWR@tablemulticolswidth}
```

Indexes into the multicolumn specification:

```
\newcounter{LWR@tablemulticolspos}
```

Remembers multicolumn vertical rules if found in the column spec.

```
\newcounter{LWR@mcolvertbarsl}
\newcounter{LWR@mcolvertbarsr}
\newcounter{LWR@mcolvertbarsldash}
\newcounter{LWR@mcolvertbarsrdash}
\newbool{LWR@mcolvertbaronleft}%
```

`\LWR@printmccoltype` {⟨*colspec*⟩} Print any valid column type found. Does not print `@`, `!`, `>`, or `<` columns or their associated tokens.

This is printed as part of the table data tag's `class`.

```
\newcommand*{\LWR@printmccoltype}[1]{%
\LWR@traceinfo{lwr@printmccoltype -#1-}%
```

Get one token of the column spec:

```
\StrChar{#1}{\arabic{LWR@tablemulticolspos}}[\LWR@strresult]%
```

Add to the HTML tag depending on which column type is found:

```
\IfStrEq{\LWR@strresult}{l}{l}{}%
\IfStrEq{\LWR@strresult}{c}{c}{}%
\IfStrEq{\LWR@strresult}{r}{r}{}%
\IfStrEq{\LWR@strresult}{p}{p}{}%
```

```
\IfStrEq{\LWR@strresult}{m}{m}{}%
\IfStrEq{\LWR@strresult}{b}{b}{}%
\IfStrEq{\LWR@strresult}{P}{P}{}%
\IfStrEq{\LWR@strresult}{M}{M}{}%
\IfStrEq{\LWR@strresult}{B}{B}{}%

\IfStrEq{\LWR@strresult}{w}{w}{}%
\IfStrEq{\LWR@strresult}{W}{W}{}%

\IfStrEq{\LWR@strresult}{S}{c}{}%
\IfStrEq{\LWR@strresult}{s}{c}{}%

\IfStrEq{\LWR@strresult}{X}{p}{}%

\IfStrEq{\LWR@strresult}{|}%
{%
    \ifbool{LWR@mcolvertbaronleft}%
        {\addtocounter{LWR@mcolvertbarsl}{1}}% left edge
        {\addtocounter{LWR@mcolvertbarsr}{1}}% not left edge
}%
{%
    \IfStrEq{\LWR@strresult}{:}%
    {%
        \ifbool{LWR@mcolvertbaronleft}%
            {\addtocounter{LWR@mcolvertbarsldash}{1}}% left edge
            {\addtocounter{LWR@mcolvertbarsrdash}{1}}% not left edge
    }%
    {%
        \IfStrEq{\LWR@strresult}{;}%
        {%
            \ifbool{LWR@mcolvertbaronleft}%
                {\addtocounter{LWR@mcolvertbarsldash}{1}}% left edge
                {\addtocounter{LWR@mcolvertbarsrdash}{1}}% not left edge
        }%
        {\boolfalse{LWR@mcolvertbaronleft}}%
    }%
}%
\LWR@traceinfo{lwr@printmccoltype done}%
}
```

`\LWR@multicolpartext` {⟨*num parameters*⟩} Print the data with paragraph tags, advance to bypass the given number of parameters.

```
\newcommand*{\LWR@multicolpartext}[1]{%
\LWR@startpars%
\LWR@multicoltext%
\addtocounter{LWR@tablemulticolspos}{#1}%
```

```
\LWR@stoppars%
}
```

`\LWR@multicolother` {⟨*colspec*⟩} For `@`, `!`, `>`, `<`, print the next token without paragraph tags:

```
\newcommand*{\LWR@multicolother}[1]{%
\addtocounter{LWR@tablemulticolspos}{1}%
\StrChar{#1}{\arabic{LWR@tablemulticolspos}}[\LWR@strresult]%
\LWR@strresult%
```

A valid column data type was found:

```
\global\booltrue{LWR@validtablecol}%
}
```

`\LWR@multicolskip` Nothing to print for this column type.

```
\newcommand*{\LWR@multicolskip}{%
```

A valid column data type was found:

```
\global\booltrue{LWR@validtablecol}%
}
```

`\LWR@printmccoldata` {⟨*colspec*⟩} Print the data for any valid column type found.

```
\newcommand*{\LWR@printmccoldata}[1]{%
\LWR@traceinfo{lwr@printmccoldata -#1}%
```

Not yet found a valid column type:

```
\global\boolfalse{LWR@validtablecol}%
```

Get one token of the column spec:

```
\StrChar{#1}{\arabic{LWR@tablemulticolspos}}[\LWR@strresult]%
```

Print the text depending on which column type is found. Also handles `@`, `>`, `<` as it comes to them.

```
\IfStrEq{\LWR@strresult}{l}{\LWR@multicoltext}{}%
\IfStrEq{\LWR@strresult}{c}{\LWR@multicoltext}{}%
\IfStrEq{\LWR@strresult}{r}{\LWR@multicoltext}{}%
\IfStrEq{\LWR@strresult}{D}{%
\addtocounter{LWR@tablemulticolspos}{3}% skip parameters
\LWR@multicoltext%
}{}%
```

```
\IfStrEq{\LWR@strresult}{p}{\LWR@multicolpartext{0}}{}%
\IfStrEq{\LWR@strresult}{m}{\LWR@multicolpartext{0}}{}%
\IfStrEq{\LWR@strresult}{b}{\LWR@multicolpartext{0}}{}%
\IfStrEq{\LWR@strresult}{P}{\LWR@multicolpartext{0}}{}%
\IfStrEq{\LWR@strresult}{M}{\LWR@multicolpartext{0}}{}%
\IfStrEq{\LWR@strresult}{B}{\LWR@multicolpartext{0}}{}%

\IfStrEq{\LWR@strresult}{w}{\LWR@multicolpartext{3}}{}%
\IfStrEq{\LWR@strresult}{W}{\LWR@multicolpartext{3}}{}%

\IfStrEq{\LWR@strresult}{S}{\LWR@multicoltext}{}%
\IfStrEq{\LWR@strresult}{s}{\LWR@multicoltext}{}%

\IfStrEq{\LWR@strresult}{X}{\LWR@multicolpartext{0}}{}%
\IfStrEq{\LWR@strresult}{|}{\LWR@multicolskip}{}%
\IfStrEq{\LWR@strresult}{:}{\LWR@multicolskip}{}%
\IfStrEq{\LWR@strresult}{;}{%
    \LWR@multicolskip%
    \addtocounter{LWR@tablemulticolspos}{1}% skip parameter
}{}%
\IfStrEq{\LWR@strresult}{\detokenize{@}}{\LWR@multicolother{#1}}{}%
\IfStrEq{\LWR@strresult}{\detokenize{!}}{\LWR@multicolother{#1}}{}%
\IfStrEq{\LWR@strresult}{\detokenize{>}}{\LWR@multicolother{#1}}{}%
\IfStrEq{\LWR@strresult}{\detokenize{<}}{\LWR@multicolother{#1}}{}%
```

If an invalid column type:

```
\ifbool{LWR@validtablecol}{}{\LWR@multicoltext}%
```

Tracing:

```
\LWR@traceinfo{lwr@printmccoldata done}%
}
```

`\parsemulticolumnalignment` {⟨*1: colspec*⟩} {⟨*2: printresults*⟩}

Scan the multicolumn specification and execute the printfunction for each entry.

Note that the spec for a `p{spec}` column, or `@`, `>`, `<`, is a token list which will NOT match `l`, `c`, `r`, or `p`.

```
\newcommand*{\LWR@parsemulticolumnalignment}[2]{%
\setcounter{LWR@tablemulticolspos}{1}%
\StrLen{#1}[\LWR@strresult]%
\setcounter{LWR@tablemulticolswidth}{\LWR@strresult}%
```

Scan across the tokens in the column spec:

```
\whileboolexpr{%
    not test {%
        \ifnumcomp{\value{LWR@tablemulticolspos}}{>}%
            {\value{LWR@tablemulticolswidth}}%
    }%
}%
{%
```

Execute the assigned print function for each token in the column spec:

```
#2{#1}%
```

Move to the next token in the column spec:

```
\addtocounter{LWR@tablemulticolspos}{1}%
}%
}
```

70.21.2 Multicolumn factored code

`\LWR@addmulticolvertrulecolor`

```
\newcommand*{\LWR@addmulticolvertrulecolor}{%
```

No vertical rules if finishing the `tabular` with a row of empty cells:

```
\ifbool{LWR@tabularmutemods}{}{%
```

Left side:

```
    \ifnumcomp{\value{LWR@mcolvertbarsl}}{=}{1}{%
        \LWR@tdaddstyle%
        border-left: 1px solid \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifnumcomp{\value{LWR@mcolvertbarsl}}{>}{1}{%
        \LWR@tdaddstyle%
        border-left: 4px double \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifnumcomp{\value{LWR@mcolvertbarsldash}}{=}{1}{%
        \LWR@tdaddstyle%
        border-left: 1px dashed \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifnumcomp{\value{LWR@mcolvertbarsldash}}{>}{1}{%
        \LWR@tdaddstyle%
        border-left: 2px dashed \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
```

Right side:

```
    \ifnumcomp{\value{LWR@mcolvertbarsr}}{=}{1}{%
        \LWR@tdaddstyle%
        border-right: 1px solid \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifnumcomp{\value{LWR@mcolvertbarsr}}{>}{1}{%
        \LWR@tdaddstyle%
        border-right: 4px double \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifnumcomp{\value{LWR@mcolvertbarsrdash}}{=}{1}{%
        \LWR@tdaddstyle%
        border-right: 1px dashed \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
    \ifnumcomp{\value{LWR@mcolvertbarsrdash}}{>}{1}{%
        \LWR@tdaddstyle%
        border-right: 2px dashed \LWR@origpound\LWR@vertruleHTMLcolor%
    }{}%
}%
}
```

```
\newcommand{\LWR@multicoltext}{}
```

To find multicolumn right trim:

```
\newcounter{LWR@lastmulticolumn}
```

`\LWR@domulticolumn` `[`⟨*1: vpos*⟩`]` `[`⟨*2: #rows*⟩`]` {⟨*3: numLaTeXcols*⟩} {⟨*4: numHTMLcols*⟩} {⟨*5: colspec*⟩} {⟨*6: text*⟩}

```
\NewDocumentCommand{\LWR@domulticolumn}{o o m m m +m}{%
\LWR@traceinfo{LWR@domulticolumn -#1- -#2- -#4- -#5-}%
```

Remember the text to be inserted, and remember that a valid column type was found:

```
\renewcommand{\LWR@multicoltext}{%
#6%
\global\booltrue{LWR@validtablecol}%
}%
```

Compute the rightmost column to be included. This is used to create the right trim.

```
\setcounter{LWR@lastmulticolumn}{\value{LWR@tableLaTeXcolindex}}%
\addtocounter{LWR@lastmulticolumn}{#3}%
\addtocounter{LWR@lastmulticolumn}{-1}%
```

Row processing:

```
\LWR@maybenewtablerow%
```

Begin the opening table data tag:

```
\LWR@htmltag{td colspan="#4" %

\IfValueT{#2}{ % rows?
rowspan="#2" %

\IfValueT{#1}{% vpos?
\ifstrequal{#1}{b}{style="\LWR@print@mbox{vertical-align:bottom}" }{}%
\ifstrequal{#1}{t}{style="\LWR@print@mbox{vertical-align:top}" }{}%
}% vpos?
}% rows?

 class="td%
```

Print the column type and vertical bars:

```
\setcounter{LWR@mcolvertbarsl}{0}%
\setcounter{LWR@mcolvertbarsr}{0}%
\setcounter{LWR@mcolvertbarsldash}{0}%
\setcounter{LWR@mcolvertbarsrdash}{0}%
\booltrue{LWR@mcolvertbaronleft}%
\LWR@parsemulticolumnalignment{#5}{\LWR@printmccoltype}%
```

If this column has a cmidrule, add "rule" to the end of the HTML class tag.

If this position had a "Y" then add "rule" for a horizontal rule:

```
\LWR@subaddcmidruletrim%
{\LWR@getexparray{LWR@trimlrules}{\arabic{LWR@tableLaTeXcolindex}}}%
{\LWR@getexparray{LWR@trimrrules}{\arabic{LWR@lastmulticolumn}}}%
```

Also add vertical bar class.

```
\ifnumcomp{\value{LWR@mcolvertbarsl}}{=}{1}{ tvertbarl}{}%
\ifnumcomp{\value{LWR@mcolvertbarsl}}{>}{1}{ tvertbarldouble}{}%
\ifnumcomp{\value{LWR@mcolvertbarsr}}{=}{1}{ tvertbarr}{}%
\ifnumcomp{\value{LWR@mcolvertbarsr}}{>}{1}{ tvertbarrdouble}{}%
\ifnumcomp{\value{LWR@mcolvertbarsldash}}{=}{1}{ tvertbarldash}{}%
\ifnumcomp{\value{LWR@mcolvertbarsldash}}{>}{1}{ tvertbarldoubledash}{}%
\ifnumcomp{\value{LWR@mcolvertbarsrdash}}{=}{1}{ tvertbarrdash}{}%
\ifnumcomp{\value{LWR@mcolvertbarsrdash}}{>}{1}{ tvertbarrdoubledash}{}%
```

Close the class tag's opening quote: " NOT A TYPO

```
%
```

```
\LWR@tdstartstyles%
\LWR@addtabularrowcolor%
\LWR@addcmidrulewidth%
\LWR@addcdashline%
\LWR@addtabularhrulecolor%
\LWR@addmulticolvertrulecolor%
\LWR@addformatwpalignment{#5}%
\LWR@tdendstyles%
}% end of the opening table data tag
\global\boolfalse{LWR@intabularmetadata}%
\LWR@parsemulticolumnalignment{#5}{\LWR@printmccoldata}%
}
```

70.21.3 Multicolumn

`\LWR@htmlmulticolumn` {⟨*numcols*⟩} {⟨*alignment*⟩} {⟨*text*⟩}

```
\NewDocumentCommand{\LWR@htmlmulticolumn}{m m +m}%
{%
```

Figure out how many extra HTML columns to add for `@` and `!` columns:

```
\LWR@tabularhtmlcolumns{\arabic{LWR@tableLaTeXcolindex}}{#1}
```

Create the multicolumn tag:

```
\LWR@domulticolumn{#1}{\arabic{LWR@tabhtmlcoltotal}}{#2}{#3}%
```

Move to the next LaTeX column:

```
\addtocounter{LWR@tableLaTeXcolindex}{#1}%
\addtocounter{LWR@tableLaTeXcolindex}{-1}%
```

Skip any trailing `@` or `!` columns for this cell:

```
\global\booltrue{LWR@skipatbang}%
}
```

70.21.4 Longtable captions

longtable captions use `\multicolumn`.

Bool `LWR@starredlongtable` Per the caption pacakge, step the counter if `longtable*`.

```
\newbool{LWR@starredlongtable}
\boolfalse{LWR@starredlongtable}
```

Per the caption package. User-redefinable float type.

```
\providecommand*{\LTcaptype}{table}
```

`\LWR@longtabledatacaptiontag` * [⟨*toc entry*⟩] {⟨*caption*⟩}

```
\NewDocumentCommand{\LWR@longtabledatacaptiontag}{s o +m}
{%
```

Remember the latest name for `\nameref`:

```
\IfValueTF{#2}{% optional given?
    \ifblank{#2}% optional empty?
    {\LWR@setlatestname{#3}}% empty
    {\LWR@setlatestname{#2}}% given and non-empty
}% optional given
{\LWR@setlatestname{#3}}% no optional
```

Create a multicolumn across all the columns:

Figure out how many extra HTML columns to add for `@` and `!` columns found between the first and the last column:

```
\LWR@tabularhtmlcolumns{1}{\arabic{LWR@tabletotalLaTeXcols}}
```

Create the multicolumn tag:

```
\LWR@domulticolumn{\arabic{LWR@tabletotalLaTeXcols}}%
    {\arabic{LWR@tabhtmlcoltotal}}%
    {P}%
{% \LWR@domulticolumn
\IfBooleanTF{#1}% star?
```

Star version, show a caption but do not make a LOT entry:

```
{% yes star
    \LWR@figcaption%
    \LWR@isolate{#3}%
    \endLWR@figcaption%
}%
{% No star:
```

Not the star version:

Don't step the counter if `\caption[]{A caption.}`

```
    \ifbool{LWR@starredlongtable}%
    {%
        \ifblank{#2}% TOC entry
        {}%
        {%
            \refstepcounter{\LTcaptype}%
            \protected@edef\@currentlabel{%
                \@nameuse{p@\LTcaptype}\@nameuse{the\LTcaptype}%
            }%
        }%
    }{}%
```

Create an HTML caption. Afterwards, maybe make a LOT entry.

```
    \LWR@figcaption%
    \LWR@isolate{\@nameuse{fnum@\LTcaptype}}%
    \CaptionSeparator%
    \LWR@isolate{#3}%
    \endLWR@figcaption%
```

See if an optional caption was given:

```
    \ifblank{#2}% TOC entry empty
```

if the optional caption was given, but empty, do not form a TOC entry

```
    {}%
```

If the optional caption was given, but might only be `[]`:

```
    {% TOC entry not empty
        \IfNoValueTF{#2}% No TOC entry?
```

The optional caption is `[]`:

```
        {% No TOC entry
            \addcontentsline%
            {\@nameuse{ext@\LTcaptype}}%
            {\LTcaptype}%
            {%
                \protect\numberline%
                {\LWR@isolate{\@nameuse{p@\LTcaptype}}\@nameuse{the\LTcaptype}}%
                {\ignorespaces \LWR@isolate{#3}\protect\relax}%
            }%
        }% end of No TOC entry
```

The optional caption has text enclosed:

```
        {% yes TOC entry
            \addcontentsline%
            {\@nameuse{ext@\LTcaptype}}%
            {\LTcaptype}%
            {%
                \protect\numberline%
                {\LWR@isolate{\@nameuse{p@\LTcaptype}}\@nameuse{the\LTcaptype}}%
                {\ignorespaces \LWR@isolate{#2}\protect\relax}%
            }%
        }% end of yes TOC entry
    }% end of TOC entry not empty
}% end of no star
```

Skip any trailing `@` or `!` columns for this cell:

```
\global\booltrue{LWR@skipatbang}%
}% end of \LWR@domulticolumn

\addtocounter{LWR@tableLaTeXcolindex}{\arabic{LWR@tabletotalLaTeXcols}}
\addtocounter{LWR@tableLaTeXcolindex}{-1}

}
```

70.21.5 Counting HTML tabular columns

The LaTeX specification for a table includes a number of columns separated by the `&` character. These columns differ in content from line to line. Additional virtual columns may be specified by the special `@` and `!` columns. These columns are identical from line to line, but may be skipped during a multicolumn cell.

For HTML output, `@` and `!` columns are placed into their own tabular columns. Thus, a LaTeX `\multicolumn` command may span several additional `@` and `!` columns in HTML output. These additional columns must be added to the total number of columns spanned by an HTML multi-column data cell.

```
\newcounter{LWR@tabhtmlcolindex}
\newcounter{LWR@tabhtmlcolend}
\newcounter{LWR@tabhtmlcoltotal}
```

`\LWR@subtabularhtmlcolumns` `{`⟨*index*⟩`}`

Factored from `\LWr@tabularhtmlcolumns`, which follows.

```
\newcommand*{\LWR@subtabularhtmlcolumns}[1]{%
```

Temporarily define a macro equal to the @ specification for this column:

```
    \edef\LWR@atbangspec{\LWR@getexparray{LWR@colatspec}{#1}}%
```

If the @ specification is not empty, add to the count:

```
    \ifdefempty{\LWR@atbangspec}%
        {}%
        {\addtocounter{LWR@tabhtmlcoltotal}{1}}%
```

Likewise for the ! columns:

```
    \edef\LWR@atbangspec{\LWR@getexparray{LWR@colbangspec}{#1}}%
    \ifdefempty{\LWR@atbangspec}%
        {}%
        {\addtocounter{LWR@tabhtmlcoltotal}{1}}%
}
```

`\LWR@tabularhtmlcolumns` {⟨*starting LaTeX column*⟩} {⟨*number LaTeX columns*⟩}

Compute the total number of HTML columns being spanned, considering the starting LaTeX table column and the number of LaTeX tabular columns being spanned. Any @ and ! columns within this span are included in the total count. The resulting number of HTML columns is returned in the counter `LWR@tabhtmlcoltotal`.

```
\newcommand*{\LWR@tabularhtmlcolumns}[2]{%
```

Count the starting index, compute ending index, and begin with the count being the LaTeX span, to which additional @ and ! columns may be added:

```
\setcounter{LWR@tabhtmlcolindex}{#1}%
\setcounter{LWR@tabhtmlcoltotal}{#2}%
\setcounter{LWR@tabhtmlcolend}{#1}%
\addtocounter{LWR@tabhtmlcolend}{#2}%
```

If at the left edge, add the at/bang columns for the left edge:

```
\ifnumcomp{\value{LWR@tabhtmlcolindex}}{=}{1}{%
    \LWR@subtabularhtmlcolumns{leftedge}%
}{}%
```

Walk across the LaTeX columns looking for @ and ! columns:

```
\whileboolexpr{%
    test {%
        \ifnumcomp{\value{LWR@tabhtmlcolindex}}{<}{\value{LWR@tabhtmlcolend}}%
    }%
```

```
}%
{%
    \LWR@subtabularhtmlcolumns{\arabic{LWR@tabhtmlcolindex}}%
    \addtocounter{LWR@tabhtmlcolindex}{1}%
}% whiledo
}

\end{warpHTML}
```

70.22 Multirow if not loaded

A default defintion in case multirow is not loaded. This is used during table parsing.

```
\begin{warpHTML}
\newcommand{\multirow}[2][c]{}
\end{warpHTML}
```

70.23 Multicolumnrow

A print-mode version is defined here, and is also used during HTML output while inside a `lateximage`.

See section 299 for the HTML versions.

for HTML & PRINT:

```
\begin{warpall}
```

`\multicolumnrow` {⟨*1:cols*⟩} {⟨*2:halign*⟩} [⟨*3:vpos*⟩] {⟨*4:numrows*⟩} [⟨*5:bigstruts*⟩] {⟨*6:width*⟩} [⟨*7:fixup*⟩] {⟨*8:text*⟩}

For discussion of the use of `\DeclareExpandableDocumentCommand`, see:
https://tex.stackexchange.com/questions/168434/problem-with-abbreviation-of-multirow-and-multicolumn-latex

`\AtBeginDocument` to adjust after the user may have loaded multirow, which requires several tests to determine which version is loaded and thus which options are available.

```
\AtBeginDocument{
```

`\@ifundefined{@xmultirow}` determines if multirow was never loaded.

Null action if not loaded:

```
\@ifundefined{@xmultirow}
```

```
{
\DeclareExpandableDocumentCommand{\LWR@print@multicolumnrow}%
    {+m +m +O{c} +m +O{0} +m +O{0pt} +m}%
    {}%
}% no version of multirow was loaded
{% \@xmultirow defined, so some version of multirow was loaded
```

`\@ifpackageloaded{multirow}` determines if v2.0 or later of multirow was used, which included the `\ProvidesPackage` macro.

The print version:

```
\@ifpackageloaded{multirow}{% v2.0 or newer
\@ifpackagelater{multirow}{2016/09/01}% 2016/09/27 for v2.0
{% v2.0+:
\DeclareExpandableDocumentCommand{\LWR@print@multicolumnrow}%
    {+m +m +O{c} +m +O{0} +m +O{0pt} +m}%
    {\multicolumn{#1}{#2}{\@xmultirow[#3]{#4}[#5]{#6}[#7]{#8}}}%
}
{% loaded but older, probably not executed:
\DeclareExpandableDocumentCommand{\LWR@print@multicolumnrow}%
    {+m +m +O{c} +m +O{0} +m +O{0pt} +m}%
    {\multicolumn{#1}{#2}{\@xmultirow{#4}[#5]{#6}[#7]{#8}}}%
}
}% packageloaded{multirow}
```

If not `\@ifpackageloaded{multirow}` but `\@xmultirow` is defined, then this must be v1.6 or earlier, which did not `\ProvidesPackage{multirow}`, and did not have the `vposn` option.

```
{% v1.6 or older did not \ProvidePackage
\DeclareExpandableDocumentCommand{\LWR@print@multicolumnrow}%
    {+m +m +O{c} +m +O{0} +m +O{0pt} +m}%
    {\multicolumn{#1}{#2}{\@xmultirow{#4}[#5]{#6}[#7]{#8}}}%
}

}% \@ifundefined{@xmultirow}

\providecommand*{\multicolumnrow}{\LWR@print@multicolumnrow}

}% AtBeginDocument

\end{warpall}
```

70.24 Utility macros inside a table

for HTML output:

```
\begin{warpHTML}
```

Used to prevent opening a tabular data cell if the following token is one which does not create tabular data:

```
\newcommand*{\LWR@donothing}{}
```

In case array is not loaded:

```
\let\firsthline\relax
\let\lasthline\relax
\newcommand*{\firsthline}{}
\newcommand*{\lasthline}{}
```

In case bigdelim is not loaded:

```
\newcommand*{\ldelim}{}
\newcommand*{\rdelim}{}
```

```
\end{warpHTML}
```

70.25 Special-case tabular markers

for HTML & PRINT:

```
\begin{warpall}
```

`\TabularMacro` Place this just before inserting a custom macro in a table data cell. Doing so tells lwarp not to automatcally start a new HTML table data cell yet. See section 9.9.

```
\newcommand*{\TabularMacro}{}
```

```
\end{warpall}
```

`\ResumeTabular` Used to resume tabular entries after resuming an environment.

⚠ `tabular` inside another environment

When creating a new environment which contains a `tabular` environment, lwarp's emulation of the tabular does not automatically resume when the containing enviroment ends, resulting in corrupted HTML rows. To fix this, use `\ResumeTabular` as follows. This is ignored in print mode.

```
\StartDefiningTabulars % because & is used in a definition
\newenvironment{outerenvironment}
{
\tabular{cc}
left & right \\
}
{
\TabularMacro\ResumeTabular
left & right \\
\endtabular
}
\StopDefiningTabulars
```

for HTML output:

```
\begin{warpHTML}

\newcommand*{\ResumeTabular}{%
\global\boolfalse{LWR@exitingtabular}%
\global\boolfalse{LWR@tabularmutemods}%
\LWR@getmynexttoken%
}

\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}

\newcommand*{\ResumeTabular}{}

\end{warpprint}
```

70.26 Checking for a new table cell

for HTML output:

```
\begin{warpHTML}
```

Bool `LWR@exitingtabular` When `\end` is found, turns off the next opening data tag.

```
\newbool{LWR@exitingtabular}
```

Bool `LWR@tabularmutemods` Mutes HTML output for `@`, `!`, < and >.

This is used while printing the final row to generate `\bottomrules`.

```
\newbool{LWR@tabularmutemods}
```

\LWR@tabledatacolumntag Open a new HTML table cell unless the next token is for a macro which does not create data, such as \hline, \toprule, etc:

```
\newcommand*{\LWR@tabledatacolumntag}%
{%
\LWR@traceinfo{LWR@tabledatacolumntag}%
```

\show\LWR@mynexttoken to see what tokens to look for

If not any of the below, start a new table cell:

```
\global\let\LWR@mynextaction\LWR@tabledatasinglecolumntag%
```

If exiting the tabular:

```
\ifdefequal{\LWR@mynexttoken}{\end}%
    {\global\booltrue{LWR@exitingtabular}}{}%
```

longtable can have a caption in a cell

```
\ifdefequal{\LWR@mynexttoken}{\caption}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

Look for other things which would not start a table cell:

```
\ifdefequal{\LWR@mynexttoken}{\multicolumn}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
\ifdefequal{\LWR@mynexttoken}{\multirow}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
\ifdefequal{\LWR@mynexttoken}{\multicolumnrow}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
\ifdefequal{\LWR@mynexttoken}{\noalign}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

If an \mrowcell, this is a cell to be skipped over:

```
\ifdefequal{\LWR@mynexttoken}{\mrowcell}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

If an \mcolrowcell, this is a cell to be skipped over:

```
\ifdefequal{\LWR@mynexttoken}{\mcolrowcell}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\TabularMacro}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

```
\ifdefequal{\LWR@mynexttoken}{\hline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\firsthline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\lasthline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\toprule}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\midrule}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\cmidrule}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%


\ifdefequal{\LWR@mynexttoken}{\morecmidrules}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\specialrule}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\cline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\bottomrule}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\rowcolor}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\arrayrulecolor}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\doublerulesepcolor}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\warpprintonly}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\warpHTMLonly}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

```
\ifdefequal{\LWR@mynexttoken}{\ldelim}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\rdelim}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

For arydshln:

```
\ifdefequal{\LWR@mynexttoken}{\hdashline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\cdashline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\firsthdashline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%

\ifdefequal{\LWR@mynexttoken}{\lasthdashline}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

Ignore an empty line between rows:

```
\ifdefequal{\LWR@mynexttoken}{\par}%
    {\global\let\LWR@mynextaction\LWR@donothing}{}%
```

No action for an `\end` token.

Add similar to the above for any other non-data tokens which might appear in the table.

Start the new table cell if was not any of the above:

```
\LWR@traceinfo{LWR@tabledatacolumntag: about to do mynext}%
\LWR@mynextaction%
\LWR@traceinfo{LWR@tabledatacolumntag: done}%
}

\end{warpHTML}
```

70.27 `\mrowcell`

for HTML & PRINT:

```
\begin{warpall}
```

`\mrowcell`

⚠ multirow cells

The user must insert `\mrowcell` into any `\multirow` cells which must be skipped. This command has no action during print output.

```
\newcommand*{\mrowcell}{}
\end{warpall}
```

70.28 \mcolrowcell

for HTML & PRINT:

```
\begin{warpall}
```

\mcolrowcell
⚠ multirow cells

The user must insert \mcolrowcell into any \multicolumnrow cells which must be skipped. This command has no action during print output.

```
\newcommand*{\mcolrowcell}{}
\end{warpall}
```

70.29 HTML tabular environment

for HTML output:

```
\begin{warpHTML}
```

These are default defininitions in case booktabs is not loaded, and are not expected to used, but must exist as placeholders. They are pre-deleted in case memoir has already loaded booktabs.

```
\LetLtxMacro\toprule\relax
\LetLtxMacro\midrule\relax
\LetLtxMacro\cmidrule\cline
\LetLtxMacro\bottomrule\relax
\LetLtxMacro\addlinespace\relax
\LetLtxMacro\morecmidrules\relax
\LetLtxMacro\specialrule\relax

\newcommand*{\toprule}[1][]{\hline}
\newcommand*{\midrule}[1][]{\hline}
\LetLtxMacro\cmidrule\cline
\newcommand*{\bottomrule}[1][]{\hline}
\newcommand*{\addlinespace}[1][]{}
\newcommand*{\morecmidrules}{}
\newcommand*{\specialrule}[3]{\hline}
```

\noalign {⟨*text*⟩} Redefined for use inside tabular.

```
\LetLtxMacro\LWR@orignoalign\noalign

\newcommand{\LWR@tabularnoalign}[1]{%
\begingroup%
\global\advance\rownum\m@ne%
\renewcommand*{\LWR@xcolorrowHTMLcolor}{}%
\multicolumn{\value{LWR@tabletotalLaTeXcols}}{l}{#1} \\
\endgroup%
% \@rowc@lors%
\LWR@getmynexttoken%
}
```

`\LWR@HTMLhline` The definition of `\hline` depends on whether tabls has been loaded. If so, optional space below the line may be specified, but will be ignored.

```
\AtBeginDocument{
\@ifpackageloaded{lwarp-tabls}
{
\newcommand*{\LWR@HTMLhline}[1][]{%
    \ifbool{FormatWP}%
    {\LWR@docmidrule{1-\arabic{LWR@tabletotalLaTeXcols}}}%
    {\addtocounter{LWR@hlines}{1}}%
    \LWR@getmynexttoken}%
}
{
\newcommand*{\LWR@HTMLhline}{%
    \ifbool{FormatWP}%
    {\LWR@docmidrule{1-\arabic{LWR@tabletotalLaTeXcols}}}%
    {\addtocounter{LWR@hlines}{1}}%
    \LWR@getmynexttoken}%
}
}% AtBeginDocument
```

`\LWR@HTMLcline` {⟨*columns*⟩}

```
\NewDocumentCommand{\LWR@HTMLcline}{m}%
{\LWR@docmidrule{#1}\LWR@getmynexttoken}%
```

`\LWR@nullifyNoAutoSpacing` For babel-french, turn off auto spacing at the start of the tabular, then nullify the autospacing commands inside the tabular, since they were not compatible with the tabular column parsing code, which uses xstring.

```
\AtBeginDocument{
\@ifundefined{frenchbsetup}%
{% no babel-french
    \newcommand*{\LWR@nullifyNoAutoSpacing}{}
}% no babel-french
```

```
{% yes babel-french
    \newcommand*{\LWR@nullifyNoAutoSpacing}{%
        \NoAutoSpacing%
        \renewcommand*{\NoAutoSpacing}{}%
        \renewcommand*{\LWR@FBcancel}{}%
    }
}% yes babel-french
}% AtBeginDocument
```

Env `LWR@tabular` [⟨*vertposition*⟩] {⟨*colspecs*⟩}

The new tabular environment will be `\let` in `\LWR@LwarpStart`, since siunitx might redefine tabular in the user's document.

```
\StartDefiningTabulars

\newenvironment*{LWR@tabular}[2][]
{%
\LWR@traceinfo{LWR@tabular started}%
\addtocounter{LWR@tabulardepth}{1}%
```

Not yet started a table row:

```
\global\boolfalse{LWR@startedrow}%
```

Not yet doing any rules:

```
\setcounter{LWR@hlines}{0}%
\setcounter{LWR@hdashedlines}{0}%
\global\boolfalse{LWR@doingtbrule}%
\global\boolfalse{LWR@doingcmidrule}%
```

For babel-french, turn off auto spacing one time, then nullify the autospacing commands since were not compatible with the tabular parsing code.

```
\LWR@nullifyNoAutoSpacing%
```

Have not yet found the end of tabular command. Unmute the `@` and `!` columns.

```
\global\boolfalse{LWR@exitingtabular}%
\global\boolfalse{LWR@tabularmutemods}%
```

Create the `table` tag:

```
\global\booltrue{LWR@intabularmetadata}%
\LWR@traceinfo{LWR@tabular: About to LWR@forecenewpage.}%
\LWR@forcenewpage
\LWR@htmlblocktag{table}%
```

Parse the table columns:

```
\LWR@parsetablecols{#2}%
```

Table col spec is: `\LWR@tablecolspec` which is a string of `llccrr`, etc.

Do not place the table inside a paragraph:

```
\LWR@stoppars%
```

Track column #:

```
\setcounter{LWR@tableLaTeXcolindex}{1}%
```

Have not yet added data in this column:

```
\global\boolfalse{LWR@tabularcelladded}%
```

Start looking for midrules:

```
\LWR@clearmidrules%
```

`\\` becomes a macro to end the table row:

```
\LetLtxMacro{\\}{\LWR@tabularendofline}%
```

The following adjust for colortbl.

```
\LetLtxMacro\arrayrulecolor\arrayrulecolornexttoken%
\LetLtxMacro\doublerulesepcolor\doublerulesepcolornexttoken%
\gdef\LWR@columnHTMLcolor{}%
\gdef\LWR@rowHTMLcolor{}%
\gdef\LWR@cellHTMLcolor{}%
\@rowcolors%
```

The vertical rules are set to the color active at the start of the tabular. `\arrayrulecolor` will then affect horizontal rules inside the tabular, but not the vertical rules.

```
\edef\LWR@vertruleHTMLcolor{\LWR@ruleHTMLcolor}%
```

Tracking the depth of cell color `<div>`s:

```
\setcounter{LWR@cellcolordepth}{0}%
```

The following may appear before a data cell is created, so after doing their actions, we look ahead with `\LWR@getmynextoken` to see if the next token might create a new data cell:

The optional parameter for \hline supports the tabls package.

```
\LWR@traceinfo{LWR@tabular: redefining macros}%
\LetLtxMacro\noalign\LWR@tabularnoalign%
\LetLtxMacro\hline\LWR@HTMLhline%
\LetLtxMacro\cline\LWR@HTMLcline%

\DeclareDocumentCommand{\hdashline}{o}{%
    \ifbool{FormatWP}%
        {\LWR@docdashline{1-\arabic{LWR@tabletotalLaTeXcols}}}%
        {\addtocounter{LWR@hdashedlines}{1}}%
    \LWR@getmynexttoken%
}%

\DeclareDocumentCommand{\cdashline}{m}{%
    \LWR@docdashline{##1}\LWR@getmynexttoken%
}%

\DeclareDocumentCommand{\firsthdashline}{o}{%
    \ifbool{FormatWP}%
        {\LWR@docdashline{1-\arabic{LWR@tabletotalLaTeXcols}}}%
        {\addtocounter{LWR@hdashedlines}{1}}%
    \LWR@getmynexttoken%
}%

\DeclareDocumentCommand{\lasthdashline}{o}{%
    \ifbool{FormatWP}%
        {\LWR@docdashline{1-\arabic{LWR@tabletotalLaTeXcols}}}%
        {\addtocounter{LWR@hdashedlines}{1}}%
    \LWR@getmynexttoken%
}%
```

The following create data cells and will have no more data in this cell, so we do not want to look ahead for a possible data cell, so do not want to use \LWR@getmynexttoken.

```
\renewcommand{\multicolumn}{\LWR@htmlmulticolumn}%
\renewcommand*{\mrowcell}{%
    \LWR@maybenewtablerow%
    \LWR@tabularleftedge%
    \global\booltrue{LWR@skippingmrowcell}%
}%
\renewcommand*{\mcolrowcell}{%
    \LWR@maybenewtablerow%
    \global\booltrue{LWR@skippingmcolrowcell}%
}%
\LetLtxMacro\caption\LWR@longtabledatacaptiontag%
```

Reset for new processing:

```
\global\boolfalse{LWR@tableparcell}%
\global\boolfalse{LWR@skippingmrowcell}%
\global\boolfalse{LWR@skippingmcolrowcell}%
\global\boolfalse{LWR@skipatbang}%
\global\boolfalse{LWR@emptyatbang}%
```

Set & for its special meaning inside the tabular:

```
\StartDefiningTabulars%
\protected\gdef&{\LWR@tabularampersand}%
```

Nest one level deeper of tabular paragraph handling:

```
\addtocounter{LWR@tabularpardepth}{1}%
```

Look ahead for a possible table data cell:

```
\LWR@traceinfo{LWR@tabular: about to LWR@getmynexttoken}%
\LWR@getmynexttoken%
}%
```

Ending the environment:

```
{%
\LWR@traceinfo{LWR@tabular ending}%
```

Unnest one level of tabular paragraph handling:

```
\addtocounter{LWR@tabularpardepth}{-1}%
\ifboolexpr{%
    test {%
        \ifnumcomp{\value{LWR@tableLaTeXcolindex}}{<}{\value{LWR@tabletotalLaTeXcols}}
    } or %
    (%
        bool{LWR@intabularmetadata} and%
        not bool{LWR@tabularcelladded} and%
        test {%
            \ifnumcomp{\value{LWR@tableLaTeXcolindex}}{=}{\value{LWR@tabletotalLaTeXcols}}%
        }%
    )%
}%
{%
    \LWR@tabularfinishrow%
}%
{%
    \LWR@closetabledatacell%
```

```
}%
\LWR@htmlblocktag{/tr}%
```

xcolor row color support:

```
\@rowc@lors%
```

```
\LWR@htmlblocktag{/table}%
\global\boolfalse{LWR@intabularmetadata}%
```

Unnest one level of tabular:

```
\addtocounter{LWR@tabulardepth}{-1}%
```

Restore & to its usual meaning:

```
\protected\gdef&{\LWR@origampmacro}%
\StopDefiningTabulars%
\LWR@traceinfo{LWR@tabular finished ending}%
}

\StopDefiningTabulars
```

```
\end{warpHTML}
```

71 Cross-references

Sectioning commands have been emulated from scratch, so the cross-referencing commands are custom-written for them. Emulating both avoids several layers of patches.

The zref package is used to remember section name, file, and latexmage depth and number for each label.

Table 12 shows the data structures related to cross-referencing.

for HTML output:

```
\begin{warpHTML}
```

71.1 Setup

`\@currentlabelname` To remember the most recently defined section name, description, or caption, for `\nameref`.

Table 12: Cross-referencing data structures

Original LaTeX: (print and HTML)

\refstepcounter: Steps the couunter and sets \@currentlabel.

\@currentlabel: \p@<ctr>\the<ctr> Updated by \refstepcounter.

\label: Writes to the .aux file:
\newlabel{<label>}{{\@currentlabel}{\thepage}}

\newlabel: When the .aux file is read, sets \r@<label>.

\r@<label>: Set to: {{\@currentlabel}{\thepage}}

\ref: Returns the first part of \r@<label>.

\pageref: Returns the second part of \r@<label>.

Added by lwarp: (HTML only)

\label: Adds HTML tags (section 71.3), plus \splabel data (section 71.2):

zLWR@name: The section name for this label.
zLWR@htmlfilenumer: The filenumber or name for this label.
zLWR@lateximagedepth: The lateximagedepth for this label.
zLWR@lateximagenumber: The lateximagenumber for this label.

\nameref: Emualted from hyperref for lwarp. See section 71.4.

\ref and \nameref: Adds HTML tags. See section 71.4.

Added by amsmath: (print and HTML)

\label: Execution is delayed until the math environment is completed.

\ltx@label: LaTeX \label, (HTML: patched by lwarp,) later patched by cleveref.

Added by cleveref: (print and HTML)

\refstepcounter: Added: sets \cref@currentlabel.

\cref@currentlabel: (<type>=<ctr> unless an alias is used):
[<type>][\arabic{<ctr>}][<parent ctrs>]{\p@<ctr>\the<ctr>} Also see section 57.4 for use with footnotes.

\label: Writes to the .aux file:
\newlabel{<label>@cref}{{\cref@currentlabel}{\thepage}}

\newlabel: (Unchanged.) When the .aux file is read, sets \r@<label>@cref.

\r@<label>@cref: Set to: {{\cref@currentlabel}{\thepage}}

Utility functions: See \cref@getlabel, \cref@gettype, \cref@getcounter, \cref@getprefix.

Cross-referencing names: \crefname and \Crefname assign human-readable names for references to this counter type.

Additionally patched by lwarp: (HTML only)

\cref, etc.: Modified for lwarp. See section 85.

\label inside math: See section 77.7.1.

Footnotes: See \noteentry in section 57.4.

```
\providecommand*{\@currentlabelname}{}
```

\LWR@stripperiod {⟨*text*⟩} [⟨.⟩]

Removes a trailing period.

```
\def\LWR@stripperiod#1.\ltx@empty#2\@nil{#1}%
```

\LWR@setlatestname {⟨*object name*⟩}

Removes \label, strips any final period, and remembers the result.

```
\newcommand*{\LWR@setlatestname}[1]{%
```

Remove \label and other commands from the name, the strip any final period. See zref-titleref and gettitlestring.

```
\GetTitleStringExpand{#1}%
\edef\@currentlabelname{\detokenize\expandafter{\GetTitleStringResult}}%
\edef\@currentlabelname{%
    \expandafter\LWR@stripperiod\@currentlabelname%
    \ltx@empty.\ltx@empty\@nil%
}%
}
```

71.2 zref setup

See:
http://tex.stackexchange.com/questions/57194/
extract-section-number-from-equation-reference

Create a new property list called special:

```
\zref@newlist{special}
```

Define a new property which has the name of the most recently declared section:

```
\zref@newprop{zLWR@name}{\@currentlabelname}
```

Define a new property which has either a filename or a file number:

```
\zref@newprop{zLWR@htmlfilenumber}{%
\ifbool{FileSectionNames}{\LWR@thisfilename}{\arabic{LWR@htmlfilenumber}}%
}%
```

Additional properties for lateximages:

```
\zref@newprop{zLWR@lateximagedepth}{\arabic{LWR@lateximagedepth}}
\zref@newprop{zLWR@lateximagenumber}{\arabic{LWR@lateximagenumber}}
```

`zLWR@htmlfilenumber` property holds the file number or name

Add a `LWR@htmlfilenumber` property, and latexmage properties to special:

```
\zref@addprop{special}{zLWR@name}
\zref@addprop{special}{zLWR@htmlfilenumber}
\zref@addprop{special}{zLWR@lateximagedepth}
\zref@addprop{special}{zLWR@lateximagenumber}
```

Returns the selected field:

```
\newcommand*{\LWR@spref}[2]{%
\zref@extractdefault{#1}{#2}{??}%
}
```

`\LWR@nameref` `{`⟨*label*⟩`}` Returns the section name for this label:

```
\newcommand*{\LWR@nameref}[1]{%
\LWR@spref{#1}{zLWR@name}%
}
```

`\LWR@htmlfileref` `{`⟨*label*⟩`}` Returns the file number or name for this label:

```
\newcommand*{\LWR@htmlfileref}[1]{%
```

DO NOT USE `\LWR@traceinfo` HERE! Will be expanded.

```
\LWR@spref{#1}{zLWR@htmlfilenumber}%
}
```

`\LWR@lateximagedepthref` `{`⟨*label*⟩`}` Returns the `lateximagedepth` for this label:

```
\newcommand*{\LWR@lateximagedepthref}[1]{%
\LWR@spref{#1}{zLWR@lateximagedepth}%
}
```

`\LWR@lateximagenumberref` `{`⟨*label*⟩`}` Returns the `lateximagenumber` for this label:

```
\newcommand*{\LWR@lateximagenumberref}[1]{%
\LWR@spref{#1}{zLWR@lateximagenumber}%
}
```

\LWR@splabel {⟨*label*⟩} Sanitize the name and then creates the label:

```
\newcommand*{\LWR@splabel}[1]{%
\LWR@traceinfo{LWR@splabel !#1!}%
\LWR@setlatestname{\@currentlabelname}%
\zref@labelbylist{#1}{special}%
}
```

71.3 Labels

\LWR@sublabel {⟨*label*⟩} Creates an HTML id tag.

\detokenize is used to allow underscores in the labels.

```
\newcommand*{\LWR@sublabel}[1]{%
\LWR@traceinfo{LWR@sublabel !#1!}%
```

Create an HTML id tag unless are inside a lateximage, since it would appear in the image:

```
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
{}%
{% not lateximage
```

If not doing a lateximage, create an HTML ID tag: (To be factored…)

```
    \LWR@sanitize{#1}%
    \ifbool{LWR@doingstartpars}%
    {% pars allowed
        \ifbool{LWR@doingapar}%
        {% par started
            \LWR@htmltag{a \LWR@print@mbox{id="\LWR@sanitized"}}\LWR@htmltag{/a}%
        }% par started
        {% par not started
            \LWR@stoppars%
            \LWR@htmltag{a \LWR@print@mbox{id="\LWR@sanitized"}}\LWR@htmltag{/a}%
            \LWR@startpars%
        }% par not started
    }% pars allowed
    {% pars not allowed
        \LWR@htmltag{a \LWR@print@mbox{id="\LWR@sanitized"}}\LWR@htmltag{/a}%
    }% pars not allowed
}% not lateximage
}
```

\LWR@new@label (⟨*bookmark*⟩) {⟨*label*⟩} [⟨*type*⟩]

\label during HTML output when not in SVG math mode, removing extra spaces around the label, as done by regular LaTeX \label.

The is also used during a lateximage, including SVG math, since the special label handling is required, but \LWR@sublabel does not generate HTML tags inside a lateximage.

clevereref later encases this to add its own cross-referencing.

The optional ⟨*bookmark*⟩ is per the memoir class, and is ignored.

The optional ⟨*type*⟩ is per the ntheorem package, and is ignored.

```
\NewDocumentCommand{\LWR@new@label}{d() m o}{%
\LWR@traceinfo{LWR@new@label: starting}%
\LWR@traceinfo{LWR@new@label: !#2!}%
% \@bsphack%
```

Create a traditional LaTeX label, as modified by cleveref:

```
\LWR@orig@label{#2}%
```

Create a special label which holds the section number, LWR@htmlfilenumber, LWR@lateximagedepth, and LWR@lateximagenumber:

```
\LWR@traceinfo{LWR@new@label: filesectionnames is \ifbool{FileSectionNames}{true}{false}}%
\LWR@traceinfo{LWR@new@label: LWR@thisfilename is !\LWR@thisfilename!}%
\LWR@traceinfo{LWR@new@label: LWR@htmlfilenumber is \arabic{LWR@htmlfilenumber}}%
\LWR@splabel{#2}%
\LWR@sublabel{#2}%
% \@esphack%
\LWR@traceinfo{LWR@new@label: done}%
}
```

71.4 References

\LWR@startref {⟨*label*⟩} (Common code for \ref and \nameref.)

Open an HTML tag reference to a filename, # character, and a label.

```
\newcommand*{\LWR@startref}[1]
{%
\edef\LWR@lidref{\LWR@lateximagedepthref{#1}}%
\LWR@sanitize{#1}%
\LWR@traceinfo{LWR@startref A: !#1!}%
```

Create the filename part of the link:

```
\LWR@htmltag{a href="%
\LWR@traceinfo{LWR@startref B}%
\LWR@print@mbox{\LWR@htmlrefsectionfilename{#1}}%
\LWR@traceinfo{LWR@startref C}%
\LWR@origpound%
```

Create the destination id:

See if `LWR@lateximagedepth` is unknown:

```
\LWR@traceinfo{LWR@startref D: !#1!}%
\ifthenelse{\equal{\LWR@lidref}{??}}%
```

"??" if `LWR@lateximagedepth` is unknown, so create a link with an unknown destination:

```
{%
    \LWR@traceinfo{LWR@startref D0: ??}%
    ??%
}%
```

If `LWR@lateximagedepth` is known. Use a lateximage if the depth is greater than zero, or a regular link otherwise:

```
{%
    \LWR@traceinfo{LWR@startref D1: \LWR@lidref}%
    \ifthenelse{\cnttest{\LWR@lidref}{>}{0}}%
    {%
        \LWR@traceinfo{LWR@startref D2: \LWR@lidref}%
        lateximage\LWR@lateximagenumberref{#1}%
    }%
    {%
        \LWR@traceinfo{LWR@startref D3}%
```

`\detokenize` is used to allow underscores in the labels:

```
        \LWR@print@mbox{\LWR@sanitized}%
    }%
}%
\LWR@traceinfo{LWR@startref E}%
```

Closing quote:

```
"}%
\LWR@traceinfo{LWR@startref F}%
}
```

`\LWR@subnewref` {⟨*label*⟩} {⟨*label or sub@label*⟩}

Factored for the subfig package. Uses the original label for the hyper-reference, but prints its own text, such as "`1(b)`".

```
\NewDocumentCommand{\LWR@subnewref}{m m}{%
\LWR@traceinfo{LWR@subnewref #1 #2}%
\LWR@startref{#1}%
\LWR@print@ref{#2}%
\LWR@htmltag{/a}%
}
```

`\ref` * {⟨*label*⟩} `\ref` is redefined to `\LWR@HTML@ref`, except inside the text part of a `\hyperref`, where it is redefined to `\LWR@ref@ignorestar`.

`\LWR@HTML@ref` * {⟨*label*⟩} Create an internal document reference link, or without a link if starred per hyperref.

```
\NewDocumentCommand{\LWR@HTML@ref}{s m}{%
\LWR@traceinfo{LWR@HTML@ref !#2!}%
\IfBooleanTF{#1}%
{\LWR@print@ref{#2}}%
{\LWR@subnewref{#2}{#2}}%
}

\LWR@formatted{ref}
```

`\LWR@ref@ignorestar` * {⟨*label*⟩} For use inside `\hyperref`. Ignores the star, then uses the original `\ref`.

```
\NewDocumentCommand{\LWR@ref@ignorestar}{s m}{%
    \LWR@print@ref{#2}%
}
```

`\pagerefPageFor` Text for page references.

```
\newcommand*{\pagerefPageFor}{see }
```

`\pageref` * {⟨*label*⟩} Create an internal document reference, or just the unlinked number if starred, per hyperref.

```
\NewDocumentCommand{\LWR@new@pageref}{s m}{%
\IfBooleanTF{#1}%
{(\pagerefPageFor\LWR@print@ref{#2})}%
{(\cpageref{#2})}%
}
```

`\nameref` {⟨*label*⟩}

```
\newrobustcmd*{\nameref}[1]{%
\LWR@traceinfo{nameref}%
\LWR@startref{#1}%
\LWR@traceinfo{nameref B}%
\LWR@nameref{#1}%
\LWR@traceinfo{nameref C}%
\LWR@htmltag{/a}%
\LWR@traceinfo{nameref: done}%
}
```

`\Nameref` {⟨*label*⟩} In print, adds the page number. In HTML, does not.

```
\LetLtxMacro\Nameref\nameref
```

71.5 Hyper-references

⚠ Note that the code currently only sanitizes the underscore character. Additional characters should be rendered inert as well. See the `hyperref.sty` definition of `\gdef\hyper@normalise` for an example.

Pkg `hyperref`

⚠ Do not tell other packages that hyperref is emulated. Some packages patch various commands if hyperref is present, which will probably break something, and the emulation already handles whatever may be emulated anyhow.

```
% DO NOT TELL OTHER PACKAGES TO ASSUME HYPERREF, lest they attempt to patch it:
% \EmulatesPackage{hyperref}[2015/08/01]% Disabled.  Do not do this.
```

Emulates hyperref:

`\@currentHref` Added to support backref.

```
\AtBeginDocument{
\def\@currentHref{%
autopage-\theLWR@currentautosec%
}
}
```

`\LWR@subhyperref` {⟨*URL*⟩}

Starts a link for \LWR@hrefb. A group must have been opened first, with nullified catcodes. The text name is printed afterwards, after the group is closed and catcodes restored.

```
\NewDocumentCommand{\LWR@subhyperref}{m}{%
\LWR@traceinfo{LWR@subhyperref !#1!}%
\LWR@sanitize{#1}%
\LWR@htmltag{%
    a href="\LWR@sanitized" %
    target="\_{}blank"\LWR@orignewline%
}%
}
```

\LWR@subhyperreftext {⟨*text*⟩}

Finishes the hyperref for \LWR@hrefb. Catcodes must have been restored already. To be used after \LWR@subhyperref, and after its group has been closed.

```
\newcommand{\LWR@subhyperreftext}[1]{%
#1%
\LWR@htmltag{/a}%
\LWR@ensuredoingapar%
}
```

\LWR@subhyperrefclass {⟨*URL*⟩} {⟨*text*⟩} {⟨*htmlclass*⟩}

```
\NewDocumentCommand{\LWR@subhyperrefclass}{m +m m}{%
\LWR@htmltag{%
    a href="%
        \begingroup\@sanitize#1\endgroup%
    " %
    class="#3"\LWR@orignewline%
}%
#2%
\LWR@htmltag{/a}%
\LWR@ensuredoingapar%
}
```

\href [⟨*options*⟩] {⟨*URL*⟩}

Create a link with accompanying text:

```
\DeclareDocumentCommand{\LWR@hrefb}{O{} m}{%
\LWR@ensuredoingapar%
\LWR@subhyperref{#2}%
\endgroup% restore catcodes
\LWR@subhyperreftext%
```

```
}

\newrobustcmd*{\href}{%
\begingroup%
\catcode`\#=12%
\catcode`\%=12%
\catcode`\&=12%
\catcode`\~=12%
\catcode`\_=12%
\LWR@hrefb%
}
```

`\nolinkurl` `{`⟨*URL*⟩`}`

Print the name of the link without creating the link:

```
\newcommand*{\LWR@nolinkurlb}[1]{%
\LWR@ensuredoingapar%
\def\LWR@templink{#1}%
\@onelevel@sanitize\LWR@templink%
\LWR@templink%
\endgroup%
}

\newrobustcmd*{\nolinkurl}{%
\begingroup%
\catcode`\#=12%
\catcode`\%=12%
\catcode`\&=12%
\catcode`\~=12%
\catcode`\_=12%
\LWR@nolinkurlb%
}
```

`\url` `{`⟨*URL*⟩`}`

Create a link whose text name is the address of the link.

The url package may redefine `\url`, so it is `\let` to `\LWR@urla`here and also redefined by lwarp-url.

```
\DeclareDocumentCommand{\LWR@urlb}{m}{%
\LWR@ensuredoingapar%
\def\LWR@templink{#1}%
\@onelevel@sanitize\LWR@templink%
\href{\LWR@templink}{\LWR@templink}%
\endgroup%
}
```

```
8175
8176 \newrobustcmd*{\url}{%
8177 \begingroup%
8178 \catcode`\#=12%
8179 \catcode`\%=12%
8180 \catcode`\&=12%
8181 \catcode`\~=12%
8182 \catcode`\_=12%
8183 \LWR@urlb%
8184 }
```

`\LWR@subinlineimage` [⟨*alttag*⟩] {⟨*class*⟩} {⟨*filename*⟩} {⟨*extension*⟩} {⟨*style*⟩}

```
8185 \newcommand*{\LWR@subinlineimage}[5][]{%
8186 \ifblank{#1}%
8187 {\LWR@htmltag{img src="#3.#4" alt="#3" style="#5" class="#2"}}%
8188 {\LWR@htmltag{img src="#3.#4" alt="#1" style="#5" class="#2"}}%
8189 }

8190 \end{warpHTML}
```

Table 13: Float data structures

For each <type> of float (figure, table, etc.) there exists the following:

counter <type>: A counter called <type>, such as figure, table.

\<type>name: Name. \figurename prints "Figure", etc.

\ext@<type>: File extension. \ext@figure prints "lof", etc.

\fps@<type>: Placement.

\the<type>: Number. \thetable prints the number of the table, etc.

\p@<type>: Parent's number. Prints the number of the [within] figure, etc.

\fnum@<type>: Prints the figure number for the caption.
\<type>name \the<type>, "Figure 123".

\<type>: Starts the float environment. \figure or \begin{figure}

\end<type>: Ends the float environment. \endfigure or \end{figure}

\tf@<ext>: The LaTeX file identifier for the output file.

LWR@have<type>: A boolean remembering whether a \listof was requested for a float of this type.

File with extension lo<f,t,a-z>: An output file containing the commands to build the \listof<type> "table-of-contents" structure.

Cross-referencing names: For cleveref's \cref and related, \crefname and \Crefname assign human-readable names for references to this float type.

72 Floats

Floats are supported, although partially through emulation.

Table 13 shows the data structure associated with each <type> of float.

\@makecaption is redefined to print the float number and caption text, separated by \CaptionSeparator, which works with the babel package to adjust the caption separator according to the language. French, for example, uses an en-dash instead of a colon: "Figure 123 – Caption text".

72.1 Float environment

for HTML output:

```
\begin{warpHTML}
```

`\LWR@floatbegin` {⟨*type*⟩} [⟨*placement*⟩] Begins a `\newfloat` environment.

```
\NewDocumentCommand{\LWR@floatbegin}{m o}{%
\ifbool{FormatWP}{\newline}{}%
\LWR@stoppars
```

There is a new float, so increment the unique float counter:

```
\addtocounter{LWR@thisautoid}{1}%
\booltrue{LWR@freezethisautoid}%

\begingroup%
```

Settings while inside the environment:

```
\LWR@print@raggedright%
```

Open an HTML `figure` tag. The figure is assigned a `class` equal to its type, and another class according to the float package style, if used. Note that `\csuse` returns an empty string if `\LWR@floatstyle@<type>` is note defined.

```
\LWR@htmltag{%
    figure id="\LWR@print@mbox{autoid-\arabic{LWR@thisautoid}}" % space
    class="#1 \@nameuse{LWR@floatstyle@#1}"%
}%
\ifbool{FormatWP}{%
    \LWR@orignewline%
    \LWR@BlockClassWP{}{}{wp#1}%
}{}%
```

Update the caption type:

```
\renewcommand*{\@captype}{#1}%
\caption@settype{#1}%
```

Mark the float for a word processor conversion:

```
\LWR@startpars%
\ifboolexpr{bool{FormatWP} and bool{WPMarkFloats}}{%

=== begin #1 ===

}{}%
```

Look for \centering, etc:

```
\LWR@futurenonspacelet\LWR@mynexttoken\LWR@floatalignment%
}
```

For koma-script. The following does not work for tables.

```
\AtBeginDocument{
\@ifpackageloaded{tocbasic}{
\appto\figure@atbegin{%
\LWR@futurenonspacelet\LWR@mynexttoken\LWR@floatalignment%
}
}{}
}
```

\@float
\@dlbfloat
Support packages which create floats directly.

```
\let\@float\LWR@floatbegin
\let\@dblfloat\LWR@floatbegin
```

\LWR@floatend
Ends a \newfloat environment.

```
\newcommand*{\LWR@floatend}{%
```

If saw a \centering, finish the center environment:

```
\LWR@endfloatalignment%
```

Mark the float end for a word processor conversion:

```
\ifboolexpr{bool{FormatWP} and bool{WPMarkFloats}}{%

=== end ===

}{}%
\LWR@stoppars%
```

Close an HTML figure tag:

```
\ifbool{FormatWP}{\endLWR@BlockClassWP}{}%
\LWR@htmlelementend{figure}%
\endgroup%
\boolfalse{LWR@freezethisautoid}%
\LWR@startpars%
\ifbool{FormatWP}{\newline}{}%
}
```

\end@float
\end@dlbfloat

Support packages which create floats directly.

```
\let\end@float\LWR@floatend
\let\end@dblfloat\LWR@floatend
```

72.2 Float tracking

Ctr LWR@thisautoid

A sequential counter for all floats and theorems. This is used to identify the float or theorem then reference it from the List of Figures and List of Tables.

```
\newcounter{LWR@thisautoid}
```

Ctr LWR@thisautoidWP

A sequential counter for all word processor conversion s. This is used to convince LibreOffice to form a frame around this element.

```
\newcounter{LWR@thisautoidWP}
```

Bool LWR@freezethisautoid

Prevents multiple increments of \LWR@thisautoid inside a float.

```
\newbool{LWR@freezethisautoid}
\boolfalse{LWR@freezethisautoid}
```

\LWR@newautoidanchor

Adds a new <autoid> anchor.

```
\newcommand*{\LWR@newautoidanchor}{%
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
{}%
{
    \ifbool{LWR@freezethisautoid}{}{%
        \addtocounter{LWR@thisautoid}{1}%
        \LWR@htmltag{a id="\LWR@print@mbox{autoid-\arabic{LWR@thisautoid}}"}%
            \LWR@htmltag{/a}%
    }%
}
}
```

\@captype

Remembers which float type is in use.

```
\newcommand*{\@captype}{}
```

\LWR@floatalignmentname

Set to center, flushleft, or flushright if saw \centering, \raggedright, or \raggedleft.

```
\newcommand*{\LWR@floatalignmentname}{}
```

\LWR@floatalignment If sees a \centering, \raggedleft, or \raggedright, creates a center, flushright, or flushleft environment.

```
\newcommand*{\LWR@floatalignment}{%
\ifdefstrequal{\LWR@mynexttoken}{\centering}{%
    \center%
    \renewcommand*{\LWR@floatalignmentname}{center}%
}{}%
\ifdefstrequal{\LWR@mynexttoken}{\raggedright}{%
    \flushleft%
    \renewcommand*{\LWR@floatalignmentname}{flushleft}%
}{}%
\ifdefstrequal{\LWR@mynexttoken}{\raggedleft}{%
    \flushright%
    \renewcommand*{\LWR@floatalignmentname}{flushright}%
}{}%
}
```

\LWR@endfloatalignment Closes an environment from \LWR@floatalignment.

```
\newcommand*{\LWR@endfloatalignment}{%
\ifdefvoid{\LWR@floatalignmentname}{}{\@nameuse{end\LWR@floatalignmentname}}%
\renewcommand*{\LWR@floatalignmentname}{}%
}
```

72.3 Caption inside a float environment

\CaptionSeparator How to separate the float number and the caption text.

```
\AtBeginDocument{\providecommand*{\CaptionSeparator}{:~}}
```

\@makecaption {⟨*name and num*⟩} {⟨*text*⟩}

Prints the float type and number, the caption separator, and the caption text.

```
\AtBeginDocument{\renewcommand{\@makecaption}[2]{%
    \LWR@traceinfo{@makecaption}%
    \LWR@isolate{#1}\CaptionSeparator\LWR@isolate{#2}%
    \LWR@traceinfo{@makecaption: done}%
}%
}
```

72.4 Caption and LOF linking and tracking

When a new HTML file is marked in the LaTeX PDF file, the LaTeX page number at that point is stored in `LWR@latestautopage`, (and the associated filename is remembered by the special LaTeX labels). This page number is used to generate an `autopage` HTML `<id>` in the HTML output at the start of the new HTML file. Meanwhile, there is a float counter used to generate an HTML `autoid` `<id>` at the start of the float itself in the HTML file. The `autopage` and `autoid` values to use for each float are written to the `.lof`, etc. files just before each float's entry. These values are used by `\l@figure`, etc. to create the HTML links in the List of Figures, etc.

Ctr `LWR@nextautoid`
Ctr `LWR@nextautopage`

Tracks `autoid` for floats. Tracks `autopage` for floats.

These are updated per float as the `.lof`, `.lot` file is read.

```
\newcounter{LWR@nextautoid}
\newcounter{LWR@nextautopage}
```

`\LWRsetnextfloat` {⟨*autopage*⟩} {⟨*autoid*⟩}

This is written to the `.lof`, `.lot` file just before each float's usual entry. The `autopage` and `autoid` are remembered for `\l@figure` to use when creating the HTML links.

```
\newcommand*{\LWRsetnextfloat}[2]{%
\setcounter{LWR@nextautopage}{#1}%
\setcounter{LWR@nextautoid}{#2}%
}
```

Ctr `LWR@latestautopage`

Updated each time a new HTML file is begun. `\LWRsetnextfloat` is written with this and the `autoid` by the modified `\addcontentsline` just before each float's entry.

```
\newcounter{LWR@latestautopage}
\setcounter{LWR@latestautopage}{1}
```

Env `LWR@figcaption`

Encapsulates a caption inside `<figcaption>`, and if `FormatWP` then also a `<div>` with an italic style.

```
\newenvironment*{LWR@figcaption}
{%
    \LWR@traceinfo{LWR@figcaption env start}%
    \LWR@htmlblocktag{figcaption}%
    \ifbool{FormatWP}{%
        \begin{BlockClass}[font-style:italic]{italic}
        \LWR@print@vspace*{\baselineskip}
    }{}%
    \LWR@traceinfo{LWR@figcaption env start: done}%
```

```
}
{%
    \LWR@traceinfo{LWR@figcaption env end}%
    \ifbool{FormatWP}{\end{BlockClass}}{}%
    \LWR@htmlblocktag{/figcaption}%
    \LWR@traceinfo{LWR@figcaption env end: done}%
}
```

\LWR@HTML@caption@begin {⟨*type*⟩}

Low-level patches to create HTML tags for captions.

```
\newcommand*{\LWR@HTML@caption@begin}[1]
{
\LWR@traceinfo{LWR@HTML@caption@begin}%
```

Keep par and minipage changes local:

```
\begingroup%
```

The caption code was not allowing the closing par tag:

```
\@setpar{\LWR@closeparagraph\@@par}%
```

No need for a minipage or \parbox inside the caption:

```
\RenewDocumentEnvironment{minipage}{O{t} o O{t} m}{}{}%
\RenewDocumentCommand{\parbox}{O{t} o O{t} m +m}{##5}%
```

Enclose the original caption code inside an HTML tag:

```
\LWR@figcaption%
\LWR@traceinfo{LWR@HTML@caption@begin: about to LWR@origcaption@begin}%
\LWR@print@caption@begin{#1}%
\LWR@traceinfo{LWR@HTML@caption@begin: done}%
}
```

\LWR@HTML@caption@end Low-level patches to create HTML tags for captions.

```
\newcommand*{\LWR@HTML@caption@end}
{%
\LWR@traceinfo{LWR@HTML@caption@end}%
\LWR@print@caption@end%
```

Closing tag:

```
\endLWR@figcaption%
```

```
\endgroup%
% \leavevmode% avoid bad space factor (0) error
\LWR@traceinfo{LWR@HTML@caption@end: done}%
}
```

\caption@begin
\caption@end

Low-level patches to create HTML tags for captions. These are assigned \AtBeginDocument so that other packages which modify captions will have already been loaded before saving the print-mode version.

```
\AtBeginDocument{
\LWR@formatted{caption@begin}
\LWR@formatted{caption@end}
}
```

\captionlistentry

Tracks the float number for this caption used outside a float. Patched to create an HTML anchor.

```
\let\LWR@origcaptionlistentry\captionlistentry

\renewcommand*{\captionlistentry}{%
\LWR@ensuredoingapar%
\LWR@origcaptionlistentry%
}

\def\LWR@LTcaptionlistentry{%
\LWR@ensuredoingapar%
\LWR@htmltag{a id="\LWR@print@mbox{autoid-\arabic{LWR@thisautoid}}"}\LWR@htmltag{/a}%
  \bgroup
  \@ifstar{\egroup\LWR@LT@captionlistentry}% gobble *
          {\egroup\LWR@LT@captionlistentry}}%
\def\LWR@LT@captionlistentry#1{%
  \caption@listentry\@firstoftwo[\LTcaptype]{#1}}%
```

\addcontentsline

Patched to write the autopage and autoid before each float's entry. No changes if writing .toc For a theorem, automatically defines \ext@<type> as needed, to mimic and reuse the float mechanism.

f

```
\let\LWR@origaddcontentsline\addcontentsline

\renewcommand*{\addcontentsline}[3]{%
\ifstrequal{#1}{toc}{}{% not TOC


\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
    {}%
    {\LWR@newautoidanchor}%
```

```
    \ifcsvoid{ext@#2}{\csdef{ext@#2}{#1}}{}%

    \addtocontents{\@nameuse{ext@#2}}{%
        \protect\LWRsetnextfloat%
        {\arabic{LWR@latestautopage}}%
        {\arabic{LWR@thisautoid}}%
    }%
}% not TOC
\LWR@origaddcontentsline{#1}{#2}{#3}%
}
```

Pkg capt-of
Pkg caption

Either package provides `\captionof`, which is later patched at the beginning of the document.

`\captionof` Patched to handle paragraph tags.

```
\AtBeginDocument{
\let\LWR@origcaptionof\captionof

\renewcommand*{\captionof}{%
\LWR@stoppars
\LWR@origcaptionof%
}
}

\end{warpHTML}
```

73 Table of Contents, LOF, LOT

This section controls the generation of the TOC, LOF, and LOT.

The `.toc`, `.lof`, and `.lot` files are named by the source code `\jobname`.

In HTML, the printed tables are placed inside a `<div>` of class `toc`, `lof`, or `lot`.

A "sidetoc" is provided which prints a subset of the TOC on the side of each page other than the homepage.

The regular LaTeX infrastructure is used for TOC, along with some patches to generate HTML output.

for HTML output:

```
\begin{warpHTML}
```

73.1 Reading and printing the TOC

`\LWR@myshorttoc` {⟨*toc/lof/lot/sidetoc*⟩}

Reads in and prints the TOC/LOF/LOT at the current position. While doing so, makes the `@` character into a normal letter to allow formatting commands in the section names.

Unlike in regular LaTeX, the file is not reset after being read, since the sideTOC may be referred to again in each HTML page.

```
\newcommand*{\LWR@myshorttoc}[1]{%
\LWR@traceinfo{LWR@myshorttoc: #1}%
\LWR@ensuredoingapar%
```

Only if the file exists:

```
\IfFileExists{\jobname.#1}{%
\LWR@traceinfo{LWR@myshorttoc: loading}%
```

⚠ Many of the commands in the file will have `@` characters in them, so `@` must be made a regular letter.

```
\begingroup%
\makeatletter%
```

Read in the TOC file:

```
\@input{\jobname.#1}%
\endgroup%
}%
{}%
\LWR@traceinfo{LWR@myshorttoc: done}%
}
```

`\LWR@subtableofcontents` {⟨*toc/lof/lot*⟩} {⟨*sectionstarname*⟩}

Places a TOC/LOF/LOT at the current position.

```
\NewDocumentCommand{\LWR@subtableofcontents}{m m}{%
```

Closes previous levels:

```
\@ifundefined{chapter}
{\LWR@closeprevious{\LWR@depthsection}}
{\LWR@closeprevious{\LWR@depthchapter}}
```

Prints any pending footnotes so that they appear above the potentially large TOC:

```
\LWR@printpendingfootnotes
```

Place the list into its own chapter (if defined) or section:

```
\@ifundefined{chapter}{\section*{#2}}{\chapter*{#2}}
```

Create a new HTML `nav` containing the TOC/LOF/LOT:

```
\LWR@htmlelementclass{nav}{#1}
```

Create the actual list:

```
\LWR@myshorttoc{#1}
```

Close the `nav`:

```
\LWR@htmlelementclassend{nav}{#1}
}
```

`\@starttoc` {⟨*ext*⟩}

Patch `\@starttoc` to encapsulate the TOC inside HTML tags:

```
\let\LWR@orig@starttoc\@starttoc

\renewcommand{\@starttoc}[1]{
\LWR@htmlelementclass{nav}{#1}
\LWR@orig@starttoc{#1}
\LWR@htmlelementclassend{nav}{#1}
}
```

Bool `LWR@copiedsidetoc` Used to only copy the TOC file to the sidetoc a single time.

(listings and perhaps other packages would re-use `\tableofcontents` for their own purposes, causing the sidetoc to be copied more than once, and thus end up empty.)

```
\newbool{LWR@copiedsidetoc}
\boolfalse{LWR@copiedsidetoc}
```

`\tableofcontents` Patch `\tableofcontents`, etc. to print footnotes first. newfloat uses `\listoffigures` for all future float types.

```
\AtBeginDocument{
```

```
\let\LWR@origtableofcontents\tableofcontents

\renewcommand*{\tableofcontents}{%
```

Do not print the table of contents if formatting for a word processor, which will presumably auto-generate its own updated table of contents:

```
\ifboolexpr{bool{FormatWP} and bool{WPMarkTOC}}{

=== table of contents ===

}
{
```

Copy the `.toc` file to `.sidetoc` for printing the sideTOC. The original `.toc` file is renewed when `\tableofcontents` is finished.

```
    \ifbool{LWR@copiedsidetoc}{}{%
        \LWR@copyfile{\jobname.toc}{\jobname.sidetoc}%
        \booltrue{LWR@copiedsidetoc}%
    }%
    \LWR@printpendingfootnotes
    \LWR@origtableofcontents
}
}% \tableofcontents
}% AtBeginDocument
```

`\listoffigures`

```
\let\LWR@origlistoffigures\listoffigures

\renewcommand*{\listoffigures}{
\ifboolexpr{bool{FormatWP} and bool{WPMarkLOFT}}{

=== list of figures ===

}
{
    \LWR@printpendingfootnotes
    \LWR@origlistoffigures
}
}
```

`\listoftables`

```
\let\LWR@origlistoftables\listoftables

\renewcommand*{\listoftables}{
```

```
\ifboolexpr{bool{FormatWP} and bool{WPMarkLOFT}}{
=== list of tables ===
}
{
    \LWR@printpendingfootnotes
    \LWR@origlistoftables
}
}
```

73.2 High-level TOC commands

`\listof` {⟨*type*⟩} {⟨*title*⟩}

Emulate the `\listof` command from the float package (section 214). Used to create lists of custom float types. Also used to redefine the standard LaTeX `\listoffigures` and `\listoftables` commands.

```
\NewDocumentCommand{\listof}{m +m}{%
\@ifundefined{l@#1}{%
    \csdef{l@#1}##1##2{\hypertocfloat{1}{#1}{\@nameuse{ext@#1}}{##1}{##2}}%
}{}%
\LWR@subtableofcontents{\@nameuse{ext@#1}}{#2}
\expandafter\newwrite\csname tf@\csname ext@#1\endcsname\endcsname
\immediate\openout \csname tf@\csname ext@#1\endcsname\endcsname
    \jobname.\@nameuse{ext@#1}\relax
}
```

73.3 Side TOC

The "side TOC" is a table-of-contents positioned to the side.

It may be renamed by redefining `\sidetocname`, and may contain paragraphs.

CSS may be used to format the sideTOC:

CSS related to sideTOC:

`nav.sidetoc`: The entire sideTOC.

`div.sidetoctitle`: The title.

`div.sidetoccontents`: The table of contents.

```
\end{warpHTML}
```

for HTML & PRINT:

```
\begin{warpall}
```

Ctr `SideTOCDepth` Controls how deep the side-TOC gets. Use a standard LaTeX section level similar to `tocdepth`.

```
\newcounter{SideTOCDepth}
\setcounter{SideTOCDepth}{1}
```

`\sidetocname` Holds the default name for the sideTOC.

```
\newcommand{\sidetocname}{Contents}
```

```
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

`\LWR@sidetoc` Creates the actual side-TOC.

```
\newcommand*{\LWR@sidetoc}{
\LWR@forcenewpage
\LWR@stoppars

```

The entire sideTOC is placed into a `nav` of class `sidetoc`.

```
\LWR@htmlelementclass{nav}{sidetoc}

\setcounter{tocdepth}{\value{SideTOCDepth}}

```

The title is placed into a `<div>` of class `sidetoctitle`, and may contain paragraphs.

```
\begin{BlockClass}{sidetoctitle}
\sidetocname
\end{BlockClass}
```

The table of contents is placed into a `<div>` of class `sidetoccontents`.

```
\begin{BlockClass}{sidetoccontents}
\LinkHome

\LWR@myshorttoc{sidetoc}
\end{BlockClass}
\LWR@htmlelementclassend{nav}{sidetoc}
}
```

73.4 Low-level TOC line formatting

\numberline {⟨*number*⟩}

(Called from each line in the `.aux`, `.lof` files.)

Record this section number for further use:

```
\newcommand*{\LWR@numberline}[1]{%
\LWR@sectionnumber{#1}\quad%
}

\LetLtxMacro\numberline\LWR@numberline
```

\hypertoc {⟨*1: depth*⟩} {⟨*2: type*⟩} {⟨*3: name*⟩} {⟨*4: page*⟩}

Called by `\l@section`, etc. to create a hyperlink to a section.

The `autopage` label is always created just after the section opens.

#1 is depth

#2 is `section`, `subsection`, etc.

#3 the text of the caption

#4 page number

```
\NewDocumentCommand{\hypertoc}{m m +m m}{%
\LWR@traceinfo{hypertoc !#1!#2!#3!#4!}%
```

Respond to `tocdepth`:

```
\ifthenelse{\cnttest{#1}{<=}{\value{tocdepth}}}{%
    \LWR@startpars%
```

Create an HTML link to filename#autosec-(page), with the name, of the given HTML class.

```
    \LWR@subhyperrefclass{%
        \LWR@htmlrefsectionfilename{autopage-#4}\LWR@origpound\LWR@print@mbox{autosec-#4}%
    }{#3}{toc#2}%
    \LWR@stoppars%
}%
{}%
\LWR@traceinfo{hypertoc done}%
}
```

Ctr `lofdepth` TOC depth for figures.

```
\@ifclassloaded{memoir}{}{
\newcounter{lofdepth}
\setcounter{lofdepth}{1}
}
```

Ctr `lotdepth` TOC depth for tables.

```
\@ifclassloaded{memoir}{}{
\newcounter{lotdepth}
\setcounter{lotdepth}{1}
}
```

`\hypertocfloat` {⟨*1: depth*⟩} {⟨*2: type*⟩} {⟨*3: ext of parent*⟩} {⟨*4: caption*⟩} {⟨*5: page*⟩}

#1 is depth

#2 is `figure`, `table`, etc.

#3 is `lof`, `lot`, of the parent.

#4 the text of the caption

#5 page number

```
\newcommand{\hypertocfloat}[5]{%
\LWR@startpars
```

If some float-creation package has not yet defined the float type's `lofdepth` counter, etc, define it here:

```
\@ifundefined{c@#3depth}{%
\newcounter{#3depth}%
\setcounter{#3depth}{1}%
}{}%
```

Respond to `lofdepth`, etc.:

```
\LWR@traceinfo{hypertocfloat depth is #1 #3depth is \arabic{#3depth}}%
\ifthenelse{\cnttest{#1}{<=}{\arabic{#3depth}}}{%
    \LWR@startpars%
```

Create an HTML link to filename#autoid-(float number), with text of the caption, of the given HTML class.

```
    \LWR@subhyperrefclass{%
    \LWR@htmlrefsectionfilename{autopage-\arabic{LWR@nextautopage}}%
    \LWR@origpound\LWR@print@mbox{autoid-\arabic{LWR@nextautoid}}}%
    {#4}{toc#2}%
    \LWR@stoppars%
}{}%
}
```

Automatically called by `\contentsline`:

`\l@part` {⟨*name*⟩} {⟨*page*⟩}

Uses `\DeclareDocumentCommand` in case the class does not happen to have a `\part`.

```
\DeclareDocumentCommand{\l@part}{m m}{\hypertoc{-1}{part}{#1}{#2}}
```

`\l@chapter` {⟨*name*⟩} {⟨*page*⟩}

Uses `\DeclareDocumentCommand` in case the class does not happen to have a `\chapter`.

```
\@ifundefined{chapter}
{}
{
\DeclareDocumentCommand{\l@chapter}{m m}
    {\hypertoc{0}{chapter}{#1}{#2}}
}
```

`\l@section` {⟨*name*⟩} {⟨*page*⟩}

```
\renewcommand{\l@section}[2]{\hypertoc{1}{section}{#1}{#2}}
```

`\l@subsection` {⟨*name*⟩} {⟨*page*⟩}

```
\renewcommand{\l@subsection}[2]{\hypertoc{2}{subsection}{#1}{#2}}
```

`\l@subsubsection` {⟨*name*⟩} {⟨*page*⟩}

```
\renewcommand{\l@subsubsection}[2]{\hypertoc{3}{subsubsection}{#1}{#2}}
```

`\l@paragraph` {⟨*name*⟩} {⟨*page*⟩}

```
\renewcommand{\l@paragraph}[2]{\hypertoc{4}{paragraph}{#1}{#2}}
```

\l@subparagraph {⟨*name*⟩} {⟨*page*⟩}

```
\renewcommand{\l@subparagraph}[2]{\hypertoc{5}{subparagraph}{#1}{#2}}
```

\l@figure {⟨*name*⟩} {⟨*page*⟩}

```
\renewcommand{\l@figure}[2]{\hypertocfloat{1}{figure}{lof}{#1}{#2}}
```

\l@table {⟨*name*⟩} {⟨*page*⟩}

```
\renewcommand{\l@table}[2]{\hypertocfloat{1}{table}{lot}{#1}{#2}}

\end{warpHTML}
```

74 Index and glossary

See:
http://tex.stackexchange.com/questions/187038/how-to-mention-section-number-in-index-created-by-imakeidx

Index links are tracked by the counter `LWR@autoindex`. This counter is used to create a label for each index entry, and a reference to this label for each entry in the index listing. This method allows each index entry to link directly to its exact position in the document.

for HTML output:

```
\begin{warpHTML}

\newcounter{LWR@autoindex}
\setcounter{LWR@autoindex}{0}

\newcounter{LWR@autoglossary}
\setcounter{LWR@autoglossary}{0}
```

Env `theindex`

```
\@ifundefined{chapter}
{\newcommand*{\LWR@indexsection}[1]{\section*{#1}}}
{\newcommand*{\LWR@indexsection}[1]{\chapter*{#1}}}

\AtBeginDocument{
\renewenvironment*{theindex}{%
    \LWR@indexsection{\indexname}%
    \let\item\LWR@indexitem%
```

```
8556     \let\subitem\LWR@indexsubitem%
8557     \let\subsubitem\LWR@indexsubsubitem%
8558 }{}
8559 }% AtBeginDocument
```

`\LWR@indexitem` `[`⟨*index key*⟩`]` The optional argument is added to support repeatindex.

```
8560 \newcommand{\LWR@indexitem}[1][\@empty]{
8561
8562 \InlineClass{indexitem}{}#1%
8563 }
```

`\LWR@indexsubitem`

```
8564 \newcommand{\LWR@indexsubitem}{
8565
8566 \InlineClass{indexsubitem}{}
8567 }
```

`\LWR@indexsubsubitem`

```
8568 \newcommand{\LWR@indexsubsubitem}{
8569
8570 \InlineClass{indexsubsubitem}{}
8571 }
```

`\@wrindex` `{`⟨*term*⟩`}` Redefined to write the `LWR@autoindex` counter instead of `page`.

```
8572 \def\LWR@wrindex#1{%
8573 \addtocounter{LWR@autoindex}{1}%
8574 \LWR@new@label{LWRindex-\arabic{LWR@autoindex}}%
8575 \protected@write\@indexfile{}%
8576 {\string\indexentry{#1}{\arabic{LWR@autoindex}}}%
8577 \endgroup
8578 \@esphack}
8579
8580 \AtBeginDocument{
8581 \let\@wrindex\LWR@wrindex
8582 }
```

`\@wrglossary` `{`⟨*term*⟩`}` Redefined to write the `LWR@latestautopage` counter instead of `page`.

```
8583 \def\@wrglossary#1{%
8584 \addtocounter{LWR@autoglossary}{1}%
8585 \LWR@new@label{LWRglossary-\theLWR@autoglossary}%
8586 \protected@write\@glossaryfile{}%
```

```
{\string\glossaryentry{#1}{\theLWR@autoglossary}}%
\endgroup
\@esphack}
```

`\LWR@indexnameref` {⟨*LWR@autoindex*⟩}

Creates a hyperlink based on the given entry's autoindex.

```
\newcommand*{\LWR@indexnameref}[1]{\nameref{LWRindex-#1}}
```

`\LWR@doindexentry` {⟨*LWR@autoindex, or macros.*⟩}

Creates a hyperlink, or handles `\see`, `\textbf`, etc.

```
\newrobustcmd{\LWR@doindexentry}[1]{%
\IfInteger{#1}%
    {\LWR@indexnameref{#1}}%
    {#1}%
}
```

`\LWR@hyperindexrefnullified`

Handles macros commonly seen inside an `\index` entry.

To handle additional macros:

```
\appto\LWR@hyperindexrefnullified{...}
```

```
\newcommand{\LWR@hyperindexrefnullified}{%
\renewrobustcmd{\emph}[1]{\LWR@HTML@emph{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\textbf}[1]{\LWR@HTML@textbf{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\textrm}[1]{\LWR@HTML@textrm{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\textsf}[1]{\LWR@HTML@textsf{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\texttt}[1]{\LWR@HTML@texttt{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\textup}[1]{\LWR@HTML@textup{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\textsc}[1]{\LWR@HTML@textsc{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\textit}[1]{\LWR@HTML@textit{\LWR@doindexentry{##1}}}%
\renewrobustcmd{\textsl}[1]{\LWR@HTML@textsl{\LWR@doindexentry{##1}}}%
}
```

`\hyperindexref` {⟨*LWR@autoindex*⟩}

`\hyperindexref{LWR@autoindex}` is inserted into `*.ind` by the makeindex style file `lwarp.ist` or the xindy style file `lwarp.xdy`.

```
\newcommand{\hyperindexref}[1]{%
\IfInteger{#1}%
    {\LWR@indexnameref{#1}}%
```

```
    {%
        \begingroup%
        \LWR@hyperindexrefnullified
        #1%
        \endgroup%
    }%
}

\end{warpHTML}
```

for PRINT output: A null command for print mode, in case hyperref was not used:

```
\begin{warpprint}
\newcommand{\hyperindexref}[1]{#1}
\end{warpprint}
```

for HTML & PRINT: For the glossaries package, try to prevent an error where `\glo@name` was not found:

```
\begin{warpall}
\providecommand{\glo@name}{}
\end{warpall}
```

75 Bibliography presentation

for HTML output:

```
\begin{warpHTML}
```

`\bibliography` {⟨*filenames*⟩}

Modified to use the base jobname instead of the `_html` jobname.

```
\def\bibliography#1{%
    \if@filesw
    \immediate\write\@auxout{\string\bibdata{#1}}%
    \fi
%     \@input@{\jobname.bbl}% original
    \begingroup%
    \@input@{\BaseJobname.bbl}% lwarp
    \endgroup%
}
```

`\@biblabel` {⟨*text-refnumber*⟩}

```
\renewcommand{\@biblabel}[1]{[#1]\quad}
```

Env thebibliography To emphasize document titles in the bibliography, the following redefines \em inside thebibliography to gather everything until the next closing brace, then display these tokens with \textit.

Adapted from embracedef.sty, which is by TAKAYUKI YATO*:*
https://gist.github.com/zr-tex8r/b72555e3e7ad2f0a37f1

```
\AtBeginDocument{
\AtBeginEnvironment{thebibliography}{
\providecommand*{\LWR@newem}[1]{\textit{#1}}

\renewrobustcmd{\em}{%
  \begingroup
    \gdef\LWR@em@after{\LWR@em@finish\LWR@newem}%
    \afterassignment\LWR@em@after
    \toks@\bgroup
}

\def\LWR@em@finish#1{%
    \xdef\LWR@em@after{\noexpand#1{\the\toks@}}%
  \endgroup
  \LWR@em@after\egroup
}
}% \AtBeginEnvironment{thebibliography}
}% \AtBeginDocument

\end{warpHTML}
```

76 Restoring original formatting

\LWR@restoreorigformatting Used to temporarily restore the print-mode meaning of a number of formatting, graphics, and symbols-related macros while generating SVG math or a lateximage.

Must be used inside a group.

Sets \LWR@formatting to print until the end of the group.

A number of packages will \appto additional actions to this macro.

Various packages add to this macro using \appto.

for HTML output:

```
\begin{warpHTML}

\newcommand*{\LWR@restoreorigformatting}{%
\LWR@traceinfo{LWR@restoreorigformatting}%
```

Numerous macros change their print/HTML meaning depending on \LWR@formatting:

```
\renewcommand*{\LWR@formatting}{print}%
\linespread{1}%

\let\par\LWR@origpar%

\LWR@select@print@hspace%


\LetLtxMacro\hfil\LWR@orighfil%
\let\hss\LWR@orighss%
\let\llap\LWR@origllap%
\let\rlap\LWR@origrlap%
\let\hfilneg\LWR@orighfilneg%

\let\,\LWR@origcomma% disable HTML short unbreakable space
\let\thinspace\LWR@origthinspace% disable HTML short unbreakable space
\let\negthinspace\LWR@orignegthinspace% disable HTML negative short unbreakable space
\let\textellipsis\LWR@origtextellipsis%
\let\textless\LWR@origtextless%
\let\textgreater\LWR@origtextgreater%
\LetLtxMacro\rmfamily\LWR@origrmfamily%
\LetLtxMacro\sffamily\LWR@origsffamily%
\LetLtxMacro\ttfamily\LWR@origttfamily%
\LetLtxMacro\bfseries\LWR@origbfseries%
\LetLtxMacro\mdseries\LWR@origmdseries%
\LetLtxMacro\upshape\LWR@origupshape%
\LetLtxMacro\slshape\LWR@origslshape%
\LetLtxMacro\scshape\LWR@origscshape%
\LetLtxMacro\itshape\LWR@origitshape%
\LetLtxMacro\em\LWR@origem%
\LetLtxMacro\normalfont\LWR@orignormalfont%
\let\sp\LWR@origsp%
\let\sb\LWR@origsb%
\LetLtxMacro\textsuperscript\LWR@origtextsuperscript%
\LetLtxMacro\@textsuperscript\LWR@orig@textsuperscript%
\LetLtxMacro\textsubscript\LWR@origtextsubscript%
\LetLtxMacro\@textsubscript\LWR@orig@textsubscript%
\LetLtxMacro\underline\LWR@origunderline%
\let~\LWR@origtilde%
\let\enskip\LWR@origenskip%
\let\quad\LWR@origquad%
\let\qquad\LWR@origqquad%
\LetLtxMacro\tabular\LWR@origtabular%
\LetLtxMacro\endtabular\LWR@origendtabular%
\LetLtxMacro\noalign\LWR@orignoalign%
\LetLtxMacro\hline\LWR@orighline%
\let\newline\LWR@orignewline%
```

```
\LetLtxMacro\includegraphics\LWR@origincludegraphics%
\let\TeX\LWR@origTeX%
\let\LaTeX\LWR@origLaTeX%
\let\LaTeXe\LWR@origLaTeXe%
\renewcommand*{\Xe}{X\textsubscript{E}}%

\LetLtxMacro\@ensuredmath\LWR@origensuredmath%
%
\LWR@restoreorigaccents%
\LWR@restoreoriglists%
%
\LWR@FBcancel%
}

\end{warpHTML}
```

77 Math

77.1 Limitations

77.1.1 Rendering tradeoffs

Math rendering — Math may be rendered as SVG graphics or using the MathJax JavaScript display engine.

SVG files — Rendering math as images creates a new SVG file for each expression, except that an MD5 hash is used to combine identical duplicates of the same inline math expression into a single file, which must be converted to SVG only once. Display math is still handled as individual files, since it may contain labels or references which are likely to change.

SVG inline — The SVG images are currently stored separately, but they could be encoded in-line directly into the HTML document. This may reduce the number of files and potentially speed loading the images, but slows the display of the rest of the document before the images are loaded.

PNG files — Others LaTeX-to-HTML converters have used PNG files, sometimes pre-scaled for print resolution but displayed on-screen at a scaled down size. This allows high-quality print output at the expense of larger files, but SVG files are the preferred approach for scalable graphics.

MathML — Conversion to MathML might be a better approach, among other things allowing a more compact representation of math than SVG drawings. Problems with MathML

include limited browser support and some issues with the fine control of the appearance of the result. Also see section 11 regarding EPUB output with MATHJAX.

77.1.2 SVG option

SVG math option

For SVG math, math is rendered as usual by LATEX into the initial PDF file using the current font[18], then is captured from the PDF and converted to SVG graphics via a number of utility programs. The SVG format is a scalable-vector web format, so math may be typeset by LATEX with its fine control and precision, then displayed or printed at any size, depending on (sometimes broken) browser support. An HTML `alt` attribute carries the LATEX code which generated the math, allowing copy/paste of the LATEX math expression into other documents.

SVG image font size

For the `lateximage` environment, the size of the math and text used in the SVG image may be adjusted by setting `\LateximageFontSizeName` to a font size name — *without the backslash*, which defaults to:

```
\renewcommand{\LateximageFontSizeName}{normalsize}
```

For inline SVG math, font size is instead controlled by `\LateximageFontScale`, which defaults to:

```
\newcommand*{\LateximageFontScale}{.75}
```

SVG math copy/paste

For SVG math, text copy/paste from the HTML `<alt>` tags lists the equation number or tag for single equations, along with the LATEX code for the math expression. For $\mathcal{AMS}$ environments with multiple numbers in the same environment, only the first and last is copy/pasted, as a range. No tags are listed inside a starred $\mathcal{AMS}$ environment, although the `\tag` macro will still appear inside the LATEX math expression.

⚠ SVG math in TEX boxes

SVG math does not work inside TEX boxes, since a `\newpage` is required before and after each image.

77.1.3 MATHJAX option

MATHJAX math option

Prog MathJax

The popular MATHJAX alternative (`mathjax.org`) may be used to display math.

When MATHJAX is enabled, math is rendered twice:

1. As regular LATEX PDF output placed inside an HTML comment, allowing equation numbering and cross referencing to be almost entirely under the control of LATEX, and

[18] See section 448 regarding fonts and fractions.

2. As detokenized printed LaTeX commands placed directly into the HTML output for interpretation by the MathJax display scripts. An additional script is used to pre-set the equation number format and value according to the current LaTeX values, and the MathJax cross-referencing system is ignored in favor of the LaTeX internal system, seamlessly integrating with the rest of the LaTeX code.

77.1.4 Customizing MathJax

MathJax does not have preexisting support every possible math function. Additional MathJax function definitions may be defined. These will be declared at the start of each HTML page, and thus will have a global effect.

Examples:

```
\CustomizeMathJax{
    \newcommand{\expval}[1]{\langle#1\rangle}
    \newcommand{\abs}[1]{\lvert#1\rvert}
}
\CustomizeMathJax{\newcommand{\arsinh}{\text{arsinh}}}
\CustomizeMathJax{\newcommand{\arcosh}{\text{arcosh}}}
\CustomizeMathJax{\newcommand{\NN}{\mathbb{N}}}
```

77.1.5 MathJax limitations

MathJax limitations

Prog MathJax

Limitations when using MathJax include:

subequations

- MathJax itself does not support subequations. This may be improved by parsing the LaTeX math expression to manually insert tags, but this has not yet been done.

footnotes in math

- Footnotes inside equations are not yet supported while using MathJax.

lateximage

- Math appearing inside a lateximage, and therefore also inside a Ti*k*z or `picture` environment, is rendered as SVG math even if MathJax is used in the rest of the document.

siunitx

⚠ siunitx inside an equation

- Usage of siunitx inside a math equation is supported via a third-party MathJax extension. While inside a math expression, do not use `\SI` or `\si` inside `\text`, where it will be rendered as normal text.

  https://github.com/burnpanck/MathJax-siunitx

  Also see section 9.6.10.

tabbing

- A `tabbing` environment is emulated using an HTML `<pre>`.While MathJax is

enabled inside `tabbing`, the browser may not correctly render the horizontal alignment of the math and text following after on the same line.

⚠ other macros and packages

- Other math-related macros and packages are not supported by MathJax, including `\ensuremath` and bigdelim, along with occasionally-used macros such as `\relax`. lwarp emulates footnotes, units, and nicefrac for MathJax.

77.1.6 Catcode changes

preamble macros with math

The math shift character `$` is not set for HTML output until after the preamble. Macros defined in the preamble which contain `$` must be enclosed between `\StartDefiningMath` and `\StopDefiningMath` to temporarily change to the HTML meaning of `$`:

```
\StartDefiningMath
\newcommand{...}
\StopDefiningMath
```

As an alternative, use `\(` and `\)` instead of `$`, in which case `\StartDefiningMath` and `\StopDefiningMath` are not necessary.

If a package defines macros using `$`, it may be nessary to use `\StartDefiningMath` and `\StopDefiningMath` before and after loading the package.

77.1.7 Complicated inline math objects

`\inlinemathnormal` `\inlinemathother`

changing contents complicated `alt` tag

An inline math expression is usually converted to a reusable hashed SVG math image, or a MathJax expression. The hash or expression depends on the contents of the math expression. In most cases this math expression is static, such as `$x+1$`, so the image can be reused for multiples instances of the same expression. In some cases, the math expression includes a counter or other object which may change between uses. Another problem is complicated contents which do not expand well in an `alt` tag. The macro `\inlinemathother` may be used before a dynamic math expression, and `\inlinemathnormal` after. Doing so tells lwarp to use an unhashed SVG math image, even if MathJax is in use. See section 43.

77.1.8 Complicated display math objects

`\displaymathnormal`

By default, or when selecting `\displaymathnormal`, MathJax math display environments print their contents as text into HTML, and SVG display math environments render their contents as SVG images and use their contents as the `alt` tag of HTML output. To do so, the contents are loaded into a macro for reuse. In some cases, such as complicated Ti*k*z pictures, compilation will fail.

\displaymathother
MathJax unsupported
complicated alt tag

When selecting \displaymathother, it is assumed that the contents are more complicated than "pure" math. An example is an elaborate Ti*k*z picture, which will not render in MathJax and will not make sense as an HTML alt tag. In this mode, MathJax is turned off, math display environments become SVG images, even if MathJax is selected, and the HTML alt tags become simple messages. The contents are internally processed as an environment instead of a macro argument, so complicated objects such as Ti*k*z pictures are more likely to compile successfully.

77.2 HTML alt tag names

Redefinable names for the HTML alt tags, for translation according to the reader's native language.

for HTML & PRINT:

```
\begin{warpall}
```

\mathimagename
Default: "math image"

The HTML alt tag for an SVG math image.

```
\newcommand*{\mathimagename}{math image}
```

\packagediagramname
Default: "diagram"

Appended to the lateximage HTML alt tag for the images generated by many packages.

```
\newcommand*{\packagediagramname}{diagram}
```

```
\end{warpall}
```

77.3 Inline and display math

for HTML output:

```
\begin{warpHTML}
```

Ctr LWR@externalfilecnt

Counter for the external files which are generated and then referenced from the HTML:

```
\newcounter{LWR@externalfilecnt}
```

Bool
LWR@indisplaymathimage

True if processing display math for SVG output. Inside a lateximage, display math is only set to print-mode output if LWR@indisplaymathimage is false. Used to avoid nullifying display math before it has been completed.

```
\newbool{LWR@indisplaymathimage}
```

\$ Plain dollar signs appearing in the HTML output may be interpreted by MathJax to be math shifts. For a plain text dollar \$, use an HTML entity to avoid it being interpreted by MathJax, unless are inside a lateximage, in which case it will not be seen by MathJax.

```
\let\LWR@origtextdollar\$

\renewcommand*{\$}{%
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
{\LWR@origtextdollar}%
{\HTMLentity{dollar}}%
}
```

File lwarp_baseline_marker.png
File lwarp_baseline_marker.eps

A marker to be used to help *pdfcrop* identify the inline math baseline and width. If either graphicx or graphics is loaded, this marker is placed at the lower left and lower right corners of the inline math. *pdfcrop* is then able to identify the width of the image, and also the height of an image such as a horizontal dash which does not otherwise touch the baseline.

A marker with alpha or opacity of 0% is not registered by *pdfcrop*, so the marker is a small square block of 1% alpha, which seems to work while still being effectively invisible in the final SVG image.

If graphicx is loaded, this marker is sized as a tiny 1 sp square. If graphics is loaded, this marker is used at its default size of around .25 pt. If neither graphics package is loaded, the marker is replaced by a 10 sp horizontal space, and there is no assistance for determining baseline or width of the inline math image. The best results are obtained when using graphicx.

\LWR@addbaselinemarker Places a small marker in an SVG inline image. If graphics or graphicx are loaded, the marker is a mostly transparent image. If neither is loaded, no marker is used.

```
\AtBeginDocument{

\ifpdf
    \newcommand*{\LWR@baselinename}{lwarp_baseline_marker.png}
\else
    \ifXeTeX
        \newcommand*{\LWR@baselinename}{lwarp_baseline_marker.png}
    \else
        \newcommand*{\LWR@baselinename}{lwarp_baseline_marker.eps}
    \fi
\fi

\IfFileExists{\LWR@baselinename}%
{
    \@ifpackageloaded{graphicx}{
        \newcommand*{\LWR@addbaselinemarker}{%
```

```
            \LWR@origincludegraphics{\LWR@baselinename}%
        }
    }{
        \@ifpackageloaded{graphics}{
            \newcommand*{\LWR@addbaselinemarker}{%
                \LWR@origincludegraphics{\LWR@baselinename}%
            }
        }{
            \PackageWarning{lwarp}{Load graphicx or graphics
                for improved SVG math baselines,}
            \newcommand*{\LWR@addbaselinemarker}{}
        }
    }
}{% lwarp_baseline_marker.png or .eps is not present
    \PackageWarning{lwarp}{File \LWR@baselinename\space is not installed alongside
        the lwarp-*.sty files, so SVG math baselines may not be accurate,}
    \newcommand*{\LWR@addbaselinemarker}{}
}

}% AtBeginDocument
```

`\LWR@subsingledollar` * {⟨*2: alt text*⟩} {⟨*3: add'l hashing*⟩} {⟨*4: math expression*⟩}

For inline math. Uses MathJax, or for SVG math the image is measured and ajusted to the baseline of the HTML output, and placed inside a `lateximage`.

image filename hashing

If starred, a hashed filename is used. If so, the hash is based on the `alt` tag and also the additional hashing argument.

This may be used to provide an expression with a simple `alt` tag but also enough additional information to provide a unique hash.

An example is when the expression is a complicated TEX expression, which would not copy/paste well. A simplified tag may be used, while the complicated expression is duplicated in the additional hashing argument.

Another example is when the expression is simple, but the image depends on options. These options may be decoded into text form and included in the additional hashing argument in order to make the hash unique according to the set of options, even if the simple `alt` tag is still the same.

```
\newlength{\LWR@singledollarwidth}
\newlength{\LWR@singledollarheight}
\newlength{\LWR@singledollardepth}

\newsavebox{\LWR@singledollarbox}

\NewDocumentCommand{\LWR@subsingledollar}{s m m m}{%
\LWR@traceinfo{LWR@subsingledollar}%
```

```
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
{%
\LWR@traceinfo{LWR@subsingledollar: already in a lateximage}%
    #4% contents
}%
{% not in a lateximage
\begingroup%
```

MathJax cannot parse the often complicated TEX expressions which appear in the various uses of `\ensuredmath`. `\ensuremath` forces the `alt` tag to "`(math image)`", as translated according to `\mathimagename`. If this is the case, force the use of a `lateximage` even if MathJax. Likewise for siunitx if `parse-numbers=false`.

If MathJax, or if formatting math for a word processor, and not `\ensuredmath`, and not a dynamic math expression, print the math expression:

```
\ifboolexpr{%
    (
        bool{mathjax} or
        ( bool{FormatWP} and bool{WPMarkMath} )
    ) and
    ( not test { \ifstrequal {#2} {(\mathimagename)} } ) and % from \ensuredmath
    ( not bool{LWR@dynamicmath} )
}%
```

For MATHJAX, print the math between `\(` and `\)`:

```
{%
    \LWR@traceinfo{LWR@subsingledollar: Mathjax}%
    {\textbackslash(\LWR@HTMLsanitize{#4}\textbackslash)}%
}% mathjax
```

For SVG, print the math inside a `lateximage`, with an `<alt>` tag of the LATEX code, and a CSS style to control the baseline adjustment.

```
{% not mathjax
\LWR@traceinfo{LWR@subsingledollar: NOT mathjax, or is ensuremath, or is dynamic}%
```

Measure the depth, width, and height of the math image:

```
    \begingroup%
```

Temporarily disable formatting while measuring the image parameters:

```
    \LWR@restoreorigformatting%
    \RenewDocumentEnvironment{lateximage}{s o o o}{}{}% inside group
    \LWR@print@normalsize%
```

Temporarily set font for the HTML PDF output:

```
    \LWR@traceinfo{Using font family \LWR@f@family}%
    \@nameuse{LWR@orig\LWR@f@family family}%
    \LWR@traceinfo{Using font series \LWR@f@series}%
    \@nameuse{LWR@orig\LWR@f@series series}%
    \LWR@traceinfo{Using font shape \LWR@f@shape}%
    \@nameuse{LWR@orig\LWR@f@shape shape}%
```

`lateximagedepth` must be nested to avoid generating paragraph tags. $\mathcal{AMS}$ math modifies the `\text` macro such that `\addtocounter` does not always occur as expected. Lower-level code is used instead.

```
    \global\advance\c@LWR@lateximagedepth 1\relax%
```

Typeset and save the contents, depending on how they were generated:

SVG math: `\LWR@origensuredmath` is part of argument #4.

SVG math `\ensuremath`: `\LWR@origensuredmath` is part of argument #4.

SVG dynamic math: `\LWR@origensuredmath` is part of argument #4.

Mathjax: Argument #4 is the contents of the math expression without `\LWR@origensuredmath`. This case is handled above.

Mathjax `\ensuremath`: `\LWR@origensuredmath` is part of argument #4.

Mathjax dynamic math: Argument #4 is the contents of the math expression without `\LWR@origensuredmath`, so `\LWR@origensuredmath` is added below.

`\ifmmode`: Included "just in case".

```
    \ifmmode%
        \global\sbox{\LWR@singledollarbox}{#4}%
    \else%
        \ifbool{LWR@dynamicmath}{%
            \ifbool{mathjax}{%
                \global\sbox{\LWR@singledollarbox}{\LWR@origensuredmath{#4}}%
            }{%
                \global\sbox{\LWR@singledollarbox}{#4}%
            }%
        }{%
            \global\sbox{\LWR@singledollarbox}{#4}%
        }%
    \fi%
```

Add a small and almost transparent marker at the depth of the image.

A math minus sign has the same depth as a plus, even though it does not draw anything below the baseline. This means that *pdfcrop* would crop the image without depth. The marker below the baseline is seen by *pdfcrop* and preserves the depth.

```
    \global\sbox{\LWR@singledollarbox}{%
        \usebox{\LWR@singledollarbox}%
        \raisebox{-\dp\LWR@singledollarbox}{%
            \LWR@addbaselinemarker%
        }%
    }%
```

More low-level code to undo the counter change.

```
    \global\advance\c@LWR@lateximagedepth -1\relax% Due to AmS \text macro.
```

Measure the depth:

```
    \setlength{\LWR@singledollardepth}{%
        \LateximageFontScale\dp\LWR@singledollarbox%
    }%
```

Make the length a global change:

```
    \global\LWR@singledollardepth=\LWR@singledollardepth%
```

Likewise for width:

```
    \setlength{\LWR@singledollarwidth}{%
        \LateximageFontScale\wd\LWR@singledollarbox%
    }%
    \global\LWR@singledollarwidth=\LWR@singledollarwidth%
```

Likewise for total height:

```
    \setlength{\LWR@singledollarheight}{%
        \LateximageFontScale\ht\LWR@singledollarbox%
    }%
    \addtolength{\LWR@singledollarheight}{%
        \LateximageFontScale\dp\LWR@singledollarbox%
    }%
    \global\LWR@singledollarheight=\LWR@singledollarheight%

    \endgroup%
```

Set a style for the the height or width. The `em` unit is used so that the math scales according to the user's selected font size.

Start with the greater of the width or the height, biased towards the width:

```
    \ifdimgreater{\LWR@singledollarwidth}{.7\LWR@singledollarheight}{%
        \def\LWR@singledollarstyle{%
            width:\LWR@convertto{em}{\the\LWR@singledollarwidth} em%
        }%
    }{%
        \def\LWR@singledollarstyle{%
            height:\LWR@convertto{em}{\the\LWR@singledollarheight} em%
        }%
    }%
```

If a very narrow width, use the height.

```
    \ifdimless{\LWR@singledollarwidth}{.2em}%
    {%
        \def\LWR@singledollarstyle{%
            height:\LWR@convertto{em}{\the\LWR@singledollarheight} em%
        }%
    }%
    {}%
```

If very wide and short, use the width:

```
    \ifdimless{\LWR@singledollarheight}{.2em}%
    {%
        \def\LWR@singledollarstyle{%
            width:\LWR@convertto{em}{\the\LWR@singledollarwidth} em%
        }%
    }%
    {}%
```

If there is significant text depth, add the depth to the style.

```
    \ifdimgreater{\LWR@singledollardepth}{0.05ex}{%
        \def\LWR@singledollardepthstyle{%
            \ ; % extra space
            \LWR@print@mbox{%
                vertical-align:-\LWR@convertto{em}{\the\LWR@singledollardepth} em%
            } % extra space
        }%
    }{%
        \def\LWR@singledollardepthstyle{}%
    }%
```

Create the `lateximage` using the alternate tag and the computed size and depth. The star causes `lateximage` to use an MD5 hash as the filename. When hashing, also include the current font and color in the hash.

```
    \ifbool{LWR@dynamicmath}{%
        \LWR@traceinfo{subsingledollar: dynamic}%
        \begin{lateximage}% no hashing
            [(\mathimagename)]% alt tag
            []% no add'l hashing
            [\LWR@singledollarstyle \LWR@singledollardepthstyle]% CSS
    }{%
        \LWR@traceinfo{subsingledollar: static}%
        \IfValueTF{#1}{%
            \LWR@findcurrenttextcolor% sets \LWR@tempcolor
            \begin{lateximage}*% use hashing
                [#2]% alt
                [% addl' hashing
                    #3%
                    FM\LWR@f@family%
                    SR\LWR@f@series%
                    SH\LWR@f@shape%
                    CL\LWR@tempcolor%
                ]%
                [\LWR@singledollarstyle \LWR@singledollardepthstyle]% CSS
        }{%
            \begin{lateximage}% no hashing
                [#2]% alt
                []% no add'l hashing
                [\LWR@singledollarstyle \LWR@singledollardepthstyle]% CSS
        }%
    }%
```

Place small and almost transparent markers on the baseline at the left and right edges of the image. These markers are seen by *pdfcrop*, and force vertically-centered objects such as a dash to be raised off the baseline in the cropped image, and also force the total width and left / right margins to be correct. (Except that in some fonts a character may exceed the bounding box, and thus may appear wider than expected when converted to an image.)

```
    \LWR@addbaselinemarker%
```

Typeset the contents:

```
    \usebox{\LWR@singledollarbox}%
```

The closing baseline marker:

```
    \LWR@addbaselinemarker%

    \end{lateximage}%
%
}% not mathjax
```

```
\endgroup%
}% not in a lateximage
\LWR@traceinfo{LWR@subsingledollar: done}%
}

\LetLtxMacro\LWR@origdollar$
\LetLtxMacro\LWR@secondorigdollar$% balance for editor syntax highlighting

\LetLtxMacro\LWR@origopenparen\(
\LetLtxMacro\LWR@origcloseparen\)
\LetLtxMacro\LWR@origopenbracket\[
\LetLtxMacro\LWR@origclosebracket\]
```

$ $$ Redefine the dollar sign to place math inside a `lateximage`, or use MathJax:

```
\begingroup
\catcode`\$=\active%
\protected\gdef${\@ifnextchar$\LWR@doubledollar\LWR@singledollar}%
```

Used by chemformula to escape single-dollar math:

```
\protected\gdef\LWR@newsingledollar{\@ifnextchar$\LWR@doubledollar\LWR@singledollar}%
```

\LWR@doubledollar Redefine the double dollar sign to place math inside a `lateximage`, or use MathJax:

```
\protected\gdef\LWR@doubledollar$#1$${%
```

If MathJax or formatting for a word processor, print the LaTeX expression:

```
\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
```

For MathJax, print the math between `\[` and `\]`:

```
{

    \textbackslash[%
    \LWR@HTMLsanitize{#1}%
    \textbackslash]

}% mathjax
```

For SVG, print the math inside a `lateximage`, with an `<alt>` tag of the LaTeX code:

```
{% not mathjax
    \begin{BlockClass}{displaymath}%
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
```

```
    \begin{lateximage}%
    [%
        \textbackslash{[} % extra space
        \LWR@HTMLsanitize{#1} % extra space
        \textbackslash{]}%
    ]%
    \LWR@origdollar\LWR@origdollar#1\LWR@origdollar\LWR@origdollar%
    \end{lateximage}%
    \end{BlockClass}%
}% not mathjax
}%
```

`\LWR@singledollar` {⟨*alt text*⟩} {⟨*math expression*⟩}

```
\protected\gdef\LWR@singledollar#1${%
\ifbool{mathjax}{%
    \LWR@subsingledollar*%
    {% alt tag
        \textbackslash( %
        \LWR@HTMLsanitize{#1} % extra space
        \textbackslash)%
    }%
    {singledollar}% add'l hashing
    {#1}% contents
}{% not mathjax
    \LWR@subsingledollar*%
    {% alt tag
        \textbackslash( %
        \LWR@HTMLsanitize{#1} % extra space
        \textbackslash)%
    }%
    {singledollar}% add'l hashing
    {\LWR@origensuredmath{#1}}% contents
}% not mathjax
}
```

`\(` `\[` Redefine to the above dollar macros.

```
\AtBeginDocument{
\protected\gdef\(#1\){$#1$}
\protected\gdef\[#1\]{$$#1$$}
}

\endgroup


\AtBeginDocument{
\LetLtxMacro\LWR@openbracketnormal\[
\LetLtxMacro\LWR@closebracketnormal\]
```

```
}
```

`\@ensuredmath` {⟨*expression*⟩}

If MathJax, a `lateximage` is used, since `\ensuremath` is often used for complex TEX expressions which MathJax may not render. If SVG math, a hashed file is used with a simple `alt` tag, but additional hashing provided by the contents.

```
\LetLtxMacro\LWR@origensuredmath\@ensuredmath

\renewcommand{\@ensuredmath}[1]{%
\ifbool{mathjax}{%
    \LWR@subsingledollar*{(\mathimagename)}{%
           \protect\LWR@HTMLsanitize{\detokenize\expandafter{#1}}%
    }{\relax%
        \LWR@origensuredmath{#1}%
    }%
}{% SVG math
```

If already inside a `lateximage` in math mode, continue as-is.

```
\ifmmode%
    \LWR@origensuredmath{#1}%
\else%
```

Create an inline math `lateximage` with a simple `alt` tag and additional hashing according to the contents.

```
    \ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
    {\LWR@origensuredmath{#1}}%
    {%
        \LWR@subsingledollar*{(\mathimagename)}{%
           \protect\LWR@HTMLsanitize{\detokenize\expandafter{#1}}%
        }{%
            \LWR@origensuredmath{#1}%
        }%
    }%
\fi%
}%
}
```

Remove the old `math` and `displaymath` environments:

```
\let\math\relax
\let\endmath\relax
\let\displaymath\relax
\let\enddisplaymath\relax
```

Env `math` Set math mode then typeset the body of what was between the begin/end. See the environ package for `\BODY`.

```
\NewEnviron{math}{\expandafter\(\BODY\)}
```

Env `LWR@displaymathnormal` Set math mode then typeset the body of what was between the begin/end. See the environ package for `\BODY`.

```
\NewEnviron{LWR@displaymathnormal}{\expandafter\[\BODY\]\@ignoretrue}
```

Set the default displaymath to the normal version:

```
\LetLtxMacro\[\LWR@openbracketnormal%
\LetLtxMacro\]\LWR@closebracketnormal%
\LetLtxMacro\displaymath\LWR@displaymathnormal%
\LetLtxMacro\enddisplaymath\endLWR@displaymathnormal%
```

Env `LWR@displaymathother` A version of `displaymath` which can handle complicated objects, but does not supply MathJax or HTML `alt` tags.

```
\newenvironment{LWR@displaymathother}
{%
    \begin{BlockClass}{displaymath}%
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}%
    [(display math)]%
    \LWR@origdollar\LWR@origdollar%
}
{%
    \LWR@origdollar\LWR@origdollar%
    \end{lateximage}%
    \end{BlockClass}%
}
```

Env `LWR@equationother` A version of `displaymath` which can handle complicated objects, but does not supply MathJax or HTML `alt` tags.

```
\newenvironment{LWR@equationother}
{%
    \begin{BlockClass}{displaymathnumbered}%
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}%
    [(display math)]%
    \LWR@origequation%
```

```
}
{%
    \LWR@origendequation%
    \end{lateximage}%
    \end{BlockClass}%
}
```

77.4 MathJax support

Ctr `LWR@nextequation` Used to add one to compute the next equation number.

```
\newcounter{LWR@nextequation}
```

`\LWR@syncmathjax` Sets the MathJax equation format and number for the following equations.

These MathJax commands are printed inside "`\(`" and "`\)`" characters. They are printed to HTML output, not interpreted by LaTeX.

```
\newcommand*{\LWR@syncmathjax}{%
```

If using chapters, place the chapter number in front of the equation. Otherwise, use the simple equation number.

```
\ifcsdef{thechapter}{
\InlineClass{hidden}{
\textbackslash(
\textbackslash{}seteqsection \{\thechapter\}
\textbackslash)
}
}
{}% not using chapters
```

MathJax doesn't allow setting the equation number to 1:

```
\ifthenelse{\cnttest{\value{equation}}>0}
{
```

Tell MathJax that the next set of equations begins with the current LaTeX equation number, plus one.

```
    \setcounter{LWR@nextequation}{\value{equation}}
    \addtocounter{LWR@nextequation}{1}
```

Place the MathJax command inside "`\(`" and "`\)`" characters, to be printed to HTML, not interpreted by LaTeX.

```
    \InlineClass{hidden}{
        \textbackslash(
        \textbackslash{}seteqnumber \{\arabic{LWR@nextequation}\}
        \textbackslash)
    }
}{}% not eq > 0
}
```

`\LWR@hidelatexequation` {⟨*environment*⟩} {⟨*contents*⟩}

Creates the LaTeX version of the equation inside an HTML comment.

```
\NewDocumentCommand{\LWR@hidelatexequation}{m +m}{%
```

Stop HTML paragraph handling and open an HTML comment:

```
\LWR@stoppars
\LWR@htmlopencomment

```

Start the LaTeX math environment inside the HTML comment:

```
\begingroup
\@nameuse{LWR@orig#1}
```

While in the math environment, restore various commands to their LaTeX meanings.

```
\LWR@restoreorigformatting
```

See `\LWR@htmlmathlabel` in section 77.7.1.

Print the contents of the equation:

```
#2
```

End the LaTeX math environment inside the HTML comment:

```
\@nameuse{LWR@origend#1}
\endgroup

```

Close the HTML comment and resume HTML paragraph handling:

```
\LWR@htmlclosecomment
\LWR@startpars
}
```

`\LWR@addmathjax` {⟨*environment*⟩} {⟨*contents*⟩}

Given the name of a math environment and its contents, create a MathJax instance. The contents are printed to HTML output, not interpreted by LaTeX.

```
\NewDocumentCommand{\LWR@addmathjax}{m +m}{%
```

Enclose the MathJax environment inside printed "`\(`" and "`\)`" characters.

```
\LWR@origtilde\LWR@orignewline
\textbackslash{}begin\{#1\}
```

Print the contents, sanitizing for HTML special characters.

```
\LWR@HTMLsanitizeexpand{\detokenize\expandafter{#2}}
```

Close the MathJax environment:

```
\textbackslash{}end\{#1\}
\LWR@orignewline
}
```

77.5 Equation environment

Remember existing `equation` environment:

```
\AtBeginDocument{
\let\LWR@origequation\equation
\let\LWR@origendequation\endequation
\csletcs{LWR@origequation*}{equation*}
\csletcs{LWR@origendequation*}{endequation*}
}
```

`\LWR@doequation` {⟨*env contents*⟩} {⟨*env name*⟩}

For SVG math output, the contents are typeset using the original `equation` inside a `lateximage`, along with an `<alt>` tag containing a detokenized copy of the LaTeX source for the math.

For MathJax output, the contents are typeset in an original `equation` environment placed inside a HTML comment, with special processing for `\label`s. The contents are also printed to the HTML output for processing by the MathJax script.

```
\newcommand*{\LWR@doequation}[2]{%
```

If `mathjax` or `FormatWP`, print the LaTeX expression:

```
\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
```

MathJax output:

```
{
```

Print commands to syncronize MathJax's equation number and format to the current LaTeX chapter/section and equation number:

```
    \LWR@syncmathjax
```

Print the LaTeX math inside an HTML comment:

```
    \LWR@hidelatexequation{#2}{#1}
}
```

SVG output: Create the `lateximage` along with an HTML `<alt>` tag having an equation number, the LaTeX equation environment commmands, and the contents of the environment's `\BODY`.

```
{% not mathjax
```

Begin the `lateximage` with an `<alt>` tag containing the math source:

```
    \ifstrequal{#2}{equation*}{%
        \begin{BlockClass}{displaymath}%
    }{%
        \begin{BlockClass}{displaymathnumbered}%
    }%
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[%
        \ifstrequal{#2}{equation*}{%
            \ifdefequal{\LWR@equationtag}{\theequation}{%
%                                   no tag was given
            }{%
                (\LWR@equationtag) % tag was given
            }%
        }{%
            (\LWR@equationtag) % automatic numbering
        }%
        \textbackslash{begin\{#2\}} % extra space
        \LWR@HTMLsanitizeexpand{\detokenize\expandafter{#1}} % extra space
        \textbackslash{end\{#2\}}%
    ]% alt tag
```

Create the actual LaTeX-formatted equation inside the `lateximage` using the contents of the environment.

```
    \@nameuse{LWR@orig#2}%
    #1% contents collected by \collect@body
    \@nameuse{LWR@origend#2}%
    \end{lateximage}%
    \end{BlockClass}%
}% not mathjax
}
```

After the environment, if MathJax, print the math to the HTML output for MathJax processing:

```
\newcommand*{\LWR@doendequation}[1]{%
    \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
    {%
        \LWR@addmathjax{#1}{\BODY}%
    }{}%

}
```

Remove existing `equation` environment:

```
\AtBeginDocument{
\let\equation\relax
\let\endequation\relax
\csletcs{equation*}{relax}
\csletcs{endequation*}{relax}
}
```

Env `equation` The new `equation` environment is created with `\NewEnviron` (from the environ package), which stores the contents of its environment in a macro called `\BODY`.

```
\AtBeginDocument{
\NewEnviron{equation}%
{\LWR@doequation{\BODY}{equation}}%
[\LWR@doendequation{equation}]

\LetLtxMacro\LWR@equationnormal\equation
\LetLtxMacro\endLWR@equationnormal\endequation
}
```

Env `equation*`

```
\AtBeginDocument{
\NewEnviron{equation*}%
```

```
{\LWR@doequation{\BODY}{equation*}}%
[\LWR@doendequation{equation*}]

\csletcs{LWR@equationnormalstar}{equation*}
\csletcs{LWR@endequationnormalstar}{endequation*}
}
```

Remember the "less" version of `equation`, which uses MathJax and `alt` tags, but does not support complicated contents such as some Ti*k*z expressions.

```
\AtBeginDocument{
\LetLtxMacro\LWR@equationless\equation
\LetLtxMacro\endLWR@equationless\endequation
\csletcs{LWR@equationlessstar}{equation*}
\csletcs{LWR@endequationlessstar}{endequation*}
}
```

77.6 `\displaymathnormal` and `\displaymathother`

`\displaymathnormal`

By default, or when selecting `\displaymathnormal`, MathJax math display environments print their contents as text into HTML, and SVG display math environments render their contents as SVG images and use their contents as the `alt` tag of HTML output. To do so, the contents are loaded into a macro for reuse. In some cases, such as complicated Ti*k*z pictures, compilation will fail.

`\displaymathother`
MathJax unsupported complicated `alt` tag

When selecting `\displaymathother`, it is assumed that the contents are more complicated than "pure" math. An example is an elaborate Ti*k*z picture, which will not render in MathJax and will not make sense as an HTML `alt` tag. In this mode, MathJax is turned off, math display environments become SVG images, even if MathJax is selected, and the HTML `alt` tags become simple messages. The contents are internally processed as an environment instead of a macro argument, so complicated objects such as Ti*k*z pictures are more likely to compile successfully.

`\displaymathnormal`
simple math objects

Use when display math environments have simple math which is to sent to MathJax or included in HTML `alt` tags.

```
\newcommand*{\displaymathnormal}{%
\ifbool{LWR@origmathjax}{\booltrue{mathjax}}{\boolfalse{mathjax}}%
\LetLtxMacro\[\LWR@openbracketnormal%
\LetLtxMacro\]\LWR@closebracketnormal%
\LetLtxMacro\displaymath\LWR@displaymathnormal%
\LetLtxMacro\enddisplaymath\endLWR@displaymathnormal%
\LetLtxMacro\equation\LWR@equationnormal%
\LetLtxMacro\endequation\endLWR@equationnormal%
\csletcs{equation*}{LWR@equationnormalstar}%
```

```
\csletcs{endequation*}{LWR@endequationnormalstar}%
}
```

`\displaymathother` Use when display math environments have complicated objects which will not work with MathJax or should not be included in HTML `alt` tags. Complicated contents are more likely to compile correctly.

complicated math objects

```
\newcommand*{\displaymathother}{%
\boolfalse{mathjax}%
\LetLtxMacro\displaymath\LWR@displaymathother%
\LetLtxMacro\enddisplaymath\endLWR@displaymathother%
\LetLtxMacro\[\LWR@displaymathother%
\LetLtxMacro\]\endLWR@displaymathother%
\LetLtxMacro\equation\LWR@equationother%
\LetLtxMacro\endequation\endLWR@equationother%
\csletcs{equation*}{displaymath}%
\csletcs{endequation*}{enddisplaymath}%
}
```

```
\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
```

Print-mode versions:

```
\newcommand*{\displaymathnormal}{}
\newcommand*{\displaymathother}{}
```

```
\end{warpprint}
```

for HTML output:

```
\begin{warpHTML}
```

77.7 AMS Math environments

77.7.1 Support macros

Bool `LWR@amsmultline` True if processing a multline environment.

To compensate for `multline`-spefific code, `LWR@amsmultline` is used to add extra horizontal space in `\LWR@htmlmathlabel` if is used in an amsmath environment which is not a `multline` environment and not an `equation`.

```
\newbool{LWR@amsmultline}
\boolfalse{LWR@amsmultline}
```

\LWR@htmlmathlabel {⟨*label*⟩}

lwarp points \ltx@label here. This is used by \label when inside a LaTeX AMS math environment's math display environment.

\LWR@origltx@label points to the LaTeX original, modified by lwarp, then by amsmath, then by cleveref.

```
\newcommand*{\LWR@htmlmathlabel}[1]{%
\LWR@traceinfo{LWR@htmlmathlabelb #1}%
```

If mathjax or FormatWP, print the LaTeX expression:

```
\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{%
```

The combined LaTeX & HTML label is printed in a \text field:

```
    \text{%
```

Shift the label over to the right side of the environment to avoid over-printing the math:

```
    \ifbool{LWR@amsmultline}{}{\hspace*{\totwidth@}}%
```

Temporarily end the HTML comment, insert the LaTeX & HTML label, then resume the HTML comment. \@firstofone is required to remove extra braces introduced by the amsmath package.)

```
    \LWR@htmlclosecomment%
    \LWR@origltx@label{#1}%
    \LWR@htmlopencomment%
    }% text
}% mathjax
{%
    \LWR@origltx@label{#1}%
}%
}
```

\LWR@beginhideamsmath Starts hiding LaTeX math inside an HTML comment.

```
\newcommand*{\LWR@beginhideamsmath}{
\LWR@stoppars
\LWR@origtilde\LWR@orignewline
\LWR@htmlopencomment

\begingroup
\LWR@restoreorigformatting
```

```
}
```

`\LWR@endhideamsmath` Ends hiding LaTeX math inside an HTML comment.

```
\newcommand*{\LWR@endhideamsmath}{
\endgroup

\LWR@htmlclosecomment
\LWR@orignewline
\LWR@startpars
}
```

77.7.2 Environment patches

The amsmath environments already collect their contents in `\@envbody` for further processing. `eqnarray` is not an $\mathcal{AMS}$ package, and thus requires special handling.

For SVG math: Each envrionment is encapsulated inside a `lateximage` environment, along with a special optional argument of `\LWR@amsmathbody` or `\LWR@amsmathbodynumbered` telling `lateximage` to use as the HTML `<alt>` tag the environment's contents which were automatically captured by the $\mathcal{AMS}$ environment.

For MathJax: Each environment is syched with LaTeX's equation numbers, typeset with LaTeX inside an HTML comment, then printed to HTML output for MathJax to process.

Env `eqnarray` This environmnet is not an $\mathcal{AMS}$ environment and thus its body is not automatically captured, so the environ package is used to capture the environment into `\BODY`.

```
\let\LWR@origeqnarray\eqnarray
\let\LWR@origendeqnarray\endeqnarray
```

To remember whether the starred environment was used, and thus whether to number the equations:

```
\newbool{LWR@numbereqnarray}
\booltrue{LWR@numbereqnarray}
```

Common code used by `eqnarray` and `Beqnarray` (from fancybox):

```
\newcommand{\LWR@eqnarrayfactor}{%
```

If `mathjax` or `FormatWP`, print the LaTeX expression:

```
\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{%
```

If MathJax, the environment contents (the \BODY) are executed in a HTML comment to trigger the correct equation number increment (if not starred), then are included verbatim in the output for MathJax to interpret:

```
    \LWR@syncmathjax
    \boolfalse{LWR@amsmultline}
    \ifbool{LWR@numbereqnarray}
    {
```

If numbering the equations, execute a copy inside an HTML comment block:

```
        \LWR@beginhideamsmath
        \LWR@origeqnarray
        \BODY
        \LWR@origendeqnarray
        \LWR@endhideamsmath
```

Then print the (sanitized) contents to the output for MathJax to interpret:

```
        \LWR@addmathjax{eqnarray}{\BODY}
    }%
    {% not LWR@numbereqnarray
```

If not numbering equations, just create the contents for MathJax:

```
    \LWR@addmathjax{eqnarray*}{\BODY}
    }% LWR@numbereqnarray
}% mathjax
{% not mathjax
    \ifbool{LWR@numbereqnarray}
    {
```

For numbered SVG equations, first create a `lateximage` with an `alt` attribute containing sanitized copy of the source code:

```
        \begin{BlockClass}{displaymathnumbered}%
        \LWR@newautoidanchor%
        \booltrue{LWR@indisplaymathimage}%
        \begin{lateximage}[(\LWR@startingequationtag--\LWR@equationtag)
            \LWR@addmathjax{eqnarray}{\BODY}]
```

Then create the image contents using an actual `eqnarray`:

```
        \LWR@origeqnarray
        \BODY
        \LWR@origendeqnarray
        \end{lateximage}
        \end{BlockClass}
```

```
    }%
    {% not LWR@numbereqnarray
```

If not numbered, do the same, but an extra `\nonumber` seems to be required:

```
        \begin{BlockClass}{displaymath}
        \LWR@newautoidanchor%
        \booltrue{LWR@indisplaymathimage}%
        \begin{lateximage}[\LWR@addmathjax{eqnarray*}{\BODY}]
        \LWR@origeqnarray
        \BODY
        \nonumber
        \LWR@origendeqnarray
        \end{lateximage}
        \end{BlockClass}
    }% LWR@numbereqnarray
}% not mathjax
```

Default to number equations in the future:

```
\booltrue{LWR@numbereqnarray}
}
```

`eqnarray` itself is made with a blank line before and after to force it to be on its own line:

```
\RenewEnviron{eqnarray}
{%

\LWR@eqnarrayfactor

}
```

The starred version is patched to turn off the numbering:

```
\csgpreto{eqnarray*}{\boolfalse{LWR@numbereqnarray}}

\end{warpHTML}
```

78 Lateximages

78.1 Description

Env `lateximage` A `lateximage` is a piece of the document which is typeset in LaTeX then included in

the HTML output as an image. This is used for math if SVG math is chosen, and also for the `picture`, `tikzpicture`, and other environments.

Before typesetting the `lateximage` a large number of formatting, graphics, and symbols-related macros are temporarily restored to their print-mode meaning by `\LWR@restoreorigformatting`. (See section 76.)

A `lateximage` is typeset on its own PDF page inside an HTML comment which starts on the preceeding page and ends on following page, and instructions are written to `lateximage.txt` for *lwarpmk* to extract the `lateximage` from the page of the PDF file then generate an accompanying `.svg` file image file. Meanwhile, instructions to show this image are placed into the HTML file after the comment.

An HTML `<span>` is created to hold both the HTML comment, which will have the *pdftotext* conversion, and also the link to the final `.svg` image.

A LaTeX label is used to remember which PDF page has the image. A label is used because footnotes, endnotes, and pagenotes may cause the image to appear at a later time. The label is declared along with the image, and so it correctly remembers where the image finally ended up.

HTML `alt` tag

The HTML `alt` tag is set to the LaTeX source for SVG math, some chemistry expressions, and perhaps some other expressions which make sense for text copy/paste. In some other cases, the `alt` tag is set according to the package name.

When creating an SVG math image, its `alt` tag may be set to the math expression, which may be hashed for image reuse. In the case of `\ensuremath` or after `\inlinemathother`, where the contents require a unique image for each instance of the same expression, the `alt` tag is set to `\mathimagename`, and the image is not reused.

This expression is visible in the browser if images are not loaded, and appears when the text is copied and pasted. The default is “math image”, and it may be changed according to the document’s language. This may be set in the preamble, or changed as necessary inside the document, where it will affect the following SVG math images.

For many packages, the output is placed inside a `lateximage` with an HTML `alt` tag set to the package name followed by `\packagediagramname`. For example:

```
(-xy- diagram)
```

This expression is visible in the browser if images are not loaded, and appears when the text is copied and pasted. The default is “diagram”, and may it be changed according to the document’s language. This may be set in the preamble, or changed as necessary inside the document, where it will affect the following `lateximages`.

SVG image font size

For the `lateximage` environment, the size of the math and text used in the SVG

image may be adjusted by setting \LateximageFontSizeName to a font size name — *without the backslash*, which defaults to:

```
\renewcommand{\LateximageFontSizeName}{normalsize}
```

For inline SVG math, font size is instead controlled by \LateximageFontScale, which defaults to:

```
\newcommand*{\LateximageFontScale}{.75}
```

78.2 Support counters and macros

for HTML output:

```
\begin{warpHTML}
```

Ctr LWR@lateximagenumber

Sequence the images.

```
\newcounter{LWR@lateximagenumber}
\setcounter{LWR@lateximagenumber}{0}
```

Ctr LWR@lateximagedepth

Do not create \lateximage inside of \lateximage.

```
\newcounter{LWR@lateximagedepth}
\setcounter{LWR@lateximagedepth}{0}
```

A few utility macros to write special characters:

```
\edef\LWR@hashmark{\string#} % for use in \write
\edef\LWR@percent{\@percentchar} % for use in \write
```

Ctr LWR@LIpage

Used to reference the PDF page number of a lateximage to be written into lateximages.txt.

```
\newcounter{LWR@LIpage}
```

```
\end{warpHTML}
```

78.3 Font size

for HTML & PRINT:

```
\begin{warpall}
```

\LateximageFontSizeName

Declares how large to write text in \lateximages. The .svg file text size should blend well with the surrounding HTML text size.

⚠ no backslash

Do not include the leading backslash in the name.

```
\newcommand*{\LateximageFontSizeName}{normalsize}
```

\LateximageFontScale Declares how large to scale inline SVG math images. The `.svg` file text size should blend well with the surrounding HTML text size. The default is .75, but it may be redefined as needed depending on the HTML font.

```
\newcommand*{\LateximageFontScale}{.75}

\end{warpall}
```

78.4 Sanitizing math expressions for HTML

for HTML output:

```
\begin{warpHTML}
```

\LWR@HTMLsanitize {⟨*text*⟩}

Math expressions are converted to `lateximage`s, and some math environments may contain `&`, `<`, or `>`, which should not be allowed inside an HTML `<alt>` tag, so must convert them to HTML entities.

Two versions follow, depending on expansion needs. There may be a better way…

```
\newrobustcmd{\LWR@HTMLsanitize}[1]{%
```

Cancel French babel character handling, and fully expand the strings:

```
\begingroup%
\LWR@FBcancel%
\fullexpandarg%
```

The `&`, `<`, and `>` may be interpreted by the browser:

```
\protect\StrSubstitute{\detokenize{#1}}%
{\detokenize{&}}{\detokenize{&amp;}}[\LWR@strresult]%

\protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}%
{\detokenize{<}}{\detokenize{&lt;}}[\LWR@strresult]%

\protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}%
{\detokenize{>}}{\detokenize{&gt;}}[\LWR@strresult]%
```

The double quote occasionally causes problems.

```
\protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}%
{\detokenize{"}}{\detokenize{&quot;}}[\LWR@strresult]%
```

MathJax allows expressions to be defined with \newcommand. These expressions would appear with ## for each argument, and each must be changed to a single #. This must be done after all the above changes. Attempting another conversion after this causes an error upon further expansion.

```
\protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}%
{\detokenize{##}}{\LWR@origpound}[\LWR@strresult]%

\LWR@strresult%
\endgroup%
}
```

\LWR@HTMLsanitizeexpand {⟨*text*⟩}

This version expands the argument before sanitizing it.

```
\newrobustcmd{\LWR@HTMLsanitizeexpand}[1]{%
```

Cancel French babel character handling, and fully expand the strings:

```
\begingroup%
\LWR@FBcancel%
\fullexpandarg%
```

The difference between this and \LWR@HTMLsanitize (without "expand") is the following \expandafter:

```
\protect\StrSubstitute{\detokenize\expandafter{#1}}%
{\detokenize{&}}{\detokenize{&amp;}}[\LWR@strresult]%

\protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}%
{\detokenize{<}}{\detokenize{&lt;}}[\LWR@strresult]%

\protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}%
{\detokenize{>}}{\detokenize{&gt;}}[\LWR@strresult]%

\protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}%
{\detokenize{"}}{\detokenize{&quot;}}[\LWR@strresult]%
```

\LWR@HTMLsanitizeexpand is not used for defining new MathJax macros, so the ## conversion is not needed here.

```
\LWR@strresult%
\endgroup%
}
```

78.5 Equation numbers

Ctr LWR@startingequation

For use with lateximage and multi-line numbered equations. Remembers the next equation number so that it may be printed in the alt tag.

```
\newcounter{LWR@startingequation}

\@ifundefined{chapter}
{
\renewcommand{\theLWR@startingequation}{%
\arabic{LWR@startingequation}%
}
}
{% chapter defined
\renewcommand{\theLWR@startingequation}{%
\ifnumcomp{\value{chapter}}{>}{0}{\arabic{chapter}.}{}%
\arabic{LWR@startingequation}%
}
}
```

Bool LWR@isstartingequation

True for the first equation tag, false for later tags in the same environment.

```
\newbool{LWR@isstartingequation}
```

\LWR@startingequationtag

Prints the starting equation number or tag.

```
\let\LWR@startingequationtag\theLWR@startingequation
```

\LWR@equationtag

Prints the ending equation number or tag.

This is reset by lateximage, may be temporarily overwritten by \tag calling \LWR@remembertag.

```
\newcommand*{\LWR@equationtag}{}
```

Only if SVG math, patch \tag after packages have loaded, in case someone else modified \tag.

```
\AtBeginDocument{

\ifbool{mathjax}{}{% not mathjax
```

\LWR@remembertag {⟨*tag*⟩}

For use inside the math environments while using SVG math. Sets `\theLWR@startingequation` and `\theequation` to the given tag.

```
\NewDocumentCommand{\LWR@remembertag}{m}{%
\ifbool{LWR@isstartingequation}%
{%
    \global\boolfalse{LWR@isstartingequation}%
    \xdef\LWR@startingequationtag{#1}%
}{}%
\xdef\LWR@equationtag{#1}%
}%

}% not mathjax
}% AtBeginDocument
```

78.6 HTML `alt` tags

`\LWR@amsmathbody` {⟨*envname*⟩} For use inside the optional argument to a `lateximage` to add the contents of a AMS math environment to the `<alt>` tag.

```
\newcommand*{\LWR@amsmathbody}[1]
{%
\textbackslash\{begin\}\{#1\} % extra space
\LWR@HTMLsanitizeexpand{\detokenize\expandafter{\the\@envbody}}%
\textbackslash\{end\}\{#1\}%
}
```

`\LWR@amsmathbodynumbered` {⟨*envname*⟩} For use inside the optional argument to a `lateximage` to add the contents of a AMS math environment to the `alt` tag, prefixed by the equation numbers.

```
\newcommand*{\LWR@amsmathbodynumbered}[1]
{%
\ifnumcomp{\value{LWR@startingequation}}{=}{\value{equation}}%
{(\LWR@equationtag)}%
{(\LWR@startingequationtag--\LWR@equationtag)} % extra space
\LWR@amsmathbody{#1} % extra space
}
```

78.7 `lateximage` environment

Env `lateximage` * [⟨*2: <alt> tag*⟩] [⟨*3: add'l hashing*⟩] [⟨*4: css style*⟩]

Typesets the contents and then renders the result as an SVG file. Star causes the image to be hashed for reuse.

The optional `<alt>` tag is included in the HTML code for use with copy/paste.

image filename hashing

If starred, a hashed filename is used. If so, the hash is based on the `alt` tag and also the additional hashing argument.

This may be used to provide an expression with a simple `alt` tag but also enough additional information to provide a unique hash.

An example is when the expression is a complicated TEX expression, which would not copy/paste well. A simplified tag may be used, while the complicated expression is duplicated in the additional hashing argument.

Another example is when the expression is simple, but the image depends on options. These options may be decoded into text form and included in the additional hashing argument in order to make the hash unique according to the set of options, even if the simple `alt` tag is still the same.

```
\catcode`\$=\active%

\NewDocumentEnvironment{lateximage}{s O{(image)} O{} O{}}
{%
\LWR@traceinfo{lateximage: starting on \jobname.pdf page \arabic{page}}%
\LWR@traceinfo{lateximage: entering depth is \arabic{LWR@lateximagedepth}}%
```

Nested `lateximages` remain one large `lateximage`:

```
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
```

If nesting inside an already-existing lateximage, simply record one more level. $\mathcal{AMS}$ packages redefine `\addtocounter` to do nothing if inside a `\text`, so lower-level TEX macros are used for tracking nested `lateximages`.

```
{%
%     \addtocounter{LWR@lateximagedepth}{1}%
    \global\advance\c@LWR@lateximagedepth 1\relax% Due to AmS \text macro.
}%
```

Otherwise, this is the outer-most lateximage:

```
{% start of outer-most lateximage
```

Remember the next equation number to be allocated, in case it must be printed in a multi-equation environment:

```
\LWR@traceinfo{lateximage: starting outer-most lateximage}%
```

```
    \setcounter{LWR@startingequation}{\value{equation}}%
    \addtocounter{LWR@startingequation}{1}%
    \booltrue{LWR@isstartingequation}%
    \let\LWR@startingequationtag\theLWR@startingequation%
```

The default equation tag, unless overwritten by `\tag`:

```
    \let\LWR@equationtag\theequation%
```

Starting a new lateximage:

```
    \addtocounter{LWR@lateximagenumber}{1}%
    \LWR@traceinfo{lateximage: LWR@lateximagenumber is \arabic{LWR@lateximagenumber}}%
```

While inside a lateximage, locally do not use mathjax:

```
    \boolfalse{mathjax}%
```

Be sure that are doing a paragraph:

```
    \LWR@ensuredoingapar%
```

Next file:

```
    \addtocounter{LWR@externalfilecnt}{1}%
    \LWR@traceinfo{lateximage: LWR@externalfilecnt is \arabic{LWR@externalfilecnt}}%
```

Figure out what the next page number will be. `\setcounterpageref` assigns `LWR@LIpage` to the page number for the reference `LWRlateximageXXX`:

```
    \setcounterpageref{LWR@LIpage}{LWRlateximage\arabic{LWR@lateximagenumber}}%
    \LWR@traceinfo{lateximage: LWR@LIpage is \arabic{LWR@LIpage}}%
```

Create an HTML span which will hold the comment which contains the *pdftotext* translation of the image's page, and also will hold the link to the `.svg` file:

```
    \LWR@htmltag{span id="lateximage\arabic{LWR@lateximagenumber}" % extra space
    class="lateximagesource"}%
```

Write instructions to the `lateximages.txt` file:

```
    \LWR@traceinfo{lateximage: about to write to lateximages.txt}%
    \IfBooleanTF{#1}% starred
    {% hash
        \LWR@traceinfo{lateximage: hash true, adding %
            !\detokenize\expandafter{#2}!\detokenize\expandafter{#3}!}%
```

Compute and save the hashed file name for later use:

```
        \edef\LWR@hashedname{%
            \LWR@mdfive{\detokenize\expandafter{#2}-!-#3}%
%             \LWR@mdfive{\detokenize\expandafter{#2}-!-\detokenize\expandafter{#3}}%
        }%
        \LWR@traceinfo{lateximage: hash is \LWR@hashedname}%
```

Write the page, hashing, and hashed name:

```
        \immediate\write\LWR@lateximagesfile{%
            |\arabic{LWR@LIpage}|true|\LWR@hashedname|%
        }%
    }% hash
    {% no hash
```

No hash, so write the page, no hashing, and the image number:

```
        \LWR@traceinfo{lateximage: hash false}%
        \immediate\write\LWR@lateximagesfile{%
            |\arabic{LWR@LIpage}|false|lateximage-\arabic{LWR@externalfilecnt}|%
        }%
    }% no hash
```

Place an open comment tag. This will hide any traces of the lateximage PDF page which were picked up by *pdftotext*.

```
    \LWR@traceinfo{lateximage: about to create open comment}%
    \LWR@htmlopencomment%
```

One level deeper. At this outer-most `lateximage`, it is known that this is not being used inside an $\mathcal{AMS}$ `\text`, since the outer-most level will never be in math mode.

```
     \addtocounter{LWR@lateximagedepth}{1}%
```

Start the new PDF page:

```
    \LWR@traceinfo{lateximage: about to create a new page}%
    \LWR@orignewpage%
```

Typeset the image in a "standard" width page and font size:

```
    \LWR@traceinfo{lateximage: about to create minipage}%
    \LWR@print@minipage{6in}%
    \@nameuse{LWR@print@\LateximageFontSizeName}%
```

Temporarily restore formatting to its PDF definitions: Do not produce HTML tags for \hspace, etc. inside a lateximage.

```
    \LWR@traceinfo{lateximage: about to temporarily restore formatting}%
    \LWR@restoreorigformatting%
```

Use full-page footnotes instead of minipage footnotes. These become HTML footnotes.

```
    \def\@mpfn{footnote}%
    \def\thempfn{\thefootnote}%
    \LetLtxMacro\@footnotetext\LWR@footnotetext%
```

Create the LWRlateximage<number> label:

```
    \LWR@traceinfo{lateximage: about to create label}%
    \LWR@orig@label{LWRlateximage\arabic{LWR@lateximagenumber}}%
    \LWR@traceinfo{lateximage: finished creating the label}%
```

Enable print-mode math functions:

```
    \LetLtxMacro$\LWR@origdollar%
    \catcode`\$=3% math shift
    \LetLtxMacro\(\LWR@origopenparen%
    \LetLtxMacro\)\LWR@origcloseparen%
```

Only enable print-mode display math if are not already inside display math:

```
    \ifbool{LWR@indisplaymathimage}{}{% not in display math
        \LetLtxMacro\[\LWR@origopenbracket%
        \LetLtxMacro\]\LWR@origclosebracket%
        \let\equation\LWR@origequation%
        \let\endequation\LWR@origendequation%
        \csletcs{equation*}{LWR@origequation*}%
        \csletcs{endequation*}{LWR@origendequation*}%
    }% not in display math
```

For chemformula:

```
    \LetLtxMacro\LWR@newsingledollar$%
    \LetLtxMacro\LWR@newsingledollar$% syntax highlighting

}% end of outer-most lateximage
\LWR@traceinfo{lateximage: finished start of environment}%
}% end of \begin{lateximage}
```

\endlateximage When the environment closes:

```
{% start of \end{lateximage}
\LWR@traceinfo{lateximage: starting end of lateximage}%
```

Nested more than one deep?

```
\LWR@traceinfo{lateximage: internal depth was \arabic{LWR@lateximagedepth}}%
\ifnumcomp{\value{LWR@lateximagedepth}}{>}{1}%
```

If nesting inside an already existing lateximage, simply record one less level. Uses a lower-level TEX macro due to $\mathcal{AMS}$ `\text` change of `\addtocounter`.

```
{%
    \LWR@traceinfo{lateximage: unnesting}%
    \global\advance\c@LWR@lateximagedepth -1\relax%
}%
```

If this is the outer-most lateximage:

```
{% end of outer-most lateximage
```

Finish the lateximage minipage and start a new PDF page:

```
\LWR@traceinfo{lateximage: ending outer-most lateximage}%
    \endLWR@print@minipage%
    \LWR@orignewpage%
    \LWR@print@scriptsize%
```

Close the HTML comment which encapsulated any traces of the lateximage picked up by *pdftotext*:

```
    \LWR@print@vspace*{.5\baselineskip}%
    \LWR@htmlclosecomment%
    \LWR@traceinfo{lateximage: The page after the image is \arabic{page}}%
```

Create a link to the lateximage, allowing its natural height:

```
    \IfBooleanTF{#1}% starred
    {% hash
        \LWR@subinlineimage[#2]{lateximage}%
        {%
            lateximages\OSPathSymbol%
            \LWR@print@mbox{\LWR@hashedname}%
        }{svg}{#4}%
    }% hash
    {% no hash
        \LWR@subinlineimage[#2]{lateximage}%
        {%
            lateximages\OSPathSymbol%
```

```
            \LWR@print@mbox{lateximage-\theLWR@externalfilecnt}%
        }{svg}{#4}%
    }% no hash
```

Be sure that are doing a paragraph:

```
    \LWR@ensuredoingapar%
```

Close the HTML span which has the *pdftotext* comment and also the link to the `.svg` image:

```
    \LWR@htmltag{/span}%
    \ifbool{HTMLDebugComments}{%
        \LWR@htmlcomment{End of lateximage}%
    }{}%
```

Undo one lateximage level. This is not inside an $\mathcal{AMS}$ `\text`, so regular `\addtocounter` may be used here.

```
    \addtocounter{LWR@lateximagedepth}{-1}%
}% end of outer-most lateximage
\LWR@traceinfo{lateximage: exiting depth is \arabic{LWR@lateximagedepth}}%
\LWR@traceinfo{lateximage: done}%
}%
\catcode`\$=3% math shift
\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
```

Env `lateximage` [⟨*<alt> tag*⟩] [⟨*css style*⟩]

`varwidth` is used to create a box of the natural width of its contents.

```
\NewDocumentEnvironment{lateximage}{s o o o}
    {\begin{varwidth}[b]{\linewidth}}
    {\end{varwidth}}

\end{warpprint}
```

79 `center`, `flushleft`, `flushright`

for HTML output:

```
\begin{warpHTML}
```

Env `center` Replace `center` functionality with CSS tags:

```
\renewenvironment*{center}
{
\LWR@forcenewpage
\ifbool{FormatWP}
{\BlockClass[\LWR@print@mbox{text-align:center}]{center}}
{\BlockClass{center}}
}
{\endBlockClass}
```

Env `flushright`

```
\renewenvironment*{flushright}
{
\LWR@forcenewpage
\ifbool{FormatWP}
{\BlockClass[\LWR@print@mbox{text-align:right}]{flushright}}
{\BlockClass{flushright}}
}
{\endBlockClass}
```

Env `flushleft`

```
\renewenvironment*{flushleft}
{
\LWR@forcenewpage
\ifbool{FormatWP}
{\BlockClass[\LWR@print@mbox{text-align:left}]{flushleft}}
{\BlockClass{flushleft}}
}
{\endBlockClass}
```

`\centering`, `\raggedleft`, and `\raggedright` usually have no effect on the HTML output, but they may be used to compare with the next token to identify their use at the start of a float. See `\LWR@floatalignment`.

`\centering`

```
\newcommand*{\LWR@HTML@centering}{%
\ifbool{HTMLDebugComments}{%
    \LWR@htmlcomment{centering}%
}{}%
}
\LWR@formatted{centering}
```

\raggedleft

```
\newcommand*{\LWR@HTML@raggedleft}{%
\ifbool{HTMLDebugComments}{%
    \LWR@htmlcomment{raggedleft}%
}{}%
}
\LWR@formatted{raggedleft}
```

\raggedright

```
\newcommand*{\LWR@HTML@raggedright}{%
\ifbool{HTMLDebugComments}{%
    \LWR@htmlcomment{raggedright}%
}{}%
}
\LWR@formatted{raggedright}
```

\leftline {⟨*text*⟩}

```
\renewcommand{\leftline}[1]{\begin{flushleft}#1\end{flushleft}}
```

\centerline {⟨*text*⟩}

```
\renewcommand{\centerline}[1]{\begin{center}#1\end{center}}
```

\rightline {⟨*text*⟩}

```
\renewcommand{\rightline}[1]{\begin{flushright}#1\end{flushright}}
```

```
\end{warpHTML}
```

80 Preloaded packages

for HTML output:

```
\begin{warpHTML}
```

If was loaded before lwarp, load the lwarp version as well.

\LWR@PreloadedPackage {⟨*packagename*⟩}

```
\newcommand*{\LWR@PreloadedPackage}[1]{%
\@ifpackageloaded{#1}{\LWR@origRequirePackage{lwarp-#1}}{}
}
```

If textcomp was loaded before lwarp, perhaps as part of the font-related packages, explicitly load the lwarp patches now:

```
\LWR@PreloadedPackage{textcomp}
```

If xunicode was loaded before lwarp, perhaps as part of the font-related packages, explicitly load the lwarp patches now:

```
\LWR@PreloadedPackage{xunicode}
```

If graphics or graphicx were loaded before lwarp, perhaps by xunicode, explicitly load the lwarp patches now:

```
\LWR@PreloadedPackage{graphics}
\LWR@PreloadedPackage{graphicx}
```

ulem may be preloaded by ctex, ctexart, and related classes.

```
\LWR@PreloadedPackage{ulem}
```

```
\end{warpHTML}
```

81 siunitx

Pkg `siunitx` The lwarp core passes a few options to siunitx.

fractions Due to *pdftotext* limitations, fraction output is replaced by symbol output for `per-mode` and `quotient-mode`.

⚠ math mode required Some units will require that the expression be placed inside math mode.

NOTE: As of this writing, the siunitx extension for MathJax is not currently hosted at any public CDN, thus siunitx is not usable with MathJax unless a local copy of this extension is created first.

⚠ `tabular` Tabular `S` columns are rendered as simple `c` columns, and tabular `s` columns are not supported. These may be replaced by `c` columns with each cell contained in `\num` or `\si`.

for HTML output:

```
\begin{warpHTML}
```

Options for siunitx:

```
\newrobustcmd{\LWR@siunitx@textcelsius}{\HTMLentity{deg}C}
\newrobustcmd{\LWR@siunitx@textdegree}{\HTMLentity{deg}}
```

```
\newrobustcmd{\LWR@siunitx@textprime}{\HTMLunicode{2032}}
\newrobustcmd{\LWR@siunitx@textdblprime}{\HTMLunicode{2033}}
\newrobustcmd{\LWR@siunitx@textplanckbar}{\text{\textit{\HTMLunicode{0127}}}}

\appto\LWR@restoreorigformatting{%
\renewrobustcmd{\LWR@siunitx@textcelsius}{\text{\ensuremath{^\circ}C}}%
\renewrobustcmd{\LWR@siunitx@textdegree}{\text{\ensuremath{^\circ}}}%
\renewrobustcmd{\LWR@siunitx@textprime}{\text{\ensuremath{^\prime}}}%
\renewrobustcmd{\LWR@siunitx@textdblprime}{\text{\ensuremath{^{\prime\prime}}}}%
\renewrobustcmd{\LWR@siunitx@textplanckbar}{\text{\ensuremath{\hbar}}}%
}

\PassOptionsToPackage{
    detect-mode=true,
    per-mode=symbol,% fraction is not seen by pdftotext
    text-celsius = {\LWR@siunitx@textcelsius},
    text-degree = {\LWR@siunitx@textdegree},
    text-arcminute = {\LWR@siunitx@textprime} ,
    text-arcsecond = {\LWR@siunitx@textdblprime} ,
}{siunitx}

\end{warpHTML}
```

82 Graphics print-mode modifications

82.1 General limitations

\includegraphics file formats

For `\includegraphics` with `.pdf` or `.eps` files, the user must provide a `.pdf` or `.eps` image file for use in print mode, and also a `.svg`, `.png`, or `.jpg` version of the same image for use in HTML.

```
\includegraphics{filename} % print:.pdf/.eps HTML:.svg, etc.
```

For print output, lwarp will automatically choose the `.pdf` or `.eps` format if available, or some other format otherwise. For HTML, one of the other formats is used instead.

If a `.pdf` or `.eps` image is referred to with its file extension, the extension will be changed to `.svg` for HTML:

```
\includegraphics{filename.pdf} % uses .svg in HTML
\includegraphics{filename.eps} % uses .svg in HTML
```

Prog pdftocairo PDF to SVG

To convert a PDF image to SVG, use the utility *pdftocairo*:

```
Enter ⇒  pdftocairo -svg filename.pdf
```

Prog `lwarpmk pdftosvg`

For a large number of images, use *lwarpmk*:

Enter ⇒ `lwarpmk pdftosvg *.pdf` (or a list of filenames)

Prog `lwarpmk epstopdf`

Prog `epstopdf`

epstopdf package

For EPS images converted to PDF using the package epstopdf, use

Enter ⇒ `lwarpmk pdftosvg *.PDF`

to convert to SVG images.

DVI latex

When using DVI *latex*, it is necessary to convert EPS to PDF and then to SVG:

Enter ⇒ `lwarpmk epstopdf *.eps` (or a list of filenames)

Enter ⇒ `lwarpmk pdftosvg *.pdf` (or a list of filenames)

PNG and JPG

For PNG or JPG while using *pdflatex*, *lualatex*, or *xelatex*, the same file may be used in both print or HTML versions, and may be used with a file extension, but will also be used without the file extension if it is the only file of its base name.

GIF

GIF files may be used for HTML, but another format must also be provided for print output.

file extension priorities

If a file extension is not used, for HTML the file extension priorities are: SVG, GIF, PNG, then JPG.

⚠ graphics vs. graphicx

⚠ viewport

⚠ viewport units

If using the older graphics syntax, use both optional arguments for `\includegraphics`. A single optional parameter is interpreted as the newer graphicx syntax. Note that viewports are not supported by lwarp — the entire image will be shown.

For `\includegraphics`, avoid `px` and % units for width and height, or enclose them inside `warpHTML` environments. For font-proportional image sizes, use `ex` or `em`. For fixed-sized images, use `cm`, `mm`, `in`, `pt`, or `pc`. Use the keys `width=.5\linewidth`, or similar for `\textwidth` or `\textheight` to give fixed-sized images proportional to a 6 by 9 inch text area. Do not use the `scale` option, since it is not well supported by HTML browsers.

options

`\includegraphics` accepts `width` and `height`, `origin`, `rotate` and `scale`, plus a new `class` key.

HTML class

With HTML output, `\includegraphics` accepts an optional `class=xyz` keyval combination, and if this is given then the HTML output will include that class for the image. The class is ignored for print output.

`\rotatebox`

`\rotatebox` accepts the optional `origin` key.

⚠ browser support

`\rotatebox`, `\scalebox`, and `\reflectbox` depend on modern browser support. The CSS3 standard declares that when an object is transformed the whitespace which

they occupied is preserved, unlike LaTeX, so expect some ugly results for scaling and rotating.

82.2 Print-mode modifications

for PRINT output: For print output, accept and then discard the new `class` key:

```
\begin{warpprint}
\define@key{Gin}{class}{}
```

Print-mode additions for the overpic package. See section 317 for the HTML version.

```
\AtBeginDocument{
\@ifpackageloaded{overpic}{
\newcommand*{\overpicfontsize}{12}
\newcommand*{\overpicfontskip}{14}
}{}
}
\end{warpprint}
```

83 xcolor boxes

Pkg `xcolor` A few new definitions are provided for enhanced HTML colored boxes, and `\fcolorbox` is slightly modified. Print-mode version are also provided.

Print-mode versions of new xcolor defintions. These are defined inside `warpall` because they are also used for HTML while inside a `lateximage`. They are defined `\AtBeginDocument` so that the xcolor originals may first be loaded and saved for reuse.

The framed versions are modified to allow a background color of `none`, in which case only the frame is drawn, allowing the background page color to show.

for HTML & PRINT:

```
\begin{warpall}
```

After xparse may have been loaded ...

```
\AtBeginDocument{
```

... and *only* if xcolor was loaded:

```
\@ifpackageloaded{xcolor}{
\LWR@traceinfo{patching xcolor}
```

The print version:

\colorboxBlock `\colorboxBlock` is the same as `\colorbox`:

```
\LetLtxMacro\colorboxBlock\colorbox
```

The original definition is reused by the new versions:

```
\LetLtxMacro\LWR@orig@print@fcolorbox\fcolorbox
```

\fcolorbox `[`⟨*framemodel*⟩`] {`⟨*framecolor*⟩`} [`⟨*boxmodel*⟩`] {`⟨*boxcolor*⟩`} {`⟨*text*⟩`}`

In print mode, `\fcolorbox` is modified to accept a background color of `none`.

(`\fcolorbox` is particular about its optional arguments, thus the elaborate combinations of `\ifthenelse`.)

```
\newsavebox{\LWR@colorminipagebox}

\NewDocumentCommand{\LWR@print@fcolorbox}{o m o m +m}{%
\LWR@traceinfo{LWR@print@fcolorbox #2 #4}%
```

Pre-load the contents into an LR box so that they can be used inside a `\fcolorbox`:

```
\begin{lrbox}{\LWR@colorminipagebox}%
#5%
\end{lrbox}%
```

Sort out the various optional arguments and the background color of `none`. In each case, the LRbox is placed inside a `\fcolorbox`.

The current color is remembered, then set to the frame, then the current color is used for the contents.

```
\ifstrequal{#4}{none}%
{% #4 none
    \LWR@traceinfo{background is none}%
    {% scope the \colorlet
        \colorlet{LWR@currentcolor}{.}%
        \color{#2}%
        \fbox{%
            \color{LWR@currentcolor}%
            \usebox{\LWR@colorminipagebox}%
        }% fbox
    }% colorlet
}% #4 none
{% #4 not none
```

```
\LWR@traceinfo{background not none}%
\IfValueTF{#1}%
{%
    \IfValueTF{#3}%
    {\LWR@orig@print@fcolorbox[#1]{#2}[#3]{#4}{\usebox{\LWR@colorminipagebox}}}%
    {\LWR@orig@print@fcolorbox[#1]{#2}{#4}{\usebox{\LWR@colorminipagebox}}}%
}%
{% no value #1
    \IfValueTF{#3}%
    {\LWR@orig@print@fcolorbox{#2}[#3]{#4}{\usebox{\LWR@colorminipagebox}}}%
    {\LWR@orig@print@fcolorbox{#2}{#4}{\usebox{\LWR@colorminipagebox}}}%
}% no value #1
}% #4 not none
\LWR@traceinfo{LWR@print@fcolorbox done}%
}

\renewcommand*{\fcolorbox}{\LWR@print@fcolorbox}
```

`\fcolorboxBlock` `[`⟨*frame model*⟩`]` `{`⟨*frame color*⟩`}` `[`⟨*box model*⟩`]` `{`⟨*box color*⟩`}` `{`⟨*text*⟩`}`

In print mode, `\fcolorboxBlock` is the same as `\fcolorbox`.

```
\newcommand*{\LWR@print@fcolorboxBlock}{\LWR@print@fcolorbox}
\newcommand*{\fcolorboxBlock}{\LWR@print@fcolorboxBlock}
```

Env `fcolorminipage` `[`⟨*1:frame model*⟩`]` `{`⟨*2:frame color*⟩`}` `[`⟨*3:box model*⟩`]` `{`⟨*4:box color*⟩`}` `[`⟨*5:align*⟩`]` `[`⟨*6:height*⟩`]` `[`⟨*7:inner-align*⟩`]` `{`⟨*8:width*⟩`}`

In print mode, becomes a `\fcolorbox` containing a `minipage`:

```
\NewDocumentEnvironment{LWR@print@fcolorminipage}{o m o m O{c} O{} o m}
{%
\LWR@traceinfo{*** fcolorminipage: #2 #4 #8}%
```

Pre-load the contents into an LR box so that they can be used inside a `\fcolorbox`:

```
\begin{lrbox}{\LWR@colorminipagebox}%
```

If inner alignment is not given, use the outer alignment instead:

```
\IfValueTF{#7}%
{\begin{minipage}[#5][#6][#7]{#8}}%
{\begin{minipage}[#5][#6][#5]{#8}}%
}%
{%
\end{minipage}%
\end{lrbox}%
\LWR@traceinfo{*** starting end fcolorminipage #1 #2 #3 #4 #8}%
```

Sort out the various optional arguments and the background color of `none`. In each case, the LRbox is placed inside a `\fcolorbox`.

The current color is remembered, then set to the frame, then the current color is used for the contents.

```
\ifstrequal{#4}{none}%
{% #4 none
    {% scope the \colorlet
        \colorlet{LWR@currentcolor}{.}%
        \color{#2}%
        \fbox{%
            \color{LWR@currentcolor}%
            \usebox{\LWR@colorminipagebox}%
        }% fbox
    }% colorlet
}% #4 none
{% #4 not none
    \IfValueTF{#1}%
    {%
    \IfValueTF{#3}%
    {\LWR@orig@print@fcolorbox[#1]{#2}[#3]{#4}{\usebox{\LWR@colorminipagebox}}}%
    {\LWR@orig@print@fcolorbox[#1]{#2}{#4}{\usebox{\LWR@colorminipagebox}}}%
    }%
    {% no value #1
    \IfValueTF{#3}%
    {\LWR@orig@print@fcolorbox{#2}[#3]{#4}{\usebox{\LWR@colorminipagebox}}}%
    {\LWR@orig@print@fcolorbox{#2}{#4}{\usebox{\LWR@colorminipagebox}}}%
    }% no value #1
}% #4 not none
\LWR@traceinfo{*** finished end fcolorminipage}%
}

\newenvironment*{fcolorminipage}
    {\LWR@print@fcolorminipage}
    {\endLWR@print@fcolorminipage}

\LWR@traceinfo{xcolor patches done}
}{}% xcolor loaded
}% AtBeginDocument

\end{warpall}
```

84 chemmacros environments

\makepolymerdelims and redox reactions must be enclosed in a lateximage during HTML output. These environments are provided here in print mode, and in the chemmacros code in HTML mode, as a high-level semantic syntax which automatically embeds the contents in a lateximage with an appropriate alt tag.

for PRINT output:

```
\begin{warpprint}

\AtBeginDocument{
\@ifpackageloaded{chemmacros}{
```

Env polymerdelims

```
\DeclareDocumentEnvironment{polymerdelims}{}
    {}{}
```

Env redoxreaction {⟨*space above*⟩} {⟨*space below*⟩}

For print output, extra space is include above and below the image, and a lateximage is not necessary. This extra space must be enforced, even inside a float, so zero-width rules are used.

For the HTML version, see section 159.4.

```
\DeclareDocumentEnvironment{redoxreaction}{m m}
    {\rule{0pt}{#1}}{\rule[-#2]{0pt}{#2}}

}{}% chemmacros
}% AtBeginDocument

\end{warpprint}
```

85 cleveref

Pkg cleveref cleveref package is used as-is with minor patches.

⚠ cleveref page numbers cleveref and varioref are supported, but printed page numbers do not map to HTML, so a section name or a text phrase are used for \cpageref and \cpagerefrange. This phrase includes \cpagerefFor, which defaults to “for”.

Ex:

```
    \cpageref{tab:first,tab:second}
 in HTML becomes:
```
"pages **for** table 4.1 and **for** table 4.2"

See \cpagerefFor at page 563 to redefine the message which is printed for page number references.

loading order

cleveref and the following associated macro patches are automatically preloaded at the end of the preamble via \AtEndPreamble and \AfterEndPreamble. This is done because the HTML conversion requires cleveref. The user's document may not require cleveref, thus the user may never explicitly load it, so during HTML output lwarp loads it last. If the user's document preamble uses cleveref options, or functions such as \crefname, then cleveref may be loaded in the user's preamble near the end, and lwarp's additional loading of cleveref will have no effect.

Table 12 on page 479 shows the data structure of the label/reference system as revised by lwarp and cleveref.

A few patches allow cleveref to work as-is:

for HTML output:

```
\begin{warpHTML}
```

\AtEndPreable forces cleveref to be loaded last:

```
\AtEndPreamble{
\RequirePackage{cleveref}
}
```

The following patches are applied after cleveref has loaded, and after \AtBeginDocument. Print-mode versions are not required since they all come down to \ref eventually, and \ref has a print-mode version.

```
\AfterEndPreamble{
\LWR@traceinfo{Patching cleveref.}
```

\@@@setcref {⟨*kindofref*⟩} {⟨*label*⟩}

\@templabel becomes the section number.

```
\def\LWR@orig@@@setcref#1#2{\cref@getlabel{#2}{\@templabel}#1{\@templabel}{}{}}%

\ifdefequal{\@@setcref}{\LWR@orig@@@setcref}{% before v0.21
    \renewcommand*{\@@setcref}[2]{#1{\ref{#2}}{}{}}
}{
    \ifdefequal{\@@@setcref}{\LWR@orig@@@setcref}{% as of v0.21
```

```
        \renewcommand*{\@@@setcref}[2]{#1{\ref{#2}}{}{}}
    }{
        \PackageWarning{lwarp-cleveref}{
            Unknown version of cleveref.
            \protect\cref\space will fail.
        }%
    }
}
```

`\@@@setcrefrange` {⟨*text*⟩} {⟨*label*⟩} {⟨*label*⟩}

```
\def\LWR@orig@@@setcrefrange#1#2#3{%
  \cref@getlabel{#2}{\@labela}%
  \cref@getlabel{#3}{\@labelb}%
  #1{\@labela}{\@labelb}{}{}{}{}}%

\ifdefequal{\@@setcrefrange}{\LWR@orig@@@setcrefrange}{
    \renewcommand{\@@setcrefrange}[3]{%
        #1{\ref{#2}}{\ref{#3}}{}{}{}{}%
    }
}{
    \ifdefequal{\@@@setcrefrange}{\LWR@orig@@@setcrefrange}{
        \renewcommand{\@@@setcrefrange}[3]{%
            #1{\ref{#2}}{\ref{#3}}{}{}{}{}%
        }
    }{
        \PackageWarning{lwarp-cleveref}{
            Unknown version of cleveref.
            \protect\crefrange\space will fail.
        }
    }
}

```

`\cpagerefFor` Redefinable word between "page(s)" and the page numbers.

```
\newcommand*{\cpagerefFor}{for}
```

`\@@@setcpageref` {⟨*typeofref*⟩} {⟨*label*⟩}, where typeofref is "page" or "pages"

```
\def\LWR@orig@@setcpageref#1#2{% before v0.21
  \cref@getpageref{#2}{\@temppage}#1{\@temppage}{}{}}%

\def\LWR@orig@@@setcpageref#1#2{% as of v0.21
  \cpageref@getlabel{#2}{\@temppage}#1{\@temppage}{}{}}%

```

```
\ifdefequal{\@@setcpageref}{\LWR@orig@@setcpageref}{
    \renewcommand*{\@@setcpageref}[2]{%
        #1{\cpagerefFor\ \cref{#2}}{}{}%
    }
}{
    \ifdefequal{\@@@setcpageref}{\LWR@orig@@@setcpageref}{
        \renewcommand*{\@@@setcpageref}[2]{%
            #1{\cpagerefFor\ \cref{#2}}{}{}%
        }
    }
    {
        \PackageWarning{lwarp-cleveref}{
            Unknown version of cleveref.
            \protect\cpageref\space will fail.
        }
    }
}

\def\LWR@orig@@setcpagerefrange#1#2#3{% before v0.21
  \cref@getpageref{#2}{\@pagea}%
  \cref@getpageref{#3}{\@pageb}%
  #1{\@pagea}{\@pageb}{}{}{}{}}%

\def\LWR@orig@@@setcpagerefrange#1#2#3{% as of v0.21
  \cpageref@getlabel{#2}{\@pagea}%
  \cpageref@getlabel{#3}{\@pageb}%
  #1{\@pagea}{\@pageb}{}{}{}{}}%

\ifdefequal{\@@setcpagerefrange}{\LWR@orig@@setcpagerefrange}{
    \renewcommand*{\@@setcpagerefrange}[3]{%
        #1{\cpagerefFor\ \cref{#2}}{\cref{#3}}{}{}{}{}%
    }
}{
    \ifdefequal{\@@@setcpagerefrange}{\LWR@orig@@@setcpagerefrange}{
        \renewcommand*{\@@@setcpagerefrange}[3]{%
            #1{\cpagerefFor\ \cref{#2}}{\cref{#3}}{}{}{}{}%
        }
    }
    {
        \PackageWarning{lwarp-cleveref}{
            Unknown version of cleveref.
            \protect\cpagerefrange\space will fail.
        }
    }
}

}% AfterEndPreamble
```

Remember and patch some label-related defintions. These will be further encased and patched by other packages later.

\label and \pageref do NOT change their behavior according to print or HTML output, and thus do not use the \LWR@formatted system.

```
\LetLtxMacro\LWR@orig@label\label
\RenewDocumentCommand{\label}{}{\LWR@new@label}

\LetLtxMacro\LWR@orig@pageref\pageref
\RenewDocumentCommand{\pageref}{}{\LWR@new@pageref}
\end{warpHTML}
```

86 picture environment

Env picture The picture environment is enclosed inside a \lateximage.

for HTML output:
```
\begin{warpHTML}
```

Env picture

```
\BeforeBeginEnvironment{picture}{\begin{lateximage}[(picture)]}

\AfterEndEnvironment{picture}{\end{lateximage}}
```

```
\end{warpHTML}
```

87 Boxes and Minipages

A css flexbox is used for minipages and parboxes, allowing external and internal vertical positioning.

⚠ inline A line of text with an inline minipage or parbox will have the minipage or parbox placed onto its own line, because a paragraph is a block element and cannot be made inline-block.

placement Minipages and parboxes will be placed side-by-side in HTML unless you place a \newline between them.

side-by-side Side-by-side minipages may be separated by \quad, \qquad, \enskip, \hspace, \hfill, or a \rule. When inside a center environment, the result is similar in print

and HTML. Paragraph tags are suppressed between side-by-side minipages and these spacing commands, but not at the start or end of the paragraph.

in a span — There is limited support for minipages inside an HTML . An HTML cannot appear inside a . While in a , minipages, and parboxes, and any enclosed lists have limited HTML tags, resulting in an "inline" format, without markup except for HTML breaks. Use \newline or \par for an HTML break.

size — When using \linewidth, \textwidth, and \textheight, widths and heights are scaled proportionally to a 6×9 inch text area.

no-width minipages — A minipage of width exactly \linewidth is automatically given no HTML width.

full-width minipages — A new macro \minipagefullwidth requests that the next minipage be generated without an HTML width attribute, allowing it to be the full width of the display rather than the fixed width given.

⚠ text alignment — Nested minipages adopt their parent's text alignment in HTML, whereas in regular LaTeX PDF output they do not. Use a flushleft or similar environment in the child minipage to force a text alignment.

for HTML output:
```
9789 \begin{warpHTML}
```

87.1 Counters and lengths

Ctr LWR@minipagedepth — Used to only reset the line width at the outermost minipage.

```
9790 \newcounter{LWR@minipagedepth}
9791 \setcounter{LWR@minipagedepth}{0}
```

Len \LWR@minipagewidth — Used to convert the width into printable units.

```
9792 \newlength{\LWR@minipagewidth}
```

Len \LWR@minipageheight — Used to convert the height into printable units.

```
9793 \newlength{\LWR@minipageheight}
```

87.2 Footnote handling

Also see section 57 for other forms of footnotes. Minipage footnotes are gathered in section 57.5, and then placed into the document in section 87.3.

87.3 Minipage handling

Bool `LWR@minipagefullwidth` Should the next minipage have no HTML `width`?

```
\newbool{LWR@minipagefullwidth}
\boolfalse{LWR@minipagefullwidth}
```

`\minipagefullwidth` Requests that the next minipage have no `width` tag in HTML:

for HTML output:
```
\newcommand*{\minipagefullwidth}{\booltrue{LWR@minipagefullwidth}}
\end{warpHTML}
```

for PRINT output:
```
\begin{warpprint}
\newcommand*{\minipagefullwidth}{}
\end{warpprint}
```

for HTML output:
```
\begin{warpHTML}
```

Bool `LWR@minipagethispar` Has a minipage been seen this paragraph? If true, prevents paragraph tags around horizontal space between minipages.

```
\newbool{LWR@minipagethispar}
\boolfalse{LWR@minipagethispar}
```

Env `minipage` `[`⟨*vert position*⟩`]` `[`⟨*height*⟩`]` `[`⟨*inner vert position*⟩`]` `{`⟨*width*⟩`}`

The vertical positions may be 'c', 't', or 'b'. The inner position may also be 's'.

When using `\linewidth`, `\textwidth`, or `\textheight`, these are scaled proportionally to a 6×9 inch text area.

```
\NewDocumentEnvironment{LWR@HTML@minipage}{O{t} o O{t} m}
{%
\LWR@traceinfo{minipage}%
```

Temporarily open a group, in which width and height is computed based on a virtual page size instead of the extra-large PDF page used during HTML tag generation.

The following used to be an actual LaTeX minipage.

```
\begingroup
```

Compute width, adjusted for frames:

```
\setlength{\LWR@minipagewidth}{#4}%
\ifthenelse{\cnttest{\value{LWR@minipagedepth}}{=}{0}}{%
```

Only create a new page if not yet nested:

```
    \LWR@orignewpage%
```

Adjust virtual page size:

```
    \addtolength{\LWR@minipagewidth}{3em}% room for frames
    \setlength{\linewidth}{6in}%
    \setlength{\textwidth}{6in}%
    \setlength{\textheight}{9in}%
}{}%
\LWR@traceinfo{computed width is \LWR@printlength{\LWR@minipagewidth}}%
```

Compute height:

```
\setlength{\LWR@minipageheight}{\textheight}% default unless specified
\IfValueT{#2}{\setlength{\LWR@minipageheight}{#2}}%
```

Track nesting depth:

```
\addtocounter{LWR@minipagedepth}{1}%
```

LaTeX wants to start a paragraph for the virtual minipage, then start a paragraph again for the contents of the minipage, so cancel the paragraph tag handling until the minipage has begun.

```
\ifbool{FormatWP}{\newline}{}%
\LWR@stoppars%
```

If `FormatWP`, add a text frame:

```
\ifbool{FormatWP}{%

\addtocounter{LWR@thisautoidWP}{1}%
\LWR@htmltag{%
    div id="\LWR@print@mbox{autoidWP-\arabic{LWR@thisautoidWP}}" %
    class="wpminipage"%
}%

}{}%
```

Create the `<div>` tag with optional alignment style:

```
\LWR@traceinfo{minipage: creating div class}%
\LWR@htmltag{div class="minipage" style="%
\ifthenelse{\equal{#1}{t}}{\LWR@print@mbox{vertical-align:bottom} ; }{}%
\ifthenelse{\equal{#1}{c}}{\LWR@print@mbox{vertical-align:middle} ; }{}%
\ifthenelse{\equal{#1}{b}}{\LWR@print@mbox{vertical-align:top} ; }{}%
```

```
\ifthenelse{\equal{#3}{t}}{\LWR@print@mbox{justify-content:flex-start} ; }{}%
\ifthenelse{\equal{#3}{c}}{\LWR@print@mbox{justify-content:center} ; }{}%
\ifthenelse{\equal{#3}{b}}{\LWR@print@mbox{justify-content:flex-end} ; }{}%
\ifthenelse{\equal{#3}{s}}{\LWR@print@mbox{justify-content:space-between} ; }{}%
```

Print the width and optional height styles:

```
\LWR@traceinfo{minipage: about to print the width of \LWR@printlength{\LWR@minipagewidth}}%
\ifbool{LWR@minipagefullwidth}%
{\boolfalse{LWR@minipagefullwidth}}%
{%
    \ifthenelse{\lengthtest{#4}=\linewidth}%
    {}%
    {width:\LWR@printlength{\LWR@minipagewidth} ; }%
}%
\LWR@traceinfo{minipage: about to print the height}%
\IfValueT{#2}{height:\LWR@printlength{\LWR@minipageheight} ; }%
"}%
```

Finish with an empty line to start the contents on a new line.

```

% The preceding empty line is required.
```

Set the user-accessible line and text width and height values inside the virtual minipage. These do not affect the actual size of the PDF output, but are used by any reference to `\linewidth`, etc. inside the virtual minipage being created here.

```
\setlength{\linewidth}{#4}% the original width
\setlength{\textwidth}{6in}%
\setlength{\textheight}{9in}%
```

`\raggedright` cancels hyphenation, which will be done by HTML instead.

```
\LWR@print@raggedright%
```

Set minipage footnotes:

```
\def\@mpfn{mpfootnote}%
\def\thempfn{\thempfootnote}\c@mpfootnote\z@%
\let\@footnotetext\@mpfootnotetext%
```

Resume paragraph tag handling for the contents of the minipage:

```
\LWR@startpars%
\ifboolexpr{bool{FormatWP} and bool{WPMarkMinipages}}{%

=== begin minipage ===
```

```
}{}%
\LWR@traceinfo{minipage: finished starting the minipage}%
}% finished \minipage
{% \endminipage
```

Print pending minipage footnotes:

```
\LWR@printpendingmpfootnotes%
```

End the environment with closing tag:

```
\ifboolexpr{bool{FormatWP} and bool{WPMarkMinipages}}{%

=== end minipage ===

}{}%
\LWR@stoppars%
```

The following used to be an actual LaTeX minipage.

```
\endgroup%

\ifbool{FormatWP}{%

\LWR@htmlelementend{div}%

}{}%
\LWR@htmldivclassend{minipage}%

\addtocounter{LWR@minipagedepth}{-1}%
\LWR@startpars%
\ifbool{FormatWP}{\newline}{}%
```

Prevent paragraph tags around horizontal white space until the start of the next paragraph:

```
\global\booltrue{LWR@minipagethispar}%
\LWR@traceinfo{LWR@minipage: done}%
}

\LWR@formattedenv{minipage}
```

87.4 \parbox, \mbox, \makebox, \framebox, \fbox, \raisebox

for HTML output:

\parbox [⟨*pos*⟩] [⟨*height*⟩] [⟨*inner-pos*⟩] {⟨*width*⟩} {⟨*text*⟩}

A parbox uses the minipage code:

```
\NewDocumentCommand{\LWR@HTML@parbox}{O{t} o O{t} m +m}
{
\LWR@traceinfo{parbox of width #4}%
\begin{minipage}[#1][#2][#3]{#4}%
#5
\end{minipage}%
}

\LWR@formatted{parbox}
```

\mbox {⟨*text*⟩} Nullified for HTML.

```
\newcommand*{\LWR@HTML@mbox}[1]{#1}

\LWR@formatted{mbox}
```

\makebox (⟨*(*⟩)posn) [⟨*width*⟩] [⟨*pos*⟩] {⟨*text*⟩}

```
\NewDocumentCommand{\LWR@HTML@makebox}{d() o o m}{%
```

Check for the optional width:

```
\IfValueTF{#2}%
{%
```

Check for the horizontal text alignment. For stretched, the best HTML can do is `justified` alignment.

```
    {% scope
    \def\LWR@align{center}%
    \ifstrequal{#3}{l}{\def\LWR@align{left}}{}%
    \ifstrequal{#3}{r}{\def\LWR@align{right}}{}%
    \ifstrequal{#3}{s}{\def\LWR@align{justify}}{}%
```

To print the `width` argument:

```
    \setlength{\LWR@tempwidth}{#2}%
```

`inline-block` allows `width` and `text-alignment` to be used in a `<span>`.

```
    \InlineClass[%
        \LWR@print@mbox{display:inline-block} ; %
```

```
        \LWR@print@mbox{text-align}:\LWR@align\ ; %
        width:\LWR@printlength{\LWR@tempwidth}%
    ]%
    {makebox}%

    {#4}%
    }% scope
}%
```

Without a width argument, the text is simply used inline:

```
{#4}% no width
}

\LWR@formatted{makebox}
```

`\framebox` `[⟨width⟩] [⟨pos⟩] {⟨text⟩}`

```
\LetLtxMacro\LWR@origframebox\framebox

\NewDocumentCommand{\LWR@HTML@framebox}{o o m}{%
\fbox{\makebox[#1][#2]{#3}}%
}

\LWR@formatted{framebox}
```

`\LWR@forceminwidth` `{⟨legth⟩}`

Sets `\LWR@atleastonept` to be at least 1pt.

```
\newlength{\LWR@atleastonept}

\newcommand*{\LWR@forceminwidth}[1]{%
\setlength{\LWR@atleastonept}{#1}%
\ifthenelse{%
    \lengthtest{\LWR@atleastonept>0pt}\AND%
    \lengthtest{\LWR@atleastonept<1pt}%
}%
{\setlength{\LWR@atleastonept}{1pt}}%
{}%
}
```

`\LWR@blackborderpadding` Prints the HTML attributes for a black border and padding.

`\LWR@forceminwidth` must be used first in order to set the border width.

```
\newcommand*{\LWR@blackborderpadding}{%
border:\LWR@printlength{\LWR@atleastonept} solid black ; %
padding:\LWR@printlength{\fboxsep}%
}
```

\fbox {⟨*text*⟩}

Creates a framed inline span enclosing the text.

Create a new HTML version, but don't use it until after xcolor may have loaded:

```
\newcommand{\LWR@HTML@fbox}[1]{%
\LWR@traceinfo{HTML fbox}%
\LWR@forceminwidth{\fboxrule}%
\InlineClass[%
\LWR@blackborderpadding%
]{fbox}{#1}
}
```

xcolor `\let`s things to `\fbox` when it is loaded, and this must remain even for HTML output while in a `lateximage`, so `\fbox` is not modified until `\AtBeginDocument`:

```
\AtBeginDocument{\LWR@formatted{fbox}}
```

\fboxBlock {⟨*text*⟩} Creates a framed HTML `<div>` of the text.

First, a print-mode version. This is newly defined for print mode, so it is defined inside `warpall`.

for HTML & PRINT:

```
\end{warpHTML}
\begin{warpall}
\let\fboxBlock\fbox
\end{warpall}
\begin{warpHTML}
```

for HTML output: Next, an HTML version:

```
\newcommand{\LWR@HTML@fboxBlock}[1]{%
\LWR@forceminwidth{\fboxrule}%
\begin{BlockClass}[%
\LWR@blackborderpadding%
]{fboxBlock}
#1
\end{BlockClass}
}

\LWR@formatted{fboxBlock}

\end{warpHTML}
```

Env `fminipage` [⟨*align*⟩] [⟨*height*⟩] [⟨*align*⟩] {⟨*width*⟩}

Creates a framed HTML around its contents.

for HTML & PRINT: Print version:

```
\begin{warpall}

\newsavebox{\LWR@fminipagebox}

\NewDocumentEnvironment{LWR@print@fminipage}{O{t} o O{t} m}
{%
```

An outer minipage will be used for vertical alignment. An inner minipage will be framed with \fbox.

If the optional inner alignment is not given, use the outer instead:

```
\IfValueTF{#3}%
{\def\LWR@thisalign{#3}}
{\def\LWR@thisalign{#1}}%
```

Form the outer minipage depending on whether a height was given. Make the outer minipage larger to compensate for the frame.

```
\IfValueTF{#2}%
{\minipage[#1][#2+2\fboxsep+2\fboxrule][\LWR@thisalign]{#4+2\fboxsep+2\fboxrule}}%
{\minipage[#1]{#4+2\fboxsep+2\fboxrule}}%
```

Capture the contents of the environment:

```
\begin{lrbox}{\LWR@fminipagebox}%
```

Nest the contents inside an inner minipage of the desired size:

```
\IfValueTF{#2}%
{\minipage[#1][#2][\LWR@thisalign]{#4}}%
{\minipage[#1]{#4}}%
}
{%
```

Close the inner minipage and the LR box with the contents:

```
\endminipage%
\end{lrbox}%
```

Create a frame around the contents of the environment:

```
\fbox{\usebox{\LWR@fminipagebox}}%
```

The entire thing is placed inside the outer minipage:

```
\endminipage%
}

\LetLtxMacro\fminipage\LWR@print@fminipage
\LetLtxMacro\endfminipage\endLWR@print@fminipage
% \newenvironment{fminipage}{\LWR@print@fminipage}{\endLWR@print@fminipage}

\end{warpall}
```

for HTML output:

```
\begin{warpHTML}

\NewDocumentEnvironment{LWR@HTML@fminipage}{O{t} o O{t} m}
{%
\LWR@traceinfo{fminipage #1 #2 #3 #4}%
\LWR@forceminwidth{\fboxrule}%
\setlength{\LWR@tempwidth}{#4}%
\IfValueT{#2}{\setlength{\LWR@tempheight}{#2}}%

\LWR@stoppars%

\begin{BlockClass}[%
\LWR@blackborderpadding ; %
\IfValueT{#2}{height:\LWR@printlength{\LWR@tempheight} ; }%
width:\LWR@printlength{\LWR@tempwidth}%
]{fminipage}%
}
{%
\end{BlockClass}%
```

Prevent paragraph tags around horizontal white space until the start of the next paragraph:

```
\global\booltrue{LWR@minipagethispar}%
\LWR@traceinfo{fminipage done}%
}

\LWR@formattedenv{fminipage}

\end{warpHTML}
```

`\raisebox` `{`⟨*raiselen*⟩`}` `[`⟨*height*⟩`]` `[`⟨*depth*⟩`]` `{`⟨*text*⟩`}`

```
\begin{warpHTML}

\NewDocumentCommand{\LWR@HTML@raisebox}{m o o m}{%
```

```
#4%
}

\LWR@formatted{raisebox}

\end{warpHTML}
```

88 Direct formatting

⚠ `\bfseries`, etc. `\textbf`, etc. are supported, but `\bfseries`, etc. work only in some situations.

⚠ HTML special chars `&`, `<`, and `>` have special meanings in HTML. If `\&`, `\textless`, and `\textgreater` are used, proper HTML entities will be used, but there may be HTML parsing problems if these special characters occur unescaped in program listings or other verbatim text.

program listings For program listings, the listings package is supported, and its `literate` option is used to convert `&`, `<`, and `>` to proper HTML entities.

verbatim The various `verbatim`-related environments do not convert `&`, `<`, and `>`, so care must be taken to avoid accidentally including valid HTML code inside these environments. Adding a space on either side may be sufficient.

For high-level block and inline custom CSS classes, see section 51.8.

for HTML output:

```
\begin{warpHTML}
```

`\emph` {⟨*text*⟩}

```
\DeclareRobustCommand{\LWR@HTML@emph}[1]{%
    {%
        \itshape%
        \LWR@htmlspan{em}{#1}%
    }%
}
\LWR@formatted{emph}

\DeclareRobustCommand{\LWR@null@emph}[1]{#1}
```

`\textmd` {⟨*text*⟩}

```
\DeclareRobustCommand{\LWR@HTML@textmd}[1]{%
    {%
        \mdseries%
        \InlineClass(font-weight:normal){textmd}{#1}%
```

```
10048     }%
10049 }
10050 \LWR@formatted{textmd}
10051
10052 \DeclareRobustCommand{\LWR@null@textmd}[1]{#1}
```

\textbf {⟨*text*⟩}

```
10053 \DeclareRobustCommand{\LWR@HTML@textbf}[1]{%
10054     {%
10055         \bfseries%
10056         \LWR@htmlspan{b}{#1}%
10057     }%
10058 }
10059 \LWR@formatted{textbf}
10060
10061 \DeclareRobustCommand{\LWR@null@textbf}[1]{#1}
```

\textrm {⟨*text*⟩}

```
10062 \DeclareRobustCommand{\LWR@HTML@textrm}[1]{%
10063     {%
10064         \rmfamily%
10065         \InlineClass(font-family:serif){textrm}{#1}%
10066     }%
10067 }
10068 \LWR@formatted{textrm}
10069
10070 \DeclareRobustCommand{\LWR@null@textrm}[1]{#1}
```

\textsf {⟨*text*⟩}

```
10071 \DeclareRobustCommand{\LWR@HTML@textsf}[1]{%
10072     {%
10073         \sffamily%
10074         \InlineClass(font-family:sans){textsf}{#1}%
10075     }%
10076 }
10077 \LWR@formatted{textsf}
10078
10079 \DeclareRobustCommand{\LWR@null@textsf}[1]{#1}
```

\texttt {⟨*text*⟩}

```
10080 \DeclareRobustCommand{\LWR@HTML@texttt}[1]{%
10081     {%
10082         \ttfamily%
```

```
        \LWR@htmlspan{kbd}{#1}%
    }%
}
\LWR@formatted{texttt}

\DeclareRobustCommand{\LWR@null@texttt}[1]{#1}
```

`\textup` {⟨*text*⟩}

```
\DeclareRobustCommand{\LWR@HTML@textup}[1]{%
    {%
        \upshape%
        \InlineClass(font-style:normal){textup}{#1}%
    }%
}
\LWR@formatted{textup}

\DeclareRobustCommand{\LWR@null@textup}[1]{#1}
```

`\textit` {⟨*text*⟩}

```
\DeclareRobustCommand{\LWR@HTML@textit}[1]{%
    {%
        \itshape%
        \LWR@htmlspan{i}{#1}%
    }%
}
\LWR@formatted{textit}

\DeclareRobustCommand{\LWR@null@textit}[1]{#1}
```

`\textsc` {⟨*text*⟩}

```
\DeclareRobustCommand{\LWR@HTML@textsc}[1]{%
    {%
        \scshape%
        \InlineClass(
            font-variant: small-caps ;
            font-variant-numeric: oldstyle-nums ;
        ){textsc}{#1}%
    }%
}
\LWR@formatted{textsc}

\DeclareRobustCommand{\LWR@null@textsc}[1]{#1}
```

`\textsl` {⟨*text*⟩}

```
\DeclareRobustCommand{\LWR@HTML@textsl}[1]{%
    {%
        \slshape%
        \InlineClass(font-style:oblique){textsl}{#1}%
    }%
}
\LWR@formatted{textsl}

\DeclareRobustCommand{\LWR@null@textsl}[1]{#1}
```

`\textnormal` {⟨*text*⟩}

```
\DeclareRobustCommand{\LWR@HTML@textnormal}[1]{\textmd{\textrm{\textup{#1}}}}
\LWR@formatted{textnormal}

\DeclareRobustCommand{\LWR@null@textnormal}[1]{#1}

\DeclareRobustCommand{\LWR@null@rmfamily}{}
\DeclareRobustCommand{\LWR@null@sffamily}{}
\DeclareRobustCommand{\LWR@null@ttfamily}{}
\DeclareRobustCommand{\LWR@null@bfseries}{}
\DeclareRobustCommand{\LWR@null@mdseries}{}
\DeclareRobustCommand{\LWR@null@upshape}{}
\DeclareRobustCommand{\LWR@null@slshape}{}
\DeclareRobustCommand{\LWR@null@scshape}{}
\DeclareRobustCommand{\LWR@null@itshape}{}
\DeclareRobustCommand{\LWR@null@normalfont}{}

\DeclareRobustCommand{\LWR@null@em}{}
```

`\LWR@nullfonts` Removes formatting during filename operations.

⚠ Use only inside a group.

The following are *not* made robust, since they must be expanded to their nullified versions.

```
\newcommand*{\LWR@nullfonts}{%
\LetLtxMacro\emph\LWR@null@emph%
\LetLtxMacro\textmd\LWR@null@textmd%
\LetLtxMacro\textbf\LWR@null@textbf%
\LetLtxMacro\textrm\LWR@null@textrm%
\LetLtxMacro\textsf\LWR@null@textsf%
\LetLtxMacro\texttt\LWR@null@texttt%
\LetLtxMacro\textup\LWR@null@textup%
```

```
\LetLtxMacro\textit\LWR@null@textit%
\LetLtxMacro\textsc\LWR@null@textsc%
\LetLtxMacro\textsl\LWR@null@textsl%
\LetLtxMacro\textnormal\LWR@null@textnormal%
\LetLtxMacro\rmfamily\LWR@null@rmfamily%
\LetLtxMacro\sffamily\LWR@null@sffamily%
\LetLtxMacro\ttfamily\LWR@null@ttfamily%
\LetLtxMacro\bfseries\LWR@null@bfseries%
\LetLtxMacro\mdseries\LWR@null@mdseries%
\LetLtxMacro\upshape\LWR@null@upshape%
\LetLtxMacro\slshape\LWR@null@slshape%
\LetLtxMacro\scshape\LWR@null@scshape%
\LetLtxMacro\itshape\LWR@null@itshape%
\LetLtxMacro\normalfont\LWR@null@normalfont%
\LetLtxMacro\em\LWR@null@em%


\renewcommand*{\,}{-}%
\renewcommand*{~}{-}%
\renewcommand*{\newline}{ }%
\renewcommand*{\textellipsis}{-}%

\renewcommand*{\HTMLunicode}[1]{}%
\renewcommand*{\HTMLentity}[1]{}%
```

Ampersand becomes “and”, which is a short word and is then removed from the filename.

```
\renewcommand*{\&}{and}%

\renewcommand{\textsuperscript}[1]{##1}%
\renewcommand{\textsubscript}[1]{##1}%


\renewcommand{\underline}[1]{##1}%

\RenewDocumentCommand{\LWR@htmlspanclass}{o m +m}{##3}%
\DeclareExpandableDocumentCommand{\InlineClass}{D{(}{)}{} o m +m}{##4}%
```

Nullify math macros.

```
\def\(##1\){}%
\def\[##1\]{}%
\RenewDocumentCommand{\LWR@subsingledollar}{s m m m}{}%
```

Use the simpler form with \texorpdfstring:

```
\let\texorpdfstring\relax%
```

```
\newcommand{\texorpdfstring}[2]{##2}%
}
```

Remembers the current font family, series, and shape.

```
\newcommand*{\LWR@f@family}{rm}
\newcommand*{\LWR@f@series}{md}
\newcommand*{\LWR@f@shape}{up}
```

`\LWR@textcurrentfont` {⟨*text*⟩}

Prints the text with the current font choices. Avoids nesting repeated font selections.

```
\newcounter{LWR@textcurrentfontdepth}
\setcounter{LWR@textcurrentfontdepth}{0}

\newcommand*{\LWR@textcurrentfont}[1]{%
    \ifnumcomp{\value{LWR@textcurrentfontdepth}}{>}{0}%
        {%
            \addtocounter{LWR@textcurrentfontdepth}{1}%
            #1%
            \addtocounter{LWR@textcurrentfontdepth}{-1}%
        }%
        {%
            \addtocounter{LWR@textcurrentfontdepth}{1}%
            \InlineClass{%
                    text\LWR@f@family\LWR@origtilde{}%
                    text\LWR@f@series\LWR@origtilde{}%
                    text\LWR@f@shape%
                }%
                {#1}%
            \addtocounter{LWR@textcurrentfontdepth}{-1}%
        }%
}
```

Env `LWR@blocktextcurrentfont` Prints the contents with the current font choices.

```
\newenvironment*{LWR@blocktextcurrentfont}{%
\BlockClass{%
        text\LWR@f@family\LWR@origtilde{}%
        text\LWR@f@series\LWR@origtilde{}%
        text\LWR@f@shape%
    }%
}{\endBlockClass}
```

`\mdseries`

```
10215 \renewrobustcmd*{\mdseries}{\renewcommand*{\LWR@f@series}{md}}
```

\bfseries

```
10216 \renewrobustcmd*{\bfseries}{\renewcommand*{\LWR@f@series}{bf}}
```

\rmfamily

```
10217 \renewrobustcmd*{\rmfamily}{\renewcommand*{\LWR@f@family}{rm}}
```

\sffamily

```
10218 \renewrobustcmd*{\sffamily}{\renewcommand*{\LWR@f@family}{sf}}
```

\ttfamily

```
10219 \renewrobustcmd*{\ttfamily}{\renewcommand*{\LWR@f@family}{tt}}
```

\upshape

```
10220 \renewrobustcmd*{\upshape}{\renewcommand*{\LWR@f@shape}{up}}
```

\itshape

```
10221 \renewrobustcmd*{\itshape}{\renewcommand*{\LWR@f@shape}{it}}
```

\scshape

```
10222 \renewrobustcmd*{\scshape}{\renewcommand*{\LWR@f@shape}{sc}}
```

\slshape

```
10223 \renewrobustcmd*{\slshape}{\renewcommand*{\LWR@f@shape}{sl}}
```

\normalfont

```
10224 \renewrobustcmd*{\normalfont}{\rmfamily\mdseries\upshape}
```

\sp {⟨*text*⟩}

For siunitx. Must work in math mode.

```
10225 \renewcommand{\sp}[1]{\text{<sup>#1</sup>}{}}
```

`\sb` {⟨*text*⟩}

For siunitx. Must work in math mode.

```
\renewcommand{\sb}[1]{\text{<sub>#1</sub>}{}}
```

`\textsuperscript` {⟨*text*⟩}

```
\renewrobustcmd{\textsuperscript}[1]{\LWR@htmlspan{sup}{#1}}
```

`\@textsuperscript` {⟨*text*⟩}

```
\renewcommand{\@textsuperscript}[1]{\LWR@htmlspan{sup}{#1}}
```

`\textsubscript` {⟨*text*⟩}

```
\AtBeginDocument{
\renewrobustcmd{\textsubscript}[1]{\LWR@htmlspan{sub}{#1}}
}
```

`\@textsubscript` {⟨*text*⟩}

```
\AtBeginDocument{
\renewcommand{\@textsubscript}[1]{\LWR@htmlspan{sub}{#1}}
}
```

`\up` {⟨*text*⟩} Prints superscript.

This is `\let` at the beginning of the document in case some other package has changed the definition.

```
\AtBeginDocument{\let\up\textsuperscript}
```

`\fup` {⟨*text*⟩} Prints superscript.

Supports fmtcount package.

This is `\let` at the beginning of the document in case some other package has changed the definition.

```
\AtBeginDocument{\let\fup\textsuperscript}
```

`\underline` {⟨*text*⟩}

```
\renewcommand{\underline}[1]{%
    \InlineClass%
        (text-decoration:underline; text-decoration-skip: auto)%
        {underline}{#1}%
}
```

`\LWR@overline` {⟨*text*⟩}

```
\newcommand{\LWR@overline}[1]{%
    \InlineClass%
        (text-decoration:overline; text-decoration-skip: auto)%
        {overline}{#1}%
}
```

`\LWR@currenttextcolor` The color to use for text and `\rule`, defaulting to black:

```
\newcommand*{\LWR@currenttextcolor}{black}
```

`\LWR@tempcolor` `\LWR@tempcolortwo` The color converted to HTML colorspace.

```
\newcommand*{\LWR@tempcolor}{}
\newcommand*{\LWR@tempcolortwo}{}
```

`\LWR@findcurrenttextcolor` Sets `\LWR@tempcolor` to the current color.

```
\newcommand*{\LWR@findcurrenttextcolor}{%
\renewcommand{\LWR@tempcolor}{black}%
}
```

`\LWR@textcurrentcolor` {⟨*text*⟩} Like `\textcolor` but uses the current `\color` instead.

```
\NewDocumentCommand{\LWR@textcurrentcolor}{m}{%
    \renewcommand*{\LWR@currenttextcolor}{black}%
    #1%
}
```

```
\end{warpHTML}
```

for PRINT output:

```
\begin{warpprint}
```

`\LWR@textcurrentfont` {⟨*text*⟩}

Prints the text with the current font choices.

```
\newcommand*{\LWR@textcurrentfont}[1]{#1}
```

Env `LWR@blocktextcurrentfont` Prints the contents with the current font choices.

```
\newenvironment*{LWR@blocktextcurrentfont}{}{}
\end{warpprint}
```

89 Skips, spaces, font sizes

for HTML output:

```
\begin{warpHTML}
```

`\,` and `\thinspace` may be redefined by other packages, so are redefined `\AtBeginDocument` here.

Direct-formatting space commands become HTML entities:

```
\AtBeginDocument{
\renewrobustcmd*{\,}{\HTMLunicode{202f}} % HTML thin non-breakable space
\renewrobustcmd*{\thinspace}{\HTMLunicode{202f}}    % HTML thin non-breakable space
\renewrobustcmd*{\negthinspace}{\HTMLunicode{202f}}    % HTML thin non-breakable space
\renewrobustcmd*{~}{\HTMLentity{nbsp}}
\renewrobustcmd*{\textellipsis}{\HTMLunicode{2026}}
}
```

Direct-formatting font sizes are ignored:

```
\newrobustcmd*{\LWR@HTML@normalsize}{}
\LWR@formatted{normalsize}

\newrobustcmd*{\LWR@HTML@small}{}
\LWR@formatted{small}

\newrobustcmd*{\LWR@HTML@footnotesize}{}
\LWR@formatted{footnotesize}

\newrobustcmd*{\LWR@HTML@scriptsize}{}
\LWR@formatted{scriptsize}

\newrobustcmd*{\LWR@HTML@tiny}{}
\LWR@formatted{tiny}

\newrobustcmd*{\LWR@HTML@large}{}
\LWR@formatted{large}

\newrobustcmd*{\LWR@HTML@Large}{}
\LWR@formatted{Large}
```

```
\newrobustcmd*{\LWR@HTML@LARGE}{}
\LWR@formatted{LARGE}

\newrobustcmd*{\LWR@HTML@huge}{}
\LWR@formatted{huge}

\newrobustcmd*{\LWR@HTML@Huge}{}
\LWR@formatted{Huge}


\DeclareDocumentCommand{\onecolumn}{}{}

\DeclareDocumentCommand{\twocolumn}{O{}}{
#1
}
```

\hfill

```
\newcommand*{\LWR@HTML@hfill}{\qquad}
\LWR@formatted{hfill}
```

\hrulefill

```
\newcommand*{\LWR@HTML@hrulefill}{\rule{1in}{1pt}}
\LWR@formatted{hrulefill}
```

\dotfill

```
\newcommand*{\LWR@HTML@dotfill}{\dots}
\LWR@formatted{dotfill}
```

\newpage

```
\renewcommand*{\newpage}{

}
```

\newline Uses the HTML <br /> element.

```
\newrobustcmd*{\LWR@newlinebr}{\unskip\LWR@htmltag{br /}\LWR@orignewline}%
\LetLtxMacro\newline\LWR@newlinebr
```

\\ Redefined to \LWR@endofline or \LWR@tabularendofline.

\LWR@endofline * [⟨*len*⟩]

\\ is assigned to \LWR@endofline at \LWR@LwarpStart.

Inside tabular, \\ is temporarily changed to \LWR@tabularendofline.

```
\LetLtxMacro\LWR@origendofline\\
\NewDocumentCommand{\LWR@endofline}{s O{0pt}}
{%
\newline%

\setlength{\LWR@templengthone}{#2}%
\ifdimgreater{\LWR@templengthone}{0pt}{\newline}{}%
}
```

\LWR@minipagestartpars
\hspace
\enskip
\quad
\qquad

Minipages are often placed side-by-side inside figures, with a bit of horizontal space to separate them. Since HTML does not allow a to be inside a p, paragraphs must be turned off during the generation of the minipage, then turned on after the minipage is complete. When this occurs between side-by-side minipages, lwarp correctly suppresses the paragraph tags between the minipages, unless some other text is between the minipages. Such text forms its own paragraph, resulting in text after a minipage to be on its own line. Since people often place small horizontal space between minipages, it is desirable to maintain this space if possible. lwarp tries to do this by remembering that a minipage has been seen, in which case paragraph tags are suppressed around \hspace, \enskip, \quad, and \qquad until the end of the paragraph, when the closing p tag is created.

When a minipage is seen, the boolean LWR@minipagethispar is set, telling the following horizontal whitespace commands to try to suppress their surrounding paragraph tags. LWR@minipagethispar is cleared at the next end of paragraph, when the HTML paragraph closing tag is generated.

Placed just before \hspace, \quad, or \qquad's HTML output.

```
\newcommand*{\LWR@minipagestartpars}{%
\ifbool{LWR@minipagethispar}{\LWR@startpars}{}%
}
```

\LWR@minipagestoppars Placed just after \hspace, \quad, or \qquad's HTML output.

```
\newcommand*{\LWR@minipagestoppars}{%
\ifbool{LWR@minipagethispar}{\LWR@stoppars}{}%
}
```

\quad Handles special minipage & horizontal space interactions.

```
\renewcommand*{\quad}{%
\LWR@minipagestoppars%
\HTMLunicode{2001}%
\LWR@minipagestartpars%
}
```

\qquad Handles special minipage & horizontal space interactions.

```
\renewcommand*{\qquad}{\quad\quad}
```

\enskip Handles special minipage & horizontal space interactions.

```
\renewcommand*{\enskip}{%
\LWR@minipagestoppars%
\HTMLunicode{2000}%
\LWR@minipagestartpars%
}
```

Len \LWR@tempwidth Used to compute span width, height, raise for \hspace and \rule:

Len \LWR@tempheight

Len \LWR@tempraise

```
\newlength{\LWR@tempwidth}
\newlength{\LWR@tempheight}
\newlength{\LWR@tempraise}
```

\LWR@select@html@hspace * {⟨*length*⟩} * {⟨*length*⟩}

\hspace

Handles special minipage & horizontal space interactions.

Prints a span of a given width. Ignores the optional star.

\hspace{\fill} is converted to \hspace{2em}, equal to \qquad.

```
\newcommand{\LWR@select@html@hspace}{%
\RenewDocumentCommand{\hspace}{s m}{%
\setlength{\LWR@tempwidth}{##2}%
```

If \fill, change to \qquad:

```
\ifnum\gluestretchorder\LWR@tempwidth>0%
\setlength{\LWR@tempwidth}{2em}%
\fi%
```

Only if the width is not zero:

```
\ifdimcomp{\LWR@tempwidth}{=}{0pt}{}{%
```

If had a minipage this paragraph, try to inline the white space without generating paragraph tags:

```
    \LWR@minipagestoppars%
```

Support the HTML thin wrappable space:

```
    \ifdimcomp{\LWR@tempwidth}{=}{.16667em}%
    {%
        \HTMLunicode{2009}% thin breakable space
    }%
```

Print the span with the converted width. Not rounded.

```
    {%
        \LWR@htmltagc{%
            span style="width:\LWR@printlength{\LWR@tempwidth};  % extra space
                display:inline-block"%
        }%
```

If formatting for a word processor, approximate with a number of \quads, in case a span of a given width is not supported:

```
        \ifbool{FormatWP}{%
            \setlength{\LWR@templengthone}{\LWR@tempwidth}%
            \whiledo{\lengthtest{\LWR@templengthone>1em}}{%
                \quad%
                \addtolength{\LWR@templengthone}{-1em}%
            }%
        }{}%
```

Close the span:

```
        \LWR@htmltagc{/span}%
    }%
```

If had a minipage this paragraph, try to inline the white space without generating paragraph tags:

```
    \LWR@minipagestartpars%
}% width not 0
}%
}
```

\LWR@select@html@nohspace
\hspace

* {⟨*length*⟩}

Used to disable \hspace while creating description \items.

```
\newcommand{\LWR@select@html@nohspace}{%
    \RenewDocumentCommand{\hspace}{s m}{}%
}
```

`\LWR@select@print@hspace`

```
\newcommand*{\LWR@select@print@hspace}{%
    \renewrobustcmd\hspace{\@ifstar\@hspacer\@hspace}%
}
```

`\hspace` * {⟨*length*⟩}

Handles special minipage & horizontal space interactions.

```
\LWR@select@html@hspace
```

`\LWR@vspace` * {⟨*length*⟩} Nullified vspace.

```
\NewDocumentCommand{\LWR@HTML@vspace}{s m}{}

\LWR@formatted{vspace}
```

`\linebreak` [⟨*num*⟩] Inserts an HTML `br` tag.

```
\renewcommand*{\linebreak}[1][]{\newline}
```

`\nolinebreak` [⟨*num*⟩]

```
\renewcommand*{\nolinebreak}[1][]{}
```

`\pagebreak` [⟨*num*⟩] Starts a new paragraph.

```
\renewcommand*{\pagebreak}[1][]{

}
```

`\nopagebreak` [⟨*num*⟩]

```
\renewcommand*{\nopagebreak}[1][]{}
```

`\enlargethispage` * {⟨*len*⟩}

```
\RenewDocumentCommand{\enlargethispage}{s m}{}
```

\clearpage
\cleardoublepage

```
\renewcommand*{\clearpage}{}
\renewcommand*{\cleardoublepage}{}
```

\rule [⟨*raise*⟩] {⟨*width*⟩} {⟨*height*⟩}

Handles special minipage & horizontal space interactions.

Creates a span of a given width and height. Ignores the optional star.

`\fill` is zero-width, so `\hspace{\fill}` is ignored.

```
\newcommand*{\LWR@HTML@rule}[3][]{%
```

The width is copied into a temporary LaTeX length, from which comparisons and conversions may be made:

```
\setlength{\LWR@tempwidth}{#2}%
```

If it's zero-width then skip the entire rule:

```
\ifthenelse{\lengthtest{\LWR@tempwidth=0pt}}
{}% zero- width
{% non-zero width
```

If it's non-zero width, set a minimal thickness so that it more reliably shows in the browser:

```
    \ifthenelse{%
        \lengthtest{\LWR@tempwidth>0pt}\AND%
        \lengthtest{\LWR@tempwidth<1pt}%
    }%
    {\setlength{\LWR@tempwidth}{1pt}}{}%
```

Likewise with height:

```
    \setlength{\LWR@tempheight}{#3}%
    \ifthenelse{%
        \lengthtest{\LWR@tempheight>0pt}\AND%
        \lengthtest{\LWR@tempheight<1pt}%
    }%
    {\setlength{\LWR@tempheight}{1pt}}{}%
```

If had a minipage this paragraph, try to inline the rule without generating paragraph tags:

```
    \LWR@minipagestoppars%
```

Print the span with the converted width and height. The width and height are NOT rounded, since a height of less than 1pt is quite common in LaTeX code.

```
\LWR@findcurrenttextcolor%
\LWR@htmltagc{%
span
style="%
```

The background color is used to draw the filled rule. The color may be changed by `\textcolor`.

```
\ifbool{FormatWP}{}{background:\LWR@currenttextcolor ; }%
```

The width and height are printed, converted to PT:

```
width:\LWR@printlength{\LWR@tempwidth} ; %
height:\LWR@printlength{\LWR@tempheight} ; %
```

The raise height is converted to a CSS transform. The `*2` raise multiplier is to approximately match HTML output's X height. Conversion to a LaTeX length allows a typical LaTeX expression to be used as an argument for the raise, whereas printing the raise argument directly to HTML output without conversion to a LaTeX length limits the allowable syntax. To do: A superior method would compute a ratio of LaTeX ex height, then print that to HTML with an ex unit.

```
\ifblank{#1}%
{}%
{%
    \setlength{\LWR@tempraise}{0pt-#1}%
    \setlength{\LWR@tempraise}{\LWR@tempraise*2}%
    \LWR@orignewline%
    -ms-transform: translate(0pt,\LWR@printlength{\LWR@tempraise}); %
    \LWR@orignewline%
    -webkit-transform: translate(0pt,\LWR@printlength{\LWR@tempraise}); %
    \LWR@orignewline%
    transform: translate(0pt,\LWR@printlength{\LWR@tempraise}); %
    \LWR@orignewline%
}%
```

Display inline-block to place the span inline with the text:

```
display:inline-block;"%
}%
```

If formatting for a word processor, approximate with a number of underscores, in case a span of a given width is not supported:

```
    \ifbool{FormatWP}{%
```

```
            \setlength{\LWR@templengthone}{\LWR@tempwidth}%
            \whiledo{\lengthtest{\LWR@templengthone>1em}}{%
                \_{}%
                \addtolength{\LWR@templengthone}{-1em}%
            }%
        }{}%
```

Close the span:

```
    \LWR@htmltagc{/span}%
```

If had a minipage this paragraph, try to inline the white space without generating paragraph tags:

```
    \LWR@minipagestartpars%
}% non-zero width
}

\LWR@formatted{rule}

\end{warpHTML}
```

90 \phantomsection

for HTML output:

```
\begin{warpHTML}
```

\phantomsection Emulate the hyperref \phantomsection command, often used to insert the bibliography into the table of contents. Ignores \ForceHTMLTOC.

```
\DeclareDocumentCommand{\phantomsection}{}{%
\begingroup%
\boolfalse{LWR@forcinghtmltoc}%
\section*{}%
\endgroup%
}

\end{warpHTML}
```

91 \LaTeX and other logos

Logos for HTML and print modes:

Some of these logos may be redefined in a later package, so after loading other packages, and at the beginning of the document, their definitions are finally `\let` in `\LWR@LwarpStart`.

For css conversions, see:
http://edward.oconnor.cx/2007/08/tex-poshlet
http://nitens.org/taraborelli/texlogo
and the spacing described in the metafont package documentation.

91.1 HTML logos

for HTML output:
```
\begin{warpHTML}
```

`\TeX` TEX

`latexlogo` is a CSS class used to properly typeset the E and A in LATEX and friends.

`latexlogofont` is a CSS class used to select the font for the rest of the logo in LATEX, LuaTEX, ConTEXt, etc.

```
\LetLtxMacro\LWR@origTeX\TeX

\newrobustcmd*{\LWR@TeX}
{%
    \InlineClass{latexlogofont}%
    {%
        \InlineClass{latexlogo}%
        {%
            T%
            \InlineClass{latexlogosub}{e}%
            X%
        }%
    }%
}
```

`\LaTeX` LATEX, LATEX 2_ε
`\LaTeXe`

```
\LetLtxMacro\LWR@origLaTeX\LaTeX

\newrobustcmd*{\LWR@LaTeX}
{%
    \InlineClass{latexlogofont}%
    {%
        \InlineClass{latexlogo}%
        {%
            L%
```

```
            \InlineClass{latexlogosup}{a}%
            T%
            \InlineClass{latexlogosub}{e}%
            X%
        }%
    }%
}

\LetLtxMacro\LWR@origLaTeXe\LaTeXe

\renewrobustcmd*{\LaTeXe}
{%
    \LaTeX%
    \InlineClass{latexlogofont}{%
        \InlineClass{latexlogotwoe}{%
            2%
            \InlineClass{latexlogotwoesub}{\HTMLunicode{03B5}}%
        }%
    }%
}
```

`\LuaTeX` `\LuaLaTeX` LuaTEX, LuaLATEX

```
\newrobustcmd*{\LWR@LuaTeX}{\InlineClass{latexlogofont}{Lua}\TeX}
\newrobustcmd*{\LWR@LuaLaTeX}{\InlineClass{latexlogofont}{Lua}\LaTeX}
```

`\XeTeX` `\XeLaTeX` XETEX, XELATEX

`xetexlogo` is a CSS class which aligns the backwards E in XETEX and spaces TEX appropriately.

`xelatexlogo` is a CSS class which aligns the backwards E in XELATEX and spaces LATEX appropriately.

```
\newrobustcmd*{\Xe}
    {%
        X%
        \InlineClass{xelatexlogosub}{\HTMLunicode{18e}}%
    }

\newrobustcmd*{\LWR@XeTeX}{\InlineClass{xelatexlogo}{\Xe}\TeX}

\newrobustcmd*{\LWR@XeLaTeX}{\InlineClass{xelatexlogo}{\Xe}\LaTeX}
```

`\ConTeXt` ConTEXt

```
\newrobustcmd*{\LWR@ConTeXt}
```

```
{\InlineClass{latexlogofont}{Con}\TeX{}%
\InlineClass{latexlogofont}{t}}
```

\BibTeX BibTeX, *MakeIndex*
\MakeIndex

```
\providerobustcmd*{\BibTeX}
{\InlineClass{latexlogofont}{B\textsc{ib}}\TeX}

\newrobustcmd*{\MakeIndex}
{\InlineClass{latexlogofont}{\textit{MakeIndex}}}
```

\AmS $\mathcal{AMS}$

amslogo is a css class used for the $\mathcal{AMS}$ logo.

```
\AtBeginDocument{%
\DeclareDocumentCommand{\AmS}{}
{%
    \InlineClass{amslogo}{%
        \textit{%
            A%
            \InlineClass{latexlogosub}{M}%
            S%
        }%
    }%
}%
}
```

\MiKTeX MiKTeX

```
\newrobustcmd*{\MiKTeX}{\InlineClass{latexlogofont}{MiK}\TeX}
```

\LyX LyX

lyxlogo is a css class used for the LyX logo.

```
\newrobustcmd*{\LyX}{\InlineClass{lyxlogo}{LyX}}
```

```
\end{warpHTML}
```

91.2 Print logos

for PRINT output:

```
\begin{warpprint}

```

```
\newrobustcmd*{\XeTeXrevE}
    {\hspace{-.1667em}\raisebox{-.5ex}{E}\hspace{-.125em}}

\AtBeginDocument{
\@ifpackageloaded{graphics}{
    \renewrobustcmd*{\XeTeXrevE}
        {\hspace{-.1667em}\raisebox{-.5ex}{\reflectbox{E}}\hspace{-.125em}}
}{
    \PackageWarning{lwarp}{Load graphicx or graphics
        for improved XeTeX logo}
}
}

\providerobustcmd*{\XeTeX}{\mbox{X\XeTeXrevE\TeX}}
\providerobustcmd*{\XeLaTeX}{\mbox{X\XeTeXrevE\LaTeX}}
\providerobustcmd*{\AmS}{%
    \leavevmode\hbox{$\mathcal A\kern-.2em\lower.376ex%
    \hbox{$\mathcal M$}\kern-.2em\mathcal S$}%
}
\newrobustcmd*{\LyX}{\textsf{LyX}}
\providerobustcmd*{\LuaTeX}{\mbox{Lua\TeX}}
\providerobustcmd*{\LuaLaTeX}{\mbox{Lua\LaTeX}}
\providerobustcmd*{\BibTeX}{\mbox{B\textsc{ib}\TeX}}
\providerobustcmd*{\MakeIndex}{\mbox{\textit{MakeIndex}}}
\providerobustcmd*{\ConTeXt}{\mbox{Con\TeX{}t}}
\providerobustcmd*{\MiKTeX}{\mbox{MiK\TeX}}
\end{warpprint}
```

92 \AtBeginDocument, \AtEndDocument

for HTML output:

```
\begin{warpHTML}
```

\LWR@LwarpStart
\LWR@LwarpEnd

Automatically sets up the HTML-related actions for the start and end of the document.

```
\AfterEndPreamble{\LWR@LwarpStart}
\AtEndDocument{\LWR@LwarpEnd}


\end{warpHTML}
```

93 KOMA-SCRIPT classes

Load patches to koma-script.

for HTML output:
```
\begin{warpHTML}

\@ifclassloaded{scrbook}{\RequirePackage{lwarp-patch-komascript}}{}
\@ifclassloaded{scrartcl}{\RequirePackage{lwarp-patch-komascript}}{}
\@ifclassloaded{scrreprt}{\RequirePackage{lwarp-patch-komascript}}{}

\end{warpHTML}
```

94 Memoir class

Load patches to memoir.

for HTML output:
```
\begin{warpHTML}

\@ifclassloaded{memoir}{\RequirePackage{lwarp-patch-memoir}}{}

\end{warpHTML}
```

95 CTEXpatch

Patches for ctex and related classes, which are loaded before lwarp.

All CTEX classes and the ctex package seem to load ctexpatch, so its presence is used to decide whether to have lwarp patch CTEX.

for HTML output:
```
\begin{warpHTML}
```

`\AtBeginDocument` in case the user set `FileSectionNames` in the preamble.

```
\AtBeginDocument{
    \@ifpackageloaded{ctexpatch}{%
        \def\@partcntformat#1{%
            \LWR@isolate{\CTEX@partname}~%
            \CTEX@part@aftername%
        }%

        \def\@partnameformat{}

        \def\@chapcntformat#1{%
            \LWR@isolate{\CTEX@chaptername}~%
            \CTEX@chapter@aftername%
        }%
```

```
10587       }{}
10588 }

10589 \end{warpHTML}
```

File 2 `lwarp-2in1.sty`

§ 96 Package 2in1

Pkg 2in1 2in1 is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{2in1}
```

File 3 `lwarp-2up.sty`

§ 97 Package 2up

Pkg 2up 2up is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{2up}[2010/05/15]

\def\source#1#2#3{}
\def\target#1#2#3{}
\def\targetlayout#1{}
\newdimen\pageseplength
\newdimen\pagesepwidth
\newdimen\pagesepoffset
\def\twoupemptypage{}
\def\twoupclearpage{}
\def\twoupeject{}
\def\twouparticle{}
\def\twoupplain{}
\def\twouplegaltarget{}
\def\twouplandscape{}
\def\TwoupWrites{}
```

File 4 `lwarp-a4.sty`

§ 98 Package a4

Pkg a4 a4 is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{a4}
```

```
2 \newcommand*{\WideMargins}{}
```

File 5 `lwarp-a4wide.sty`

§ 99 Package a4wide

Pkg `a4wide` a4wide is ignored.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{a4wide}
```

File 6 `lwarp-a5comb.sty`

§ 100 Package a5comb

Pkg `a5comb` a5comb is ignored.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{a5comb}
```

File 7 `lwarp-abstract.sty`

§ 101 Package abstract

(*Emulates or patches code by* Peter Wilson.)

Pkg `abstract` abstract is supported and patched by lwarp.

⚠ missing TOC If using the `number` option with file splits, be sure to place the table of contents before the abstract. The `number` option causes a section break which may cause a file split, which would put a table of contents out of the home page if it is after the abstract.

for HTML output: memoir provides an `abstract` environment even though it is not an article or report class. Meanwhile, lwarp loads book to emulate memoir, but book does not have an `abstract` environment, so when the abstract package is loaded for emulation there is no pre-existing `abstract` to redefine, which would cause an error. Thus, a null `abstract` is provide here:

```
1 \ProvideDocumentEnvironment{abstract}{}{}{}
```

Accept all options for lwarp-abstract:

```
\LWR@ProvidesPackagePass{abstract}

\AtBeginDocument{
\BeforeBeginEnvironment{abstract}{
\LWR@forcenewpage
\BlockClass{abstract}
}
\AfterEndEnvironment{abstract}{\endBlockClass}
}

\renewcommand{\@bsrunintitle}{%
\hspace*{\abstitleskip}%
{\abstractnamefont%
\InlineClass{abstractrunintitle}{\abstractname}%
\@bslabeldelim}%
}

\@ifclassloaded{memoir}
{
  \renewenvironment{abstract}{%
%     \titlepage
    \null\vfil
    \@beginparpenalty\@lowpenalty
    \if@bsrunin
    \else
      \if@bsstyle
        \abstitlestyle{\BlockClassSingle{abstracttitle}{\abstractname}}
      \else
        \ifnumber@bs
          \num@bs
        \else
          \begin{\absnamepos}%
  \abstractnamefont \BlockClassSingle{abstracttitle}{\abstractname}
            \@endparpenalty\@M
          \end\absnamepos%
%%        \vspace{\abstitleskip}%
        \fi
      \fi
      \vspace{\abstitleskip}%
    \fi
    \put@bsintoc%
    \begin{@bstr@ctlist}\if@bsrunin\@bsrunintitle\fi\abstracttextfont}%
    {\par\end{@bstr@ctlist}\vfil\null%\endtitlepage
    }
}{% not memoir
\if@titlepage
  \renewenvironment{abstract}{%
%     \titlepage
    \null\vfil
```

```
    \@beginparpenalty\@lowpenalty
    \if@bsrunin
    \else
      \if@bsstyle
        \abstitlestyle{\BlockClassSingle{abstracttitle}{\abstractname}}
      \else
        \ifnumber@bs
          \num@bs
        \else
          \begin{\absnamepos}%
  \abstractnamefont \BlockClassSingle{abstracttitle}{\abstractname}
            \@endparpenalty\@M
          \end\absnamepos%
%%        \vspace{\abstitleskip}%
        \fi
      \fi
      \vspace{\abstitleskip}%
    \fi
    \put@bsintoc%
    \begin{@bstr@ctlist}\if@bsrunin\@bsrunintitle\fi\abstracttextfont}%
    {\par\end{@bstr@ctlist}\vfil\null%\endtitlepage
    }
\else
  \renewenvironment{abstract}{%
    \if@bsrunin
    \else
      \if@bsstyle
        \abstitlestyle{\BlockClassSingle{abstracttitle}{\abstractname}}
      \else
        \ifnumber@bs
          \num@bs
        \else
\begin{\absnamepos}%
\abstractnamefont\BlockClassSingle{abstracttitle}{\abstractname}%
\end\absnamepos%
%%        \vspace{\abstitleskip}%
        \fi
      \fi
      \vspace{\abstitleskip}%
    \fi
    \put@bsintoc%
    \begin{@bstr@ctlist}\if@bsrunin\@bsrunintitle\fi\abstracttextfont}%
    {\par\end{@bstr@ctlist}}
\fi
}% not memoir
```

File 8 `lwarp-accsupp.sty`

§ 102 Package accsupp

Pkg `accsupp` accsupp is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{accsupp}

\newcommand*{\BeginAccSupp}[1]{}
\newcommand*{\EndAccSupp}[1]{}
```

File 9 `lwarp-acro.sty`

§ 103 Package acro

(*Emulates or patches code by* Clemens Niederberger.)

Pkg `acro` acro is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{acro}
```

`\DeclareAcronym` is used in the preamble, where lwarp has not yet made the dollar active, so temporarily enable lwarp math catcode just for this definition:

```
\ExplSyntaxOn
\NewDocumentCommand \LWR@DeclareAcronym {mm}
{
    \acro_declare_acronym:nn {#1} {#2}
    \catcode`\$=3% lwarp
}
\ExplSyntaxOff

\RenewDocumentCommand{\DeclareAcronym}{}{
    \catcode`\$=\active% lwarp
    \LWR@DeclareAcronym
}
```

Modified to activate the current font:

```
\ExplSyntaxOn
\cs_gset_protected:Npn \acro_write_short:nn #1#2
  {
```

```
    \mode_if_horizontal:F { \leavevmode }
    \group_begin:
      \bool_if:NTF \l__acro_custom_format_bool
        { \l__acro_custom_format_tl }
        { \l__acro_short_format_tl }
      {\LWR@textcurrentfont{#2}}% lwarp
    \group_end:
  }

\cs_gset_protected:Npn \acro_write_alt:nn #1#2
  {
    \mode_if_horizontal:F { \leavevmode }
    \group_begin:
      \bool_if:NTF \l__acro_custom_format_bool
        { \l__acro_custom_format_tl }
        { \l__acro_alt_format_tl }
      {\LWR@textcurrentfont{#2}}% lwarp
    \group_end:
  }

\cs_gset_protected:Npn \acro_write_long:nn #1#2
  {
    \mode_if_horizontal:F { \leavevmode }
    \group_begin:
      \bool_if:NTF \l__acro_custom_long_format_bool
        { \l__acro_custom_long_format_tl }
        { \use:n }
      {
        \use:x
          {
            \exp_not:n {#1}
            {
              \bool_if:NTF \l__acro_first_upper_bool
                { \exp_not:N \__acro_first_upper_case:n { \exp_not:n {
                    \LWR@textcurrentfont{#2}% lwarp
                } } }
                { \exp_not:n {\LWR@textcurrentfont{#2}} }% lwarp
            }
          }
      }
    \group_end:
  }
\ExplSyntaxOff
```

File 10 `lwarp-acronym.sty`

§ 104 Package acronym

(*Emulates or patches code by* Tobias Oetiker.)

Pkg `acronym` acronym is patched for use by lwarp.

⚠ multiply-defined labels `\acresetall` does not work with cleveref, causing multiply-defined labels. lwarp patches acronym for HTML, but not for print mode.

for HTML output:

```
\LWR@ProvidesPackagePass{acronym}
```

Uses `\textit` instead of `\itshape`:

```
\renewcommand{\acfia}[1]{%
  {\textit{\AC@acl{#1}}} (\ifAC@starred\acs*{#1}\else\acs{#1}\fi)}
```

Removes the mbox to allow math inside:

```
\renewcommand*\AC@acs[1]{%
%     \mbox{
 \expandafter\AC@get\csname fn@#1\endcsname\@firstoftwo{#1}}
% }
```

Modified for cleveref and zref:

```
\renewcommand*\AC@und@new1@bel[3]{%
    \@ifundefined{#1@#3}%
    {%
        \global\expandafter\let\csname#2@#3\endcsname\@nnil
        \global\expandafter\let\csname#2@#3@cref\endcsname\@nnil% lwarp
    }%
    {%
        \global\expandafter\let\csname#1@#3\endcsname\relax
        \global\expandafter\let\csname#1@#3@cref\endcsname\relax% lwarp
        \global\expandafter\let\csname Z@R@#3\endcsname\relax% lwarp
    }%
}%
```

Modified for cleveref and zref:

```
\renewcommand*\AC@testdef[3]{%
\ifstrequal{#1}{Z@R}{}{% lwarp
```

```
  \@ifundefined{s@#2}\@secondoftwo\@firstofone
  {%
    \expandafter\ifx\csname s@#2\endcsname\empty
      \expandafter\@firstofone
    \else
      \expandafter\xdef\csname s@#2\endcsname{%
        \expandafter\expandafter
        \expandafter\@gobble
        \csname s@#2\endcsname
      }%
      \expandafter\@gobble
    \fi
  }%
  {%
    \@testdef{#1}{#2}{#3}%
  }%
}% lwarp
}%
```

File 11 `lwarp-adjmulticol.sty`

§ 105 Package adjmulticol

(*Emulates or patches code by* Boris Veytsman.)

Pkg `adjmulticol` adjmulticol is emulated.

Emulation similar to multicols is used, with adjusted margins. If the number of columns is specified as 1, it is set so, but if two or greater are used, lwarp allows a variable number of columns up to three.

for HTML output:

```
\LWR@ProvidesPackageDrop{adjmulticol}
```

```
\RequirePackage{multicol}
```

`adjmulticols` * {⟨*numcols*⟩} {⟨*left margi*⟩} {⟨*right margin*⟩}

```
\NewDocumentEnvironment{adjmulticols}{s m m m}
{%
```

Compute the margins, and limit to positive only:

```
\setlength{\LWR@templengthone}{#3}%
\ifdimcomp{\LWR@templengthone}{<}{0pt}{\setlength{\LWR@templengthone}{0pt}}{}%
\setlength{\LWR@templengthtwo}{#4}
\ifdimcomp{\LWR@templengthtwo}{<}{0pt}{\setlength{\LWR@templengthtwo}{0pt}}{}%
```

If one column is specified, use a of class singlecolumn, else use multicols:

```
\newcommand*{\LWR@mcolstype}{multicols}%
\ifnumcomp{#2}{=}{1}{\renewcommand*{\LWR@mcolstype}{singlecolumn}}{}%
```

Help avoid page overflow:

```
\LWR@forcenewpage%
```

Create the with the given margin and class:

```
\BlockClass[%
\LWR@print@mbox{margin-left:\LWR@printlength{\LWR@templengthone}} ; %
\LWR@print@mbox{margin-right:\LWR@printlength{\LWR@templengthtwo}}%
]{\LWR@mcolstype}%
}
{\endBlockClass}
```

File 12 **lwarp-addlines.sty**

§ 106 Package addlines

(*Emulates or patches code by* Will Robertson.)

Pkg addlines addlines is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{addlines}
```

```
\newcommand*\addlines[1][1]{}
\let\addline\addlines
\newcommand*\removelines[1][1]{}
\let\removeline\removelines
```

File 13 **lwarp-ae.sty**

§ 107 Package ae

Pkg ae ae does not work with *pdftotext*, and is superceded by latinmodern.

for HTML output:

```
\LWR@loadnever{ae}{latinmodern}
```

File 14 `lwarp-aecc.sty`

§ 108 Package aecc

Pkg `aecc` aecc does not work with *pdftotext*, and is superceded by latinmodern.

for HTML output:

```
1 \LWR@loadnever{aecc}{latinmodern}
```

File 15 `lwarp-afterpage.sty`

§ 109 Package afterpage

(*Emulates or patches code by* David Carlisle.)

Pkg `afterpage` Emulated.

for HTML output: Discard all options for lwarp-afterpage:

```
1 \LWR@ProvidesPackageDrop{afterpage}
2 \newcommand{\afterpage}[1]{#1}
```

File 16 `lwarp-algorithm2e.sty`

§ 110 Package algorithm2e

(*Emulates or patches code by* Christophe Fiorio.)

Pkg `algorithm2e` algorithm2e is patched for use by lwarp.

For print output, captions are placed according to package options, but for HTML output captions are placed where used. Therefore, to have captions appear at the top of the algorithms for both print and HTML, place each captions at the top of each algorithm.

for HTML output:

```
1 \LWR@ProvidesPackagePass{algorithm2e}
```

For the list-of entries:

```
2 \renewcommand{\l@algocf}[2]{\hypertocfloat{1}{algocf}{loa}{#1}{#2}}
```

Select the lwarp float style according to the algorithm2e style:

```
\newcommand*{\LWR@floatstyle@algocf}{ruled}

\ifdefstring{\algocf@style}{boxed}{%
\renewcommand*{\LWR@floatstyle@algocf}{boxed}
}{}

\ifdefstring{\algocf@style}{boxruled}{%
\renewcommand*{\LWR@floatstyle@algocf}{boxruled}
}{}

\ifdefstring{\algocf@style}{plain}{%
\renewcommand*{\LWR@floatstyle@algocf}{plain}
}{}
```

Paragraph handling to allow line numbers under certain conditions:

```
\newbool{LWR@algocf@dopars}
\booltrue{LWR@algocf@dopars}

\renewcommand{\algocf@everypar}{%
\ifbool{LWR@algocf@dopars}{%
    \ifbool{LWR@doingstartpars}{%
        \ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
            {}%
            {%
                \algocf@everyparnl\algocf@everyparhanging%
            }%
    }{}%
}{}%
}
```

lwarp caption handling:

```
\renewcommand{\algocf@makecaption}[2]{%
\LWR@HTML@caption@begin{algocf}%
\LWR@isolate{\algocf@captiontext{#1}{#2}}%
\LWR@HTML@caption@end%
}
```

Print any caption where it is declared:

```
\renewcommand{\algocf@makecaption@plain}[2]{%
    \LWR@HTML@caption@begin{algocf}%
    \LWR@isolate{\algocf@captiontext{#1}{#2}}%
    \LWR@HTML@caption@end%
}

```

```
\renewcommand{\algocf@makecaption@boxed}[2]{%
    \LWR@HTML@caption@begin{algocf}%
    \LWR@isolate{\algocf@captiontext{#1}{#2}}%
    \LWR@HTML@caption@end%
}

\renewcommand{\algocf@makecaption@ruled}[2]{%
    \LWR@HTML@caption@begin{algocf}%
    \LWR@isolate{\algocf@captiontext{#1}{#2}}%
    \LWR@HTML@caption@end%
}
```

Turn off line numbering while making the caption:

```
\long\def\algocf@latexcaption#1[#2]#3{% original definition of caption
\boolfalse{LWR@algocf@dopars}%  lwarp
  \par%
  \addcontentsline{\csname ext@#1\endcsname}{#1}%
  {\protect\numberline{\csname the#1\endcsname}{\ignorespaces \LWR@isolate{#2}}}%
  \begingroup%
  \@parboxrestore%
  \if@minipage%
    \@setminipage%
  \fi%
  \normalsize%
  \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par%
  \endgroup%
\booltrue{LWR@algocf@dopars}%   lwarp
}
```

Line numbers are printed in a of class `alg2elinenumber`:

```
\renewcommand{\algocf@printnl}[1]{%
    \InlineClass{alg2elinenumber}{\NlSty{#1}}~%
}%
```

While initializing an algorithm environment, locally declare the style of a regular figure to be the same as the algorithm style, in case the `figure` option was used.

```
\preto\@algocf@init{%
  \edef\LWR@floatstyle@figure{\LWR@floatstyle@algocf}%
}
```

For lwarp, the algorithm is not assembled inside a box, since `lateximage`s would not work, so the captions are printed where declared.

```
\renewcommand{\@algocf@start}{%
    \let\@mathsemicolon=\;\def\;{\ifmmode\@mathsemicolon\else\@endalgoln\fi}%
%     \raggedright%
```

```
    \AlFnt{}%
    \booltrue{LWR@algocf@dopars}% lwarp
}

\renewcommand{\@algocf@finish}{%
    \boolfalse{LWR@algocf@dopars}% lwarp
    \lineskip\normallineskip\setlength{\skiptotal}{\@defaultskiptotal}%
    \let\;=\@mathsemicolon%
    \let\]=\@emathdisplay%
}
```

Use an HTML break:

```
\renewcommand{\BlankLine}{%
\LWR@stoppars%
\LWR@htmltagc{br /}%
\LWR@startpars%
}
```

Simplified for HTML. The paragraph handling must be preserved.

```
\renewcommand{\SetKwInOut}[2]{%
  \algocf@newcommand{#1}[1]{%
    \ifthenelse{\boolean{algocf@hanginginout}}%
        {\relax}%
        {\algocf@seteveryparhanging{\relax}}%
    \ifthenelse{\boolean{algocf@inoutnumbered}}%
        {\relax}%
        {\algocf@seteveryparnl{\relax}}%
    {%
            \KwSty{#2\algocf@typo:}%
        ~##1\par%
    }%
    \algocf@linesnumbered% reset the numbering of the lines
    \ifthenelse{\boolean{algocf@hanginginout}}%
        {\relax}%
        {\algocf@reseteveryparhanging}%
  }%
}%

\renewcommand{\ResetInOut}[1]{}%
```

Each of the following creates a of a given class, and turns off line numbering while creating the tags:

```
\renewcommand{\algocf@Vline}[1]{%
\boolfalse{LWR@algocf@dopars}%
\begin{BlockClass}{alg2evline}
\booltrue{LWR@algocf@dopars}%
```

```
#1
\boolfalse{LWR@algocf@dopars}%
\end{BlockClass}
\booltrue{LWR@algocf@dopars}%
}

\renewcommand{\algocf@Vsline}[1]{%
\boolfalse{LWR@algocf@dopars}%
\begin{BlockClass}{alg2evsline}
\booltrue{LWR@algocf@dopars}%
#1
\boolfalse{LWR@algocf@dopars}%
\end{BlockClass}
\booltrue{LWR@algocf@dopars}%
}

\renewcommand{\algocf@Noline}[1]{%
\boolfalse{LWR@algocf@dopars}%
\begin{BlockClass}{alg2enoline}
\booltrue{LWR@algocf@dopars}%
#1
\boolfalse{LWR@algocf@dopars}%
\end{BlockClass}
\booltrue{LWR@algocf@dopars}%
}
```

The `[H]` environment is converted to a regular float, which in HTML is placed where declared. Reusing the regular float allows the `[H]` version to reuse the ruled and boxed options.

```
\LetLtxMacro\algocf@Here\algocf
\LetLtxMacro\endalgocf@Here\endalgocf
```

File 17 `lwarp-algorithmicx.sty`

§ 111 Package algorithmicx

(*Emulates or patches code by* Szász János.)

Pkg `algorithmicx` algorithmicx is supported with minor adjustments.

for HTML output:

```
\LWR@ProvidesPackagePass{algorithmicx}
```

Inside the `algorithmic` environment, level indenting is converted to a `<span>` of the required length, and comments are placed inside a `<span>` which is floated right.

⚠ package conflicts If using \newfloat, trivfloat, and/or algorithmicx together, see section 421.1.

for HTML output:

```
\begin{warpHTML}

\AtBeginEnvironment{algorithmic}{%
%
\let\origALG@doentity\ALG@doentity%
%
\renewcommand*{\ALG@doentity}{%
\origALG@doentity%
\LWR@htmltagc{%
span style="width:\LWR@printlength{\ALG@thistlm}; display:inline-block;"%
}%
\ifbool{FormatWP}{%
\setlength{\LWR@templengthone}{\the\ALG@thistlm}%
\whiledo{\lengthtest{\LWR@templengthone>1em}}{%
\quad%
\addtolength{\LWR@templengthone}{-1em}%
}%
}{}%
\LWR@htmltagc{/span}%
}%

\let\LWR@origComment\Comment%

\renewcommand{\Comment}[1]{%
    \InlineClass{floatright}{\LWR@origComment{#1}}%
}%
}

\renewcommand\algorithmiccomment[1]{%
\hfill\HTMLunicode{25B7} #1% white right triangle
}%

\end{warpHTML}
```

File 18 **lwarp-alltt.sty**

§ 112 Package alltt

(*Emulates or patches code by* Johannes Braams.)

Pkg alltt alltt is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{alltt}
```

```
\AfterEndPreamble{
\LWR@traceinfo{Patching alltt.}
\AtBeginEnvironment{alltt}{%
\LWR@forcenewpage
\LWR@atbeginverbatim{3}{alltt}%
}
\AfterEndEnvironment{alltt}{%
    \LWR@afterendverbatim{2}%
}
}
```

File 19 `lwarp-amsmath.sty`

§ 113 Package amsmath

(*Emulates or patches code by* American Mathematical Society, LaTeX3 Project.)

Pkg `amsmath` amsmath is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{amsmath}
```

Patches to allow `\eqref` inside a caption:

```
\def\maketag@@@#1{\text{#1}}
\def\tagform@#1{\maketag@@@{(\ignorespaces#1\unskip)}}
```

Patches for $\mathcal{AMS}$ math `\tag` macro to remember the first tag:

```
\ifbool{mathjax}{}{% not mathjax

\LetLtxMacro\LWR@origmake@df@tag@@\make@df@tag@@
\LetLtxMacro\LWR@origmake@df@tag@@@\make@df@tag@@@

\renewcommand*{\make@df@tag@@}[1]{%
\LWR@remembertag{#1}%
\LWR@origmake@df@tag@@{#1}%
}

\renewcommand*{\make@df@tag@@@}[1]{%
\LWR@remembertag{#1}%
\LWR@origmake@df@tag@@@{#1}%
}

}% not mathjax
```

The following $\mathcal{AMS}$ environments are more easily patched in-place:

Env `multline`

```
\BeforeBeginEnvironment{multline}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@syncmathjax
    \booltrue{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymathnumbered}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbodynumbered{multline}]
}
}

\AfterEndEnvironment{multline}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@endhideamsmath
    \boolfalse{LWR@amsmultline}
    \LWR@addmathjax{multline}{\the\@envbody}
}
{\end{lateximage}\end{BlockClass}}

}
```

Env `multline*`

```
\BeforeBeginEnvironment{multline*}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@syncmathjax
    \booltrue{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbody{multline*}]
}
}

\AfterEndEnvironment{multline*}{
```

```
64
65 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
66 {
67     \LWR@endhideamsmath
68     \boolfalse{LWR@amsmultline}
69     \LWR@addmathjax{multline*}{\the\@envbody}
70 }
71 {\end{lateximage}\end{BlockClass}}
72
73 }
74
```

Env gather

```
75 \BeforeBeginEnvironment{gather}{
76
77 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
78 {
79     \LWR@syncmathjax
80     \boolfalse{LWR@amsmultline}
81     \LWR@beginhideamsmath
82 }
83 {
84     \begin{BlockClass}{displaymathnumbered}
85     \LWR@newautoidanchor%
86     \booltrue{LWR@indisplaymathimage}%
87     \begin{lateximage}[\LWR@amsmathbodynumbered{gather}]
88 }
89 }
90
91 \AfterEndEnvironment{gather}{
92
93 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
94 {
95     \LWR@endhideamsmath
96     \LWR@addmathjax{gather}{\the\@envbody}
97 }
98 {\end{lateximage}\end{BlockClass}}
99
100 }
```

Env gather*

```
101 \BeforeBeginEnvironment{gather*}{
102
103 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
104 {
105     \LWR@syncmathjax
```

```
    \boolfalse{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbody{gather*}]
}
}

\AfterEndEnvironment{gather*}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@endhideamsmath
    \LWR@addmathjax{gather*}{\the\@envbody}
}
{\end{lateximage}\end{BlockClass}}

}
```

Env `align`

```
\BeforeBeginEnvironment{align}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@syncmathjax
    \boolfalse{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymathnumbered}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbodynumbered{align}]
}
}

\AfterEndEnvironment{align}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@endhideamsmath
    \LWR@addmathjax{align}{\the\@envbody}
}
{\end{lateximage}\end{BlockClass}}

```

```
}
```

Env `align*`

```
\BeforeBeginEnvironment{align*}{
\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@syncmathjax
    \boolfalse{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbody{align*}]
}
}

\AfterEndEnvironment{align*}{
\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@endhideamsmath
    \LWR@addmathjax{align*}{\the\@envbody}
}
{\end{lateximage}\end{BlockClass}}

}
```

Env `flalign`

```
\BeforeBeginEnvironment{flalign}{
\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@syncmathjax
    \boolfalse{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymathnumbered}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbodynumbered{flalign}]
}
}
```

```
194
195 \AfterEndEnvironment{flalign}{
196
197 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
198 {
199     \LWR@endhideamsmath
200     \LWR@addmathjax{flalign}{\the\@envbody}
201 }
202 {\end{lateximage}\end{BlockClass}}
203
204 }
```

Env `flalign*`

```
205 \BeforeBeginEnvironment{flalign*}{
206
207 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
208 {
209     \LWR@syncmathjax
210     \boolfalse{LWR@amsmultline}
211     \LWR@beginhideamsmath
212 }
213 {
214     \begin{BlockClass}{displaymath}
215     \LWR@newautoidanchor%
216     \booltrue{LWR@indisplaymathimage}%
217     \begin{lateximage}[\LWR@amsmathbody{flalign*}]
218 }
219 }
220
221 \AfterEndEnvironment{flalign*}{
222
223 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
224 {
225     \LWR@endhideamsmath
226     \LWR@addmathjax{flalign*}{\the\@envbody}
227 }
228 {\end{lateximage}\end{BlockClass}}
229
230 }
```

Env `alignat`

```
231 \BeforeBeginEnvironment{alignat}{
232
233 \ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
234 {
235     \LWR@syncmathjax
```

```
    \boolfalse{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymathnumbered}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbodynumbered{alignat}]
}
}

\AfterEndEnvironment{alignat}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@endhideamsmath
    \LWR@addmathjax{alignat}{\the\@envbody}
}
{\end{lateximage}\end{BlockClass}}

}
```

Env `alignat*`

```
\BeforeBeginEnvironment{alignat*}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@syncmathjax
    \boolfalse{LWR@amsmultline}
    \LWR@beginhideamsmath
}
{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[\LWR@amsmathbody{alignat*}]
}
}

\AfterEndEnvironment{alignat*}{

\ifboolexpr{bool{mathjax} or ( bool{FormatWP} and bool{WPMarkMath} ) }%
{
    \LWR@endhideamsmath
    \LWR@addmathjax{alignat*}{\the\@envbody}
}
{\end{lateximage}\end{BlockClass}}

```

```
282 }
```

File 20 `lwarp-amsthm.sty`

§ 114 Package

amsthm

(*Emulates or patches code by* Publications Technical Group — American Mathematical Society.)

The original source code is located in `amsclass.dtx`, and printed in `amsclass.pdf`.

Pkg `amsthm` amsthm is patched for use by lwarp.

Table 14: amsthm package — css styling of theorems and proofs

Theorem: `<div>` of class `amsthmbody<theoremstyle>`

Theorem Name: `<span>` of class `amsthmname<theoremtyle>`

Theorem Number: `<span>` of class `amsthmnumber<theoremstyle>`

Theorem Note: `<span>` of class `amsthmnote<theoremstyle>`

Proof: `<div>` of class `amsthmproof`

Proof Name: `<span>` of class `amsthmproofname`

where `<theoremstyle>` is `plain`, `definition`, etc.

for HTML output:

```
1 \LWR@ProvidesPackagePass{amsthm}
```

Storage for the style being used for new theorems:

```
2 \newcommand{\LWR@newtheoremstyle}{plain}
```

Patched to remember the style being used for new theorems:

```
3 \renewcommand{\theoremstyle}[1]{%
4   \@ifundefined{th@#1}{%
5     \PackageWarning{amsthm}{Unknown theoremstyle `#1'}%
6     \thm@style{plain}%
7     \renewcommand{\LWR@newtheoremstyle}{plain}% lwarp
8   }{%
9     \thm@style{#1}%
10    \renewcommand{\LWR@newtheoremstyle}{#1}% lwarp
11  }%
12 }
```

Patched to remember the style for this theorem type:

```
\def\@xnthm#1#2{%
  \csedef{LWR@thmstyle#2}{\LWR@newtheoremstyle}% lwarp
  \let\@tempa\relax
  \@xp\@ifdefinable\csname #2\endcsname{%
    \global\@xp\let\csname end#2\endcsname\@endtheorem
    \ifx *#1% unnumbered, need to get one more mandatory arg
      \edef\@tempa##1{%
        \gdef\@xp\@nx\csname#2\endcsname{%
          \@nx\@thm{\@xp\@nx\csname th@\the\thm@style\endcsname}%
            {}{##1}}}%
    \else % numbered theorem, need to check for optional arg
      \def\@tempa{\@oparg{\@ynthm{#2}}[]}%
    \fi
    \AtBeginEnvironment{#2}{\edef\LWR@thisthmstyle{\@nameuse{LWR@thmstyle#2}}}% lwarp
  }%
  \@tempa
}
```

Patched to enclose with css:

```
\newcommand{\LWR@haveamsthmname}{
\renewcommand{\thmname}[1]{\InlineClass{amsthmname\LWR@thisthmstyle}{##1}}
}

\newcommand{\LWR@haveamsthmnumber}{
\renewcommand{\thmnumber}[1]{\InlineClass{amsthmnumber\LWR@thisthmstyle}{##1}}
}

\newcommand{\LWR@haveamsthmnote}{
\renewcommand{\thmnote}[1]{\InlineClass{amsthmnote\LWR@thisthmstyle}{##1}}
}

\LWR@haveamsthmname
\LWR@haveamsthmnumber
\LWR@haveamsthmnote
```

Patches for css:

```
\def\@begintheorem#1#2[#3]{%
    \item[
%   \deferred@thm@head{
%     \the\thm@headfont \thm@indent
    \@ifempty{#1}{\let\thmname\@gobble}{\LWR@haveamsthmname}% lwarp
    \@ifempty{#2}{\let\thmnumber\@gobble}{\LWR@haveamsthmnumber}% lwarp
    \@ifempty{#3}{\let\thmnote\@gobble}{\LWR@haveamsthmnote}% lwarp
    \thm@swap\swappedhead\thmhead{#1}{#2}{#3}%
    \the\thm@headpunct~
```

```
    \thmheadnl % possibly a newline.
    \hskip\thm@headsep
%   }%
    ]
  \ignorespaces}
```

Patched for css:

```
\def\@thm#1#2#3{%
  \ifhmode\unskip\unskip\par\fi
  \normalfont
  \LWR@forcenewpage% lwarp
  \BlockClass{amsthmbody\LWR@thisthmstyle}% lwarp
  \trivlist
  \let\thmheadnl\relax
  \let\thm@swap\@gobble
  \thm@notefont{\fontseries\mddefault\upshape}%
  \thm@headpunct{.}% add period after heading
  \thm@headsep 5\p@ plus\p@ minus\p@\relax
  \thm@space@setup
  #1% style overrides
  \@topsep \thm@preskip               % used by thm head
  \@topsepadd \thm@postskip           % used by \@endparenv
  \def\@tempa{#2}\ifx\@empty\@tempa
    \def\@tempa{\@oparg{\@begintheorem{#3}{}}[]}%
  \else
    \refstepcounter{#2}%
    \def\@tempa{\@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}[]}%
  \fi
  \@tempa
}
```

cleveref patches `\@thm` to do `\cref@thmoptarg` if an optional argument is given. lwarp then patches `\cref@thmoptarg` `\AtBeginDocument`.

```
\AtBeginDocument{
\def\cref@thmoptarg[#1]#2#3#4{%
    \ifhmode\unskip\unskip\par\fi%
    \normalfont%
    \LWR@forcenewpage% lwarp
    \BlockClass{amsthmbody\LWR@thisthmstyle}% lwarp
    \trivlist%
    \let\thmheadnl\relax%
    \let\thm@swap\@gobble%
    \thm@notefont{\fontseries\mddefault\upshape}%
    \thm@headpunct{.}% add period after heading
    \thm@headsep 5\p@ plus\p@ minus\p@\relax%
    \thm@space@setup%
    #2% style overrides
```

```
    \@topsep \thm@preskip               % used by thm head
    \@topsepadd \thm@postskip           % used by \@endparenv
    \def\@tempa{#3}\ifx\@empty\@tempa%
        \def\@tempa{\@oparg{\@begintheorem{#4}{}}[]}%
    \else%
        \refstepcounter[#1]{#3}%  <<< cleveref modification
        \def\@tempa{\@oparg{\@begintheorem{#4}{\csname the#3\endcsname}}[]}%
    \fi%
    \@tempa
}%
}% AtBeginDocument

\def\@endtheorem{\endtrivlist\endBlockClass\@endpefalse }
```

Proof QED symbol:

```
\AtBeginDocument{
\@ifundefined{LWR@orig@openbox}{
\LetLtxMacro\LWR@orig@openbox\openbox
\LetLtxMacro\LWR@orig@blacksquare\blacksquare
\LetLtxMacro\LWR@orig@Box\Box

\def\openbox{\text{\HTMLunicode{25A1}}}% UTF-8 white box
\def\blacksquare{\text{\HTMLunicode{220E}}}% UTF-8 end-of-proof
\def\Box{\text{\HTMLunicode{25A1}}}% UTF-8 white box

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\openbox\LWR@orig@openbox%
\LetLtxMacro\blacksquare\LWR@orig@blacksquare%
\LetLtxMacro\Box\LWR@orig@Box%
}% appto
}{}% @ifundefined
}% AtBeginDocument
```

Patched for css:

```
\renewenvironment{proof}[1][\proofname]{\par
\LWR@forcenewpage% lwarp
    \BlockClass{amsthmproof}% lwarp
  \pushQED{\qed}%
  \normalfont \topsep6\p@\@plus6\p@\relax
  \trivlist
  \item[
        \InlineClass{amsthmproofname}{#1\@addpunct{.}}]\ignorespaces% changes
}{%
  \InlineClass{theoremendmark}{\popQED}\endtrivlist%
  \endBlockClass% lwarp
  \@endpefalse
}
```

File 21 `lwarp-anonchap.sty`

§ 115 Package

anonchap

(*Emulates or patches code by* Peter Wilson.)

Pkg anonchap anonchap is emulated.

Pkg tocloft

⚠ tocloft & other packages

If using tocloft with tocbibind, anonchap, fncychap, or other packages which change chapter title formatting, load tocloft with its `titles` option, which tells tocloft to use standard LaTeX commands to create the titles, allowing other packages to work with it.

The code is shared by tocbibind.

for HTML output:

```
\LWR@ProvidesPackageDrop{anonchap}

\newcommand{\simplechapter}[1][\@empty]{%
    \def\@chapcntformat##1{%
        #1~\csname the##1\endcsname\simplechapterdelim\protect\quad%
    }%
}

\newcommand{\restorechapter}{%
\let\@chapcntformat\@seccntformat%
}
```

File 22 `lwarp-anysize.sty`

§ 116 Package

anysize

(*Emulates or patches code by* Michael Salzenberg, Thomas Esser.)

Pkg anysize anysize is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{anysize}

\def\papersize#1#2{}
\def\marginsize#1#2#3#4{}
```

File 23 `lwarp-appendix.sty`

§ 117 Package appendix

(*Emulates or patches code by* Peter Wilson.)

Pkg `appendix` appendix is patched for use by lwarp.

⚠ incorrect TOC link During HTML conversion, the option `toc` without the option `page` results in a TOC link to whichever section was before the `appendices` environment. It is recommended to use both `toc` and also `page` at the same time.

for HTML output:

```
\LWR@ProvidesPackagePass{appendix}

\renewcommand*{\@chap@pppage}{%
\part*{\appendixpagename}
 \if@dotoc@pp
 \addappheadtotoc
 \fi
}

\renewcommand*{\@sec@pppage}{%
\part*{\appendixpagename}
 \if@dotoc@pp
 \addappheadtotoc
 \fi
}
```

File 24 `lwarp-arabicfront.sty`

§ 118 Package arabicfront

Pkg `arabicfront` arabicfront is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{arabicfront}
```

File 25 `lwarp-array.sty`

§ 119 Package array

Pkg `array` array is used as-is for print output, and emulated for HTML.

for HTML output: Remove the dummy macros:

```
\let\firsthline\relax
\let\lasthline\relax

\LWR@ProvidesPackagePass{array}

\newcommand*{\LWR@HTML@firsthline}{\LWR@HTMLhline}%
\LWR@expandableformatted{firsthline}

\newcommand*{\LWR@HTML@lasthline}{\LWR@HTMLhline}%
\LWR@expandableformatted{lasthline}
```

File 26 `lwarp-arydshln.sty`

§ 120 Package arydshln

(*Emulates or patches code by* Hiroshi Nakashima.)

Pkg `arydshln` arydshln heavily patches tabular code, so the actual package is not used. arydshln is emulated for HTML `tabular`, and reverts to solid rules for SVG math `array` and `tabular` in a `lateximage`.

CSS is not able to display a double-dashed border, so a single-dashed rule is displayed as a single-dashed border, and a double-dashed rule is displayed as a thicker single-dashed border.

for HTML output: array is required to allow `\newcolumn` below.

```
\RequirePackage{array}

\LWR@ProvidesPackageDrop{arydshln}
```

Ignored, but included for source compatibility:

```
\newdimen\dashlinedash \dashlinedash4pt %
```

```
\newdimen\dashlinegap \dashlinegap4pt %
\let\hdashlinewidth\dashlinedash
\let\hdashlinegap\dashlinegap

\def\ADLnullwide{}
\def\ADLsomewide{}
\def\ADLnullwidehline{}
\def\ADLsomewidehline{}

\def\ADLactivate{}
\def\ADLinactivate{}
\newcommand*{\ADLdrawingmode}[1]{}
\newcommand*{\ADLnoshorthanded}{}
\newcommand*{\dashgapcolor}[2][]{}
\newcommand*{\nodashgapcolor}{}
```

In a `lateximage`, revert to solid vertical rules:

```
\appto\LWR@restoreorigformatting{
\newcolumntype{:}{|}%
\newcolumntype{;}[1]{|}%
\LetLtxMacro\hdashline\hline%
}
```

Some of these macros are already defined as temporary placeholders in the lwarp core, so they must be redefined here.

The emulated defaults also work for an emulated print mode inside a `lateximage`:

```
\def\hdashline{
%     \adl@hdashline\adl@ihdashline
    \adl@hdashline\adl@inactivehdl
}
\def\adl@hdashline#1{\noalign{\ifnum0=`}\fi
%         \ifadl@zwhrule \vskip-\arrayrulewidth
%         \else
%             \adl@hline\adl@connect\arrayrulewidth
                \hrule \@height \arrayrulewidth% lwarp
%         \fi
        \@ifnextchar[%
                    {#1}%
                    {#1[%
%                         \dashlinedash/\dashlinegap
                       1pt/1pt
                    ]}}
% \def\adl@ihdashline[#1/#2]{\ifnum0=`{\fi}%
%         \multispan{\adl@columns}\unskip \adl@hcline\z@[#1/#2]%
%         \noalign{\ifnum0=`}\fi
%         \futurelet\@tempa\adl@xhline}
```

```
\def\adl@inactivehdl[#1/#2]{
%         \ifadl@zwhrule \vskip-\arrayrulewidth \fi
        \hrule\@height\arrayrulewidth
        \futurelet\@tempa\adl@xhline}
\def\adl@xhline{\ifx\@tempa\hline \adl@ixhline\fi
        \ifx\@tempa\hdashline \adl@ixhline\fi
        \ifnum0=‘{\fi}}
\def\adl@ixhline{\vskip\doublerulesep \adl@hline\relax\doublerulesep}
\def\adl@hline#1#2{%
% \@tempcnta#2
%         \global\advance\adl@totalheight\@tempcnta
%         \xdef\adl@rowsL{\adl@rowsL
%                 (#1/\number\@tempcnta);}%
%         \xdef\adl@rowsR{\adl@rowsR
%                 (#1/\number\@tempcnta);}
}

\def\cdashline#1{\noalign{\ifnum0=‘}\fi
        \@ifnextchar[%]
%                       {\adl@cdline[#1]}%
%                       {\adl@cdline[#1][\dashlinedash/\dashlinegap]}
                      {\adl@inactivecdl[#1]}%
                      {\adl@inactivecdl[#1][\dashlinedash/\dashlinegap]}
}

\def\adl@inactivecdl[#1-#2][#3]{\ifnum0=‘{\fi}\cline{#1-#2}}
```

File 27 `lwarp-asymptote.sty`

§ 121 Package asymptote

(*Emulates or patches code by* Andy Hammerlindl, John Bowman, Tom Prince.)

Pkg `asymptote` asymptote is patched for use by lwarp.

To compile:

```
pdflatex project.tex
asy project-*.asy
pdflatex project.tex

lwarpmk print
asy project-*.asy
lwarpmk print1
lwarpmk print1

lwarpmk html
asy project_html-*.asy
lwarpmk html1
lwarpmk html1
lwarpmk limages
```

for HTML output:

```
\LWR@ProvidesPackagePass{asymptote}

\BeforeBeginEnvironment{asy}{\begin{lateximage}[(-asymptote-~\packagediagramname)]}
\AfterEndEnvironment{asy}{\end{lateximage}}

\xpatchcmd{\asyinclude}
    {\begingroup}
    {\begin{lateximage}[(-asymptote-~\packagediagramname)]}
    {}
    {\LWR@patcherror{asymptote}{asyinclude-begingroup}}

\xpatchcmd{\asyinclude}
    {\endgroup}
    {\end{lateximage}}
    {}
    {\LWR@patcherror{asymptote}{asyinclude-endgroup}}
```

File 28 **lwarp-atbegshi.sty**

§ 122 Package atbegshi

(*Emulates or patches code by* Heiko Oberdiek.)

Pkg atbegshi Emulated.

for HTML output: Discard all options for lwarp-atbegshi:

```
\LWR@ProvidesPackageDrop{atbegshi}[2011/10/05]
```

```
\newcommand*{\AtBeginShipout}[1]{}
\newbox\AtBeginShipoutBox
\newcommand*{\AtBeginShipoutNext}[1]{}
\newcommand*{\AtBeginShipoutFirst}[1]{}
\newcommand*{\AtBeginShipoutDiscard}{}
\newcommand*{\AtBeginShipoutInit}{}
\newcommand*{\AtBeginShipoutAddToBox}[1]{}
\newcommand*{\AtBeginShipoutAddToBoxForeground}[1]{}
\newcommand*{\AtBeginShipoutUpperLeft}[1]{}
\newcommand*{\AtBeginShipoutUpperLeftForeground}[1]{}
\newcommand*{\AtBeginShipoutOriginalShipout}[1]{}
\def\AtBeginShipoutBoxWidth{0pt}
\def\AtBeginShipoutBoxHeight{0pt}
\def\AtBeginShipoutBoxDepth{0pt}

```

File 29 **lwarp-attachfile.sty**

§ 123 Package

attachfile

(*Emulates or patches code by* Scott Pakin.)

Pkg attachfile attachfile is patched for use by lwarp.

⚠ Metadata is ignored for now.

for HTML output:

```
\LWR@ProvidesPackagePass{attachfile}
```

Encloses each icon:

```
\newenvironment*{LWR@attachfile@icon}
{
    \begin{lateximage}*%
        [-attachfile-]%
        [%
            \detokenize\expandafter{\atfi@icon@icon}-%
            \detokenize\expandafter{\atfi@color@rgb}%
        ]%
}
{
    \end{lateximage}
}
```

Each icon is enclosed inside a `LWR@attachfile@icon` environment:

```
\xpretocmd{\atfi@acroGraph}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroGraph}{\endLWR@attachfile@icon}{}{}
```

```
\xpretocmd{\atfi@acroPaperclip}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroPaperclip}{\endLWR@attachfile@icon}{}{}

\xpretocmd{\atfi@acroPushPin}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroPushPin}{\endLWR@attachfile@icon}{}{}

\xpretocmd{\atfi@acroTag}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroTag}{\endLWR@attachfile@icon}{}{}
```

Disable PDF file embedding:

```
\DeclareRobustCommand{\atfi@embedfile}[1]{}
```

The displayed output for an `\attachfile` reference:

```
\newcommand*{\LWR@attachfile@appearance}{}

\DeclareRobustCommand{\atfi@set@appearance}[1]{%
    \def\LWR@attachfile@appearance{#1}%
}
```

A file annotation becomes a reference:

```
\DeclareRobustCommand{\atfi@insert@file@annot}[1]{%
    \href{#1}{\LWR@attachfile@appearance}%
}
```

File 30 `lwarp-attachfile2.sty`

§ 124 Package

attachfile2

(*Emulates or patches code by* Heiko Oberdiek.)

Pkg `attachfile2` attachfile2 is patched for use by lwarp.

⚠ Metadata is ignored for now.

for HTML output:

```
\LWR@ProvidesPackagePass{attachfile2}
```

Adds memory of the selected color:

```
\def\LWR@attachfiletwo@color{}%

\define@key{AtFi}{color}{%
    \def\LWR@attachfiletwo@color{#1}%   lwarp
```

```
  \HyColor@AttachfileColor{#1}%
           \atfi@color@tex\atfi@color@inline\atfi@color@annot
           {attachfile2}{color}%
}
```

Encloses each icon:

```
\newenvironment*{LWR@attachfile@icon}
{
    \begin{lateximage}*%
        [-attachfile-]%
        [%
            \detokenize\expandafter{\atfi@icon@icon}-%
            \detokenize\expandafter{\LWR@attachfiletwo@color}%
        ]%
}
{
    \end{lateximage}
}
```

Each icon is enclosed inside a `LWR@attachfile@icon` environment:

```
\xpretocmd{\atfi@acroGraph}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroGraph}{\endLWR@attachfile@icon}{}{}

\xpretocmd{\atfi@acroPaperclip}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroPaperclip}{\endLWR@attachfile@icon}{}{}

\xpretocmd{\atfi@acroPushPin}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroPushPin}{\endLWR@attachfile@icon}{}{}

\xpretocmd{\atfi@acroTag}{\LWR@attachfile@icon}{}{}
\xapptocmd{\atfi@acroTag}{\endLWR@attachfile@icon}{}{}
```

Disable PDF file embedding:

```
\DeclareRobustCommand{\atfi@embedfile}[1]{}
```

The displayed output for an `\attachfile` reference:

```
\newcommand*{\LWR@attachfile@appearance}{}

\def\atfi@set@appearance@icon{%
    \atfi@set@appearance{\csname atfi@acro\atfi@icon@icon\endcsname}%
}

\DeclareRobustCommand{\atfi@set@appearance}[1]{%
    \def\LWR@attachfile@appearance{#1}%
}
```

A file annotation becomes a reference:

```
\DeclareRobustCommand{\atfi@insert@file@annot}[1]{%
    \href{#1}{\LWR@attachfile@appearance}%
}
```

Modified for text color:

```
\DeclareRobustCommand{\notextattachfile}[2][]{%
  \begingroup
    \atfi@setup{#1}%
    \ifatfi@print
      \leavevmode
      \begingroup
        \HyColor@UseColor\atfi@color@tex
        \LWR@textcurrentcolor{#2}%      lwarp
% \strut
      \endgroup
%     \else
%       \sbox\ltx@zero{#2\strut}%
%       \makebox[\wd0]{}%
    \fi
  \endgroup
}
```

Modified to draw the icon:

```
\DeclareRobustCommand{\noattachfile}[1][]{%
  \begingroup
    \atfi@setup{#1}%
    \atfi@set@appearance@icon
    \ifatfi@print
        \LWR@attachfile@appearance%     lwarp
%       \expandafter
%       \atfi@refxform\csname atfi@appobj@\atfi@icon@icon\endcsname
%     \else
%       \makebox[\atfi@appearancewidth]{}%
    \fi
  \endgroup
}
```

File 31 **lwarp-authblk.sty**

§ 125 Package authblk

(*Emulates or patches code by* Patrick W. Daly.)

Pkg authblk

authblk is patched for HTML.

package support
⚠ load order

lwarp supports the native LaTeX titling commands, and also supports the packages authblk and titling. If both are used, authblk should be loaded before titling.

\published and \subtitle

If using the titling package, additional titlepage fields for \published and \subtitle may be added by using \AddSubtitlePublished in the preamble. See section 64.8.

(*Emulates or patches code by* Patrick W. Daly.)

for HTML output:

Require that authblk be loaded before titling:

```
\@ifpackageloaded{titling}{
\PackageError{lwarp-authblk}
{Package authblk must be loaded before titling}
{Titling appends authblk's author macro, so authblk must be loaded first.}
}
{}
```

Load authblk:

```
\LWR@ProvidesPackagePass{authblk}
```

Patch to add a class for the affiliation:

```
\LetLtxMacro\LWRAB@affil\affil

\renewcommand{\affil}[2][]{%
\LWRAB@affil[#1]{\protect\InlineClass{affiliation}{#2}}
}
```

Create an HTML break for an \authorcr:

```
\renewcommand*{\authorcr}{\protect\LWR@newlinebr}
```

File 32 **lwarp-axessibility.sty**

§ 126 Package

axessibility

Pkg axessibility

axessibility is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{axessibility}

\newcommand{\wrap}[1]{}
```

File 33 `lwarp-axodraw2.sty`

§ 127 Package axodraw2

(*Emulates or patches code by* John C. Collins, J.A.M. Vermaseren.)

Pkg `axodraw2` axodraw2 is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{axodraw2}

\BeforeBeginEnvironment{axopicture}{\begin{lateximage}[(-axopicture-~\packagediagramname)]}

\AfterEndEnvironment{axopicture}{\end{lateximage}}
```

File 34 `lwarp-backref.sty`

§ 128 Package backref

(*Emulates or patches code by* David Carlisle and Sebastian Rahtz.)

Pkg `backref` backref is patched for use by lwarp.

⚠ loading Note that backref must be explicitly loaded, and is not automatically loaded by hyperref when generating HTML output.

for HTML output:

```
\LWR@ProvidesPackagePass{backref}
```

Force the `hyperref` option:

```
\def\backref{}\let\backrefxxx\hyper@section@backref
```

File 35 `lwarp-balance.sty`

§ 129 Package balance

(*Emulates or patches code by* Patrick W. Daly.)

Pkg `balance` Emulated.

for HTML output:

Discard all options for lwarp-balance:

```
\LWR@ProvidesPackageDrop{balance}

\newcommand*{\balance}{}
\newcommand*{\nobalance}{}
```

File 36 `lwarp-bibunits.sty`

§ 130 Package bibunits

(*Emulates or patches code by* Thorsten Hansen.)

Pkg `bibunits` bibunits is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{bibunits}

\def\bu@bibdata{\BaseJobname}
```

File 37 `lwarp-bigdelim.sty`

§ 131 Package bigdelim

(*Emulates or patches code by* Piet van Oostrum, Øystein Bache, Jerry Leichter.)

Pkg `bigdelim` bigdelim is used as-is for print or `lateximage`, and patched for HTML.

The delimiters are displayed in HTML by printing the delimiter, the text, and a thick border across the side of the `\multirow` which indicates the actual height of the delimiter. The delimiter character is given a `<span>` class of `ldelim` or `rdelim`, and the default CSS sets this to `font-size:200%`.

⚠ use `\mrowcell` `\ldelim` and `\rdelim` use `\multirow`, so `\mrowcell` must be used in the proper number of empty cells in the same column below `\ldelim` or `\rdelim`, but not in cells which are above or below the delimiter:

```
\begin{tabular}{lll}
<empty> & a & b \\
\ldelim{\{}{2}{.25in}[left ] & c & d \\
\mrowcell & e & f \\
<empty> & g & h \\
\end{tabular}
```

<> a b
left { c d
e f
<> g h

for HTML output: First, remove the temporary definitions of `\ldelim` and `\rdelim`, which were previously defined for tabular scanning in case bigdelim was not loaded:

```
\let\ldelim\relax
\let\rdelim\relax
```

Next, load the package's new definitions:

```
\LWR@ProvidesPackagePass{bigdelim}
```

`\ldelim` {⟨*1:delimiter*⟩} {⟨*2:#rows*⟩} {⟨*3:width*⟩} [⟨*4:text*⟩]
`\rdelim`

```
\NewDocumentCommand{\LWR@HTML@ldelim}{m m m O{}}{%
\renewcommand{\LWR@multirowborder}{right}%
\multirow{#2}{#3}{#4 \InlineClass{ldelim}{#1}}%
}

\LWR@formatted{ldelim}

\NewDocumentCommand{\LWR@HTML@rdelim}{m m m O{}}{%
\renewcommand{\LWR@multirowborder}{left}%
\multirow{#2}{#3}{\InlineClass{rdelim}{#1} #4}%
}

\LWR@formatted{rdelim}
```

File 38 `lwarp-bigstrut.sty`

§ 132 Package bigstrut

(*Emulates or patches code by* Piet van Oostrum, Øystein Bache, Jerry Leichter.)

Pkg `bigstrut` bigstrut is used as-is for print or `lateximage`, and patched for HTML.

for HTML output:

```
\LWR@ProvidesPackagePass{bigstrut}

\LetLtxMacro\LWR@origbigstrut\bigstrut

\renewcommand\bigstrut[1][x]{}

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\bigstrut\LWR@origbigstrut%
}
```

File 39 `lwarp-bitpattern.sty`

§ 133 Package bitpattern

(*Emulates or patches code by* Jean-Marc Bourguet.)

Pkg `bitpattern` bitpattern is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{bitpattern}

\xpatchcmd{\bitpattern}
    {\begingroup}
    {\begin{lateximage}[(-bitpattern-~\packagediagramname)]}
    {}
    {\LWR@patcherror{bitpattern}{bitpattern}}

\xpatchcmd{\bp@Done}
    {\endgroup}
    {\end{lateximage}}
    {}
    {\LWR@patcherror{bitpattern}{bp@Done}}
```

File 40 `lwarp-blowup.sty`

§ 134 Package blowup

Pkg `blowup` blowup is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{blowup}

\newcommand*\blowUp[1]{}
```

File 41 `lwarp-booklet.sty`

§ 135 Package booklet

(*Emulates or patches code by* Peter Wilson.)

Pkg `booklet` booklet is nullified.

for HTML output:

```
\LWR@ProvidesPackageDrop{booklet}[2009/09/02]

\newdimen\pageseplength
\newdimen\pagesepwidth
\newdimen\pagesepoffset
\newif\ifsidebyside     \sidebysidetrue
\newif\ifuselandscape   \uselandscapefalse
\newif\ifprintoption    \printoptionfalse
\newcommand*{\pagespersignature}[1]{}
\def\magstepminus#1{}
\newcommand*{\target}[3]{}
\newcommand*{\source}[3]{}
\newcommand*{\setpdftargetpages}{}
\newcommand*{\setdvipstargetpages}{}
\newcommand*{\targettopbottom}{}
\newcommand*{\twoupemptypage}{}
\newcommand*{\twoupclearpage}{}
\newcommand*{\checkforlandscape}{}
```

File 42 `lwarp-bookmark.sty`

§ 136 Package bookmark

(*Emulates or patches code by* Heiko Oberdiek.)

Pkg `bookmark` bookmark is emulated.

for HTML output: Discard all options for lwarp-bookmark:

```
\LWR@ProvidesPackageDrop{bookmark}

\newcommand*{\bookmarksetup}[1]{}
\newcommand*{\bookmarksetupnext}[1]{}
\newcommand*{\bookmark}[2][]{}
\newcommand*{\bookmarkdefinestyle}[2]{}
```

```
\newcommand*{\bookmarkget}[1]{}
\newcommand{\BookmarkAtEnd}[1]{}
```

File 43 `lwarp-booktabs.sty`

§ 137 Package booktabs

(*Emulates or patches code by* Simon Fear.)

Pkg `booktabs` booktabs is emulated during HTML output, and used as-is during print output and inside an HTML `lateximage`.

for HTML output: First, forget the placeholder macros:

```
\LetLtxMacro\toprule\relax
\LetLtxMacro\midrule\relax
\LetLtxMacro\cmidrule\cline
\LetLtxMacro\bottomrule\relax
\LetLtxMacro\addlinespace\relax
\LetLtxMacro\morecmidrules\relax
\LetLtxMacro\specialrule\relax

\LWR@ProvidesPackagePass{booktabs}


\DeclareDocumentCommand{\LWR@HTML@toprule}{o d()}%
    {%
        \IfValueTF{#1}%
            {\LWR@docmidrule[#1]{}{1-\arabic{LWR@tabletotalLaTeXcols}}}%
            {%
                \ifbool{FormatWP}%
                {\LWR@docmidrule[#1]{}{1-\arabic{LWR@tabletotalLaTeXcols}}}%
                {\global\booltrue{LWR@doingtbrule}}%
            }%
    \LWR@getmynexttoken}

\LWR@expandableformatted{toprule}

\DeclareDocumentCommand{\LWR@HTML@midrule}{o d()}%
    {%
        \IfValueTF{#1}%
            {\LWR@docmidrule[#1]{}{1-\arabic{LWR@tabletotalLaTeXcols}}}%
            {%
                \ifbool{FormatWP}%
                {\LWR@docmidrule[#1]{}{1-\arabic{LWR@tabletotalLaTeXcols}}}%
                {\addtocounter{LWR@hlines}{1}}%
            }%
    \LWR@getmynexttoken}
```

```
\LWR@expandableformatted{midrule}

\DeclareDocumentCommand{\LWR@HTML@cmidrule}{O{\LWR@cmidrulewidth} d() m}{%
    \LWR@docmidrule[#1](#2){#3}%
    \LWR@getmynexttoken%
}%

\LWR@expandableformatted{cmidrule}

\DeclareDocumentCommand{\LWR@HTML@bottomrule}{o d()}{%
    \IfValueTF{#1}%
        {\LWR@docmidrule[#1](){1-\arabic{LWR@tabletotalLaTeXcols}}}%
        {%
            \ifbool{FormatWP}%
            {\LWR@docmidrule[#1](){1-\arabic{LWR@tabletotalLaTeXcols}}}%
            {\global\booltrue{LWR@doingtbrule}}%
        }%
    \LWR@getmynexttoken%
}%

\LWR@expandableformatted{bottomrule}

\DeclareDocumentCommand{\LWR@HTML@addlinespace}{o}{}%

\LWR@expandableformatted{addlinespace}

\DeclareDocumentCommand{\LWR@HTML@morecmidrules}{}{}%

\LWR@expandableformatted{morecmidrules}

\DeclareDocumentCommand{\LWR@HTML@specialrule}{m m m d()}%
    {\LWR@docmidrule[#1](){1-\arabic{LWR@tabletotalLaTeXcols}}\LWR@getmynexttoken}%

\LWR@expandableformatted{specialrule}
```

File 44 **lwarp-bophook.sty**

§ 138 Package bophook

Pkg bophook bophook is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{bophook}

\newcommand*{\AtBeginPage}[1]{}
\newcommand*{\PageLayout}[1]{}
```

File 45 `lwarp-boxedminipage.sty`

§ 139 Package boxedminipage

Pkg `boxedminipage` boxedminipage is superceded by boxedminipage2e.

for HTML output:

```
\LWR@loadnever{boxedminipage}{boxedminipage2e}
```

File 46 `lwarp-boxedminipage2e.sty`

§ 140 Package boxedminipage2e

(*Emulates or patches code by* Scott Pakin.)

Pkg `boxedminipage2e` boxedminipage2e is emulated.

for HTML output: Discard all options for lwarp-boxedminipage2e:

```
\LWR@ProvidesPackageDrop{boxedminipage2e}

\newenvironment{boxedminipage}{%
\begin{BlockClass}{framebox}%
\minipage%
}
{
\endminipage%
\end{BlockClass}
}
```

File 47 `lwarp-breakurl.sty`

§ 141 Package breakurl

(*Emulates or patches code by* Vilar Camara Neto.)

Pkg `breakurl` breakurl is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{breakurl}

\LetLtxMacro\burl\url
```

```
3
4 \NewDocumentCommand{\LWR@burlaltb}{O{} +m m}{%
5 \LWR@ensuredoingapar%
6 \LWR@subhyperref{#2}%
7 \LWR@subhyperreftext{#3}%
8 \endgroup% restore catcodes
9 }
10
11 \newrobustcmd*{\burlalt}{%
12 \begingroup%
13 \catcode`\#=12%
14 \catcode`\%=12%
15 \catcode`\&=12%
16 \catcode`\~=12%
17 \catcode`\_=12%
18 \LWR@burlaltb%
19 }
20
21 \LetLtxMacro\urlalt\burlalt
```

File 48 **lwarp-breqn.sty**

§ 142 Package

breqn

(*Emulates or patches code by* Michael J. Downes, Morten Høgholm.)

Pkg breqn breqn is patched for use by lwarp.

⚠ darray darray is not supported.

⚠ MathJax MathJax does not support breqn.

for HTML output:

```
1 \LWR@ProvidesPackagePass{breqn}

2 \setkeys{breqn}{spread={5pt}}
3
4 \def\eqnumside{R}
5 % \def\eqnumplace{T}
6
7 \BeforeBeginEnvironment{dmath}{
8     \begin{BlockClass}{displaymathnumbered}
9     \LWR@newautoidanchor%
10    \booltrue{LWR@indisplaymathimage}%
11    \begin{lateximage}[-breqn dmath- \mathimagename]
12 }
13
14 \AfterEndEnvironment{dmath}{
```

```
    \end{lateximage}\end{BlockClass}
}

\BeforeBeginEnvironment{dmath*}{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[-breqn dmath*- \mathimagename]
}

\AfterEndEnvironment{dmath*}{
    \end{lateximage}\end{BlockClass}
}

\BeforeBeginEnvironment{dseries}{
    \begin{BlockClass}{displaymathnumbered}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[-breqn dseries- \mathimagename]
}

\AfterEndEnvironment{dseries}{
    \end{lateximage}\end{BlockClass}
}

\BeforeBeginEnvironment{dseries*}{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[-breqn dseries*- \mathimagename]
}

\AfterEndEnvironment{dseries*}{
    \end{lateximage}\end{BlockClass}
}

\BeforeBeginEnvironment{dgroup}{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[-breqn dgroup- \mathimagename]
}

\AfterEndEnvironment{dgroup}{
    \end{lateximage}\end{BlockClass}
}

\BeforeBeginEnvironment{dgroup*}{
    \begin{BlockClass}{displaymath}
    \LWR@newautoidanchor%
```

```
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[-breqn dgroup*- \mathimagename]
}

\AfterEndEnvironment{dgroup*}{
    \end{lateximage}\end{BlockClass}
}
```

File 49 `lwarp-bxpapersize.sty`

§ 143 Package bxpapersize

Pkg `bxpapersize` bxpapersize is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{bxpapersize}

\providecommand*\papersizesetup{\bxpapersizesetup}
\newcommand*\bxpapersizesetup[1]{}
```

File 50 `lwarp-bytefield.sty`

§ 144 Package bytefield

(*Emulates or patches code by* Scott Pakin.)

Pkg `bytefield` bytefield is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{bytefield}

\BeforeBeginEnvironment{bytefield}{\begin{lateximage}[(-bytefield-~\packagediagramname)]}

\AfterEndEnvironment{bytefield}{\end{lateximage}}
```

File 51 `lwarp-cancel.sty`

§ 145 Package cancel

Pkg `cancel` cancel is used as-is for SVG math, and emulated for HTML text output.

for HTML output:

```
\LWR@origRequirePackage{lwarp-xcolor}% for \convertcolorspec
\LWR@ProvidesPackagePass{cancel}
```

`\cancelto` is math-only, so is used as-is.

```
\LetLtxMacro\LWR@origcancel\cancel
\LetLtxMacro\LWR@origbcancel\bcancel
\LetLtxMacro\LWR@origxcancel\xcancel

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\cancel\LWR@origcancel%
\LetLtxMacro\bcancel\LWR@origbcancel%
\LetLtxMacro\xcancel\LWR@origxcancel%
}
```

`\LWR@cancelcolor` {⟨*text*⟩} {⟨*color*⟩} {⟨*class*⟩} {⟨*colorstyle*⟩} {⟨*FormatWPstyle*⟩}

Add colors if not empty:

```
\newcommand{\LWR@cancelcolor}[5]{%
\ifcsempty{#2}%
{\InlineClass(#5){#3}{#1}}%
{\LWR@htmlspanclass[#5;#4:\LWR@origpound\LWR@tempcolor]{#3}{#1}}%
}
```

`\cancel` {⟨*text*⟩}

```
\DeclareRobustCommand{\cancel}[1]{%
\begingroup%
\CancelColor%
\LWR@findcurrenttextcolor%
\color{black}%
\LWR@cancelcolor{#1}{LWR@tempcolor}{sout}{text-decoration-color}%
    {text-decoration:line-through}%
\endgroup%
}

\LetLtxMacro\bcancel\cancel
\LetLtxMacro\xcancel\cancel
```

File 52 `lwarp-canoniclayout.sty`

§ 146 Package canoniclayout

Pkg `canoniclayout` canoniclayout is ignored.

for HTML output: S

```
\LWR@ProvidesPackageDrop{canoniclayout}

\newcommand*{\currentfontletters}{}
\newcommand*{\charactersperpage}{}
```

File 53 `lwarp-caption.sty`

§ 147 Package caption

(*Emulates or patches code by* Axel Sommerfeldt.)

Pkg `caption` caption is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{caption}

\renewcommand\caption@ibox[3]{%
  \@testopt{\caption@iibox{#1}{#2}{#3}}{%
%         \wd\@tempboxa%
        \linewidth% lwarp
  }%
% \LWR@traceinfo{caption@ibox: done}%
}

\long\def\caption@iibox#1#2#3[#4]{%
  \@testopt{\caption@iiibox{#1}{#2}{#3}{#4}}\captionbox@hj@default
}

\long\def\caption@iiibox#1#2#3#4[#5]#6{%
%   \setbox\@tempboxa\hbox{#6}%
  \begingroup
  #1*% set \caption@position
  \caption@iftop{%
    \LWR@traceinfo{caption@iiibox top}%
    \endgroup
    \parbox[t]{#4}{%
      #1\relax
      \caption@setposition t%
%       \vbox{\caption#2{#3}}%
      {\caption#2{#3}}% lwarp
%       \captionbox@hrule
%       \csname caption@hj@#5\endcsname
%       \unhbox\@tempboxa
       #6% lwarp
    }%
  }{%
    \LWR@traceinfo{caption@iiibox bottom}%
    \endgroup
    \parbox[b]{#4}{%
      #1\relax
      \caption@setposition b%
```

```
%       \csname caption@hj@#5\endcsname
%       \unhbox\@tempboxa
         #6% lwarp
%       \captionbox@hrule
%       \vtop{\caption#2{#3}}}%
      {\caption#2{#3}}% lwarp
     }%
  }%
\LWR@traceinfo{caption@iiibox: done}%
}

\def\caption@caption{%
  \caption@iftype
    {%
     \caption@checkgrouplevel\@empty\caption
     \caption@star
       {\caption@refstepcounter\@captype}%
       {\caption@dblarg{\@caption\@captype}}}%
    {\caption@Error{\noexpand\caption outside float}%
     \caption@gobble}%
}

\long\def\caption@@caption#1[#2]#3{%

  \ifcaption@star \else
    \caption@prepareanchor{#1}{#2}%
    \memcaptioninfo{#1}{\csname the#1\endcsname}{#2}{#3}%
    \@nameuse{nag@hascaptiontrue}%
  \fi

  \par
  \caption@beginex{#1}{#2}{#3}%
    \caption@setfloatcapt{%
      \caption@boxrestore
      \if@minipage
        \@setminipage
      \fi
      \caption@normalsize
      \ifcaption@star
        \let\caption@makeanchor\@firstofone
      \fi
      \@makecaption{\csname fnum@#1\endcsname}%
                   {\ignorespaces\caption@makeanchor{#3}}\par
      \caption@if@minipage\@minipagetrue\@minipagefalse}%
  \caption@end%
}
```

`\caption@@@make` {⟨*caption label*⟩} {⟨*caption text*⟩}

```
\renewcommand\caption@@@make[2]{%
\LWR@startpars% lwarp
%   \sbox\@tempboxa{#1}%
%   \ifdim\wd\@tempboxa=\z@
%     \let\caption@lsep\relax
%   \fi
  \caption@ifempty{#2}{%
    \let\caption@lsep\@empty
    \let\caption@tfmt\@firstofone
  }%
  \@setpar{\LWR@closeparagraph\@@par}% lwarp
  \caption@applyfont
  \caption@fmt
    {\ifcaption@star\else
       \begingroup
         \captionlabelfont
         #1%
       \endgroup
     \fi}%
    {\ifcaption@star\else
       \begingroup
         \caption@iflf\captionlabelfont
         \relax\caption@lsep
       \endgroup
     \fi}%
    {{\captiontextfont
      \caption@ifstrut
        {\vrule\@height\ht\strutbox\@width\z@}%
        {}%
      \nobreak\hskip\z@skip % enable hyphenation
      \caption@tfmt{#2}
    \LWR@ensuredoingapar% lwarp
      \caption@ifstrut
        {\ifhmode\@finalstrut\strutbox\fi}%
        {}%
      \par}}
\LWR@stoppars% lwarp
}
```

\caption@@make@ {⟨⟩} {⟨⟩}

```
\renewcommand{\caption@@make@}[2]{%
  \caption@stepthecounter
  \caption@beginhook
      \caption@@@make{#1}{#2}%
  \caption@endhook
}

% \DeclareCaptionBox{none}{#2}
```

```
\DeclareCaptionBox{parbox}{%
#2%
}
\DeclareCaptionBox{colorbox}{%
#2%
}
```

File 54 `lwarp-caption2.sty`

§ 148 Package caption2

Pkg caption2 caption2 is not used. The user is recommended to use caption instead.

for HTML output:

```
\LWR@loadnever{caption2}{caption}
```

File 55 `lwarp-cases.sty`

§ 149 Package cases

(*Emulates or patches code by* Donald Arseneau.)

Pkg cases cases is patched for use by lwarp.

⚠ MathJax MathJax does not support cases.

for HTML output:

```
\LWR@ProvidesPackagePass{cases}

\BeforeBeginEnvironment{numcases}{
    \begin{BlockClass}{displaymathnumbered}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[-cases- \mathimagename]
}

\AfterEndEnvironment{numcases}{
    \end{lateximage}\end{BlockClass}
}

\BeforeBeginEnvironment{subnumcases}{
    \begin{BlockClass}{displaymathnumbered}
    \LWR@newautoidanchor%
    \booltrue{LWR@indisplaymathimage}%
    \begin{lateximage}[-cases- \mathimagename]
}
```

```
19
20 \AfterEndEnvironment{subnumcases}{
21     \end{lateximage}\end{BlockClass}
22 }
```

File 56 `lwarp-ccaption.sty`

§ 150 Package ccaption

Pkg `ccaption` ccaption is not used. The user is recommended to use caption instead.

for HTML output:

```
1 \LWR@loadnever{ccaption}{caption}
```

File 57 `lwarp-changebar.sty`

§ 151 Package changebar

Pkg `changebar` changebar is ignored.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{changebar}[2018/03/09]

2 \newcommand*{\cbstart}{}
3 \newcommand*{\cbend}{}
4 \newenvironment*{\changebar}{}{}
5 \newcommand*{\cbdelete}{}
6 \newcommand*{\nochnagebars}{}
7 \newcommand*{\cbcolor}[1]{}
8 \newlength{\changebarwidth}
9 \newlength{\deletebarwidth}
10 \newlength{\changebarsep}
11 \newcounter{changebargrey}
```

File 58 `lwarp-changepage.sty`

§ 152 Package changepage

(*Emulates or patches code by* Peter Wilson.)

Pkg `changepage` changepage is emulated.

for HTML output:

Discard all options for lwarp-changepage:

```
\LWR@ProvidesPackageDrop{changepage}

\newif\ifoddpage
\DeclareRobustCommand{\checkoddpage}{\oddpagetrue}
\DeclareRobustCommand{\changetext}[5]{}
\DeclareRobustCommand{\changepage}[9]{}

\@ifundefined{adjustwidth}{
\newenvironment{adjustwidth}[2]{}{}
\newenvironment{adjustwidth*}[2]{}{}
}{
\renewenvironment{adjustwidth}[2]{}{}
\renewenvironment{adjustwidth*}[2]{}{}
}

\DeclareDocumentCommand{\strictpagecheck}{}{}
\DeclareDocumentCommand{\easypagecheck}{}{}
```

File 59 `lwarp-chngpage.sty`

§ 153 Package chngpage

(*Emulates or patches code by* Peter Wilson.)

Pkg `chngpage` chngpage is emulated.

for HTML output: Discard all options for lwarp-chngpage:

```
\LWR@ProvidesPackageDrop{chngpage}
\LWR@origRequirePackage{lwarp-changepage}
```

File 60 `lwarp-chappg.sty`

§ 154 Package chappg

(*Emulates or patches code by* Robin Fairbairns.)

Pkg `chappg` chappg is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{chappg}
```

```
\renewcommand{\pagenumbering}[2][]{}
\providecommand{\chappgsep}{--}
```

File 61 `lwarp-chapterbib.sty`

§ 155 Package chapterbib

(*Emulates or patches code by* Donald Arseneau.)

Pkg `chapterbib` chapterbib is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{chapterbib}
```

```
\xdef\@savedjobname{\BaseJobname}
\let\@currentipfile\@savedjobname
```

File 62 `lwarp-chemfig.sty`

§ 156 Package chemfig

(*Emulates or patches code by* Christian Tellechea.)

Pkg `chemfig` chemfig is patched for use by lwarp.

If using `\polymerdelim` to add delimiters to a `\chemfig`, wrap both inside a single `lateximage`:

```
\begin{lateximage}[(-chemfig-~\packagediagramname)]
\chemfig{...}
\polymerdelim[...]{...}
\end{lateximage}
```

The images are not hashed because they depend on external settings which may be changed at any time, and are unlikely to be reused inline anyhow.

for HTML output:

```
\LWR@ProvidesPackagePass{chemfig}
```

```
\LetLtxMacro\LWR@chemfig@origchemfig\chemfig

\DeclareDocumentCommand\chemfig{s O{} O{} m}{%
    \begin{lateximage}[(-chemfig-~\packagediagramname)]%
    \IfBooleanTF{#1}{%
        \LWR@chemfig@origchemfig*[#2][#3]{#4}%
    }{%
```

```
        \LWR@chemfig@origchemfig[#2][#3]{#4}%
    }
    \end{lateximage}%
}

\LetLtxMacro\LWR@chemfig@origCF@lewis@b\CF@lewis@b

\def\CF@lewis@b#1#2{%
\begin{lateximage}[(-chemfig-~\packagediagramname)]%
\LWR@chemfig@origCF@lewis@b{#1}{#2}%
\end{lateximage}%
}

\preto{\schemestart}{\begin{lateximage}[(-chemfig-~\packagediagramname)]}
\appto{\CF@schemestop}{\end{lateximage}}

\LetLtxMacro\LWR@chemfig@origchemleft\chemleft

\def\chemleft#1#2\chemright#3{%
\begin{lateximage}[(-chemfig-~\packagediagramname)]%
\LWR@chemfig@origchemleft#1#2\chemright#3%
\end{lateximage}%
}

\LetLtxMacro\LWR@chemfig@origchemup\chemup

\def\chemup#1#2\chemdown#3{%
\begin{lateximage}[(-chemfig-~\packagediagramname)]%
\LWR@chemfig@origchemup#1#2\chemdown#3%
\end{lateximage}%
}
```

File 63 **lwarp-chemformula.sty**

§ 157 Package chemformula

(*Emulates or patches code by* Clemens Niederberger.)

Pkg `chemformula` chemformula is patched for use by lwarp.

The SVG images are hashed according to contents and local options. Global options are assumed to be constant document-wide.

⚠ chemformula with MathJax

chemformula works best without MathJax. If MathJax is used, `\displaymathother` must be used before `array`, and then `\displaymathnormal` may be used after. (The chemformula package adapts to `array`, but does not know about MathJax, and MathJax does not know about chemformula.)

While using MathJax, `\displaymathother` may also be used for other forms of display and inline math which contain chemformula expressions.

for HTML output:

```
\LWR@ProvidesPackagePass{chemformula}[2017/03/23]
\ExplSyntaxOn
```

`\ch` Enclose in an inline SVG image or MathJax. The `alt` tag is is the contents of the `\ch` expression. The filename is hashed, and also has additional hashing information based on the local options.

```
\RenewDocumentCommand \ch { O{}m }
 {%
```

To work inside `align` with `\displaymathother`, a simple version must be used to work with chemformula's adaptation to `align`.

```
    \ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%  lwarp
    {
        \chemformula_ch:nn {#1} {#2}%   original
    }
```

If used as the outer level, must temporarily ensure MathJax is disabled:

```
    {
        \begingroup%
        \boolfalse{mathjax}%
```

An inline image is used, adjusted for the baseline:

```
        \LWR@subsingledollar*{% lwarp
            \textbackslash{}ch\{\LWR@HTMLsanitize{#2}\}% alt text
        }{%
           \protect\LWR@HTMLsanitize{\detokenize\expandafter{#1}}% add'l hashing
        }%
        {%
            \chemformula_ch:nn {#1} {#2}%   original
        }%
        \endgroup%
    }
 }
```

`\chcpd` Similar to `\ch`.

```
\cs_gset_protected:Npn \chemformula_chcpd:nn #1#2
 {
   \begingroup%
   \boolfalse{mathjax}%
   \LWR@subsingledollar*{% lwarp
       \textbackslash{}chcpd\{\LWR@HTMLsanitize{#2}\}%
   }{%
```

```
        \protect\LWR@HTMLsanitize{\detokenize\expandafter{#1}}%
    }{% original
    \group_begin:
      \tl_if_blank:nF {#2}
        {
          \keys_set:nn {chemformula} {#1}
          \__chemformula_save_catcodes:
          \__chemformula_sanitize:Nn
            \l__chemformula_chemformula_tmpa_tl
            {#2}
          \__chemformula_input_compound_no_check:NV
            \l__chemformula_compound_tl
            \l__chemformula_chemformula_tmpa_tl
          \__chemformula_prepare_output:N \l__chemformula_compound_tl
          \chemformula_write:V \l__chemformula_compound_tl
        }
    \group_end:
    }
    \endgroup
  }
```

\charrow If standalone, appears in a regular lateximage.

```
\RenewDocumentCommand \charrow { mO{}O{} }
{
    \begin{lateximage}[(-chemformula- charrow)]
    \group_begin:
      \__chemformula_draw_arrow:nnn {#1} {#2} {#3}
    \group_end:
    \end{lateximage}
}
```

\chname If standalone, appears in a regular lateximage, hashed according to contents.

```
\RenewDocumentCommand \chname { R(){}R(){} }
  {
    \begin{lateximage}*[%
        \textbackslash{}chname(\LWR@HTMLsanitize{#1})(\LWR@HTMLsanitize{#2})
    ]%
        \chemformula_chwritebelow:nn {#1} {#2}
    \end{lateximage}
  }
```

\chlewis Placed inline, hashed according to contents and options.

```
\RenewDocumentCommand \chlewis { O{}mm }
  {
    \begingroup%
    \boolfalse{mathjax}%
```

```
    \LWR@subsingledollar*{\textbackslash{}chlewis\{#2\}\{#3\}}%
    {
        \protect\LWR@HTMLsanitize{\detokenize\expandafter{#1}}%
    }{
        \chemformula_lewis:nnn {#1} {#2} {#3}
    }
    \endgroup%
}
```

lwarp redefines the $ character, so special handling is required to escape math expressions inside \ch.

This boolean tracks a new kind of escaped math:

```
\bool_new:N      \l__chemformula_first_last_LWRdollar_bool
```

\chemformula_input_escape_math

Adds additional escaping for the new dollar definition:

```
\cs_gset_protected:Npn \__chemformula_input_escape_math:n #1
 {
   \__chemformula_first_last_math:n {#1}
   \bool_if:NT \l__chemformula_first_last_dollar_bool
     {
       \bool_set_true:N \l__chemformula_first_last_math_bool
       \__chemformula_read_escape_dollar:w #1 \q_nil
     }
   \bool_if:NT \l__chemformula_first_last_mathbraces_bool
     {
       \bool_set_true:N \l__chemformula_first_last_math_bool
       \__chemformula_read_escape_mathbraces:w #1 \q_nil
     }
```

Added by lwarp:

```
   \bool_if:NT \l__chemformula_first_last_LWRdollar_bool%      lwarp
     {
       \bool_set_true:N \l__chemformula_first_last_math_bool%  lwarp
       \__chemformula_read_escape_LWRdollar:w #1 \q_nil%       lwarp
     }
}
```

\chemformula_read_escape_LWRdollar

The following parses the contents inside the new dollars.

lwarp keeps the dollar as its original math shift until the document starts. While chemmacros is being patched, the dollar must temporarily be set to its new meaning during the following definition.

```
\begingroup
\catcode`\$=\active

\cs_new_protected:Npn \__chemformula_read_escape_LWRdollar:w $#1$ \q_nil
{
    \__chemformula_read_escape_math:n {#1}
}

\endgroup
```

`\chemformula_bool_set_if_first_last`

The following looks at the first and last tokens for delimiters to escape math inside `\ch`. The original definition is modified to look for the control sequences which are used by the new meaning of `$`.

```
\cs_new_protected:Npn \__chemformula_bool_cs_set_if_first_last:NnNN #1#2#3#4
 {
   \int_zero:N \l__chemformula_tmpa_int
   \int_zero:N \l__chemformula_tmpb_int
   \int_set:Nn \l__chemformula_tmpa_int { \tl_count:n {#2} }
   \tl_map_inline:nn {#2}
     {
       \int_incr:N \l__chemformula_tmpb_int
       \int_compare:nT { \l__chemformula_tmpb_int = 1 }
         {
```

At the start, the `cs_` version compares control sequences:

```
           \ifdefstrequal{##1}{#3}% lwarp
               {
                   \bool_set_true:N #1
               }% lwarp
               {}
         }
```

At the end, compare more control sequences:

```
       \int_compare:nT { \l__chemformula_tmpb_int = \l__chemformula_tmpa_int }
         {
           \ifdefstrequal{##1}{#4}
               {}
               {
                   \bool_set_false:N #1
               }
         }
     }
```

```
}
```

\chemformula_first_last_math

Modified to check for the new meaning of $ at first/last:

```
\cs_gset_protected:Npn \__chemformula_first_last_math:n #1
  {
    \bool_set_false:N \l__chemformula_first_last_math_bool
    \bool_set_false:N \l__chemformula_first_last_dollar_bool
    \bool_set_false:N \l__chemformula_first_last_LWRdollar_bool%    lwarp
    \bool_set_false:N \l__chemformula_first_last_mathbraces_bool
    \__chemformula_bool_set_if_first_last:Nnnn
      \l__chemformula_first_last_dollar_bool
      {#1}
      { $ } { $ }
    \bool_if:NF \l__chemformula_first_last_dollar_bool
      {
        \__chemformula_bool_set_if_first_last:Nnnn
          \l__chemformula_first_last_mathbraces_bool
          {#1}
          { \( } { \) }
```

Added by lwarp:

```
          \bool_if:NF \l__chemformula_first_last_mathbraces_bool%   lwarp
            {
                \__chemformula_bool_cs_set_if_first_last:NnNN
                \l__chemformula_first_last_LWRdollar_bool
                {#1}
                { \LWR@newsingledollar } { \LWR@newsingledollar }
            }%  lwarp
      }
  }

\ExplSyntaxOff
```

File 64 **lwarp-chemgreek.sty**

§ 158 Package chemgreek

(*Emulates or patches code by* Clemens Niederberger.)

Pkg chemgreek chemgreek is patched for use by lwarp.

Greek symbols ⚠ package selection To use text-mode symbols, use packages textalpha or textgreek. Using the other packages supported by chemgreek will result in math-mode greek characters, which

will result in SVG images being used. These images will be hashed.

⚠ XeLaTeX, LuaLaTeX If using XeLaTeX or LuaLaTeX, select the `fontspec` mapping:

```
\selectchemgreekmapping{fontspec}
```

for HTML output:

```
\LWR@ProvidesPackagePass{chemgreek}[2016/02/10]

\ExplSyntaxOn

\cs_gset_protected:Npn \chemgreek_text:n #1
  { { \text {#1} } }

\appto\LWR@restoreorigformatting{%
\cs_set_protected:Npn \chemgreek_text:n #1%
  { \ensuremath { \text {#1} } }%
}

\ExplSyntaxOff
```

File 65 `lwarp-chemmacros.sty`

§ 159 Package

chemmacros

(*Emulates or patches code by* Clemens Niederberger.)

Pkg `chemmacros` chemmacros is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{chemmacros}
```

SVG file hashing assumes that the relevent options are constant for the entire document.

§ 159.1 Changes to the user's document

⚠ `\makepolymerdelims` When using `\makepolymerdelims`, enclose the entire expression inside a `polymerdelims` environment, such as (from the chemmacros manual):

```
\begin{polymerdelims}
\chemfig{-[@{op,.75}]CH_2-CH(-[6]Cl)-[@{cl,0.25}]}
\makepolymerdelims{5pt}[27pt]{op}{cl}
\end{polymerdelims}
```

⚠ redox reactions Redox reactions must be enclosed inside a `redoxreaction` environment. For print output, extra space must be included above and/or below the result, so they are

declared as arguments to the environment, instead of being manually entered as per the chemmacros manual. For HTML output, the extra space is ignored and a lateximage is used instead.

```
\begin{redoxreaction}{7mm}{7mm}
\OX{a,Na} $\rightarrow$ \OX{b,Na}\pch\redox(a,b){oxidation}
\end{redoxreaction}
```

§ 159.2 Code

§ 159.3 Loading modules

Patching chemmacros modules must be done \AtBeginDocument, since modules are invoked by the user in the preamble, and each patch is only done if the module is loaded.

```
\ExplSyntaxOn

\newcommand{\@ifchemmacrosmoduleloaded}[1]{%
\@ifl@aded{\c__chemmacros_module_extension_tl}{\c__chemmacros_module_prefix_tl.#1}%
}

\ExplSyntaxOff
```

§ 159.4 New environments

\makepolymerdelims and redox reactions must be enclosed in a lateximage during HTML output. These environments are provided here in HTML mode, and in the lwarp core in print mode, as a high-level semantic syntax which automatically embeds the contents in a lateximage with an appropriate alt tag.

Env polymerdelims

```
\DeclareDocumentEnvironment{polymerdelims}{}
{\begin{lateximage}[(-chemmacros- polymer)]}
{\end{lateximage}}
```

Env redoxreaction {⟨*space above*⟩} {⟨*space below*⟩}

For HTML output, the above and below space is ignored, and a lateximage is used instead. For the print output version, see section 84.

```
\DeclareDocumentEnvironment{redoxreaction}{m m}
{\begin{lateximage}[(-chemmacros- redoxreaction)]}
{\end{lateximage}}
```

```
\ExplSyntaxOn
```

§ 159.5 Acid-base

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{acid-base}{
\PackageInfo{lwarp}{Patching~chemmacros~module~acid-base}

\cs_gset_protected:Npn \chemmacros_p:n #1
  {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{
        \textbackslash{}p\{\LWR@HTMLsanitize{#1}\}
    }{
        chemmacrosp\protect\LWR@HTMLsanitize{\detokenize\expandafter{#1}}%
    }{
    \group_begin:
      \mbox
        {
          \chemmacros_p_style:n {p}
          \ensuremath {#1}
        }
    \group_end:
    }
    \endgroup
  }

\RenewDocumentCommand \pH  {} {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}pH}{chemmacros}{
        \chemmacros_p:n { \chemmacros_chemformula:n {H} }
    }
    \endgroup
}

\RenewDocumentCommand \pOH {} {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}pOH}{chemmacros}{
        \chemmacros_p:n { \chemmacros_chemformula:n {OH} }
    }
    \endgroup
}

\RenewDocumentCommand \pKa {O{}}
  {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}pKa{[}#1{]}}{chemmacros #1}{
        \chemmacros_p:n
```

```
        {
            \Ka \ifblank {#1} {}
            { {} \c_math_subscript_token { \chemmacros_bold:n {#1} } }
        }
    }
    \endgroup
  }

\RenewDocumentCommand \pKb {O{}}
  {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}pKb{[}#1{]}}{chemmacros #1}{
        \chemmacros_p:n
        {
            \Kb \ifblank {#1} {}
            { {} \c_math_subscript_token { \chemmacros_bold:n {#1} } }
        }
    }
    \endgroup
  }

\LetLtxMacro\LWR@chemmacros@origKa\Ka
\renewcommand*{\Ka}{%
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}Ka}{chemmacros}{%
        \LWR@chemmacros@origKa%
    }%
    \endgroup
}

\LetLtxMacro\LWR@chemmacros@origKb\Kb
\renewcommand*{\Kb}{%
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}Kb}{chemmacros}{%
        \LWR@chemmacros@origKb%
    }%
    \endgroup
}

\LetLtxMacro\LWR@chemmacros@origKw\Kw
\renewcommand*{\Kw}{%
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}Kw}{chemmacros}{
        \LWR@chemmacros@origKw
    }
    \endgroup
```

```
}

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.6 Charges

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{charges}{
\PackageInfo{lwarp}{Patching~chemmacros~module~charges}

\cs_gset_protected:Npn \fplus  {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}fplus}{chemmacros}
    { \LWR@origensuredmath{\chemformula_fplus:}  }
    \endgroup
}
\cs_gset_protected:Npn \fminus {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}fminus}{chemmacros}
    { \LWR@origensuredmath{\chemformula_fminus:} }
    \endgroup
}

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.7 Nomenclature

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{nomenclature}{
\PackageInfo{lwarp}{Patching~chemmacros~module~nomenclature}

\cs_gset_protected:Npn \chemmacros_charge:n #1
  {
    \ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}
    {\chemmacros_chemformula:n { {}^{#1} }}
    {
        \ifmmode
            {\chemmacros_chemformula:n { {}^{#1} }}
        \else
            { \textsuperscript{\ensuremath{#1}} }
        \fi
    }
  }


```

```
\LetLtxMacro\LWR@chemmacros@origchemprime\chemprime

\protected\def\chemprime { \HTMLunicode{2032} }

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\chemprime\LWR@chemmacros@origchemprime%
}

\ChemCompatibilityFrom{5.8}
\cs_gset_protected:Npn \__chemmacros_cip:n #1
  {
    \tl_set:Nn \l__chemmacros_tmpa_tl {#1}
    \int_step_inline:nnnn {0} {1} {9}
      {
        \tl_replace_all:Nnn \l__chemmacros_tmpa_tl
          {##1}
          { { \l__chemmacros_cip_number_tl ##1} }
      }
    {
        \l__chemmacros_cip_inner_tl
        \LWR@textcurrentcolor{\LWR@textcurrentfont{% lwarp
            \l__chemmacros_tmpa_tl
        }}% lwarp
    }
  }
\EndChemCompatibility

\RenewDocumentCommand \Sconf { O{S} } {
\begin{lateximage}[\textbackslash{}Sconf{[}#1{]}]
    \chemmacros_sconf:n {#1}
\end{lateximage}
}

\RenewDocumentCommand \Rconf { O{R} } {
\begin{lateximage}[\textbackslash{}Rconf{[}#1{]}]
    \chemmacros_rconf:n {#1}
\end{lateximage}
}

\cs_gset_protected:Npn \chemmacros_hapto:n #1
  {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}hapto\{#1\}}{chemmacros}{
        \chemmacros_coordination_symbol:nnnn
        { \l__chemmacros_coord_use_hyphen_bool }
        {
            \chemmacros_if_compatibility:nnTF {>} {5.7}
            { \c_true_bool }
            { \c_false_bool }
```

```
        }
        { \chemeta }
        {#1}
    }
    \endgroup
  }

\cs_gset_protected:Npn \chemmacros_dento:n #1
  {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}dento\{#1\}}{chemmacros}{
        \chemmacros_coordination_symbol:nnnn
        { \l__chemmacros_coord_use_hyphen_bool }
        {
            \chemmacros_if_compatibility:nnTF {>} {5.7}
            { \c_true_bool }
            { \c_false_bool }
        }
        { \chemkappa }
        {#1}
    }
    \endgroup
  }

\cs_gset_protected:Npn \chemmacros_bridge:n #1
  {
    \begingroup
    \boolfalse{mathjax}
    \LWR@subsingledollar*{\textbackslash{}bridge\{#1\}}{chemmacros}{
        \chemmacros_coordination_symbol:nnnn
        { \l__chemmacros_coord_use_hyphen_bool }
        { \l__chemmacros_bridge_super_bool }
        { \chemmu }
        {#1}
    }
    \endgroup
  }
}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.8 Particles

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{particles}{
\PackageInfo{lwarp}{Patching~chemmacros~module~particles}

\cs_gset_protected:Npn \chemmacros_declare_nucleophile:Nn #1#2
  {
```

```
    \cs_set_protected:cpn {__chemmacros_ \chemmacros_remove_backslash:N #1:}
      {
        \bool_if:NTF \l__chemmacros_nucleophile_elpair_bool
          {
            \chemmacros_elpair:n { #2 }
            \chemmacros_if_compatibility:nnT {>=} {5.3}
              { \skip_horizontal:N \l__chemmacros_nucleophile_dim }
            \chemmacros_chemformula:n { {}^{-} }
          }
          { \chemmacros_chemformula:n { #2^{-} } }
      }
    \DeclareDocumentCommand #1 {o}
      {%
        \begin{lateximage}%
        \group_begin:%
          \IfNoValueF {##1}%
            { \chemmacros_set_keys:nn {particles} {##1} }%
          \use:c {__chemmacros_ \chemmacros_remove_backslash:N #1:}%
        \group_end:%
        \end{lateximage}%
      }
  }

\RenewChemNucleophile \Nuc {Nu}
\RenewChemNucleophile \ba  {ba}

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.9 Phases

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{phases}{
\PackageInfo{lwarp}{Patching~chemmacros~module~phases}

\cs_undefine:N \chemmacros_phase:n
\cs_new_protected:Npn \chemmacros_phase:n #1
  {
    \chemmacros_leave_vmode:
    \bool_if:NTF \l__chemmacros_phases_sub_bool
      {
        \ifnumequal{\value{LWR@lateximagedepth}}{0}
        {
            \textsubscript{ (#1) }
        }
        {
            \chemformula_subscript:n { (#1) }
        }
      }
```

```
      {
        \skip_horizontal:N \l__chemmacros_phases_space_dim
        \chemmacros_text:n { (#1) }
      }
  }

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.10 Mechanisms

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{mechanisms}{
\PackageInfo{lwarp}{Patching~chemmacros~module~mechanisms}

\chemmacros_define_keys:nn {textmechanisms}
  {
    type      .choice: ,
    type /    .code:n    =
      {
        \__chemmacros_set_mechanisms:nnn { S }
          {
              \textsubscript{N}
          }
          { }
      } ,
    type / 1  .code:n    =
      {
        \__chemmacros_set_mechanisms:nnn { S }
          {
              \textsubscript{N}
            1
          }
          { }
      } ,
    type / 2  .code:n    =
      {
        \__chemmacros_set_mechanisms:nnn { S }
          {
              \textsubscript{N}
            2
          }
          { }
      } ,
    type / se .code:n    =
      {
        \__chemmacros_set_mechanisms:nnn { S }
          {
              \textsubscript{E}
```

```
        }
        { }
    } ,
  type / 1e .code:n    =
    {
      \__chemmacros_set_mechanisms:nnn { S }
        {
            \textsubscript{E}
          1
        }
        { }
    } ,
  type / 2e .code:n    =
    {
      \__chemmacros_set_mechanisms:nnn { S }
        {
            \textsubscript{E}
          2
        }
        { }
    } ,
  type / ar .code:n    =
    {
      \__chemmacros_set_mechanisms:nnn { S }
        {
            \textsubscript{E}
        }
        { Ar - }
    } ,
  type / e  .code:n    =
    { \__chemmacros_set_mechanisms:nnn { E } { } { } } ,
  type / e1 .code:n    =
    { \__chemmacros_set_mechanisms:nnn { E } { 1 } { } } ,
  type / e2 .code:n    =
    { \__chemmacros_set_mechanisms:nnn { E } { 2 } { } } ,
  type / cb .code:n    =
    {
      \__chemmacros_set_mechanisms:nnn { E }
        {
          1
            \textsubscript{cb}
        }
        { }
    } ,
  type      .default:n =
}

\cs_gset_protected:Npn \chemmacros_mechanisms:n #1
 {
  \tl_if_blank:nTF {#1}
```

```
      { \chemmacros_set_keys:nn {textmechanisms} { type } }
      { \chemmacros_set_keys:nn {textmechanisms} { type = #1 } }
    \mbox
      {
        \tl_use:N \l__chemmacros_mechanisms_ar_tl
        \tl_use:N \l__chemmacros_mechanisms_type_tl
        \tl_use:N \l__chemmacros_mechanisms_mol_tl
      }
  }

\appto\LWR@restoreorigformatting{%
\cs_set_protected:Npn \chemmacros_mechanisms:n #1%
  {%
    \tl_if_blank:nTF {#1}%
      { \chemmacros_set_keys:nn {mechanisms} { type } }%
      { \chemmacros_set_keys:nn {mechanisms} { type = #1 } }%
    \mbox%
      {%
        \tl_use:N \l__chemmacros_mechanisms_ar_tl%
        \tl_use:N \l__chemmacros_mechanisms_type_tl%
        \tl_use:N \l__chemmacros_mechanisms_mol_tl%
      }%
  }%
}

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.11 Newman

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{newman}{
\PackageInfo{lwarp}{Patching~chemmacros~module~newman}

\RenewDocumentCommand \newman {od()m}%
  {
    \IfValueTF{#2}
    {\begin{lateximage}[\textbackslash{}newman(#2)\{#3\}]}
    {\begin{lateximage}[\textbackslash{}newman\{#3\}]}
    \group_begin:
      \IfNoValueF  {#1} { \chemmacros_set_keys:nn {newman} {#1} }
      \IfNoValueTF {#2}
        { \chemmacros_newman:nn {  } {#3} }
        { \chemmacros_newman:nn {#2} {#3} }
    \group_end:
    \end{lateximage}
  }%

}{}% \@ifchemmacrosmoduleloaded
```

```
}% AtBeginDocument
```

§ 159.12 Orbital

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{orbital}{
\PackageInfo{lwarp}{Patching~chemmacros~module~orbital}

\RenewDocumentCommand \orbital {om}
  {
    \IfValueTF{#1}
    {
        \begin{lateximage}[%
            \textbackslash{}orbital{[}\LWR@HTMLsanitize{#1}{]}\{#2\}%
        ][][margin-left: 1em ; margin-right: 1em]
    }
    {
        \begin{lateximage}[%
            \textbackslash{}orbital\{#2\}%
        ][][margin-left: 1em ; margin-right: 1em]
    }
    \group_begin:
      \chemmacros_set_keys:nn {orbital/type} {#2}
      \IfNoValueTF {#1}
        { \chemmacros_orbital:n {  } }
        { \chemmacros_orbital:n {#1} }
    \group_end:
    \end{lateximage}
  }

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.13 Reactions

`\chemmacros_declare_reaction_env` {⟨*chem*⟩} {⟨*math*⟩} {⟨*args number*⟩} {⟨*argument list ({#2}{#3}...)*⟩}

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{reactions}{
\PackageInfo{lwarp}{Patching~chemmacros~module~reactions}

\cs_gset_protected:Npn \chemmacros_declare_reaction_env:nnnn #1#2#3#4
  {
    \exp_args:Nnx \DeclareDocumentEnvironment {#1} { O{} \prg_replicate:nn {#3+0} {m} }
      {
        \boolfalse{mathjax}%    lwarp
        \chemmacros_add_reaction_description:n {##1}
        \__chemmacros_begin_reaction:
        \chemmacros_reaction_read:nnw {#2} {#4}
```

```
      }
      {
        \__chemmacros_end_reaction:
      }
  }
\cs_generate_variant:Nn \chemmacros_declare_reaction_env:nnnn {nnnV}

\RenewChemReaction {reaction}   {equation}
\RenewChemReaction {reaction*}  {equation*}
\RenewChemReaction {reactions}  {align}
\RenewChemReaction {reactions*} {align*}

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.14 Redox

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{redox}{
\PackageInfo{lwarp}{Patching~chemmacros~module~redox}

\NewDocumentCommand \LWR@chemmacros@ox { s m >{\SplitArgument{1}{,}}m }
  {
    \IfBooleanTF {#1}
      { \chemmacros_ox:nnnn {#1} {#2} #3 }
      { \chemmacros_ox:nnnn {  } {#2} #3 }
  }

\RenewDocumentCommand \ox { s O{} m }
  {
    \begingroup
    \boolfalse{mathjax}
    \IfBooleanTF {#1}
      {
        \LWR@subsingledollar*{% yes hash
            \textbackslash{}ox*\{\LWR@HTMLsanitize{#3}\}% alt
        }{%
            star \protect\LWR@HTMLsanitize{\detokenize\expandafter{#2}}%
        }{%
            \LWR@chemmacros@ox* {#2} {#3}% contents
        }%
      }
      {
        \LWR@subsingledollar*{% yes hash
            \textbackslash{}ox*\{\LWR@HTMLsanitize{#3}\}% alt
        }{%
            \protect\LWR@HTMLsanitize{\detokenize\expandafter{#2}}%
        }{%
            \LWR@chemmacros@ox {#2} {#3}% contents
        }%
```

```
      }
    \endgroup
  }

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.15 Scheme

Fix for chemmacros as of v5.8b, when using newfloat and babel:

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{scheme}{
\PackageInfo{lwarp}{Patching~chemmacros~module~scheme}

\ifdefstring{\schemename}{los}{
\SetupFloatingEnvironment{scheme}{
name = \chemmacros_translate:n {scheme-name}
}
}{}

}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument
```

§ 159.16 Spectroscopy

```
\AtBeginDocument{
\@ifchemmacrosmoduleloaded{spectroscopy}{
\PackageInfo{lwarp}{Patching~chemmacros~module~spectroscopy}

\ChemCompatibilityTo{5.8}
\cs_gset_protected:Npn \__chemmacros_nmr_base:nn #1#2
  {
    \tl_if_blank:VF \g__chemmacros_nmr_element_coupled_tl
      {
        \tl_put_left:Nn \g__chemmacros_nmr_element_coupled_tl { \{ }
        \tl_put_right:Nn \g__chemmacros_nmr_element_coupled_tl { \} }
      }
    \tl_put_left:Nn \g__chemmacros_nmr_element_coupled_tl {#2}
%     \chemmacros_chemformula:n { ^{#1} }
    \textsuperscript{#1}
    \bool_if:NTF \l__chemmacros_nmr_parse_bool
      { \chemformula_ch:nV {} \g__chemmacros_nmr_element_coupled_tl }
      { \chemmacros_chemformula:V \g__chemmacros_nmr_element_coupled_tl }
    \tl_use:N \l__chemmacros_nmr_element_method_connector_tl
    \tl_use:N \l__chemmacros_nmr_method_tl
  }
\EndChemCompatibility
\ChemCompatibilityFrom{5.8}
```

```
\cs_gset_protected:Npn \__chemmacros_nmr_base:nn #1#2
  {
    \group_begin:
      \tl_use:N \l__chemmacros_nmr_base_format_tl
      \tl_if_blank:VF \g__chemmacros_nmr_element_coupled_tl
        {
          \tl_put_left:Nn \g__chemmacros_nmr_element_coupled_tl { \{ }
          \tl_put_right:Nn \g__chemmacros_nmr_element_coupled_tl { \} }
        }
      \tl_put_left:Nn \g__chemmacros_nmr_element_coupled_tl {#2}
%       \chemmacros_chemformula:n { ^{#1} }
      \textsuperscript{#1}
      \tl_if_blank:VF \g__chemmacros_nmr_element_coupled_tl
        {
          \bool_if:NTF \l__chemmacros_nmr_parse_bool
            { \chemformula_ch:nV {} \g__chemmacros_nmr_element_coupled_tl }
            { \chemmacros_chemformula:V \g__chemmacros_nmr_element_coupled_tl }
        }
      \tl_use:N \l__chemmacros_nmr_element_method_connector_tl
      \tl_use:N \l__chemmacros_nmr_method_tl
    \group_end:
  }
\EndChemCompatibility


\cs_gset_protected:Npn \chemmacros_nmr_position:n #1
  {
    \chemmacros_chemformula:x
      {
        \exp_not:V \g__chemmacros_nmr_element_tl
        \bool_if:NF \l__chemmacros_nmr_position_side_bool
          {
            \tl_if_eq:NnTF \l__chemmacros_nmr_position_tl {^}% lwarp
            { \textsuperscript{\exp_not:n { {#1} }} }% lwarp
            { \textsubscript{\exp_not:n { {#1} }} }% lwarp
%             \exp_not:V \l__chemmacros_nmr_position_tl
%             \exp_not:n { {#1} }
          }
      }
    \bool_if:NT \l__chemmacros_nmr_position_side_bool
      {
        \tl_use:N \l__chemmacros_nmr_position_tl
        \__chemmacros_nmr_position:n {#1}
      }
  }

\cs_gset_protected:Npn \__chemmacros_nmr_coupling:w (#1;#2)
  {
    \tl_set:Nn \l__chemmacros_nmr_coupling_bonds_tl
      {
```

```
        \l__chemmacros_nmr_coupling_bonds_pre_tl
        #1
        \l__chemmacros_nmr_coupling_bonds_post_tl
      }
    \bool_if:NTF \l__chemmacros_nmr_coupling_nuclei_sub_bool
      {
        \tl_set:Nn \l__chemmacros_nmr_coupling_nuclei_tl
          {
%             \c_math_subscript_token
            \textsubscript% lwarp
              {
                \l__chemmacros_nmr_coupling_nuclei_pre_tl
                \chemmacros_chemformula:n {#2}
                \l__chemmacros_nmr_coupling_nuclei_post_tl
              }
          }
      }
      {
        \tl_set:Nn \l__chemmacros_nmr_coupling_nuclei_tl
          {
            \l__chemmacros_nmr_coupling_nuclei_pre_tl
            \chemmacros_chemformula:n {#2}
            \l__chemmacros_nmr_coupling_nuclei_post_tl
          }
      }
    \__chemmacros_nmr_coupling_aux_i:w
  }

\AfterEndPreamble{% After \AtBeginDocument
% \NMR{<num>,<elem>}(<num>,<unit>)[<solvent>] ALL arguments are optional
% \NMR* same but without ": $\delta$" at end
\cs_gset_protected:Npn \chemmacros_nmr:nnnn #1#2#3#4
    {
    \bool_if:NT \l__chemmacros_nmr_list_bool { \item \scan_stop: }
    \group_begin:
        \chemmacros_leave_vmode:
        \bool_set_false:N \l__chemmacros_nmr_frequency_bool
        \bool_set_false:N \l__chemmacros_nmr_solvent_bool
        \tl_if_empty:nF {#3}
        { \bool_set_true:N \l__chemmacros_nmr_frequency_bool }
        \tl_if_empty:nF {#4}
        { \bool_set_true:N \l__chemmacros_nmr_solvent_bool }
        \bool_if:nT
        {
            \l__chemmacros_nmr_frequency_bool
            ||
            \l__chemmacros_nmr_solvent_bool
        }
        { \bool_set_true:N \l__chemmacros_nmr_delimiters_bool }
        \bool_if:nT
```

```
        {
            \l__chemmacros_nmr_frequency_bool
            &&
            \l__chemmacros_nmr_solvent_bool
        }
        { \bool_set_true:N \l__chemmacros_nmr_comma_bool }
        \tl_if_empty:nTF {#2}
        {
            \__chemmacros_nmr_nucleus:VV
            \l__chemmacros_nmr_isotope_default_tl
            \l__chemmacros_nmr_element_default_tl
        }
        { \__chemmacros_nmr_nucleus:w #2 \q_stop }
        \mode_if_math:TF
        {
            \text
            {
                \group_begin:
                \tl_use:N \l__chemmacros_nmr_format_tl
\LWR@textcurrentcolor{\LWR@textcurrentfont{% lwarp
                \__chemmacros_nmr_base:VV
                    \g__chemmacros_nmr_isotope_tl
                    \g__chemmacros_nmr_element_tl
                \bool_if:NT \l__chemmacros_nmr_delimiters_bool
                    { ~ ( }
                \bool_if:NT \l__chemmacros_nmr_frequency_bool
                    { \__chemmacros_nmr_frequency:n {#3} }
                \bool_if:NT \l__chemmacros_nmr_comma_bool
                    { , ~ }
                \bool_if:NT \l__chemmacros_nmr_solvent_bool
                    { \chemmacros_chemformula:n {#4} }
                \bool_if:NT \l__chemmacros_nmr_delimiters_bool
                    { ) }
                \tl_if_blank:nT {#1} {:~}
}}% lwarp
                \group_end:
            }
            \tl_if_blank:nT {#1}
            {
                \delta
                \text { \l__chemmacros_nmr_delta_tl }
                \bool_if:NT \l__chemmacros_nmr_use_equal_bool {=}
            }
        }
        {
            \group_begin:
            \tl_use:N \l__chemmacros_nmr_format_tl
\LWR@textcurrentcolor{\LWR@textcurrentfont{% lwarp
            \__chemmacros_nmr_base:VV
                \g__chemmacros_nmr_isotope_tl
```

```
                \g__chemmacros_nmr_element_tl
            \bool_if:NT \l__chemmacros_nmr_delimiters_bool
                {~(}
            \bool_if:NT \l__chemmacros_nmr_frequency_bool
                { \__chemmacros_nmr_frequency:n {#3} }
            \bool_if:NT \l__chemmacros_nmr_comma_bool
                {,~}
            \bool_if:NT \l__chemmacros_nmr_solvent_bool
                {
                \bool_if:NTF \l__chemmacros_nmr_parse_bool

%                     { \chemformula_ch:nn { } {#4} }%  original
                    {\ch{#4}}%  lwarp
                    {#4}
                }
            \bool_if:NT \l__chemmacros_nmr_delimiters_bool
                {)}
}}% lwarp
            \tl_if_blank:nT {#1} {:}
            \group_end:
            \tl_if_blank:nT {#1}
            {
                \tl_use:N \c_space_tl
                \c_math_toggle_token
                \delta
                \c_math_toggle_token
                \l__chemmacros_nmr_delta_tl
                \bool_if:NT \l__chemmacros_nmr_use_equal_bool {~=}
            }
        }
    \group_end:
    }
}% AfterEndPremble


\RenewDocumentCommand \chemmacros_data:w { smo }
  {
    \bool_if:NT \l__chemmacros_nmr_list_bool { \item }
      {
%         \tl_use:N \l__chemmacros_nmr_format_tl #2
        \tl_use:N \l__chemmacros_nmr_format_tl
        \LWR@textcurrentcolor{\LWR@textcurrentfont{% lwarp
            #2
            \IfNoValueF {#3} { ~ ( #3 ) }
            \IfBooleanT {#1} { \bool_if:NT \l__chemmacros_nmr_use_equal_bool { : } }
        }}% lwarp
      }
    \IfBooleanF {#1} { \bool_if:NT \l__chemmacros_nmr_use_equal_bool { ~ = } }
  }
```

```
765
766 }{}% \@ifchemmacrosmoduleloaded
767 }% AtBeginDocument
```

§ 159.17 Thermodynamics

```
768 \AtBeginDocument{
769 \@ifchemmacrosmoduleloaded{thermodynamics}{
770 \PackageInfo{lwarp}{Patching~chemmacros~module~thermodynamics}
771
772 \cs_gset_protected:Npn \chemmacros_state:nn #1#2
773  {
774    \group_begin:
775      \boolfalse{mathjax}
776      \chemmacros_set_keys:nn {thermodynamics} {#1}
777        \LWR@subsingledollar*{% yes hashing
778            \textbackslash{}state\{\LWR@HTMLsanitize{#2}\}% alt
779        }{%
780            chemmacros_state% add'l hashing
781            #1% options
782            LSP \tl_use:N \l__chemmacros_state_sp_left_tl% super/subscripts
783            LSB \tl_use:N \l__chemmacros_state_sb_left_tl
784            RSP \tl_use:N \l__chemmacros_state_sp_right_tl
785            RSB \tl_use:N \l__chemmacros_state_sb_right_tl
786        }
787        {
788         \LWR@origensuredmath{
789          \chemmacros_text:V \l__chemmacros_state_pre_tl
790          \c_math_superscript_token
791            { \chemmacros_text:V \l__chemmacros_state_sp_left_tl }
```

Only add the subscripts if they are being used. This avoids causing an incorrect depth, as the empty subscript will be measured by TEX but cropped out by *pdfcrop*.

```
792          \tl_if_empty:NTF \l__chemmacros_state_sb_left_tl
793          {}
794          {
795            \c_math_subscript_token
796            { \chemmacros_text:V \l__chemmacros_state_sb_left_tl }
797          }
798          #2
799          \c_math_superscript_token
800            { \chemmacros_text:V \l__chemmacros_state_sp_right_tl }
801          \tl_if_empty:NTF \l__chemmacros_state_sb_right_tl
802          {}
803          {
804            \c_math_subscript_token
805            { \chemmacros_text:V \l__chemmacros_state_sb_right_tl }
806          }
```

```
          \chemmacros_text:V \l__chemmacros_state_post_tl
        }
      }
    \group_end:
  }
\cs_generate_variant:Nn \chemmacros_state:nn { nV }

\cs_gset_protected:Npn \chemmacros_declare_state:Nn #1#2
  {
    \chemmacros_define_keys:xn
      {thermodynamics/\chemmacros_remove_backslash:N #1}
      {
        pre               .meta:nn = {chemmacros/thermodynamics} { pre = ##1 } ,
        post              .meta:nn = {chemmacros/thermodynamics} { post = ##1 } ,
        superscript-left  .meta:nn = {chemmacros/thermodynamics} { superscript-left = ##1 } ,
        superscript-right .meta:nn = {chemmacros/thermodynamics} { superscript-right = ##1 } ,
        superscript       .meta:n  = { superscript-right = ##1 } ,
        subscript-left    .meta:nn = {chemmacros/thermodynamics} { subscript-left = ##1 } ,
        subscript-right   .meta:nn = {chemmacros/thermodynamics} { subscript-right = ##1 } ,
        subscript         .meta:n     = { subscript-left = ##1 } ,
        subscript-pos     .choices:nn =
          { left , right }
          { \tl_set_eq:NN \l__chemmacros_state_sb_pos_tl \l_keys_choice_tl } ,
        symbol            .tl_set:N = \l__chemmacros_state_symbol_tl ,
        unit              .tl_set:N = \l__chemmacros_state_unit_tl
      }
    \DeclareDocumentCommand #1 { sO{}D(){}m }
      {
        \group_begin:
          \chemmacros_set_keys:xn
            {thermodynamics/\chemmacros_remove_backslash:N #1}
            {#2}
          \tl_if_blank:nF {##3}
            {
              \chemmacros_set_keys:nx {thermodynamics}
                { subscript-\l__chemmacros_state_sb_pos_tl = \exp_not:n {##3} }
            }
              \chemmacros_state:nV {##2} \l__chemmacros_state_symbol_tl
              \chemmacros_set_keys_groups:nnn {thermodynamics} {variables} {##2}
              \IfBooleanF {##1} {  = ~ \SI {##4} { \l__chemmacros_state_unit_tl } }
          \group_end:
      }
  }
```

The pre-existing macros are redefined with the new definition:

```
\RenewChemState \enthalpy { symbol = H , unit = \kilo\joule\per\mole }
\RenewChemState \entropy  { symbol = S , unit = \joule\per\kelvin\per\mole , pre = }
\RenewChemState \gibbs    { symbol = G , unit = \kilo\joule\per\mole }
```

```
}{}% \@ifchemmacrosmoduleloaded
}% AtBeginDocument

\ExplSyntaxOff
```

File 66 **lwarp-chemnum.sty**

§ 160 Package chemnum

(*Emulates or patches code by* Clemens Niederberger.)

Pkg chemnum chemnum is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{chemnum}

\ExplSyntaxOn

\cs_gset_protected:Npn \chemnum_compound_write:n #1
  {
    \chemnum_get_compound_property:nn {#1} {pre-main-label-code}
    \group_begin:
      \bool_if:NTF \l__chemnum_compound_local_bool
        { \l__chemnum_local_label_format_tl }
        { \chemnum_get_compound_property:nn {#1} {label-format} }
      {
        \LWR@textcurrentfont{
            \chemnum_get_compound_property:nn {#1} {counter-representation}
        }
      }
    \group_end:
    \chemnum_get_compound_property:nn {#1} {post-main-label-code}
  }

\cs_gset_protected:Npn \chemnum_subcompound_write:nn #1#2
  {
    \group_begin:
      \bool_if:NTF \l__chemnum_compound_local_bool
        { \l__chemnum_local_label_format_tl }
        { \chemnum_get_compound_property:nn {#1} {label-format} }
      {
        \LWR@textcurrentfont{
            \chemnum_get_subcompound_property:nnn {#1} {#2}
            {counter-representation}
        }
      }
    \group_end:
  }
```

```
34
35 \ExplSyntaxOff
```

File 67 `lwarp-chkfloat.sty`

§ 161 Package chkfloat

Pkg `chkfloat` chkfloat is ignored.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{chkfloat}[2012/08/19]
```

File 68 `lwarp-cite.sty`

§ 162 Package cite

(*Emulates or patches code by* Donald Arseneau.)

Pkg `cite` cite is patched for use by lwarp.

for HTML output:

```
1 \LWR@ProvidesPackagePass{cite}
```

For the [super] option, the `\kern` must be removed:

```
2 \def\LWRCT@biblabel#1{\@citess{#1}\kern-\labelsep\,}
3
4 \ifdefstrequal{\@biblabel}{\LWRCT@biblabel}
5 {
6     \def\@biblabel#1{\@citess{#1}}
7 }{}
```

For the [super] option, `\textsuperscript` is used instead of math superscript:

```
8 \def\@citess#1{\textsuperscript{#1}}
9
10 \DeclareDocumentCommand\citepunct{}{,\,\relax}
```

File 69 `lwarp-CJK.sty`

§ 163 Package CJK

Pkg `CJK` CJK does not work with lwarp unless called from ctex.

for HTML output:

```
\@ifpackageloaded{xeCJK}{}{
    \LWR@loadnever{CJK}{ctex}
}
```

File 70 `lwarp-CJKutf8.sty`

§ 164 Package CJKutf8

Pkg `CJKutf8` CJKutf8 does not work with lwarp unless called from ctex.

for HTML output:

```
\@ifpackageloaded{xeCJK}{}{
    \LWR@loadnever{CJKutf8}{ctex}
}
```

File 71 `lwarp-clrdblpg.sty`

§ 165 Package clrdblpg

Pkg `clrdblpg` clrdblpg is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{clrdblpg}
```

File 72 `lwarp-cmdtrack.sty`

§ 166 Package cmdtrack

Pkg `cmdtrack` cmdtrack is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{cmdtrack}[2012/12/18]

\newcommand{\untrack}[1]{}
```

File 73 `lwarp-color.sty`

§ 167 Package color

Pkg `color` Allowed but ignored. xcolor is then required as well.

color is superceded by xcolor, and lwarp requires several of the features of xcolor. When color is requested, xcolor is loaded as well.

for HTML output:

```
\LWR@ProvidesPackagePass{color}
\RequirePackage{xcolor}
```

File 74 `lwarp-colortbl.sty`

§ 168 Package colortbl

Pkg `colortbl` colortbl is emulated.

⚠ row/cell color Only use `\rowcolor` and `\cellcolor` at the start of a row, in that order.

colortbl ignores the overhang arguments.

for HTML output: A few placeholder definitions are forgotten first:

```
\let\rowcolor\relax

\LWR@ProvidesPackagePass{colortbl}
```

The following `\LWR@HTML` versions are used inside an HTML `tabular`.

`\columncolor` `[`⟨*model*⟩`]` `{`⟨*color*⟩`}` `[`⟨*left overhang*⟩`]` `[`⟨*right overhang*⟩`]`

`\LWR@getmynexttoken` is not used here because `\columncolor` is not used inside the data area of the tabular.

```
\NewDocumentCommand{\LWR@HTML@columncolor}{O{named} m o o}{%
\convertcolorspec{#1}{#2}{HTML}\LWR@columnHTMLcolor%
\LWR@addtabularcellcolor%
}

\LWR@formatted{columncolor}
```

`\LWR@getmynexttoken` is used for `\rowcolor` because it is used inside the data area of the tabular.

`\rowcolor` `[`⟨*model*⟩`]` `{`⟨*color*⟩`}` `[`⟨*left overhang*⟩`]` `[`⟨*right overhang*⟩`]`

```
\NewDocumentCommand{\LWR@HTML@rowcolor}{O{named} m o o}{%
\convertcolorspec{#1}{#2}{HTML}\LWR@rowHTMLcolor%
\LWR@getmynexttoken%
}

\LWR@expandableformatted{rowcolor}
```

\cellcolor [⟨*model*⟩] {⟨*color*⟩} [⟨*left overhang*⟩] [⟨*right overhang*⟩]

```
\NewDocumentCommand{\LWR@HTML@cellcolor}{O{named} m o o}{%
\convertcolorspec{#1}{#2}{HTML}\LWR@cellHTMLcolor%
\LWR@addtabularcellcolor%
}

\LWR@formatted{cellcolor}
```

\arrayrulecolor [⟨*model*⟩] {⟨*color*⟩}

The HTML version for use outside a `tabular`. Inside a `tabular`, `\LWR@HTML@arrayrulecolornexttoken` is used instead.

```
\newcommand{\LWR@HTML@arrayrulecolor}[2][named]{%
\convertcolorspec{#1}{#2}{HTML}\LWR@ruleHTMLcolor%
}

\LWR@expandableformatted{arrayrulecolor}
```

\LWR@arrayrulecolornexttoken [⟨*model*⟩] {⟨*color*⟩}

The HTML version for use inside a `tabular`.

```
\newcommand{\LWR@HTML@arrayrulecolornexttoken}[2][named]{%
\convertcolorspec{#1}{#2}{HTML}\LWR@ruleHTMLcolor%
\LWR@getmynexttoken%
}

\LWR@expandableformatted{arrayrulecolornexttoken}
```

\doublerulesepcolor [⟨*model*⟩] {⟨*color*⟩}

The version for use outside a `tabular`.

```
\newcommand{\LWR@HTML@doublerulesepcolor}[2][named]{}

\LWR@expandableformatted{doublerulesepcolor}
```

\LWR@doublerulesepcolornexttoken [⟨*model*⟩] {⟨*color*⟩}

The version for use inside a `tabular`.

```
\newcommand{\LWR@HTML@doublerulesepcolornexttoken}[2][named]{\LWR@getmynexttoken}

\LWR@expandableformatted{doublerulesepcolornexttoken}
```

File 75 `lwarp-continue.sty`

§ 169 Package continue

Pkg `continue` continue is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{continue}

\newcommand*{\flagcont}{}
\newcommand*{\flagend}{}
\newcommand*{\flagword}{}
\newcommand*{\preflagword}{}
\newcommand*{\postflagword}{}
\newlength\contsep
\newlength\contdrop
```

File 76 `lwarp-copyrightbox.sty`

§ 170 Package copyrightbox

(*Emulates or patches code by* Thomas Fischer, Ives van der Flaas.)

Pkg `copyrightbox` copyrightbox is emulated for use by lwarp.

The entire copyright box is placed inside a `<div>` of class `copyrightbox`.

The contents are placed inside a `<div>` of class `copyrightboxcontents`.

The copyright notice is placed inside a `<div>` of class `copyrightboxnote`.

for HTML output:

```
\LWR@ProvidesPackageDrop{copyrightbox}

\newcommand{\copyrightbox}[3][r]{%
\begin{BlockClass}[
    display: inline-flex;
    flex-direction: column ;
]{copyrightbox}
\begin{BlockClass}{copyrightboxcontents}
#2
\end{BlockClass}
\begin{BlockClass}{copyrightboxnote}
#3
```

```
\end{BlockClass}
\end{BlockClass}
}

\newcommand{\CRB@setcopyrightfont}{}
\newcommand{\CRB@setcopyrightparagraphstyle}{}
```

File 77 `lwarp-crop.sty`

§ 171 Package crop

(*Emulates or patches code by* MELCHIOR FRANZ.)

Pkg `crop` Emulated.

for HTML output: Discard all options for lwarp-crop:

```
\LWR@ProvidesPackageDrop{crop}

\newcommand*{\crop}[1][]{}
\newcommand*{\cropdef}[6][]{}
```

File 78 `lwarp-ctex.sty`

§ 172 Package ctex

Pkg `ctex` Error if ctex is loaded after lwarp.

Load ctex before lwarp so that lwarp can take control of the sectioning commands. The ctex `heading` option is then ignored.

Ref: http://bbs.ctex.org/forum.php?mod=viewthread&tid=155890

Discard all options for lwarp-ctex:

for HTML output:

```
\LWR@ProvidesPackageDrop{ctex}[2018-05-02]

\LWR@loadbefore{ctex}
```

File 79 `lwarp-cuted.sty`

§ 173 Package cuted

(*Emulates or patches code by* Sigitas Tolušis.)

Pkg `cuted` cuted is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{cuted}

\newenvironment{strip}{}{}
\newskip\stripsep
\def\oldcolsbreak#1{}
```

File 80 `lwarp-cutwin.sty`

§ 174 Package cutwin

(*Emulates or patches code by* Peter Wilson and Alan Hoenig.)

Pkg `cutwin` Emulated.

for HTML output: Discard all options for lwarp-cutwin:

```
\LWR@ProvidesPackageDrop{cutwin}

\newcommand*{\opencutleft}{}
\newcommand*{\opencutright}{}
\newcommand*{\opencutcenter}{}
\newcommand*{\cutfuzz}{}

\newenvironment{cutout}[4]
{\marginpar{\windowpagestuff}}
{}

\newcommand*{\windowpagestuff}{}

\newcommand*{\pageinwindow}{%
% \begin{minipage}{.3\linewidth}
\windowpagestuff
% \end{minipage}
}

```

```
\newenvironment{shapedcutout}[3]
{\marginpar{\picinwindow}}
{}

\newcommand*{\putstuffinpic}{}

\newcommand*{\picinwindow}{%
\begin{picture}(0,0)
\putstuffinpic
\end{picture}}
```

File 81 `lwarp-dblfloatfix.sty`

§ 175 Package dblfloatfix

Pkg `dblfloatfix` dblfloatfix is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{dblfloatfix}
```

File 82 `lwarp-dblfnote.sty`

§ 176 Package dblfnote

(*Emulates or patches code by* Hiroshi Nakashima.)

Pkg `dblfnote` dblfnote is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{dblfnote}

\newcounter{DFNsloppiness}
\newdimen\DFNcolumnsep
\newdimen\DFNcolumnwidth
\def\DFNallowcbreak{}
\def\DFNinhibitcbreak{}
\def\DFNtrysingle{}
\def\DFNalwaysdouble{}
\def\DFNruleboth{}
\def\DFNruleleft{}
```

File 83 `lwarp-dcolumn.sty`

§ 177 Package dcolumn

Pkg `dcolumn` dcolumn is emulated by the lwarp core.

```
\LWR@ProvidesPackageDrop{dcolumn}
```

File 84 `lwarp-diagbox.sty`

§ 178 Package diagbox

(*Emulates or patches code by* Leo Liu.)

Pkg `diagbox` diagbox is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{diagbox}
```

To restore print-mode inside a `lateximage`:

```
\LetLtxMacro\LWR@origdiagbox@double\diagbox@double
\LetLtxMacro\LWR@origdiagbox@triple\diagbox@triple

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\diagbox@double\LWR@origdiagbox@double%
\LetLtxMacro\diagbox@triple\LWR@origdiagbox@triple%
}
```

`\LWR@diagbox@AB` {⟨*E/W*⟩} {⟨*A*⟩} {⟨*E/W*⟩} {⟨*B*⟩}

```
\newcommand{\LWR@diagbox@AB}[4]{
\begingroup%
\LetLtxMacro\\\newline%
\BlockClassSingle{diagbox#1}{#2}%
\BlockClassSingle{diagbox#3}{#4}%
\endgroup%
\LWR@stoppars%
}
```

`\LWR@diagboxNW` {⟨*A*⟩} {⟨*B*⟩}

```
\newcommand{\LWR@diagboxNW}[2]{%
\LWR@diagbox@AB{E}{#2}{W}{#1}%
}
```

Likewise for NE, SW, SE:

```
\newcommand{\LWR@diagboxNE}[2]{%
\LWR@diagbox@AB{W}{#1}{E}{#2}%
}

\let\LWR@diagboxSW\LWR@diagboxNE
\let\LWR@diagboxSE\LWR@diagboxNW
```

`\diagbox@double` {⟨*keys*⟩} {⟨*A*⟩} {⟨*B*⟩}

```
\def\diagbox@double#1#2#3{%
\setkeys{diagbox}{dir=NW,#1}%
\@nameuse{LWR@diagbox\diagbox@dir}{#2}{#3}%
}
```

`\LWR@diagboxTNW` {⟨*title*⟩} {⟨*A*⟩} {⟨*B*⟩}

```
\newcommand{\LWR@diagboxTNW}[3]{%
\BlockClassSingle{diagboxtitleN}{#1}
\LWR@diagboxNW{#2}{#3}
}
```

Likewise for NE, SW, SE:

```
\newcommand{\LWR@diagboxTNE}[3]{%
\BlockClassSingle{diagboxtitleN}{#1}
\LWR@diagboxNE{#2}{#3}
}

\newcommand{\LWR@diagboxTSW}[3]{%
\LWR@diagboxSW{#2}{#3}
\BlockClassSingle{diagboxtitleS}{#1}
\LWR@stoppars%
}

\newcommand{\LWR@diagboxTSE}[3]{%
\LWR@diagboxSE{#2}{#3}
\BlockClassSingle{diagboxtitleS}{#1}
\LWR@stoppars%
}
```

`\diagbox@triple` {⟨*keys*⟩} {⟨*A*⟩} {⟨*T*⟩} {⟨*B*⟩}

```
\def\diagbox@triple#1#2#3#4{%
\setkeys{diagbox}{dir=NW,#1}%
\@nameuse{LWR@diagboxT\diagbox@dir}{#3}{#2}{#4}%
}
```

File 85 `lwarp-dprogress.sty`

§ 179 Package dprogress

Pkg `dprogress` dprogress is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{dprogress}[2008/02/21]
```

File 86 `lwarp-draftcopy.sty`

§ 180 Package draftcopy

Pkg `draftcopy` draftcopy is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{draftcopy}

\newcommand{\draftcopyVersion}[1]{}
\newcommand{\draftcopySetGrey}[1]{}
\newcommand{\draftcopySetScale}[1]{}
\newcommand{\draftcopySetScaleFactor}[1]{}
\newcommand{\draftcopyFirstPage}[1]{}
\newcommand{\draftcopyLastPage}[1]{}
\newcommand{\draftcopyName}[2]{}
\newcommand{\draftcopyPageTransform}[1]{}
\newcommand{\draftcopyBottomTransform}[1]{}
\newcommand{\draftcopyPageX}[1]{}
\newcommand{\draftcopyPageY}[1]{}
\newcommand{\draftcopyBottomX}[1]{}
\newcommand{\draftcopyBottomY}[1]{}
```

File 87 `lwarp-draftfigure.sty`

§ 181 Package draftfigure

Pkg `draftfigure` draftfigure is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{draftfigure}[2017/07/19]
\RequirePackage{xkeyval}

\define@key{draftfigure}{code}{}
\define@key{draftfigure}{noframe}[true]{}
\define@key{draftfigure}{filename}[true]{}
\define@key{draftfigure}{content}[]{}
\define@key{draftfigure}{style}[normal]{}
\define@key{draftfigure}{position}[left]{}
\define@key{draftfigure}{size}[normal]{}
\newcommand\setdf[1]{\setkeys{draftfigure}{#1}}
```

File 88 `lwarp-draftwatermark.sty`

§ 182 Package draftwatermark

(*Emulates or patches code by* Sergio Callegari.)

Pkg `draftwatermark` draftwatermark is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{draftwatermark}

\newcommand{\SetWatermarkAngle}[1]{}
\newcommand{\SetWatermarkColor}[1]{}
\newcommand{\SetWatermarkLightness}[1]{}
\newcommand{\SetWatermarkFontSize}[1]{}
\newcommand{\SetWatermarkScale}[1]{}
\newcommand{\SetWatermarkHorCenter}[1]{}
\newcommand{\SetWatermarkVertCenter}[1]{}
\newcommand{\SetWatermarkText}[1]{}
```

File 89 `lwarp-easy-todo.sty`

§ 183 Package easy-todo

(*Emulates or patches code by* Juan Rada-Vilela.)

Pkg `easy-todo` easy-todo is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{easy-todo}
```

`\listoftodos` Modified to correct buggy use of `\flushright`.

```
\let\LWR@origlistoftodos\listoftodos

\renewcommand{\listoftodos}{%
\begingroup
\renewcommand{\flushright}{}
\LWR@origlistoftodos
\endgroup
}
```

`\todoii` Modified to use `\textcolor` instead of `\color`.

```
\renewcommand{\todoii}[2]{%
\ifthenelse{\equal{\@todoobeyfinal}{true}}{%
    \ifoptionfinal{\todoenable{false}}{\todoenable{true}}%
}{}%
\ifthenelse{\equal{\@todoenable}{true}}{%
\refstepcounter{todos}%
\noindent{%
    \todocolor%
    \LWR@textcurrentcolor{%
        \normalfont\scriptsize{\bfseries{\thetodos.#1}}%
    }%
}%
\addcontentsline{lod}{todos}{\protect{\thetodos. }\LWR@isolate{#2}}%
}{}%
}
```

File 90 **`lwarp-ebook.sty`**

§ 184 Package ebook

(*Emulates or patches code by* Jørgen Steensgaard.)

Pkg `ebook` ebook is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{ebook}

\setcounter{secnumdepth}{0}
\setcounter{tocdepth}{2}

\providecommand{\pagefill}[1][0.001mm]{\noindent}

\providecommand{\ebook}{
\setcounter{secnumdepth}{0}
\setcounter{tocdepth}{2}
}
```

File 91 `lwarp-ellipsis.sty`

§ 185 Package ellipsis

(*Emulates or patches code by* Peter J. Heslin.)

Pkg `ellipsis` ellipsis is emulated.

```
\LWR@ProvidesPackageDrop{ellipsis}

\newcommand{\ellipsisgap}{0.1em}

\newcommand*{\midwordellipsis}{\,\textellipsis\,}
```

File 92 `lwarp-emptypage.sty`

§ 186 Package emptypage

Pkg `emptypage` emptypage is ignored.

for HTML output: Discard all options for lwarp-emptypage:

```
\LWR@ProvidesPackageDrop{emptypage}
```

File 93 `lwarp-endfloat.sty`

§ 187 Package endfloat

Pkg `endfloat` endfloat is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{endfloat}

\newcommand\figureplace{}
\newcommand\tableplace{}
\newcommand\floatplace[1]{}
\newcounter{posttable}
\newcounter{postfigure}
\newcommand*{\theposttbl}{}
\newcommand*{\thepostfig}{}
```

```
\newcommand{\AtBeginFigures}[1]{}
\newcommand{\AtBeginTables}[1]{}
\newcommand{\AtBeginDelayedFloats}[1]{}
\newcommand*{\processdelayedfloats}{}
\newcommand*{\efloatseparator}{}
\def\efloattype{}
\providecommand\efloatheading[1]{}
\providecommand\efloatpreamble{}
\providecommand\efloatpostamble{}
```

File 94 `lwarp-endheads.sty`

§ 188 Package

endheads

Pkg `endheads` endheads is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{endheads}

\newcommand{\changesinglepageabbrev}[1]{}
\newcommand{\changemultiplepageabbrev}[1]{}
\newcommand{\changenotesname}[1]{}
\newcommand{\changenotesheader}[1]{}
\newcommand{\changenotescontentsname}[1]{}
\newcommand{\changechapternotesline}[1]{}
\newcommand{\checknoteheaders}{}
\newif\ifnotesincontentson \notesincontentsonfalse
\newcommand{\notesincontents}{\notesincontentsontrue}
\newif\ifendnoteheaderson \endnoteheadersonfalse
\newcommand{\setupendnoteheaders}{%
    \endnoteheadersontrue%
}
\newif\iftitleinnotes \titleinnotestrue
\newcommand{\styleforchapternotebegin}{}
\newcommand{\styleforchapternoteend}{}
\newcommand{\setstyleforchapternotebegin}[1]{%
    \renewcommand{\styleforchapternotebegin}{#1}%
}
\newcommand{\setstyleforchapternoteend}[1]{%
    \renewcommand{\styleforchapternoteend}{#1}%
}
\newcommand{\resetendnotes}{}
\newif\ifnotesbychapteron \notesbychapteronfalse
\newcommand{\notesbychapter}{\notesbychapterontrue}
```

File 95 `lwarp-endnotes.sty`

§ 189 Package endnotes

(*Emulates or patches code by* John Lavagnino.)

Pkg `endnotes` Used as-is.

table of contents To place the endnotes in the TOC, use:

```
\usepackage{endnotes}
\appto\enoteheading{\addcontentsline{toc}{section}{\notesname}}
\renewcommand*{\notesname}{Endnotes} % optional
```

HTML page To additionally have the endnotes on their own HTML page, if `FileDepth` allows:

```
\ForceHTMLPage
\theendnotes
```

for HTML output:

```
\LWR@ProvidesPackagePass{endnotes}

\def\enoteformat{%
% \rightskip\z@ \leftskip\z@ \parindent=1.8em
\leavevmode
% \llap{
\makeenmark
% }
}

\def\@makeenmark{\hbox{\LWR@htmlspan{sup}{\normalfont\theenmark}}}
\def\makeenmark{\@makeenmark}
```

File 96 `lwarp-enumerate.sty`

§ 190 Package enumerate

Pkg `enumerate` enumerate is supported with no changes.

This package is only required because it was used in the past to drop and then emulate the package. It cannot be removed because an older version which dropped the package may still remain, for example in a local vs. distribution directory, but it is now supported directly by lwarp and thus must no longer be dropped.

for HTML output:
```
\LWR@ProvidesPackagePass{enumerate}
```

File 97 `lwarp-enumitem.sty`

§ 191 Package enumitem

(*Emulates or patches code by* Javier Bezos.)

Pkg `enumitem` enumitem is supported with minor adjustments.

for HTML output:
```
\LWR@ProvidesPackagePass{enumitem}
```

for HTML output:
```
\begin{warpHTML}
```

`\newlist {`⟨*name*⟩`} {`⟨*type*⟩`} {`⟨*maxdepth*⟩`}`
`\renewlist {`⟨*name*⟩`} {`⟨*type*⟩`} {`⟨*maxdepth*⟩`}`

For enumitem lists, new lists must have the start and end actions assigned to the new environment. Renewed lists already have their actions assigned, and thus need no changes.

```
\let\LWR@orignewlist\newlist

\renewcommand*{\newlist}[3]{%
\LWR@orignewlist{#1}{#2}{#3}%
\AtBeginEnvironment{#1}{\@nameuse{LWR@#2start}}%
\AtEndEnvironment{#1}{\@nameuse{LWR@#2end}}%
}

\end{warpHTML}
```

File 98 `lwarp-epigraph.sty`

§ 192 Package epigraph

(*Emulates or patches code by* Peter Wilson.)

Pkg `epigraph` epigraph is emulated.

for HTML output:
```
\LWR@ProvidesPackageDrop{epigraph}

\DeclareDocumentCommand{\qitem}{m m}
{
```

```
\begin{BlockClass}{qitem}
#1
\ifbool{FormatWP}
{\begin{BlockClass}[border-top:1px solid gray]{epigraphsource}}
{\begin{BlockClass}{epigraphsource}}
#2
\end{BlockClass}
\end{BlockClass}
}


\DeclareDocumentCommand{\epigraph}{m m}
{
\begin{LWR@BlockClassWP}{\LWR@print@mbox{text-align:right}}{}{epigraph}
\qitem{#1}{#2}
\end{LWR@BlockClassWP}
}

\DeclareDocumentEnvironment{epigraphs}{}
{\LWR@BlockClassWP{\LWR@print@mbox{text-align:right}}{}{epigraph}}
{\endLWR@BlockClassWP}
```

Use css to format epigraphs.

The following are null commands for source compatibility:

```
\newenvironment*{flushepinormal}{}{}


\@ifclassloaded{memoir}{
\setlength{\epigraphwidth}{.5\linewidth}
\renewcommand{\textflush}{flushepinormal}
\renewcommand{\epigraphhead}[2][0]{#2}
\renewcommand{\dropchapter}[1]{}
\renewcommand*{\undodrop}{}
}{% not memoir
\newlength{\epigraphwidth}
\setlength{\epigraphwidth}{.5\linewidth}
\newcommand{\textflush}{flushepinormal}
\newcommand{\epigraphflush}{flushright}
\newcommand{\sourceflush}{flushright}
\newcommand*{\epigraphsize}{\small}
\newlength{\epigraphrule}
\newlength{\beforeepigraphskip}
\newlength{\afterepigraphskip}
\newcommand{\epigraphhead}[2][0]{#2}
\newcommand{\dropchapter}[1]{}
\newcommand*{\undodrop}{}
}% not memoir

```

```
\let\cleartoevenpage\relax% also in nextpage
\newcommand{\cleartoevenpage}[1][]{}
```

File 99 `lwarp-epsfig.sty`

§ 193 Package epsfig

Pkg `epsfig` epsfig is emulated for use by lwarp.

⚠ Only the LaTeX2e syntax is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{epsfig}[2017/06/25]
```

A few additional keys to capture the filename:

```
\RequirePackage{graphics}

\define@key{igraph}{file}{%
    \xdef\LWR@epsfig@filename{#1}%
}

\define@key{igraph}{figure}{%
    \xdef\LWR@epsfig@filename{#1}%
}

\define@key{igraph}{prolog}{}

\define@key{igraph}{silent}[]{}
```

The captured filename is used as the argument to `\includegraphics`:

```
\newcommand{\epsfig}[1]{\includegraphics[#1]{\LWR@epsfig@filename}}

\newcommand{\psfig}[1]{\includegraphics[#1]{\LWR@epsfig@filename}}
```

File 100 `lwarp-epstopdf.sty`

§ 194 Package epstopdf

Pkg `epstopdf` Previous versions of lwarp had a nullfied verison, but now epstopdf-base is supported. lwarp-epstopdf becomes a placeholder to overwrite previous versions.

See package epstopdf-base for details.

for HTML output:

```
\LWR@ProvidesPackagePass{epstopdf}[2016/05/15]
```

File 101 **lwarp-epstopdf-base.sty**

§ 195 Package

epstopdf-base

Pkg epstopdf-base

⚠ convert to .svg

Images with an .eps extension will be converted to .pdf. The HTML output uses the .svg version, so use

Enter ⇒ `lwarpmk pdftosvg <listofPDFfiles>`

to generate .svg versions.

for HTML output:

```
\LWR@ProvidesPackagePass{epstopdf-base}[2016/05/15]
```

Redefine to remember the image filename, replacing .pdf with .svg. Use the epstopdf print version inside a lateximage.

```
\newcommand*{\LWR@HTML@ETE@OrgGin@setfile}[3]{%
    \edef\LWR@tempone{#3}%
    \StrSubstitute{\LWR@tempone}{.pdf}{.svg}[\LWR@tempone]%
    \StrSubstitute{\LWR@tempone}{.PDF}{.SVG}[\LWR@tempone]%
    \xdef\LWR@parsedfilename{\LWR@tempone}%
}

\LWR@formatted{ETE@OrgGin@setfile}
```

\includegraphics in HTML mode redefines \Gin@setfile to be \LWR@HTML@Gin@setfile, which is now redirected to epstopdf's version:

```
\renewcommand*{\LWR@HTML@Gin@setfile}[3]{%
    \ETE@Gin@setfile{#1}{#2}{#3}%
}
```

Allow .eps images to be found if a suffix is not provided:

```
\AtBeginDocument{
\DeclareGraphicsExtensions{%
    .eps,.EPS,.svg,.SVG,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG%
}
\DeclareGraphicsRule{.svg}{svg}{.svg}{}
\DeclareGraphicsRule{.SVG}{svg}{.SVG}{}
}
```

Likewise when inside a `lateximage`:

```
\appto\LWR@restoreorigformatting{%
\DeclareGraphicsExtensions{%
    .eps,.EPS,.pdf,.PDF,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG%
}%
}
```

File 102 `lwarp-errata.sty`

§ 196 Package errata

(*Emulates or patches code by* Michael Kohlhase.)

Pkg `errata` errata is patched for use by lwarp.

This is for v0.3 of errata. A newer version of errata with more features is under development, at which time the lwarp version will have to be updated.

for HTML output: Macros are being defined with the math dollar, so enable the HTML version during package loading:

```
\StartDefiningMath
```

Now load the package:

```
\LWR@ProvidesPackagePass{errata}[2006/11/12]
```

Patches for dynamic inline math:

```
\xpatchcmd{\erratumAdd}
    {$_a^{\arabic{erratum}}$}
%     {\inlinemathother$_a^{\arabic{erratum}}$\inlinemathnormal}
    {\textsubscript{a}\textsuperscript{\arabic{erratum}}}
    {}
    {\LWR@patcherror{erratum}{erratumAdd}}

\xpatchcmd{\erratumDelete}
    {$_d^{\arabic{erratum}}$}
%     {\inlinemathother$_d^{\arabic{erratum}}$\inlinemathnormal}
    {\textsubscript{d}\textsuperscript{\arabic{erratum}}}
    {}
    {\LWR@patcherror{erratum}{erratumDelete}}

\xpatchcmd{\erratumReplace}
    {$_r^{\arabic{erratum}}$}
%     {\inlinemathother$_r^{\arabic{erratum}}$\inlinemathnormal}
```

```
    {\textsubscript{r}\textsuperscript{\arabic{erratum}}}
    {}
    {\LWR@patcherror{erratum}{erratumReplace}}

\xpatchcmd{\erratum}
    {$_a$}
%     {\inlinemathother$_a$\inlinemathnormal}
    {\textsubscript{a}}
    {}
    {\LWR@patcherror{erratum}{erratumDelete}}

\xpatchcmd{\erratum}
    {$_d^{\@thefnmark}$}
%     {\inlinemathother$_d^{\@thefnmark}$\inlinemathnormal}
    {\textsubscript{d}\textsuperscript{\@thefnmark}}
    {}
    {\LWR@patcherror{erratum}{eDelete}}

\xpatchcmd{\erratum}
    {$_r^{\@thefnmark}$}
%     {\inlinemathother$_r^{\@thefnmark}$\inlinemathnormal}
    {\textsubscript{r}\textsuperscript{\@thefnmark}}
    {}
    {\LWR@patcherror{erratum}{eReplace}}
```

Finish the current page's errata before closing and reloading the list:

```
\preto\PrintErrata{\LWR@orignewpage}
```

No longer defining math macros with the HTML $:

```
\StopDefiningMath
```

File 103 `lwarp-eso-pic.sty`

§ 197 Package eso-pic

(*Emulates or patches code by* ROLF NIEPRASCHK.)

Pkg `eso-pic` eso-pic is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{eso-pic}

\newcommand*{\LenToUnit}{}
\newcommand{\AtPageUpperLeft}[1]{}
\newcommand{\AtPageLowerLeft}[1]{}
```

```
\newcommand{\AtPageCenter}[1]{}
\newcommand{\AtStockLowerLeft}[1]{}
\newcommand{\AtStockUpperLeft}[1]{}
\newcommand{\AtStockCenter}[1]{}
\newcommand{\AtTextUpperLeft}[1]{}
\newcommand{\AtTextLowerLeft}[1]{}
\newcommand{\AtTextCenter}[1]{}
\NewDocumentCommand{\AddToShipoutPictureBG}{s +m}{}

\newcommand{\AddToShipoutPicture}{\AddToShipoutPictureBG}
\NewDocumentCommand{\AddToShipoutPictureFG}{s +m}{}
\newcommand*{\ClearShipoutPictureBG}{}
\newcommand*{\ClearShipoutPicture}{}
\newcommand*{\ClearShipoutPictureFG}{}
\newcommand{\gridSetup}[6][]{}
```

File 104 `lwarp-everypage.sty`

§ 198 Package everypage

(*Emulates or patches code by* Sergio Callegari.)

Pkg `everypage` everypage is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{everypage}

\newcommand*{\AddEverypageHook}[1]{}
\newcommand*{\AddThispageHook}[1]{}
```

File 105 `lwarp-everyshi.sty`

§ 199 Package everyshi

(*Emulates or patches code by* Martin Schröder.)

Pkg `everyshi` Emulated.

for HTML output: Discard all options for lwarp-everyshi:

```
\LWR@ProvidesPackageDrop{everyshi}

\newcommand*{\EveryShipout}[1]{}
\newcommand*{\AtNextShipout}[1]{}
```

File 106 `lwarp-extramarks.sty`

§ 200 Package extramarks

(*Emulates or patches code by* Piet van Oostrum.)

Pkg `extramarks` extramarks is emulated.

for HTML output: Discard all options for lwarp-extramarks:

```
\LWR@ProvidesPackageDrop{extramarks}

\newcommand*{\extramarks}[2]{}
\newcommand*{\firstleftxmark}{}
\newcommand*{\lastleftxmark}{}
\newcommand*{\firstrightxmark}{}
\newcommand*{\lastrightxmark}{}
\newcommand*{\firstxmark}{}
\newcommand*{\lastxmark}{}
\newcommand*{\topxmark}{}
\newcommand*{\topleftxmark}{}
\newcommand*{\firstleftmark}{}
\newcommand*{\lastrightmark}{}
```

File 107 `lwarp-fancybox.sty`

§ 201 Package fancybox

(*Emulates or patches code by* Timothy Van Zandt.)

Pkg `fancybox` fancybox is supported with some patches.

framed equation example fancybox's documentation has an example `FramedEqn` environment which combines math, `\Sbox`, a minipage, and an `\fbox`. This combination requires that the entire environment be enclosed inside a `lateximage`, which is done by adding `\lateximage` at the very start of `FramedEqn`'s beginning code, and `\endlateximage` at the very end of the ending code. Unfortunately, the HTML `alt` attribute is not used here.

```
\newenvironmentFramedEqn
{
\lateximage% NEW
\setlength{\fboxsep}{15pt}
...}{...
\[\fbox{\TheSbox}\]
\endlateximage% NEW
}
```

framing alternatives

`\fbox` works with fancybox. Also see lwarp's `\fboxBlock` macro and `fminipage` environment for alternatives to `\fbox` for framing environments.

framed table example

The fancybox documentation's example framed table using an `\fbox` containing a `tabular` does not work with lwarp, but the `FramedTable` environment does work if `\fbox` is replaced by `\fboxBlock`. This method loses HTML formatting. A better method is to enclose the table's contents inside a `fminipage` environment. The caption may be placed either inside or outside the `fminipage`:

```
\begin{table}
\begin{fminipage}{\linewidth}
\begin{tabular}{lr}
...
\end{tabular}
\end{fminipage}
\end{table}
```

⚠ framed verbatim

lwarp does not support the `verbatim` environment inside a span, box, or fancybox's `\Sbox`, but a `verbatim` may be placed inside a `fminipage`. The fancybox documentation's example `FramedVerb` may be defined as:

```
\newenvironment{FramedVerb}[1] % width
{
\VerbatimEnvironment
\fminipage{#1}
\beginVerbatim
}{
\endVerbatim
\endfminipage
}
```

framed `\VerbBox`

fancybox's `\VerbBox` may be used inside `\fbox`.

indented alignment

`LVerbatim`, `\LVerbatimInput`, and `\LUseVerbatim` indent with horizontal space which may not line up exactly with what *pdftotext* detects. Some lines may be off slightly in their left edge.

⚠ `\VerbatimFootnotes`
⚠ sectioning or displaymath

If using fancybox or fancyvrb with `\VerbatimFootnotes`, and using footnotes in a sectioning command or display math, use `\footnotemark` and `\footnotetext`:

```
\subsection[Subsection Name]
    {Subsection Name\protect\footnotemark}
\footnotetext{A footnote with \verb+verbtim+.}
```

and likewise for equations or display math.

At present there is a bug such that paragraph closing tags are not present in footnotes when \VerbatimFootnotes are selected. The browser usually compensates.

```
\LWR@ProvidesPackagePass{fancybox}
```

After the preamble is loaded, after any patches to Verbatim:

```
\AfterEndPreamble{
\LWR@traceinfo{Patching fancybox.}
```

\VerbatimFootnotes Patched to use the new version.

```
\def\VerbatimFootnotes{%
\let\@footnotetext\V@footnotetext%
\let\LWR@footnotetext\V@footnotetext% lwarp
}
```

\V@@footnotetext Patches in a subset of lwarp's \LWR@footnotetext to the fancyvrb version of \V@@footnotetext.

```
\def\V@@footnotetext{%
\LWR@traceinfo{V@footnotetext}%
\global\setbox\LWR@footnotes=\vbox\bgroup%
```

Add to any current footnotes:

```
    \unvbox\LWR@footnotes%
```

Remember the footnote number for \ref:

```
    \protected@edef\@currentlabel{%
        \csname p@footnote\endcsname\@thefnmark%
    }% @currentlabel
```

Use HTML superscripts in the footnote even inside a lateximage:

```
    \renewrobustcmd{\textsuperscript}[1]{\LWR@htmlspan{sup}{##1}}%
```

Use paragraph tags if in a tabular data cell or a lateximage:

```
    \ifthenelse{%
        \boolean{LWR@doingstartpars} \AND%
        \cnttest{\value{LWR@lateximagedepth}}{=}{0}%
    }%
    {}%
    {\LWR@htmltagc{\LWR@tagregularparagraph}}%
```

Append the footnote to the list:

```
    \@makefntext{}%
  \bgroup%
  \aftergroup{\V@@@footnotetext}%
  \ignorespaces%
}%
}% AfterEndPreamble
\renewcommand*{\@shadowbox}[1]{%
\ifbool{FormatWP}%
{\InlineClass[border:1px solid black]{shadowbox}{#1}}%
{\InlineClass{shadowbox}{#1}}%
}
\renewcommand*{\@doublebox}[1]{%
\ifbool{FormatWP}%
{\InlineClass[border:1px double black]{doublebox}{#1}}%
{\InlineClass{doublebox}{#1}}%
}
\renewcommand*{\@ovalbox}[2]{%
\ifbool{FormatWP}%
{\InlineClass[border:1px solid black; border-radius:1ex]{ovalbox}{#2}}%
{%
    \ifthenelse{\isequivalentto{#1}{\thinlines}}%
    {\InlineClass{ovalbox}{#2}}%
    {\InlineClass{Ovalbox}{#2}}%
}%
}
```

Convert minipages, parboxes, and lists into linear text using the `LWR@nestspan` environment:

```
\let\LWR@origSbox\Sbox
\def\Sbox{\LWR@origSbox\LWR@nestspan}
\let\LWR@origendSbox\endSbox
\def\endSbox{\endLWR@nestspan\LWR@origendSbox}
```

`Beqnarray` is adapted for MathJax or enclosed inside a `lateximage`:

```
\RenewEnviron{Beqnarray}
{\LWR@eqnarrayfactor}
```

```
59
60 \csgpreto{Beqnarray*}{\boolfalse{LWR@numbereqnarray}}
```

`\GenericCaption` is enclosed in an HTML block:

```
61 \renewcommand{\GenericCaption}[1]{%
62 \LWR@figcaption%
63 \LWR@isolate{#1}%
64 \endLWR@figcaption%
65 }
```

`Btrivlist` is enclosed in an HTML block. This is a tabular, and does not use `\item`.

`\trivlist` {⟨*l/c/r*⟩} [⟨*t/c/b*⟩]

```
66 \RenewDocumentEnvironment{Btrivlist}{m o}
67 {%
68     \begin{BlockClass}{Btrivlist}%
69     \tabular{#1}%
70 }
71 {%
72     \endtabular%
73     \end{BlockClass}%
74 }
```

`Btrivlist` is also neutralized when used inside a span:

```
75 \AtBeginEnvironment{LWR@nestspan}{%
76 \RenewDocumentEnvironment{Btrivlist}{m o}{}{}%
77 }
```

lwarp's handling of `\item` is patched to accept fancybox's optional arguments:

```
78 \let\LWRFB@origitemizeitem\LWR@itemizeitem
79 \let\LWRFB@origdescitem\LWR@descitem
80
81 \RenewDocumentCommand{\LWR@itemizeitem}{d()o}{%
82     \IfValueTF{#2}{%
83         \LWRFB@origitemizeitem[#2]%
84     }{%
85         \LWRFB@origitemizeitem%
86     }%
87 }
88
89 \RenewDocumentCommand{\LWR@descitem}{d()o}{%
90     \IfValueTF{#2}{%
91         \LWRFB@origdescitem[#2]~%
92     }{%
```

```
        \LWRFB@origdescitem%
    }%
}

\RenewDocumentCommand{\LWR@nestspanitem}{d()}{%
\if@newlist\else{\LWR@htmltagc{br /}}\fi%
\LWR@origitem%
}
```

The various boxed lists become regular lists:

```
\renewenvironment{Bitemize}[1][]{\begin{itemize}}{\end{itemize}}
\renewenvironment{Benumerate}[1][]{\begin{enumerate}}{\end{enumerate}}
\renewenvironment{Bdescription}[1][]{\begin{description}}{\end{description}}
```

`\boxput` simply prints one then the other argument, side-by-side instead of above and behind:

```
\RenewDocumentCommand{\boxput}{s d() m m}{%
\IfBooleanTF{#1}{#3\quad#4}{#4\quad#3}%
}
```

Neutralized commands:

```
\RenewDocumentCommand{\fancyput}{s d() m}{}
\RenewDocumentCommand{\thisfancyput}{s d() m}{}

\RenewDocumentCommand{\fancypage}{m m}{}
\RenewDocumentCommand{\thisfancypage}{m m}{}

\def\LandScape#1{}
\def\endLandScape{}
\def\@Landscape#1#2#3{}
\def\endLandscape{}
```

Low-level patches for `UseVerbatim` and friends:

```
\let\LWRFB@UseVerbatim\UseVerbatim
\renewcommand*{\UseVerbatim}[1]{%
\LWR@atbeginverbatim{3}{Verbatim}%
\LWRFB@UseVerbatim{#1}%
\LWR@afterendverbatim{.5}%
}

\let\LWRFB@LUseVerbatim\LUseVerbatim

\renewcommand*{\LUseVerbatim}[1]{%
```

```
\LWR@atbeginverbatim{3}{LVerbatim}%
\noindent%
\LWRFB@LUseVerbatim{#1}%
\LWR@afterendverbatim{.5}%
}

\def\@BUseVerbatim[#1]#2{%
\LWR@atbeginverbatim{3}{BVerbatim}%
\LWRFB@UseVerbatim{#2}%
\LWR@afterendverbatim{.5}%
}
```

File 108 `lwarp-fancyheadings.sty`

§ 202 Package fancyheadings

Pkg `fancyheadings` fancyheadings is superceded by fancyhdr.

for HTML output:

```
\LWR@loadnever{fancyheadings}{fancyhdr}
```

File 109 `lwarp-fancyhdr.sty`

§ 203 Package fancyhdr

(*Emulates or patches code by* Piet van Oostrum.)

Pkg `fancyhdr` fancyhdr is nullified.

for HTML output: Discard all options for lwarp-fancyhdr:

```
\LWR@ProvidesPackageDrop{fancyhdr}

\newcommand*{\fancyhead}[2][]{}
\newcommand*{\fancyfoot}[2][]{}
\newcommand*{\fancyhf}[2][]{}
\newcommand*{\fancypagestyle}[2]{}
\newcommand*{\lhead}[2][]{}
\newcommand*{\chead}[2][]{}
\newcommand*{\rhead}[2][]{}
\newcommand*{\lfoot}[2][]{}
\newcommand*{\cfoot}[2][]{}
\newcommand*{\rfoot}[2][]{}
\newcommand*{\headrulewidth}{}
\newcommand*{\footrulewidth}{}
```

```
\newcommand*{\fancyheadoffset}[2][]{}
\newcommand*{\fancyfootoffset}[2][]{}
\newcommand*{\fancyhfoffset}[2][]{}
\newcommand*{\iffloatpage}[2]{#2}
\newcommand*{\ifftopfloat}[2]{#2}
\newcommand*{\iffbotfloat}[2]{#2}
```

File 110 `lwarp-fancyref.sty`

§ 204 Package

fancyref

Pkg `fancyref` fancyref is emulated.

for HTML output:

```
\LWR@ProvidesPackagePass{fancyref}
```

To remove the `margin` option, if `\fancyrefhook` is anything other than the `paren` option, then force it to the default instead. (Comparing to the `margin` option was not possible since lwarp has revised the meaning of `\mbox` so the comparison failed.)

```
\newcommand*{\LWRfref@parenfancyrefhook}[1]{(#1)}

\ifdefstrequal{\fancyrefhook}{\LWRfref@parenfancyrefhook}
{}{
    \renewcommand*{\fancyrefhook}[1]{#1}%
}
```

Modified to ignore the page number and varioref.

```
\renewcommand*{\@f@ref}[4]{%
  \@ifundefined{#1r@#2@#3}{%
    \PackageError{fancyref}{%
      \backslashchar#1ref\space format ``#2''
      undefined\MessageBreak
      for label type ``#3''%
    }{%
      The format ``#2'' was not defined for the label type
      ``#3''\MessageBreak
      and the \backslashchar#1ref\space command.  Perhaps
      you have only misspelled its name.\MessageBreak
      Otherwise you will have to define it with
      \protect\new#1refformat\MessageBreak
      prior to using it.%
    }%
  }{%
    \fancyrefhook{%
      \@nameuse{#1r@#2@#3}%
```

```
        {\ref{#3\fancyrefargdelim#4}}%
%         {\pageref{#3\fancyrefargdelim#4}}% original
%         {\@fancyref@page@ref{#3\fancyrefargdelim#4}}% original
        {}% lwarp
        {}% lwarp
    }%
  }%
}%
```

File 111 `lwarp-fancytabs.sty`

§ 205 Package fancytabs

Pkg `fancytabs` fancytabs is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{fancytabs}

\newcommand{\fancytab}[3][RIGHT]{}
\newcommand{\fancytabsStyle}[1]{}
\newcommand{\fancytabsHeight}[1]{}
\newcommand{\fancytabsWidth}[1]{}
\newcommand{\fancytabsCount}[1]{}
\newcommand{\fancytabsLeftColor}[1]{}
\newcommand{\fancytabsRightColor}[1]{}
\newcommand{\fancytabsTop}[1]{}
\newcommand{\fancytabsTextVPos}[1]{}
\newcommand{\fancytabsTextHPos}[1]{}
\newcommand{\fancytabsGap}[1]{}
\newcommand{\fancytabsFloor}[1]{}
\newcommand{\fancytabsRotate}[1]{}
```

File 112 `lwarp-fancyvrb.sty`

§ 206 Package fancyvrb

(*Emulates or patches code by* Timothy Van Zandt.)

Pkg `fancyvrb` fancyvrb is supported with some patches.

⚠ `\VerbatimFootnotes` ⚠ sectioning or displaymath

If using fancybox or fancyvrb with `\VerbatimFootnotes`, and using footnotes in a sectioning command or display math, use `\footnotemark` and `\footnotetext`:

```
\subsection[Subsection Name]
    {Subsection Name\protect\footnotemark}
\footnotetext{A footnote with \verb+verbtim+.}
```

and likewise for equations or display math.

At present there is a bug such that paragraph closing tags are not present in footnotes when `\VerbatimFootnotes` are selected. The browser usually compensates.

```
\RequirePackage{xcolor}% for \convertcolorspec

\LWR@ProvidesPackagePass{fancyvrb}
```

Initial default patch for fancyvrb:

```
\fvset{frame=none}%
```

After the preamble is loaded, after any patches to `Verbatim`:

```
\AfterEndPreamble{
\LWR@traceinfo{Patching fancyvrb.}
```

`\VerbatimFootnotes` Patched to use the new version.

```
\def\VerbatimFootnotes{%
\let\@footnotetext\V@footnotetext%
\let\footnote\V@footnote%
\let\LWR@footnotetext\V@footnotetext% lwarp
}
```

`\V@@footnotetext` Patches in a subset of lwarp's `\LWR@footnotetext` to the fancyvrb version of `\V@@footnotetext`.

```
\def\V@@footnotetext{%
\LWR@traceinfo{V@footnotetext}%
\global\setbox\LWR@footnotes=\vbox\bgroup%
```

Add to any current footnotes:

```
    \unvbox\LWR@footnotes%
```

Remember the footnote number for `\ref`:

```
    \protected@edef\@currentlabel{%
        \csname p@footnote\endcsname\@thefnmark%
    }% @currentlabel
```

Use HTML superscripts in the footnote even inside a `lateximage`:

```
    \renewrobustcmd{\textsuperscript}[1]{\LWR@htmlspan{sup}{##1}}%
```

Use paragraph tags if in a tabular data cell or a `lateximage`:

```
    \ifthenelse{%
        \boolean{LWR@doingstartpars} \AND%
        \cnttest{\value{LWR@lateximagedepth}}{=}{0}%
    }%
    {}%
    {\LWR@htmltagc{\LWR@tagregularparagraph}}%
```

Append the footnote to the list:

```
    \@makefntext{}%
  \bgroup%
  \aftergroup{\V@@@footnotetext}%
  \ignorespaces%
}%

\preto\FVB@Verbatim{\LWR@forcenewpage}
\preto\FVB@LVerbatim{\LWR@forcenewpage}
% \preto\FVB@BVerbatim{\LWR@forcenewpage}% Fails, so done below.
```

Simplified to remove PDF formatting:

```
\def\FV@BeginListFrame@Single{%
  \FV@SingleFrameLine{\z@}%
}

\def\FV@EndListFrame@Single{%
  \FV@SingleFrameLine{\@ne}%
}

\def\FV@BeginListFrame@Lines{%
  \FV@SingleFrameLine{\z@}%
}

\def\FV@EndListFrame@Lines{%
    \FV@SingleFrameLine{\@ne}%
}

\renewcommand*{\FV@SingleFrameSep}{}
```

Adds HTML formatting:

```
\def\FV@BUseVerbatim#1{%
    \LWR@atbeginverbatim[\LWR@FVstyle]{0}{verbatim}%
    \FV@BVerbatimBegin#1\FV@BVerbatimEnd%
    \LWR@afterendverbatim{0}%
}
```

\LWR@FVstyle Holds the style of the verbatim.

```
\newcommand*{\LWR@FVstyle}{}
```

The following patches to `Verbatim` are executed at the start and end of the environment, depending on the choice of `frame`. Original code is from the fancyvrb package.

```
\newcommand*{\LWR@fvstartnone}{%
\LWR@traceinfo{fvstartnone}%
% \hbox to\z@{
\LWR@atbeginverbatim[\LWR@FVstyle]{0}{verbatim}%
% }%
}

\newcommand*{\LWR@fvendnone}{%
\LWR@traceinfo{fvendnone}%
% \hbox to\z@{
\LWR@afterendverbatim{0}%
% }%
}

\newcommand*{\LWR@fvstartsingle}{%
\LWR@traceinfo{fvstartsingle}%
\LWR@fvstartnone%
\FV@BeginListFrame@Single%
}

\newcommand*{\LWR@fvendsingle}{%
\LWR@traceinfo{fvendsingle}%
\FV@EndListFrame@Single%
\LWR@fvendnone%
}

\newcommand*{\LWR@fvstartline}{%
\LWR@traceinfo{fvstartline}%
\LWR@fvstartnone%
% \setlength{\LWR@templengthone}{\baselineskip}%
\FV@BeginListFrame@Lines%
% \setlength{\baselineskip}{\LWR@templengthone}%
% \setlength{\baselineskip}{5pt}%
}

\newcommand*{\LWR@fvendline}{%
\LWR@traceinfo{fvendline}%
\FV@EndListFrame@Lines%
\LWR@fvendnone%
}
```

The following patches select the start/left/right/end behaviors depending on `frame`. Original code is from the fancyvrb package.

```
\newcommand*{\LWR@FVfindbordercolor}{%
\FancyVerbRuleColor%
\LWR@findcurrenttextcolor%
\color{black}%
}

% border width of \FV@FrameRule
\newcommand*{\LWR@FVborderstyle}[1]{%
padding#1: \strip@pt\dimexpr \FV@FrameSep\relax\relax pt ; %
\LWR@FVfindbordercolor %
border#1: \strip@pt\dimexpr \FV@FrameRule\relax\relax pt %
solid \LWR@origpound\LWR@tempcolor ; %
}

\def\FV@Frame@none{%
\renewcommand*{\LWR@FVstyle}{\LWR@currenttextcolorstyle}%
\let\FV@BeginListFrame\LWR@fvstartnone%
\let\FV@LeftListFrame\relax%
\let\FV@RightListFrame\relax%
\let\FV@EndListFrame\LWR@fvendnone}

\FV@Frame@none% default values

\def\FV@Frame@single{%
\renewcommand*{\LWR@FVstyle}{\LWR@currenttextcolorstyle\LWR@FVborderstyle{}}%
\let\FV@BeginListFrame\LWR@fvstartsingle%
\let\FV@LeftListFrame\FV@LeftListFrame@Single%
\let\FV@RightListFrame\FV@RightListFrame@Single%
\let\FV@EndListFrame\LWR@fvendsingle}

\def\FV@Frame@lines{%
\renewcommand*{\LWR@FVstyle}{%
    \LWR@currenttextcolorstyle\LWR@FVborderstyle{-top}\LWR@FVborderstyle{-bottom}%
}%
\let\FV@BeginListFrame\LWR@fvstartline%
\let\FV@LeftListFrame\relax%
\let\FV@RightListFrame\relax%
\let\FV@EndListFrame\LWR@fvendline}

\def\FV@Frame@topline{%
\renewcommand*{\LWR@FVstyle}{\LWR@currenttextcolorstyle\LWR@FVborderstyle{-top}}%
\let\FV@BeginListFrame\LWR@fvstartline%
\let\FV@LeftListFrame\relax%
\let\FV@RightListFrame\relax%
\let\FV@EndListFrame\LWR@fvendnone}

```

```
\def\FV@Frame@bottomline{%
\renewcommand*{\LWR@FVstyle}{\LWR@currenttextcolorstyle\LWR@FVborderstyle{-bottom}}%
\let\FV@BeginListFrame\LWR@fvstartnone%
\let\FV@LeftListFrame\relax%
\let\FV@RightListFrame\relax%
\let\FV@EndListFrame\LWR@fvendline}

\def\FV@Frame@leftline{%
\renewcommand*{\LWR@FVstyle}{\LWR@currenttextcolorstyle\LWR@FVborderstyle{-left}}%
% To define the \FV@FrameFillLine macro (from \FV@BeginListFrame)
\ifx\FancyVerbFillColor\relax%
\let\FV@FrameFillLine\relax%
\else%
\@tempdima\FV@FrameRule\relax%
\multiply\@tempdima-\tw@%
\edef\FV@FrameFillLine{%
{\noexpand\FancyVerbFillColor{\vrule\@width\number\@tempdima sp}%
\kern-\number\@tempdima sp}}%
\fi%
\let\FV@BeginListFrame\LWR@fvstartnone%
\let\FV@LeftListFrame\FV@LeftListFrame@Single%
\let\FV@RightListFrame\relax%
\let\FV@EndListFrame\LWR@fvendnone}
```

Adds the optional label to the top and bottom edges. Original code is from the fancyvrb package.

```
\def\FV@SingleFrameLine#1{%
%   \hbox to\z@{%
%     \kern\leftmargin
    \ifnum#1=\z@\relax
      \let\FV@Label\FV@LabelBegin
    \else
      \let\FV@Label\FV@LabelEnd
    \fi
    \ifx\FV@Label\relax
%       \FancyVerbRuleColor{\vrule \@width\linewidth \@height\FV@FrameRule}%
    \else
      \ifnum#1=\z@
%         \setbox\z@\hbox{\strut\enspace\FV@LabelBegin\enspace\strut}%
        \ifx\FV@LabelPositionTopLine\relax
        \else
        \LWR@FVfindbordercolor
        \LWR@htmltagc{%
            div class="fancyvrblabel" % extra space
                style="color: \LWR@origpound\LWR@tempcolor"%
        }
        \LWR@print@textrm{\FV@LabelBegin}% \textrm preserves emdash
        \LWR@htmltagc{/div}
```

```
        \fi
      \else
%         \setbox\z@\hbox{\strut\enspace\FV@LabelEnd\enspace\strut}%
        \ifx\FV@LabelPositionBottomLine\relax
        \else
        \LWR@FVfindbordercolor

        \LWR@htmltagc{%
            div class="fancyvrblabel" % extra space
                style="color: \LWR@origpound\LWR@tempcolor"%
        }
        \LWR@print@textrm{\FV@LabelEnd}
        \LWR@htmltagc{/div}
        \fi
      \fi
    \fi
%     \hss
%     }
}
```

Processes each line, adding optional line numbers. Original code is from the fancyvrb package.

```
\def\FV@ListProcessLine#1{%
   \hbox to \hsize{%
%      \kern\leftmargin
      \hbox to \VerbatimHTMLWidth {%
       \ifcsvoid{FV@LeftListNumber}{}{\kern 2.5em}%
        \FV@LeftListNumber%
%       \FV@LeftListFrame
      \FancyVerbFormatLine{#1}%
      \hss%
%       \FV@RightListFrame
      \FV@RightListNumber%
    }%
      \hss% required to avoid underfull hboxes
}
}
```

Env `BVerbatim`

```
\AtBeginEnvironment{BVerbatim}
{%
\LWR@forcenewpage% instead of \preto
\LWR@atbeginverbatim{0}{bverbatim}%
}

\AfterEndEnvironment{BVerbatim}
{%
```

```
\LWR@afterendverbatim{0}%
}
```

End of the modifications to make at the end of the preamble:

```
} % \AfterEndPreamble
```

File 113 `lwarp-figcaps.sty`

§ 207 Package figcaps

(*Emulates or patches code by* Patrick W. Daly.)

Pkg `figcaps` Emulated.

for HTML output: Discard all options for lwarp-figcaps:

```
\LWR@ProvidesPackageDrop{figcaps}

\newcommand*{\figcapson}{}
\newcommand*{\figcapsoff}{}
\newcommand*{\printfigures}{}
\newcommand*{\figmarkon}{}
\newcommand*{\figmarkoff}{}
\def\figurecapname{Figure Captions}
\def\tablepagename{Tables}
\def\figurepagename{Figures}
```

File 114 `lwarp-figsize.sty`

§ 208 Package figsize

(*Emulates or patches code by* Anthony A. Tanbakuchi.)

Pkg `figsize` figsize is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{figsize}
```

Emulates a virtual 6×9 inch textsize.

```
\newlength{\figwidth}
\newlength{\figheight}

```

```
\newcommand{\SetFigLayout}[3][0]{%
\setlength{\figheight}{8in}%
\setlength{\figheight}{\figheight / #2}%
%
\setlength{\figwidth}{5.5in}%
\setlength{\figwidth}{\figwidth / #3}%
}
```

File 115 `lwarp-fix2col.sty`

§ 209 Package

fix2col

Pkg `fix2col` fix2col is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{fix2col}
```

File 116 `lwarp-fixme.sty`

§ 210 Package

fixme

(*Emulates or patches code by* Didier Verna.)

Pkg `fixme` fixme is patched for use by lwarp.

⚠ external layouts External layouts (`\fxloadlayouts`) are not supported.

User control is provided for setting the HTML styling of the "faces". The defaults are as follows, and may be changed in the preamble after fixme is loaded:

```
\def\FXFaceInlineHTMLStyle{font-weight:bold}
\def\FXFaceEnvHTMLStyle{font-weight:bold}
\def\FXFaceSignatureHTMLStyle{font-style:italic}
\def\FXFaceTargetHTMLStyle{font-style:italic}
```

for HTML output:

```
\LWR@ProvidesPackagePass{fixme}
```

Restore lwarp's version of `\@wrindex`, ignoring the fixme package's `target` option:

```
\let\@wrindex\LWR@wrindex
```

Float-related macros required by lwarp:

```
\newcommand{\ext@fixme}{lox}
```

```
\renewcommand{\l@fixme}[2]{\hypertocfloat{1}{fixme}{lox}{#1}{#2}}
```

Other modifications:

```
\def\FXFaceInlineHTMLStyle{font-weight:bold}

\renewcommand*\FXLayoutInline[3]{ %
\InlineClass[\FXFaceInlineHTMLStyle]{fixmeinline}%
    {\@fxtextstd{#1}{#2}{#3}}%
}

\def\FXFaceEnvHTMLStyle{font-weight:bold}

\renewcommand*\FXEnvLayoutPlainBegin[2]{%
\BlockClass[\FXFaceEnvHTMLStyle]{fixmebold}
\ignorespaces#2 \fxnotename{#1}: \ignorespaces}

\renewcommand*\FXEnvLayoutPlainEnd[2]{\endBlockClass}

\renewcommand*\FXEnvLayoutSignatureBegin[2]{%
\BlockClass[\FXFaceEnvHTMLStyle]{fixmebold}
\fxnotename{#1}: \ignorespaces}

\renewcommand*\FXEnvLayoutSignatureEnd[2]{\@fxsignature{#2}\endBlockClass}

\def\FXFaceSignatureHTMLStyle{font-style:italic}

\DeclareRobustCommand*\@fxsignature[1]{%
\ifthenelse{\equal{#1}{}}%
{}%
{ -- {\InlineClass[\FXFaceSignatureHTMLStyle]{fixmesignature}{#1}}}%
}


\def\FXFaceTargetHTMLStyle{font-style:italic}

\renewcommand\FXTargetLayoutPlain[2]{%
    \InlineClass[\FXFaceTargetHTMLStyle]{fixmetarget}{#2}%
}
```

File 117 `lwarp-fixmetodonotes.sty`

§ 211 Package fixmetodonotes

(*Emulates or patches code by* Gioele Barabucci.)

Pkg `fixmetodonotes` fixmetodonotes is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{fixmetodonotes}

\renewcommand{\NOTES@addtolist}[2]{%
    \refstepcounter{NOTES@note}%
%   \phantomsection% REMOVED
    \addcontentsline{notes}{NOTES@note}{%
        \protect\numberline{\theNOTES@note}{{#1}: {#2}}%
    }%
}

\renewcommand{\NOTES@marker}[2]{\fbox{%
    \textcolor{#2}{% WAS \color
        \textbf{#1}}%
    }}

\renewcommand{\NOTES@colorline}[2]{%
  \bgroup%
    \ULon{\LWR@backgroundcolor{#1}{#2}}%
}
```

File 118 `lwarp-flafter.sty`

§ 212 Package flafter

Pkg `flafter` flafter is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{flafter}
\providecommand\fl@trace[1]{}
```

File 119 `lwarp-flippdf.sty`

§ 213 Package flippdf

Pkg `flippdf` flippdf is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{flippdf}[2006/06/30]

\newcommand\FlipPDF{}
\newcommand\UnFlipPDF{}
```

File 120 `lwarp-float.sty`

§ 214 Package

float

(*Emulates or patches code by* Anselm Lingnau.)

Pkg `float` float is emulated.

Float styles `boxed` and `ruled` are emulated by CSS and a float class according to style.

The HTML `<figure>` `class` is set to the float type, so CSS may also be used to format the float and its caption, according to float type. Furthermore, an additional class is set to the float style: `plain`, `plaintop`, `boxed`, or `ruled`, so CSS may be used to format by float style as well. Default formatting by CSS is provided for `ruled` and `boxed` styles.

for HTML output:

```
\LWR@ProvidesPackageDrop{float}[2001/11/08]
```

`\listof` See section 73.2 for the `\listof` command.

`\LWR@floatstyle` The default float style:

```
\newcommand*{\LWR@floatstyle}{plain}
```

`\newfloat` `{`⟨*1: type*⟩`}` `{`⟨*2: placement*⟩`}` `{`⟨*3: ext*⟩`}` `[`⟨*4: within*⟩`]`

Emulates the `\newfloat` command from the float package.

"placement" is ignored.

```
\NewDocumentCommand{\newfloat}{m m m o}{%
\IfValueTF{#4}%
{\DeclareFloatingEnvironment[fileext=#3,within=#4]{#1}}%
{\DeclareFloatingEnvironment[fileext=#3]{#1}}%
```

Remember the float style:

```
\csedef{LWR@floatstyle@#1}{\LWR@floatstyle}%
```

newfloat package automatically creates the `\listof` command for new floats, but float does not, so remove `\listof` here in case it is manually created later.

```
\cslet{listof#1s}\relax%
\cslet{listof#1es}\relax%
```

Likesize, newfloat also creates `\l@<type>`, but float does not, so remove it here:

```
\cslet{l@#1}\relax%
}
```

`\floatname` {⟨*type*⟩} {⟨*name*⟩}

Sets the text name of the float, such as “Figure”.

```
\NewDocumentCommand{\floatname}{m +m}{%
    \SetupFloatingEnvironment{#1}{name=#2}%
}
```

`\floatplacement` {⟨*type*⟩} {⟨*placement*⟩}

Float placement is ignored.

```
\newcommand*{\floatplacement}[2]{%
    \SetupFloatingEnvironment{#1}{placement=#2}%
}
```

`\floatstyle` {⟨*style*⟩}

Remember the style for future floats:

```
\newcommand{\floatstyle}[1]{%
    \def\LWR@floatstyle{#1}%
}
```

`\restylefloat` * {⟨*type*⟩}

Remember the style for this float:

```
\NewDocumentCommand{\restylefloat}{s m}{%
    \csedef{LWR@floatstyle@#2}{\LWR@floatstyle}%
}
```

File 121 **`lwarp-floatflt.sty`**

§ 215 Package floatflt

(*Emulates or patches code by* Mats Dahlgren.)

Pkg `floatflt` Emulated.

for HTML output: Discard all options for lwarp-floatflt:

```
\LWR@ProvidesPackageDrop{floatflt}
```

Env [⟨⟩] offset {⟨*type*⟩} {⟨*width*⟩} Borrowed from the lwarp version of keyfloat:

```
\NewDocumentEnvironment{KFLTfloatflt@marginfloat}{O{-1.2ex} m m}
{%
\setlength{\LWR@templengthone}{#3}%
\LWR@BlockClassWP{%
    float:right; %
    width:\LWR@printlength{\LWR@templengthone};  % extra space
    margin:10pt%
}{%
    width:\LWR@printlength{\LWR@templengthone}%
}%
{marginblock}%
\captionsetup{type=#2}%
}
{%
\endLWR@BlockClassWP%
}
```

Env floatingfigure [⟨*placement*⟩] {⟨*width*⟩}

```
\DeclareDocumentEnvironment{floatingfigure}{o m}
  {\begin{KFLTfloatflt@marginfloat}{figure}{#2}}
  {\end{KFLTfloatflt@marginfloat}}
```

Env floatingtable [⟨*placement*⟩]

```
\DeclareDocumentEnvironment{floatingtable}{o}
  {\begin{KFLTfloatflt@marginfloat}{table}{1.5in}}
  {\end{KFLTfloatflt@marginfloat}}
```

File 122 `lwarp-floatpag.sty`

§ 216 Package floatpag

(*Emulates or patches code by* Vytas Statulevičius and Sigitas Tolušis.)

Pkg floatpag Emulated.

for HTML output: Discard all options for lwarp-floatpag:

```
\LWR@ProvidesPackageDrop{floatpag}
```

```
\newcommand*{\floatpagestyle}[1]{}
\newcommand*{\rotfloatpagestyle}[1]{}
\newcommand*{\thisfloatpagestyle}[1]{}
```

File 123 `lwarp-floatrow.sty`

§ 217 Package

floatrow

(*Emulates or patches code by* Olga Lapko.)

Pkg `floatrow` floatrow is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{floatrow}
```

⚠ Misplaced alignment tab character &

Use `\StartDefiningTabulars` and `\StopDefiningTabulars` before and after defining macros using `\ttabbox` with a tabular inside. See section 9.9.

⚠ subfig package

When combined with the subfig package, while inside a `subfloatrow` `\ffigbox` and `\ttabbox` must have the caption in the first of the two of the mandatory arguments.

⚠ `\FBwidth`, `\FBheight`

The emulation of floatrow does not support `\FBwidth` or `\FBheight`. These values are pre-set to `.3\linewidth` and `2in`. Possible solutions include:

- Use fixed lengths. lwarp will scale the HTML lengths appropriately.
- Use `warpprint` and `warpHTML` environments to select appropriate values for each case.
- Inside a `warpHTML` environment, manually change `\FBwidth` or `\FBheight` before the `\ffigbox` or `\ttabbox`. Use `\FBwidth` or `\FBheight` normally afterwards; it will be used as expected in print output, and will use your custom-selected value in HTML output. This custom value will be used repeatedly, until it is manually changed to a new value.

After everything has loaded, remember whether subcaption was loaded. If not, it is assumed that subfig is used instead:

```
\newbool{LWR@subcaptionloaded}

\AtBeginDocument{
\@ifpackageloaded{subcaption}
{\booltrue{LWR@subcaptionloaded}}
{\boolfalse{LWR@subcaptionloaded}}
}
```

`\floatbox` `[`⟨*1 preamble*⟩`]` `{`⟨*2 captype*⟩`}` `[`⟨*3 width*⟩`]` `[`⟨*4 height*⟩`]` `[`⟨*5 vert pos*⟩`]` `{`⟨*6 caption*⟩`}` `{`⟨*7 object*⟩`}`

Only parameters for captype, width, caption, and object are used.

`LWR@insubfloatrow` is true if inside a `subfloatrow` environment.

There are two actions, depending on the use of subcaption or subfig.

```
\NewDocumentCommand{\floatbox}{o m o o o +m +m}{%
\ifbool{LWR@subcaptionloaded}%
{% subcaption
```

For subcaption:

```
    \ifbool{LWR@insubfloatrow}%
    {% subcaption in a subfloatrow
```

`subfigure` and `subtable` environments take width as an argument.

```
        \IfValueTF{#3}%
        {\@nameuse{sub#2}{#3}}%
        {\@nameuse{sub#2}{\linewidth}}%
    }% subcaption in a subfloatrow
    {% subcaption not in subfloatrow
```

`figure` and `table` environments do not take a width argument.

```
        \@nameuse{#2}%
    }% subcaption not in subfloatrow
    #6

    #7
```

End the environments:

```
    \ifbool{LWR@insubfloatrow}%
    {\@nameuse{endsub#2}}%
    {\@nameuse{end#2}}%
}% subcaption
{% assume subfig
```

For subfig:

```
\ifbool{LWR@insubfloatrow}%
{% subfig in a subfloatrow
```

`\subfloat` is a macro, not an environment.

Package subfig's `\subfloat` command takes an optional argument which is the caption, but `\floatbox` argument #6 contains commands to create the caption and label, not the caption itself. Thus, `\caption` is temporarily disabled to return its own argument without braces.

```
    \begingroup
    \let\caption\@firstofone
    \subfloat[#6]{#7}
    \endgroup
}% subfig in a subfloatrow
{% subfig package, but not a subfig
```

figure and table are environments:

```
\@nameuse{#2}
#6

#7
\@nameuse{end#2}
}% subfig package, but not a subfig
}% assume subfig
}
```

Not used:

```
\newcommand*{\nocapbeside}{}
\newcommand*{\capbeside}{}
\newcommand*{\captop}{}
\newlength{\FBwidth}
\setlength{\FBwidth}{.3\linewidth}
\newlength{\FBheight}
\setlength{\FBheight}{2in}
\newcommand*{\useFCwidth}{}
\newcommand{\floatsetup}[2][]{}
\newcommand{\thisfloatsetup}[1]{}
\newcommand{\clearfloatsetup}[1]{}
\newcommand*{\killfloatstyle}{}
```

\newfloatcommand {⟨*1 command*⟩} {⟨*2 captype*⟩} [⟨*3 preamble*⟩] [⟨*4 default width*⟩]

Preamble and default width are ignored.

```
\NewDocumentCommand{\newfloatcommand}{m m o o}{%
\@namedef{#1}{
\floatbox{#2}
}
}
```

\renewfloatcommand {⟨*1 command*⟩} {⟨*2 captype*⟩} [⟨*3 preamble*⟩] [⟨*4 default width*⟩]

Preamble and default width are ignored.

```
\NewDocumentCommand{\renewfloatcommand}{m m o o}{%
\@namedef{#1}{%
\floatbox{#2}
}
}
```

\ffigbox [⟨*width*⟩] [⟨*height*⟩] [⟨*vposn*⟩] {⟨*caption commands*⟩} {⟨*contents*⟩}

```
\newfloatcommand{ffigbox}{figure}[\nocapbeside][]
```

\ttabbox [⟨*width*⟩] [⟨*height*⟩] [⟨*vposn*⟩] {⟨*caption commands*⟩} {⟨*contents*⟩}

```
\newfloatcommand{ttabbox}{table}[\captop][\FBwidth]
```

\fcapside [⟨*width*⟩] [⟨*height*⟩] [⟨*vposn*⟩] {⟨*caption commands*⟩} {⟨*contents*⟩}

```
\newfloatcommand{fcapside}{figure}[\capbeside][]
```

Env floatrow [⟨*numfloats*⟩]

The row of floats is placed into a of class floatrow.

```
\newenvironment*{floatrow}[1][2]
{
\LWR@forcenewpage
\BlockClass{floatrow}
```

While inside the floatrow, divide the \linewidth by the number of floats.

```
\booltrue{LWR@infloatrow}
\setlength{\linewidth}{6in/#1}
}
{
\boolfalse{LWR@infloatrow}
\endBlockClass
}
```

Keys for \DeclareNewFloatType:

```
\newcommand*{\LWR@frowkeyplacement}{}
\newcommand*{\LWR@frowkeyname}{}
\newcommand*{\LWR@frowkeyfileext}{}
\newcommand*{\LWR@frowkeywithin}{}
\newcommand*{\LWR@frowkeycapstyle}{}

\define@key{frowkeys}{placement}{}%
\define@key{frowkeys}{name}{\renewcommand{\LWR@frowkeyname}{#1}}%
\define@key{frowkeys}{fileext}{\renewcommand{\LWR@frowkeyfileext}{#1}}%
\define@key{frowkeys}{within}{\renewcommand{\LWR@frowkeywithin}{#1}}%
\define@key{frowkeys}{relatedcapstyle}{}%
```

\DeclareNewFloatType {⟨*type*⟩} {⟨*options*⟩}

Use \listof{type}{Title} to print a list of the floats.

```
\newcommand*{\DeclareNewFloatType}[2]{%
```

Reset key values:

```
\renewcommand*{\LWR@frowkeyplacement}{}%
\renewcommand*{\LWR@frowkeyname}{}%
\renewcommand*{\LWR@frowkeyfileext}{}%
```

```
\renewcommand*{\LWR@frowkeywithin}{}%
\renewcommand*{\LWR@frowkeycapstyle}{}%
```

Read new key values:

```
\LWR@traceinfo{about to setkeys frowkeys}%
\setkeys{frowkeys}{#2}%
\LWR@traceinfo{finished setkeys frowkeys}%
```

Create a new float with optional [within]:

```
\ifthenelse{\equal{\LWR@frowkeywithin}{}}%
{%
    \LWR@traceinfo{about to newfloat #1 \LWR@frowkeyplacement\ %
        \LWR@frowkeyfileext}%
    \newfloat{#1}{\LWR@frowkeyplacement}{\LWR@frowkeyfileext}%
}%
{%
    \LWR@traceinfo{about to newfloat #1\ \LWR@frowkeyplacement\ %
        \LWR@frowkeyfileext\ \LWR@frowkeywithin}%
    \newfloat{#1}{\LWR@frowkeyplacement}%
    {\LWR@frowkeyfileext}[\LWR@frowkeywithin]%
    \LWR@traceinfo{finished newfloat #1}%
}%
```

Rename the float if a name was given:

```
\ifthenelse{\equal{\LWR@frowkeyname}{}}%
{}%
{\floatname{#1}{\LWR@frowkeyname}}%
}
```

Not used:

```
\newcommand{\buildFBBOX}[2]{}
\newcommand*{\CenterFloatBoxes}{}
\newcommand*{\TopFloatBoxes}{}
\newcommand*{\BottomFloatBoxes}{}
\newcommand*{\PlainFloatBoxes}{}

\newcommand{\capsubrowsettings}{}

\NewDocumentCommand{\RawFloats}{o o}{}
```

`\RawCaption` {⟨*text*⟩}

To be used inside a minipage or parbox.

```
\newcommand{\RawCaption}[1]{#1}
```

`\floatfoot` {⟨*text*⟩}

Places additional text inside a float, inside a css `<div>` of class `floatfoot`.

```
\NewDocumentCommand{\floatfoot}{s +m}{%
\begin{BlockClass}{floatfoot}
#2
\end{BlockClass}
}
```

Used to compute `\linewidth`.

```
\newbool{LWR@insubfloatrow}
\boolfalse{LWR@insubfloatrow}
```

Env `subfloatrow` [⟨*num_floats*⟩]

```
\newenvironment*{subfloatrow}[1][2]
{
```

The row of floats is placed into a `<div>` of class `floatrow`:

```
\LWR@forcenewpage
\BlockClass{floatrow}
```

While inside the floatrow, `LWR@insubfloatrow` is set true, which tells `\floatbox` to use `\subfigure` or `\subtable`.

```
\begingroup
\booltrue{LWR@insubfloatrow}
}
{
\endgroup
\endBlockClass
\boolfalse{LWR@insubfloatrow}
}
```

File 124 **`lwarp-fltrace.sty`**

§ 218 Package

fltrace

Pkg `fltrace` fltrace is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{fltrace}
```

```
\def\tracefloats{}
\def\tracefloatsoff{}
\def\tracefloatvals{}
```

File 125 `lwarp-flushend.sty`

§ 219 Package flushend

(*Emulates or patches code by* Sigitas Tolušis.)

Pkg `flushend` Emulated.

for HTML output: Discard all options for lwarp-flushend:

```
\LWR@ProvidesPackageDrop{flushend}

\newcommand*{\flushend}{}
\newcommand*{\raggedend}{}
\newcommand*{\flushcolsend}{}
\newcommand*{\raggedcolsend}{}
\newcommand*{\atColsBreak}[1]{}
\newcommand*{\atColsEnd}[1]{}
\newcommand*{\showcolsendrule}{}
```

File 126 `lwarp-fnbreak.sty`

§ 220 Package fnbreak

Pkg `fnbreak` fnbreak is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{fnbreak}

\newcommand*{\fnbreakverbose}{}
\newcommand*{\fnbreaknonverbose}{}
\newcommand*{\fnbreaklabel}{}
\newcommand*{\fnbreaknolabel}{}
```

File 127 `lwarp-fncychap.sty`

§ 221 Package fncychap

(*Emulates or patches code by* Ulf A. Lindgren.)

Pkg `fncychap` fncychap is emulated.

for HTML output: Discard all options for lwarp-fncychap:

```
\LWR@ProvidesPackageDrop{fncychap}

\def\mghrulefill#1{}
\def\ChNameLowerCase{}
\def\ChNameUpperCase{}
\def\ChNameAsIs{}
\def\ChTitleLowerCase{}
\def\ChTitleUpperCase{}
\def\ChTitleAsIs{}
\newcommand{\ChRuleWidth}[1]{}
\newcommand{\ChNameVar}[1]{}
\newcommand{\ChNumVar}[1]{}
\newcommand{\ChTitleVar}[1]{}
\newcommand{\TheAlphaChapter}{}
\newcommand{\DOCH}{}
\newcommand{\DOTI}[1]{}
\newcommand{\DOTIS}[1]{}
\newlength{\mylen}
\newlength{\myhi}
\newlength{\px}
\newlength{\py}
\newlength{\pyy}
\newlength{\pxx}
\newlength{\RW}
\newcommand{\FmN}[1]{#1}
\newcommand{\FmTi}[1]{#1}
```

File 128 `lwarp-fnlineno.sty`

§ 222 Package fnlineno

Pkg `fnlineno` fnlineno is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{fnlineno}
```

File 129 `lwarp-fnpos.sty`

§ 223 Package fnpos

(*Emulates or patches code by* Hiroshi Nakashima.)

Pkg `fnpos` fnpos is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{fnpos}

\newcommand*{\makeFNbottom}{}
\newcommand*{\makeFNmid}{}
\newcommand*{\makeFNbelow}{}
\newcommand*{\makeFNabove}{}
```

File 130 `lwarp-fontenc.sty`

§ 224 Package fontenc

Pkg `fontenc`

If using pdfLaTeX, lwarp used to require fontenc be loaded before lwarp, but now lwarp itself loads `\fontenc` with T1 encoding, which lwarp requires. fontenc is now allowed to be loaded with another encoding after lwarp.

lwarp-fontenc is no longer necessary, but is still provided to overwrite older versions.

for HTML output:

```
\LWR@ProvidesPackagePass{fontenc}
```

File 131 `lwarp-fontspec.sty`

§ 225 Package fontspec

Pkg `fontspec`

Error if fontspec is loaded after lwarp.

Discard all options for lwarp-fontspec:

for HTML output:

```
\LWR@ProvidesPackageDrop{fontspec}[2017/11/09]

\LWR@loadbefore{fontspec}
```

File 132 `lwarp-footmisc.sty`

§ 226 Package footmisc

(*Emulates or patches code by* Robin Fairbairns.)

Pkg `footmisc`

footmisc is emulated.

lwarp incidentally happens to emulate the `stable` option.

```
\LWR@ProvidesPackageDrop{footmisc}
```

Some nullified commands:

```
\newcommand{\footnotelayout}{}
\newcommand{\setfnsymbol}[1]{}
\NewDocumentCommand{\DefineFNsymbols}{s m o m}{}

\newdimen\footnotemargin
\footnotemargin1.8em\relax

\newcommand*\hangfootparskip{0.5\baselineskip}
\newcommand*\hangfootparindent{0em}%

\let\pagefootnoterule\footnoterule
\let\mpfootnoterule\footnoterule
\def\splitfootnoterule{\kern-3\p@ \hrule \kern2.6\p@}

\providecommand*{\multiplefootnotemarker}{3sp}
\providecommand*{\multfootsep}{,}
```

Using cleveref:

```
\providecommand*{\footref}[1]{\labelcref{#1}}
```

The following work as-is:

```
\newcommand\mpfootnotemark{%
  \@ifnextchar[%
    \@xmpfootnotemark%
    {%
      \stepcounter\@mpfn%
      \protected@xdef\@thefnmark{\thempfn}%
      \@footnotemark%
    }%
}
\def\@xmpfootnotemark[#1]{%
  \begingroup%
    \csname c@\@mpfn\endcsname #1\relax%
    \unrestored@protected@xdef\@thefnmark{\thempfn}%
  \endgroup%
  \@footnotemark%
}
```

File 133 **lwarp-footnote.sty**

§ 227 Package footnote

(*Emulates or patches code by* Mark Wooding.)

Pkg `footnote` footnote is used with minor patches.

for HTML output:

```
\LWR@ProvidesPackagePass{footnote}
```

Removed print-version formatting:

```
\def\fn@startnote{%
%   \@parboxrestore%
  \protected@edef\@currentlabel{\csname p@\@mpfn\endcsname\@thefnmark}%
%   \color@begingroup% *** conflicts with lwarp
}

% \let\fn@endnote\color@endgroup% *** conflicts with lwarp
\def\fn@endnote{%
\LWR@htmltagc{/\LWR@tagregularparagraph}%
\LWR@orignewline%
}
```

Removed print-version formatting:

```
\def\fn@startfntext{%
  \setbox\z@\vbox\bgroup%
    \fn@startnote%
    \fn@prefntext%
    \ignorespaces%
}
```

Removed print-version formatting, added closing paragraph tag:

```
\def\fn@endfntext{%
    \LWR@htmltagc{/\LWR@tagregularparagraph}%
    \LWR@orignewline%
    \fn@postfntext%
  \egroup%
  \begingroup%
    \let\@makefntext\@empty%
    \let\@finalstrut\@gobble%
    \LetLtxMacro\rule\@gobbletwo% *8* also the optional argument?
    \@footnotetext{\unvbox\z@}%
  \endgroup%
}
```

These have been redefined, so re-`\let` them again:

```
\let\endfootnote\fn@endfntext
\let\endfootnotetext\endfootnote
```

File 134 `lwarp-footnotehyper.sty`

§ 228 Package footnotehyper

Pkg `footnotehyper` footnotehyper is a hyperref-safe version of footnote. For lwarp, footnotehyper is emulated.

for HTML output: Discard all options for lwarp-footnotehyper:

```
\RequirePackage{footnote}
\LWR@ProvidesPackageDrop{footnotehyper}
```

File 135 `lwarp-footnpag.sty`

§ 229 Package footnpag

Pkg `footnpag` footnpag is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{footnpag}
```

File 136 `lwarp-forest.sty`

§ 230 Package forest

(*Emulates or patches code by* Sašo Živanović.)

Pkg `forest` forest is patched for use by lwarp.

⚠ `\Forest*` The starred version of the macro `\Forest*` is not supported. lwarp encases each `lateximage` in an environment, so the global results of the starred `\Forest*` are lost.

for HTML output:

```
\LWR@ProvidesPackagePass{forest}

\BeforeBeginEnvironment{forest}{\begin{lateximage}[forest]}

\AfterEndEnvironment{forest}{\end{lateximage}}

\RenewDocumentCommand{\Forest}{s D(){} m}{%
```

```
  \forest@config{#2}%
  \IfBooleanTF{#1}{%
        \PackageError{lwarp-forest}%
        {Starred \Forest is not supported}%
        {Lwarp uses an environment for images, but \Forest* cannot work in an environment.}%
        \let\forest@next\forest@env%
    }{\let\forest@next\forest@group@env}%
    \begin{lateximage}[forest]%     lwarp
  \forest@next{#3}%
    \end{lateximage}%               lwarp
}
```

File 137 `lwarp-framed.sty`

§ 231 Package framed

(*Emulates or patches code by* Donald Arseneau.)

Pkg `framed` framed is supported and patched by lwarp.

for HTML output: Accept all options for lwarp-framed:

```
\LWR@ProvidesPackagePass{framed}
\RequirePackage{xcolor}% for \convertcolorspec


\renewenvironment{framed}{%
\LWR@forcenewpage
\BlockClass{framed}%
}
{\endBlockClass}

\renewenvironment{oframed}{%
\LWR@forcenewpage
\BlockClass{framed}%
}
{\endBlockClass}


\renewenvironment{shaded}{%
\convertcolorspec{named}{shadecolor}{HTML}\LWR@tempcolor%
\LWR@forcenewpage
\BlockClass[background: \LWR@origpound\LWR@tempcolor]{shaded}%
}
{\endBlockClass}

\renewenvironment{shaded*}{%
```

```
\convertcolorspec{named}{shadecolor}{HTML}\LWR@tempcolor%
\LWR@forcenewpage
\BlockClass[background: \LWR@origpound\LWR@tempcolor]{shaded}%
}
{\endBlockClass}


\renewenvironment{leftbar}{%
\LWR@forcenewpage
    \BlockClass{framedleftbar}
  \def\FrameCommand{}%
  \MakeFramed {}
}%
 {\endMakeFramed\endBlockClass}


\renewenvironment{snugshade}{%
\convertcolorspec{named}{shadecolor}{HTML}\LWR@tempcolor%
\LWR@forcenewpage
\BlockClass[background: \LWR@origpound\LWR@tempcolor]{snugframed}%
}
{\endBlockClass}

\renewenvironment{snugshade*}{%
\convertcolorspec{named}{shadecolor}{HTML}\LWR@tempcolor%
\LWR@forcenewpage
\BlockClass[background: \LWR@origpound\LWR@tempcolor]{snugframed}%
}
{\endBlockClass}

\let\oframed\framed
\let\endoframed\endframed


\RenewEnviron{titled-frame}[1]{%
\CustomFBox{#1}{}{0pt}{0pt}{0pt}{0pt}{\BODY}
}
```

\CustomFBox {⟨*toptitle*⟩} {⟨*bottitle*⟩} {⟨*thicknesstop*⟩} {⟨*bottom*⟩} {⟨*left*⟩} {⟨*right*⟩} {⟨*text contents*⟩}

```
\renewcommand{\CustomFBox}[7]{%
\convertcolorspec{named}{TFFrameColor}{HTML}\LWR@tempcolor%
\LWR@forcenewpage
\begin{BlockClass}[border: 3px solid \LWR@origpound\LWR@tempcolor]{framed}%
\ifthenelse{\isempty{#1}}{}{% not empty
    \begin{BlockClass}[background: \LWR@origpound\LWR@tempcolor]{framedtitle}%
    \textcolor{TFTitleColor}{\textbf{#1}}%
    \end{BlockClass}
```

```
}% not empty

#7

\ifthenelse{\isempty{#2}}{}{% not empty
    \convertcolorspec{named}{TFFrameColor}{HTML}\LWR@tempcolor%
    \begin{BlockClass}[background: \LWR@origpound\LWR@tempcolor]{framedtitle}%
    \textcolor{TFTitleColor}{\textbf{#2}}%
    \end{BlockClass}
}% not empty
\end{BlockClass}
}
```

`\TitleBarFrame` [⟨*marker*⟩] {⟨*title*⟩} {⟨*contents*⟩}

```
\renewcommand\TitleBarFrame[3][]{
\CustomFBox
    {#2}{}%
    \fboxrule\fboxrule\fboxrule\fboxrule
    {#3}%
}

\renewcommand{\TF@Title}[1]{#1}
```

`MakeFramed` {⟨*settings*⟩}

```
\let\MakeFramed\relax
\let\endMakeFramed\relax

\NewEnviron{MakeFramed}[1]{%
\FrameCommand{\begin{minipage}{\linewidth}\BODY\end{minipage}}%
}
```

`\fb@put@frame` {⟨*frame cmd no split*⟩} {⟨*frame cmd split*⟩}

```
\renewcommand*{\fb@put@frame}[2]{%
\relax%
\@tempboxa%
}
```

File 138 **`lwarp-ftnright.sty`**

§ 232 Package ftnright

Pkg `ftnright` ftnright is ignored.

for HTML output: Discard all options for lwarp-ftnright:

```
\LWR@ProvidesPackageDrop{ftnright}
```

File 139 `lwarp-fullminipage.sty`

§ 233 Package fullminipage

Pkg `fullminipage` fullminipage is nullified.

for HTML output:

```
\LWR@ProvidesPackageDrop{fullminipage}[2014/07/06]
\newenvironment{fullminipage}[1][]{}{}
```

File 140 `lwarp-fullpage.sty`

§ 234 Package fullpage

Pkg `fullpage` fullpage is ignored.

for HTML output: Discard all options for lwarp-fullpage:

```
\LWR@ProvidesPackageDrop{fullpage}[1994/06/01]
```

File 141 `lwarp-fullwidth.sty`

§ 235 Package fullwidth

(*Emulates or patches code by* Marco Daniel.)

Pkg `fullwidth` fullwidth is emulated.

A minipage is used, of no HTML width.

for HTML output:

```
\LWR@ProvidesPackageDrop{fullwidth}
\newenvironment*{fullwidth}[1][]{%
\minipagefullwidth%
\minipage{\linewidth}%
}
{%
```

```
\endminipage%
}
```

File 142 `lwarp-fwlw.sty`

§ 236 Package fwlw

Pkg `fwlw` fwlw is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{fwlw}

\newbox\FirstWordBox      \global\setbox\FirstWordBox\hbox{}
\newbox\NextWordBox       \global\setbox\NextWordBox\hbox{}
\newbox\LastWordBox       \global\setbox\LastWordBox\hbox{}
\def\ps@fwlwhead{}
\def\ps@NextWordFoot{}
```

File 143 `lwarp-geometry.sty`

§ 237 Package geometry

(*Emulates or patches code by* Hideo Umeki.)

Pkg `geometry` geometry is preloaded by lwarp, but must be nullified as seen by the user's source code.

for HTML output: Discard all options for lwarp-geometry:

```
\LWR@ProvidesPackageDrop{geometry}

\renewcommand*{\geometry}[1]{}
\renewcommand*{\newgeometry}[1]{}
\renewcommand*{\restoregeometry}{}
\renewcommand*{\savegeometry}[1]{}
\renewcommand*{\loadgeometry}[1]{}
```

File 144 `lwarp-glossaries.sty`

§ 238 Package glossaries

(*Emulates or patches code by* Nicola L.C. Talbot.)

Pkg glossaries

processing glossaries

Opt GlossaryCmd

Default: makeglossaries

Opt lwarpmk printglossary

Opt lwarpmk htmlglossary

lwarpmk has the commands `lwarpmk printglossary` and `lwarpmk htmlglossary`, which process the glossaries created by the glossaries package using that package's ***makeglossaries*** command.

The shell command to execute is set by the lwarp option `GlossaryCmd`, which defaults to ***makeglossaries***. The print or HTML glossary filename is appended to this command.

⚠ ***makeglossaries*** not found

In some situations it may be required to modify the default command, such as to add the ***perl*** command in front:

```
\usepackage[
   GlossaryCmd={perl makeglossaries},
] {lwarp}
```

xindy language

To set the language to use for processing glossaries with *xindy*:

```
\usepackage[
   GlossaryCmd={makeglossaries -L english},
] {lwarp}
```

Other options for ***makeglossaries*** may be set as well.

placement and TOC options

The glossaries may be placed in a numbered or unnumbered section, given a TOC entry, and placed inline or on their own HTML page:

Numbered section, on its own HTML page:

```
\usepackage[xindy,toc,numberedsection=nolabel]{glossaries}
...
\printglossaries
```

Unnumbered section, inline with the current HTML page:

```
\usepackage[xindy,toc]{glossaries}
...
\printglossaries
```

Unnumbered section, on its own HTML page:

```
\usepackage[xindy,toc]{glossaries}
...
\ForceHTMLPage
\printglossaries
```

⚠ glossary style

The default `style=item` option for glossaries conflicts with lwarp, so the style is forced to `index` instead.

⚠ number list

The page number list in the printed form would become `\namerefs` in HTML, which could become a very long string if many items are referenced. For now, the number list is simply turned off.

print/HTML versions

The print and HTML versions of the glossary differ in their internal page numbers. Separate commands for generating print and HTML glossaries are used, even though the page number is currently ignored.

for HTML output:

```
\PassOptionsToPackage{xindy}{glossaries}
\LWR@ProvidesPackagePass{glossaries}
\setupglossaries{nonumberlist}
\setglossarystyle{index}
```

Patched to fix TOC pointing to the previous page:

```
\renewcommand*{\@p@glossarysection}[2]{%
  \glsclearpage
  \phantomsection
  \ifdefempty\@@glossarysecstar
  {%
    \csname\@@glossarysec\endcsname{#2}%
  }%
  {%
```

In the original, the TOC entry was made before the section, thus linking to the phantomsection in the printed version, but for HTML, this caused the link to point to the page before the glossaries, which could be a different HTML file. Here, the TOC entry is made after the section is created:

```
      \csname\@@glossarysec\endcsname*{#2}%
    \@gls@toc{#1}{\@@glossarysec}% Moved after the previous line.
  }%
  \@@glossaryseclabel
}
```

lwarp's sectioning commands cannot handle robust macros when splitting HTML into named filenames. glossaries uses `\translate` in sectioning names, and `\translate` is robust and cannot be expanded. The following pre-expands the translations at this moment, making use of `\translatelet`.

```
\newcommand*{\LWR@comp@glossaryname}{\translate{Glossary}}

\ifdefstrequal{\glossaryname}{\LWR@comp@glossaryname}{
    \translatelet\LWR@translatetemp{Glossary}
    \edef\glossaryname{\LWR@translatetemp}
}{}

\newcommand*{\LWR@comp@acronymname}{\translate{Acronym}}

\ifdefstrequal{\acronymname}{\LWR@comp@acronymname}{
    \translatelet\LWR@translatetemp{Acronym}
    \edef\acronymname{\LWR@translatetemp}
```

```
}{}

\newcommand*{\LWR@comp@glssymbolsgroupname}{\translate{Symbols (glossaries)}}

\ifdefstrequal{\glssymbolsgroupname}{\LWR@comp@glssymbolsgroupname}{
    \translatelet\LWR@translatetemp{Symbols (glossaries)}
    \edef\glssymbolsgroupname{\LWR@translatetemp}
}{}

\newcommand*{\LWR@comp@glsnumbersgroupname}{\translate{Numbers (glossaries)}}

\ifdefstrequal{\glsnumbersgroupname}{\LWR@comp@glsnumbersgroupname}{
    \translatelet\LWR@translatetemp{Numbers (glossaries)}
    \edef\glsnumbersgroupname{\LWR@translatetemp}
}{}
```

File 145 `lwarp-glossary.sty`

§ 239 Package glossary

Pkg `glossary` glossary is superceded by glossaries.

for HTML output:

```
\LWR@loadnever{glossary}{glossaries}
```

File 146 `lwarp-graphics.sty`

§ 240 Package graphics

(*Emulates or patches code by* D. P. Carlisle.)

Pkg `graphics` graphics is emulated.

for HTML output:

```
\LWR@ProvidesPackagePass{graphics}
```

§ 240.1 Graphics extensions

`\DeclareGraphicsExtensions` {⟨*list*⟩}

`\AtBeginDocument` allow SVG files instead of PDF:

```
\AtBeginDocument{
\DeclareGraphicsExtensions{.svg,.SVG,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG}
\DeclareGraphicsRule{.svg}{svg}{.svg}{}
\DeclareGraphicsRule{.SVG}{svg}{.SVG}{}
```

```
}
```

Inside a `lateximage`, allow PDF instead of SVG:

```
\ifpdf
\appto\LWR@restoreorigformatting{%
\DeclareGraphicsExtensions{.pdf,.PDF,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG}%
}
\else% \ifpdf
        \ifXeTeX
\appto\LWR@restoreorigformatting{%
\DeclareGraphicsExtensions{.pdf,.PDF,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG}%
}
        \else
\appto\LWR@restoreorigformatting{%
\DeclareGraphicsExtensions{.eps,.EPS,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG}%
}
        \fi
\fi
```

§ 240.2 Length conversions and graphics options

⚠ whitespace

A scaled image in LaTeX by default takes only as much space on the page as it requires, but HTML browsers use as much space as the original unscaled image would have taken, with the scaled image over- or under-flowing the area.

Used to store the user's selected dimensions and HTML class.

The class defaults to "inlineimage" unless changed by a `class=xyx` option.

```
\newlength{\LWR@igwidth}
\newlength{\LWR@igheight}
\newcommand*{\LWR@igwidthstyle}{}
\newcommand*{\LWR@igheightstyle}{}
\newcommand*{\LWR@igorigin}{}
\newcommand*{\LWR@igangle}{}
\newcommand*{\LWR@igxscale}{1}
\newcommand*{\LWR@igyscale}{1}
\newcommand*{\LWR@igclass}{inlineimage}
```

Set the actions of each of the key/value combinations for `\includegraphics`. Many are ignored.

If an optional width was given, set an HTML style:

```
\define@key{igraph}{width}{%
\setlength{\LWR@igwidth}{#1}%
\ifthenelse{\lengthtest{\LWR@igwidth > 0pt}}%
{%
```

Default to use the converted fixed length given:

```
    \renewcommand*{\LWR@igwidthstyle}{width:\LWR@printlength{\LWR@igwidth}}%
```

If ex or em dimensions were given, use those instead:

```
    \IfEndWith{#1}{ex}%
    {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes ex
    {}% not ex
    \IfEndWith{#1}{em}%
    {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes em
    {}% not em
    \IfEndWith{#1}{\%}%
    {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes percent
    {}% not percent
    \IfEndWith{#1}{px}%
    {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes px
    {}% not px
}{}% end of length > 0pt
}
```

If an optional height was given, set an HTML style:

```
\define@key{igraph}{height}{%
\setlength{\LWR@igheight}{#1}%
\ifthenelse{\lengthtest{\LWR@igheight > 0pt}}%
{%
```

Default to use the converted fixed length given:

```
    \renewcommand*{\LWR@igheightstyle}{%
    height:\LWR@printlength{\LWR@igheight} % extra space
    }%
```

If ex or em dimensions were given, use those instead:

```
    \IfEndWith{#1}{ex}%
    {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes ex
    {}% not ex
    \IfEndWith{#1}{em}%
    {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes em
    {}% not em
    \IfEndWith{#1}{\%}%
    {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes percent
    {}% not percent
    \IfEndWith{#1}{px}%
    {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes px
    {}% not px
}{}% end of length > 0pt
```

```
}
```

Handle origin key:

```
\define@key{igraph}{origin}[c]{%
    \renewcommand*{\LWR@igorigin}{#1}%
}
```

Handle angle key:

```
\define@key{igraph}{angle}{\renewcommand*{\LWR@igangle}{#1}}
```

Handle class key:

```
\define@key{igraph}{class}{\renewcommand*{\LWR@igclass}{#1}}

```

It appears that graphicx does not have separate keys for `xscale` and `yscale`. `scale` adjusts both at the same time.

```
\define@key{igraph}{scale}{%
    \renewcommand*{\LWR@igxscale}{#1}%
    \renewcommand*{\LWR@igyscale}{#1}%
}
```

Numerous ignored keys:

```
\define@key{igraph}{bb}{}
\define@key{igraph}{bbllx}{}
\define@key{igraph}{bblly}{}
\define@key{igraph}{bburx}{}
\define@key{igraph}{bbury}{}
\define@key{igraph}{natwidth}{}
\define@key{igraph}{natheight}{}
\define@key{igraph}{hiresbb}[true]{}
\define@key{igraph}{viewport}{}
\define@key{igraph}{trim}{}
\define@key{igraph}{totalheight}{}
\define@key{igraph}{keepaspectratio}[true]{}
\define@key{igraph}{clip}[true]{}
\define@key{igraph}{draft}[true]{}
\define@key{igraph}{type}{}
\define@key{igraph}{ext}{}
\define@key{igraph}{read}{}
\define@key{igraph}{command}{}
```

New in v1.1a:

```
\define@key{igraph}{quite}{}
\define@key{igraph}{page}{}
\define@key{igraph}{pagebox}{}
\define@key{igraph}{interpolate}[true]{}
```

New in v1.1b:

```
\define@key{igraph}{decodearray}{}
```

§ 240.3 Printing HTML styles

`\LWR@rotstyle` {⟨*prefix*⟩} {⟨*degrees*⟩}

Prints the rotate style with the given prefix.

`prefix` is `-ms-` or `-webkit-` or nothing, and is used to generate three versions of the `transform:rotate` style.

```
\newcommand*{\LWR@rotstyle}[2]{%
 #1transform:rotate(-#2deg);
}
```

`\LWR@scalestyle` {⟨*prefix*⟩} {⟨*xscale*⟩} {⟨*yscale*⟩}

Prints the scale style with the given prefix.

`prefix` is `-ms-` or `-webkit-` or nothing, and is used to generate three versions of the `transform:scale` style.

```
\newcommand*{\LWR@scalestyle}[3]{%
 #1transform:scale(#2,#3);
}
```

§ 240.4 `\includegraphics`

Bool `LWR@infloatrow` Used to compute `\linewidth`.

```
\newbool{LWR@infloatrow}
\boolfalse{LWR@infloatrow}
```

`\LWR@opacity` For HTML, used only for `\includegraphics`.

`\LWR@opacity` may be set by the transparent package.

```
\def\LWR@opacity{1}
```

\LWR@imagesizebox Used to determine the actual image size if needed.

```
\newsavebox{\LWR@imagesizebox}
```

\LWR@HTML@Gin@setfile {⟨*w*⟩} {⟨*h*⟩} {⟨*filename*⟩} Sets the parsed filename for HTML output.

```
\newcommand*{\LWR@HTML@Gin@setfile}[3]{%
    \xdef\LWR@parsedfilename{#3}%
}
```

Key Gin class CSS class for the image.

Define the new class key for the print-mode version of \includegraphics, which is enabled inside a lateximage.

```
\AtBeginDocument{
\define@key{Gin}{class}{}
}
```

\LWR@replaceEPSSVG Usually, references to EPS files become SVG files, but if the epstopdf package is being used, it automatically converts EPS to PDF, and the following must NOT be done.

```
\AtBeginDocument{
\@ifpackageloaded{epstopdf}
{
    \newcommand*{\LWR@replaceEPSSVG}{}
}{%
    \newcommand*{\LWR@replaceEPSSVG}{%
        \StrSubstitute{\LWR@tempone}{.eps}{.svg}[\LWR@tempone]%
        \StrSubstitute{\LWR@tempone}{.EPS}{.SVG}[\LWR@tempone]%
    }
}%
}
```

\LWR@includegraphicsb * [⟨*2: options*⟩] [⟨*3: options*⟩] {⟨*4: filename*⟩}

graphics syntax is \includegraphics * [⟨*llx,lly*⟩] [⟨*urx,ury*⟩] {⟨*file*⟩}

graphicx syntax is \includegraphics [⟨*key values*⟩] {⟨*file*⟩}

If #3 is empty, only one optional argument was given, thus graphicx syntax.

If using \epsfig or \psfig from the epsfig package, #4 will be \LWR@epsfig@filename, which will have been set by the file or figure keys. Therefore, #4 must not be used until after the keys have been processed.

```
\NewDocumentCommand{\LWR@includegraphicsb}{s o o m}
{%
```

Start the image tag on a new line, allow PDF output word wrap:

```
\LWR@origtilde \LWR@orignewline%
```

Temporarily compute \linewidth, \textwidth, \textheight arguments with a 6x9 inch size until the next \endgroup.

```
\begingroup%
\ifthenelse{\cnttest{\value{LWR@minipagedepth}}{=}{0}}%
{%
    \ifbool{LWR@infloatrow}%
    {}
    {% not in a minipage or a floatrow:
        \setlength{\linewidth}{6in}%
        \setlength{\textwidth}{6in}%
        \setlength{\textheight}{9in}%
    }%
}{}%
```

For correct em sizing during the width and height conversions:

```
\large%
```

Reset some defaults, possibly will be changed below if options were given:

```
\setlength{\LWR@igwidth}{0pt}%
\setlength{\LWR@igheight}{0pt}%
\renewcommand*{\LWR@igwidthstyle}{}%
\renewcommand*{\LWR@igheightstyle}{}%
\renewcommand*{\LWR@igorigin}{}%
\renewcommand*{\LWR@igangle}{}%
\renewcommand*{\LWR@igxscale}{1}%
\renewcommand*{\LWR@igyscale}{1}%
\renewcommand*{\LWR@igclass}{inlineimage}%
```

If #3 is empty, only one optional argument was given, thus graphicx syntax:

```
\IfValueF{#3}{%
    \IfValueTF{#2}%
        {\setkeys{igraph}{#2}}%
        {\setkeys{igraph}{}}%
}%
```

Fully expand and detokenize the filename, changing the file extension to `.svg` if necessary.

```
\begingroup%
\LetLtxMacro\Gin@setfile\LWR@HTML@Gin@setfile%
\edef\LWR@tempone{#4}%
\StrSubstitute{\LWR@tempone}{.pdf}{.svg}[\LWR@tempone]%
\StrSubstitute{\LWR@tempone}{.PDF}{.SVG}[\LWR@tempone]%
\LWR@replaceEPSSVG%
\xdef\LWR@parsedfilename{\LWR@tempone}%
\Ginclude@graphics{\detokenize\expandafter{\LWR@tempone}}%
\endgroup%
\filename@parse{\LWR@parsedfilename}%
\LWR@traceinfo{LWR@parsedfilename is \LWR@parsedfilename}%
% \LWR@sanitize{\LWR@parsedfilename}%
```

If formatting for a word processor, find and set the actual image size, without rotation, using PDF instead of SVG to find the original bounding box:

```
\ifbool{FormatWP}{%
    \begingroup%
    \LWR@restoreorigformatting%
    \ifpdf%
    \appto\LWR@restoreorigformatting{%
    \DeclareGraphicsExtensions{.pdf,.PDF,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG}%
    }%
    \else% \ifpdf
            \ifXeTeX%
    \appto\LWR@restoreorigformatting{%
    \DeclareGraphicsExtensions{.pdf,.PDF,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG}%
    }%
            \else%
    \appto\LWR@restoreorigformatting{%
    \DeclareGraphicsExtensions{.eps,.EPS,.gif,.GIF,.png,.PNG,.jpg,.JPG,.jpeg,.JPEG}%
    }%
            \fi%
    \fi% \ifpdf
    \define@key{Gin}{angle}{}%
    \IfBooleanTF{#1}%
    {% starred
        \IfValueTF{#3}%
        {%
            \global\sbox{\LWR@imagesizebox}{\LWR@originincludegraphics*[#2][#3]{#4}}%
        }%
        {%
            \IfValueTF{#2}%
            {%
                \global\sbox{\LWR@imagesizebox}{\LWR@originincludegraphics*[#2]{#4}}%
            }{%
```

```
                \global\sbox{\LWR@imagesizebox}{\LWR@origincludegraphics*{#4}}%
            }%
        }%
    }% starred
    {% not starred
        \IfValueTF{#3}%
        {%
            \global\sbox{\LWR@imagesizebox}{\LWR@origincludegraphics[#2][#3]{#4}}%
        }%
        {%
            \IfValueTF{#2}%
            {%
                \global\sbox{\LWR@imagesizebox}{\LWR@origincludegraphics[#2]{#4}}%
            }{%
                \global\sbox{\LWR@imagesizebox}{\LWR@origincludegraphics{#4}}%
            }%
        }%
    }% not starred
    \endgroup%
    \settowidth{\LWR@igwidth}{\usebox{\LWR@imagesizebox}}%
    \global\renewcommand*{\LWR@igwidthstyle}{width:\LWR@printlength{\LWR@igwidth}}%
    \settoheight{\LWR@igheight}{\usebox{\LWR@imagesizebox}}%
    \global\renewcommand*{\LWR@igheightstyle}{height:\LWR@printlength{\LWR@igheight}}%
}{}% FormatWP
```

Create the HTML reference with the graphicspath, filename, extension, alt tag, style, and class.

The `\LWR@origtilde` adds space between tags in case this is being done inside a `\savebox` where `\newline` has no effect.

```
\LWR@traceinfo{LWR@includegraphicsb: about to create href}%
\href{\LWR@parsedfilename}%
{% start of href
\LWR@traceinfo{LWR@includegraphicsb: about to LWR@htmltag}%
\LWR@htmltag{% start of image tags
img src="%

\detokenize\expandafter{\LWR@parsedfilename}%

" \LWR@orignewline%
```

Only include a style tag if a width, height, angle, or scale was given:

```
\ifthenelse{
    \NOT\equal{\LWR@igwidthstyle}{} \OR
    \NOT\equal{\LWR@igheightstyle}{} \OR
    \NOT\equal{\LWR@igorigin}{} \OR
```

```
    \NOT\equal{\LWR@igangle}{} \OR
    \NOT\equal{\LWR@igxscale}{1} \OR
    \NOT\equal{\LWR@igyscale}{1}
}%
{%
    \LWR@origtilde{} style="%
    \ifthenelse{\NOT\equal{\LWR@igwidthstyle}{}}%
        {\LWR@igwidthstyle; }{}%
    \ifthenelse{\NOT\equal{\LWR@igheightstyle}{}}%
        {\LWR@igheightstyle; }{}%
    \ifthenelse{\NOT\equal{\LWR@igorigin}{}}%
        {%
            \LWR@origtilde{} transform-origin: \LWR@originnames{\LWR@igorigin}; %
            \LWR@orignewline%
        }{}%
    \ifthenelse{\NOT\equal{\LWR@igangle}{}}%
    {%
        \LWR@rotstyle{-ms-}{\LWR@igangle} % extra space
        \LWR@rotstyle{-webkit-}{\LWR@igangle} % extra space
        \LWR@rotstyle{}{\LWR@igangle }%
    }{}%
    \ifthenelse{%
        \NOT\equal{\LWR@igxscale}{1}\OR%
        \NOT\equal{\LWR@igyscale}{1}%
    }%
    {%
        \LWR@scalestyle{-ms-}{\LWR@igxscale}{\LWR@igyscale} % extra space
        \LWR@scalestyle{-webkit-}{\LWR@igxscale}{\LWR@igyscale} % extra space
        \LWR@scalestyle{}{\LWR@igxscale}{\LWR@igyscale}%
    }{} % extra space
    %
    \ifthenelse{\NOT\equal{\LWR@opacity}{1}}%
        {opacity:\LWR@opacity; }{}%
    %
    " \LWR@orignewline%
}{}%
```

Set the class:

```
\LWR@origtilde{} class="\LWR@igclass" \LWR@orignewline%
}% end of image tags
}% end of href
```

Return to original page size and font size:

```
\endgroup
\LWR@traceinfo{LWR@includegraphicsb done}%
}
```

\includegraphics [⟨*key=val*⟩] {⟨*filename*⟩}

Handles width and height, converted to fixed width and heights.

The user should always use no file suffix in the document source.

```
\AtBeginDocument{

\LWR@traceinfo{Patching includegraphics.}

\LetLtxMacro\LWR@origincludegraphics\includegraphics

\renewcommand*{\includegraphics}
{%
```

This graphic should trigger an HTML paragraph even if alone, so ensure that are doing paragraph handling:

```
\LWR@traceinfo{includegraphics}%
\LWR@ensuredoingapar%
\LWR@includegraphicsb%
}% includegraphics
}% AtBeginDocument
```

§ 240.5 Boxes

\LWR@rotboxorigin Holds the origin key letters.

```
\newcommand*{\LWR@rotboxorigin}{}
```

\LWR@originname {⟨*letter*⟩}

Given one LaTeX origin key value, translate into an HTML origin word:

```
\newcommand*{\LWR@originname}[1]{%
\ifthenelse{\equal{#1}{t}}{top}{}%
\ifthenelse{\equal{#1}{b}}{bottom}{}%
\ifthenelse{\equal{#1}{c}}{center}{}%
\ifthenelse{\equal{#1}{l}}{left}{}%
\ifthenelse{\equal{#1}{r}}{right}{}%
}
```

\LWR@originnames {⟨*letters*⟩}

Given one- or two-letter LaTeX origin key values, translate into HTML origin words:

```
\newcommand*{\LWR@originnames}[1]{%
```

```
\StrChar{#1}{1}[\LWR@strresult]%
\LWR@originname{\LWR@strresult}
\StrChar{#1}{2}[\LWR@strresult]%
\LWR@originname{\LWR@strresult}
}
```

Handle the origin key for `\rotatebox`:

```
\define@key{krotbox}{origin}{%
\renewcommand*{\LWR@rotboxorigin}{#1}%
}
```

These keys are ignored:

```
\define@key{krotbox}{x}{}
\define@key{krotbox}{y}{}
\define@key{krotbox}{units}{}
```

`\rotatebox` `[`⟨*keyval list*⟩`]` `{`⟨*angle*⟩`}` `{`⟨*text*⟩`}`

```
\AtBeginDocument{
```

The HTML version:

```
\NewDocumentCommand{\LWR@HTML@rotatebox}{O{} m +m}{%
```

Reset the origin to “none-given”:

```
\renewcommand*{\LWR@rotboxorigin}{}
```

Process the optional keys, which may set `\LWR@rotateboxorigin`:

```
\setkeys{krotbox}{#1}%
```

Select `inline-block` so that HTML will transform this span:

```
\LWR@htmltagc{span style="display: inline-block; %
```

If an origin was given, translate and print the origin information:

```
\ifthenelse{\NOT\equal{\LWR@rotboxorigin}{}}%
{transform-origin: \LWR@originnames{\LWR@rotboxorigin};\LWR@origtilde}{}%
```

Print the rotation information:

```
\LWR@rotstyle{-ms-}{#2} % extra space
```

```
\LWR@rotstyle{-webkit-}{#2} % extra space
\LWR@rotstyle{}{#2} % extra space
"}\LWR@orignewline%
```

Print the text to be rotated:

```
\begin{LWR@nestspan}%
#3%
```

Close the span:

```
\LWR@htmltagc{/span}%
\end{LWR@nestspan}%
}
```

The high-level interface:

```
\LWR@formatted{rotatebox}

}% AtBeginDocument
```

`\scalebox` `{`⟨*h-scale*⟩`}` `[`⟨*v-scale*⟩`]` `{`⟨*text*⟩`}`

```
\AtBeginDocument{
```

The HTML version:

```
\NewDocumentCommand{\LWR@HTML@scalebox}{m o m}{%
```

Select `inline-block` so that HTML will transform this span:

```
\LWR@htmltagc{span style="display: inline-block; %
```

Print the scaling information:

```
\LWR@scalestyle{-ms-}{#1}{\IfNoValueTF{#2}{#1}{#2}} % extra space
\LWR@scalestyle{-webkit-}{#1}{\IfNoValueTF{#2}{#1}{#2}} % extra space
\LWR@scalestyle{}{#1}{\IfNoValueTF{#2}{#1}{#2}} % extra space
"}%
```

Print the text to be scaled:

```
\begin{LWR@nestspan}%
#3%
```

Close the span:

```
\LWR@htmltagc{/span}%
\end{LWR@nestspan}%
}
```

The high-level interface:

```
\LWR@formatted{scalebox}

}% AtBeginDocument
```

`\reflectbox` `{`⟨*text*⟩`}`

```
\AtBeginDocument{

\newcommand{\LWR@HTML@reflectbox}[1]{%
\scalebox{-1}[1]{#1}%
}% \reflectbox

\LWR@formatted{reflectbox}

}% AtBeginDocument
```

`\resizebox` `{`⟨*h-length*⟩`}` `{`⟨*v-length*⟩`}` `{`⟨*text*⟩`}`

Simply prints its text argument.

```
\AtBeginDocument{

\NewDocumentCommand{\LWR@HTML@resizebox}{s m m m}{%
#4%
}

\LWR@formatted{resizebox}

}% AtBeginDocument
```

File 147 **lwarp-graphicx.sty**

§ 241 Package graphicx

Pkg `graphicx` graphicx is emulated.

graphicx loads graphics, which also loads lwarp-graphics, which remembers the original graphics definitions for use inside a `lateximage`, and then patches them `\AtBeginDocument` for HTML output.

lwarp-graphics handles the syntax of either graphics or graphicx.

for HTML output:

```
1 \LWR@ProvidesPackagePass{graphicx}[2017/06/01]
```

File 148 `lwarp-grffile.sty`

§ 242 Package grffile

Pkg `grffile`

⚠ matching PDF and SVG

grffile is supported as-is. File types known to the browser are displayed, and unknown file types are given a link. Each PDF image for print mode should be accompanied by an SVG, PNG, or JPG version for HTML.

lwarp-grffile now exists as a placeholder since grffile used to be emulated by lwarp, and thus older versions of lwarp-grffile may exist and should be overwritten by this newer version.

for HTML output:

```
1 \LWR@ProvidesPackagePass{grffile}
```

File 149 `lwarp-grid.sty`

§ 243 Package grid

Pkg `grid`

grid is ignored.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{grid}
2 \newenvironment*{gridenv}{}{}
```

File 150 `lwarp-grid-system.sty`

§ 244 Package grid-system

(*Emulates or patches code by* Marcus Bitzl.)

Pkg `grid-system`

grid-system is patched for use by lwarp.

for HTML output:

```
1 \LWR@ProvidesPackagePass{grid-system}[2014/02/16]
```

(`\ifdef` is in case the older syntax is removed.)

```
\AtBeginEnvironment{Row}{\setlength{\linewidth}{6in}}

\ifdef{\endrow}{
    \AtBeginEnvironment{row}{\setlength{\linewidth}{6in}}
}{}

\renewcommand{\gridsystem@finishcell}{\hspace{\gridsystem@cellsep}}
```

File 151 `lwarp-gridset.sty`

§ 245 Package gridset

Pkg `gridset` gridset is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{gridset}

\newcommand*{\gridbase}{}
\newcommand*{\gridinterval}{}
\newcommand*{\savepos}[1]{}
\newcounter{gridcnt}
\newcommand*{\vskipnextgrid}{}
\newcommand*{\thegridinfo}[1]{}
\newcommand*{\theposinfo}[1]{}
\newcommand*{\theypos}[1]{}
```

File 152 `lwarp-hang.sty`

§ 246 Package hang

(*Emulates or patches code by* Andreas Nolda.)

Pkg `hang` hang is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{hang}

\newlength{\hangingindent}
\setlength{\hangingindent}{1em}
\newlength{\hangingleftmargin}
\setlength{\hangingleftmargin}{0em}

\newcommand*{\LWR@findhangingleftmargin}{%
\setlength{\LWR@templengthone}{\hangingleftmargin}%
\addtolength{\LWR@templengthone}{\hangingindent}%
```

```
}

\newenvironment{hangingpar}
{
    \LWR@findhangingleftmargin%
    \BlockClass[%
        \LWR@print@mbox{margin-left:\LWR@printlength{\LWR@templengthone}} ; %
        \LWR@print@mbox{text-indent:-\LWR@printlength{\hangingindent}}%
    ]%
    {hangingpar}%
}
{\endBlockClass}

\newenvironment{hanginglist}
{%
    \renewcommand*{\LWR@printcloselist}{\LWR@printcloseitemize}%
    \renewcommand*{\LWR@printopenlist}{%
        \LWR@findhangingleftmargin%
        ul style="%
            \LWR@print@mbox{list-style-type:none;} % extra space
            \LWR@print@mbox{%
                margin-left:\LWR@printlength{\LWR@templengthone}%
            } ; % extra space
            \LWR@print@mbox{%
                text-indent:-\LWR@printlength{\hangingindent}%
            }%
        "%
    }%
    \let\item\LWR@itemizeitem%
    \list{}{}%
}
{\endlist}

\newenvironment{compacthang}
{\hanginglist}
{\endhanginglist}

\newlength{\labeledleftmargin}
\setlength{\labeledleftmargin}{0em}

\newenvironment{labeledpar}[2]
{%
    \BlockClass[%
        \LWR@findhangingleftmargin%
        \LWR@print@mbox{margin-left:\LWR@printlength{\LWR@templengthone}} ; %
        \LWR@print@mbox{text-indent:-\LWR@printlength{\hangingindent}}%
    ]{labeledpar}#2%
}
{\endBlockClass}

```

```
\newenvironment{labeledlist}[1]
{\hanginglist}
{\endhanginglist}

\newenvironment{compactlabel}[1]
{\hanginglist}
{\endhanginglist}
```

File 153 `lwarp-hanging.sty`

§ 247 Package

hanging

Pkg `hanging` hanging is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{hanging}

\@ifclassloaded{memoir}{
\let\hangpara\relax
\let\hangparas\relax
\let\endhangparas\relax
\let\hangpunct\relax
\let\endhangpunct\relax
}{}
```

`\hangpara` {⟨*indent*⟩} {⟨*afternum*⟩}

Use `hangparas` instead.

```
\newcommand*{\hangpara}[2]{}
```

Env `hangparas` {⟨*indent*⟩} {⟨*afternum*⟩}

```
\newenvironment*{hangparas}[2]
{%
    \BlockClass[%
        \LWR@print@mbox{margin-left:\LWR@printlength{#1}} ; %
        \LWR@print@mbox{text-indent:-\LWR@printlength{#1}}%
    ]%
    {hangingpar}%
}
{\endBlockClass}
```

Env `hangpunct`

```
\newenvironment*{hangpunct}
{\BlockClass{hangpunct}}
```

```
{\endBlockClass}

\newcommand{\nhpt}{.}
\newcommand{\nhlq}{‘}
\newcommand{\nhrq}{’}
```

File 154 `lwarp-hypcap.sty`

§ 248 Package hypcap

Pkg `hypcap` hypcap is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{hypcap}

\newcommand*{\capstart}{}
\newcommand*{\hypcapspace}{}
\newcommand*{\hypcapredef}[1]{}
\newcommand*{\capstartfalse}{}
\newcommand*{\capstarttrue}{}
```

File 155 `lwarp-hypdestopt.sty`

§ 249 Package hypdestopt

Pkg `hypdestopt` hypdestopt is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{hypdestopt}
```

File 156 `lwarp-hypernat.sty`

§ 250 Package hypernat

Pkg `hypernat` hypernat is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{hypernat}
```

File 157 `lwarp-hyperref.sty`

§ 251 Package hyperref

(*Emulates or patches code by* Sebastian Rahtz, Heiko Oberdiek.)

Pkg `hyperref` hyperref is emulated.

for HTML output:

```
% \LWR@ProvidesPackageDrop{hyperref}
\typeout{Using the lwarp html version of package ‘hyperref’, discarding options.}
\typeout{    Are not using ProvidesPackage, so that other packages}
\typeout{    do not attempt to patch lwarp’s version of ‘hyperref’.}
% \ProvidesPackage{lwarp-#1-#2}
\DeclareOption*{}
\ProcessOptions\relax

\newcommand*{\hypersetup}[1]{}
\newcommand*{\hyperbaseurl}[1]{}
```

`\hyperimage` {⟨*URL*⟩} {⟨*alt text*⟩}

Insert an image with alt text:

```
\NewDocumentCommand{\LWR@hyperimageb}{m +m}{%
\LWR@ensuredoingapar%
\def\LWR@templink{#1}%
\@onelevel@sanitize\LWR@templink%
\LWR@htmltag{img src="\LWR@templink" alt="#2" class="hyperimage"}%
\LWR@ensuredoingapar%
\endgroup%
}

\newrobustcmd*{\hyperimage}{%
\begingroup%
\catcode‘\#=12%
\catcode‘\%=12%
\catcode‘\&=12%
\catcode‘\~=12%
\catcode‘\_=12%
\LWR@hyperimageb%
}
```

`\hyperdef` {⟨*1: category*⟩} {⟨*2: name*⟩} {⟨*3: text*⟩}

Creates an HTML anchor to `category.name` with the given text.

```
\NewDocumentCommand{\LWR@hyperdefb}{m m +m}{%
\LWR@ensuredoingapar%
\LWR@sublabel{#1.#2}%
#3%
\endgroup%
}

\newcommand*{\hyperdef}{%
\begingroup%
\catcode`\#=12%
\catcode`\%=12%
\catcode`\&=12%
\catcode`\~=12%
\catcode`\_=12%
\LWR@hyperdefb%
}

```

`\LWR@hyperrefb` {⟨*1: URL*⟩} {⟨*2: category*⟩} {⟨*3: name*⟩} {⟨*4: text*⟩}

Creates an HTML link to `URL#category.name` with the given text.

```
\newcommand{\LWR@hyperreffinish}[1]{%
\begingroup%
\RenewDocumentCommand{\ref}{}{\LWR@ref@ignorestar}%
#1%
\endgroup%
\LWR@htmltag{/a}%
}

\newcommand*{\LWR@hyperrefbb}[3]{%
\LWR@htmltag{%
    a href="%
        \detokenize\expandafter{#1}\LWR@hashmark%
        \detokenize\expandafter{#2}.\detokenize\expandafter{#3}%
    "%
}%
\endgroup%
\LWR@hyperreffinish%
}

\newrobustcmd*{\LWR@hyperrefb}{%
\begingroup%
\catcode`\#=12%
\catcode`\%=12%
\catcode`\&=12%
\catcode`\~=12%
\catcode`\_=12%
```

```
\LWR@hyperrefbb%
}
```

`\LWR@hyperrefc` `[`⟨*label*⟩`]` `{`⟨*text*⟩`}`

Creates text as an HTML link to the LaTeX label.

```

\NewDocumentCommand{\LWR@hyperrefcb}{O{label}}{%
\LWR@startref{#1}%
\endgroup%
\LWR@hyperreffinish%
}

\newcommand*{\LWR@hyperrefc}{%
\begingroup%
\catcode`\#=12%
\catcode`\%=12%
\catcode`\&=12%
\catcode`\~=12%
\catcode`\_=12%
\LWR@hyperrefcb%
}
```

`\hyperref` `{`⟨*1: URL*⟩`}` `{`⟨*2: category*⟩`}` `{`⟨*3: name*⟩`}` `{`⟨*4: text*⟩`}` —or— `[`⟨*1: label*⟩`]` `{`⟨*2: text*⟩`}`

```
\DeclareRobustCommand*{\hyperref}{%
\LWR@ensuredoingapar%
\@ifnextchar[\LWR@hyperrefc\LWR@hyperrefb%
}
```

`\hypertarget` `{`⟨*name*⟩`}` `{`⟨*text*⟩`}`

Creates an anchor to `name` with the given text.

```
\NewDocumentCommand{\LWR@hypertargetb}{m +m}{%
\label{LWR-ht-#1}%
#2%
\endgroup%
}

\newcommand*{\hypertarget}{%
\begingroup%
\catcode`\#=12%
\catcode`\%=12%
\catcode`\&=12%
\catcode`\~=12%
\catcode`\_=12%
\LWR@hypertargetb%
```

```
}
```

`\hyperlink` {⟨*name*⟩} {⟨*text*⟩}

Creates a link to the anchor created by hypertarget, with the given link text.

Declared because also defined by memoir.

```
\DeclareDocumentCommand{\LWR@hyperlinkb}{m}{%
\LWR@hyperrefcb[LWR-ht-#1]%
}

\DeclareDocumentCommand{\hyperlink}{}{%
\LWR@ensuredoingapar%
\begingroup%
\catcode`\#=12%
\catcode`\%=12%
\catcode`\&=12%
\catcode`\~=12%
\catcode`\_=12%
\LWR@hyperlinkb%
}
```

`\autoref` * {⟨*label*⟩}

For HTML, `\cleveref` is used instead.

```
\NewDocumentCommand{\autoref}{s m}{%
\IfBooleanTF{#1}{\ref{#2}}{\cref{#2}}%
}
```

`\autopageref` {⟨*label*⟩}

For HTML, `\cleveref` is used instead.

```
\NewDocumentCommand{\autopageref}{s m}{%
\IfBooleanTF{#1}{\cpageref{#2}}{\cref{#2}}%
}
```

`\pdfstringdef` {⟨*macroname*⟩} {⟨*TEXstring*⟩}

```
\newcommand{\pdfstringdef}[2]{}
```

`\pdfbookmark` [⟨*level*⟩] {⟨*text*⟩} {⟨*name*⟩}

```
\newcommand{\pdfbookmark}[3][]{}
```

`\currentpdfbookmark` {⟨*text*⟩} {⟨*name*⟩}

```
\newcommand{\currentpdfbookmark}[2]{}
```

\subpdfbookmark {⟨*text*⟩} {⟨*name*⟩}

```
\newcommand{\subpdfbookmark}[2]{}
```

\belowpdfbookmark {⟨*text*⟩} {⟨*name*⟩}

```
\newcommand{\belowpdfbookmark}[2]{}
```

\texorpdfstring {⟨*TEXstring*⟩} {⟨*PDFstring*⟩}

```
\newcommand{\texorpdfstring}[2]{#1}
```

\hypercalcbp {⟨*dimen*⟩} From hyperref.

```
\def\hypercalcbp#1{%
\strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
}%
```

\Acrobatmenu {⟨*menuoption*⟩} {⟨*text*⟩}

```
\newcommand{\Acrobatmenu}[2]{}
```

\TextField [⟨*parameters*⟩] {⟨*label*⟩}

```
\DeclareRobustCommand{\TextField}[2][]{}
```

\CheckBox [⟨*parameters*⟩] {⟨*label*⟩}

```
\DeclareRobustCommand{\CheckBox}[2][]{}
```

\ChoiceMenu [⟨*parameters*⟩] {⟨*label*⟩} {⟨*choices*⟩}

```
\DeclareRobustCommand{\ChoiceMenu}[3][]{}
```

\PushButton [⟨*parameters*⟩] {⟨*label*⟩}

```
\DeclareRobustCommand{\PushButton}[2][]{}
```

\Submit [⟨*parameters*⟩] {⟨*label*⟩}

```
\DeclareRobustCommand{\Submit}[2][]{}
```

\Reset [⟨*parameters*⟩] {⟨*label*⟩}

```
\DeclareRobustCommand{\Reset}[2][]{}
```

\Gauge [⟨*parameters*⟩] {⟨*label*⟩}

```
145 \DeclareRobustCommand{\Gauge}[2][]{}
```

\LayoutTextField {⟨*label*⟩} {⟨*field*⟩}

```
146 \newcommand*{\LayoutTextField}[2]{}
```

\LayoutChoiceField {⟨*label*⟩} {⟨*field*⟩}

```
147 \newcommand*{\LayoutChoiceField}[2]{}
```

\LayoutCheckField {⟨*label*⟩} {⟨*field*⟩}

```
148 \newcommand*{\LayoutCheckField}[2]{}
```

\MakeRadioField {⟨*width*⟩} {⟨*height*⟩}

```
149 \newcommand*{\MakeRadioField}[2]{}
```

\MakeCheckField {⟨*width*⟩} {⟨*height*⟩}

```
150 \newcommand*{\MakeCheckField}[2]{}
```

\MakeTextField {⟨*width*⟩} {⟨*height*⟩}

```
151 \newcommand*{\MakeTextField}[2]{}
```

\MakeChoiceField {⟨*width*⟩} {⟨*height*⟩}

```
152 \newcommand*{\MakeChoiceField}[2]{}
```

\MakeFieldButton {⟨*text*⟩}

```
153 \newcommand{\MakeFieldButton}[1]{}
```

File 158 `lwarp-hyperxmp.sty`

§ 252 Package hyperxmp

Pkg `hyperxmp` Emulated.

for HTML output:

Discard all options for lwarp-hyperxmp:

```
\LWR@ProvidesPackageDrop{hyperxmp}
```

File 159 `lwarp-hyphenat.sty`

§ 253 Package hyphenat

Pkg hyphenat

hyphenat is emulated during HTML output, while the print-mode version is used inside a `lateximage`.

for HTML output:

```
\LWR@ProvidesPackagePass{hyphenat}

\LetLtxMacro\LWRHYNAT@origtextnhtt\textnhtt
\LetLtxMacro\LWRHYNAT@orignhttfamily\nhttfamily
\LetLtxMacro\LWRHYNAT@orignohyphens\nohyphens
\LetLtxMacro\LWRHYNAT@origbshyp\bshyp
\LetLtxMacro\LWRHYNAT@origfshyp\fshyp
\LetLtxMacro\LWRHYNAT@origdothyp\dothyp
\LetLtxMacro\LWRHYNAT@origcolonhyp\colonhyp
\LetLtxMacro\LWRHYNAT@orighyp\hyp

\LetLtxMacro\textnhtt\texttt
\LetLtxMacro\nhttfamily\ttfamily

\renewcommand{\nohyphens}[1]{#1}
\renewrobustcmd{\bshyp}{%
    \ifmmode\backslash\else\textbackslash\fi%
}
\renewrobustcmd{\fshyp}{/}
\renewrobustcmd{\dothyp}{.}
\renewrobustcmd{\colonhyp}{:}
\renewrobustcmd{\hyp}{-}

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\textnhtt\LWRHYNAT@origtextnhtt%
\LetLtxMacro\nhttfamily\LWRHYNAT@orignhttfamily%
\LetLtxMacro\nohyphens\LWRHYNAT@orignohyphens%
\LetLtxMacro\bshyp\LWRHYNAT@origbshyp%
\LetLtxMacro\fshyp\LWRHYNAT@origfshyp%
\LetLtxMacro\dothyp\LWRHYNAT@origdothyp%
\LetLtxMacro\colonhyp\LWRHYNAT@origcolonhyp%
\LetLtxMacro\hyp\LWRHYNAT@orighyp%
}
```

File 160 `lwarp-idxlayout.sty`

§ 254 Package idxlayout

(*Emulates or patches code by* Thomas Titz.)

Pkg `idxlayout` Emulated.

for HTML output: Discard all options for lwarp-idxlayout:

```
\LWR@ProvidesPackageDrop{idxlayout}

\newcommand{\LWR@indexprenote}{}

\preto\printindex{

\LWR@orignewpage
\LWR@startpars

\LWR@indexprenote

}

\newcommand{\setindexprenote}[1]{\renewcommand{\LWR@indexprenote}{#1}}
\newcommand*{\noindexprenote}{\renewcommand{\LWR@indexprenote}{}}

\newcommand{\idxlayout}[1]{}
\newcommand*{\indexfont}{}
\newcommand*{\indexjustific}{}
\newcommand*{\indexsubsdelim}{}
\newcommand*{\indexstheadcase}{}
```

File 161 `lwarp-ifoddpage.sty`

§ 255 Package ifoddpage

(*Emulates or patches code by* Martin Scharrer.)

Pkg `ifoddpage` ifoddpage is emulated.

for HTML output: Discard all options for lwarp-ifoddpage:

```
\LWR@ProvidesPackageDrop{ifoddpage}
```

```
\newif\ifoddpage

\newif\ifoddpageoroneside

\DeclareRobustCommand{\checkoddpage}{\oddpagetrue\oddpageoronesidetrue}

\def\oddpage@page{1}

\def\@ifoddpage{%
        \expandafter\@firstoftwo
}

\def\@ifoddpageoroneside{%
        \expandafter\@firstoftwo
}
```

File 162 **lwarp-imakeidx.sty**

§ 256 Package

imakeidx

(*Emulates or patches code by* Enrico Gregorio.)

Pkg imakeidx imakeidx is patched for use by lwarp.

letter headings When using *makeindex*, to match the print and HTML output's display of index letter headings, specify the `lwarp.ist` style:

```
\makeindex[options={-s lwarp.ist}]
```

(For HTML the `lwarp.ist` style is used automatically, which displays letter headings. When using *xindy* the default style also displays letter headings.)

index setup See section 9.5.15 for how to setup *lwarpmk* to process the indexes with imakeidx, both with and without shell escape.

for HTML output:

```
\LWR@ProvidesPackagePass{imakeidx}
```

Use the new HTML suffix:

```
\catcode`\_=12%
\define@key{imki}{name}{\def\imki@name{#1_html}}
\catcode`\_=8%
```

\printindex The HTML version of \printindex:

```
\catcode`\_=12%
```

```
\renewcommand*{\printindex}[1][\imki@jobname]{%
\LWR@orignewpage%
\LWR@startpars%
\ifstrequal{#1}{\imki@jobname}{%
  \@ifundefined{#1@idxfile}{%
        \imki@error{#1}%
    }{%
        \imki@putindex{#1}%
    }%
}{%
  \@ifundefined{#1_html@idxfile}{\imki@error{#1_html}}{\imki@putindex{#1_html}}%
}%
}

\catcode`\_=8%
```

\@index The HTML version of \index:

```
\catcode`\_=12%

\def\@index[#1]{%
    \ifstrequal{#1}{\imki@jobname}%
    {%
        \@ifundefined{#1@idxfile}%
        {%
            \PackageWarning{imakeidx}{Undefined index file `#1'}%
            \begingroup
            \@sanitize
            \imki@nowrindex%
        }%
        {%
            \edef\@idxfile{#1}%
            \begingroup
            \@sanitize
            \@wrindex\@idxfile%
        }%
    }%
    {%
        \@ifundefined{#1_html@idxfile}%
        {%
            \PackageWarning{imakeidx}{Undefined index file `#1_html'}%
            \begingroup
            \@sanitize
            \imki@nowrindex%
        }%
        {%
            \edef\@idxfile{#1_html}%
            \begingroup
```

```
            \@sanitize
            \@wrindex\@idxfile%
        }%
    }%
}

\catcode`\_=8%
```

\item
\subitem
\subsubitem

HTML versions of \item, etc.:

```
\appto\theindex{%
    \let\item\LWR@indexitem%
    \let\subitem\LWR@indexsubitem%
    \let\subsubitem\LWR@indexsubsubitem%
}
```

\imki@wrindexentrysplit {⟨*file*⟩} {⟨*entry*⟩} {⟨*page*⟩}
\imki@wrindexentryunique {⟨*file*⟩} {⟨*entry*⟩} {⟨*page*⟩}

While writing index entries, adds an HTML label, and writes the label's index instead of the page number:

```
\renewcommand\imki@wrindexentrysplit[3]{%
\addtocounter{LWR@autoindex}{1}%
\LWR@new@label{LWRindex-\arabic{LWR@autoindex}}%
  \expandafter\protected@write\csname#1@idxfile\endcsname{}%
    {\string\indexentry{#2}{\arabic{LWR@autoindex}}}%
}

\renewcommand\imki@wrindexentryunique[3]{%
\addtocounter{LWR@autoindex}{1}%
\LWR@new@label{LWRindex-\arabic{LWR@autoindex}}%
  \protected@write\@indexfile{}%
    {\string\indexentry[#1]{#2}{\arabic{LWR@autoindex}}}%
}

\def\imki@wrindexsplit#1#2{%
\imki@wrindexentrysplit{#1}{#2}{\thepage}%
\endgroup\imki@showidxentry{#1}{#2}%
  \@esphack%
}

\def\imki@wrindexunique#1#2{%
\imki@wrindexentryunique{#1}{#2}{\thepage}%
\endgroup\imki@showidxentry{#1}{#2}%
  \@esphack%
  }
```

```
89
```

`\LWR@imki@setxdydefopts`

Sets the xindy HTML options, ignoring the user's settings.

```
90 \newcommand*{\LWR@imki@setxdydefopts}{%
91     \edef\imki@options{ \space %
92         -M \space \LWR@xindyStyle\space %
93         -L \space \LWR@xindyLanguage\space %
94         -C \space \LWR@xindyCodepage\space %
95     }%
96 }
```

`\LWR@imki@setdefopts` {⟨*user options*⟩}

Sets the HTML options, added to the user's settings, depending on whether makeindex or xindy are used.

For *makeindex*, the user's choice is ignored, and only the lwarp version is used. (Only one style at a time is possible.)

For *xindy*, multiple modules may be specified, and the lwarp version is appended.

```
97 \newcommand*{\LWR@imki@setdefopts}[1]{%
98 \ifblank{#1}{%
99     \edef\imki@options{\space -s \space \LWR@makeindexStyle \space}%
100    \ifdefstring{\imki@progdefault}{xindy}{\LWR@imki@setxdydefopts}{}%
101    \ifdefstring{\imki@progdefault}{texindy}{\LWR@imki@setxdydefopts}{}%
102    \ifdefstring{\imki@progdefault}{truexindy}{\LWR@imki@setxdydefopts}{}%
103 }{%
104    \edef\imki@options{\space #1 \space}%
105 }%
106 }
```

`\imki@makeindex` Use the new HTML options:

```
107 \xpatchcmd{\imki@makeindex}
108     {\let\imki@options\space}
109     {\LWR@imki@setdefopts{}}%
110     {}
111     {\LWR@patcherror{imakeidx}{makeindex}}
```

Use the new HTML options.

```
112 \define@key{imki}{options}{\LWR@imki@setdefopts{#1}}
```

`\imki@resetdefaults` Use the new HTML options:

```
113 \xpatchcmd{\imki@resetdefaults}
114     {\def\imki@options{ }}
```

```
    {\LWR@imki@setdefopts{}}
    {}
    {\LWR@patcherror{imakeidx}{resetdefaults}}
```

`theindex` was already defined `\AtBeginDocument` by the lwarp core, so it must be redefined here similarly, but patched for imakeidx:

Env `theindex`

```
\AtBeginDocument{
\renewenvironment*{theindex}{%
    \imki@maybeaddtotoc
     \imki@indexlevel{\indexname}
    \let\item\LWR@indexitem%
    \let\subitem\LWR@indexsubitem%
    \let\subsubitem\LWR@indexsubsubitem%
}{}
}% AtBeginDocument
```

Update to the new defaults:

```
\imki@resetdefaults
```

Update to the new patches:

`\AtBeginDocument` is because `\@wrindex` is previously defined as `\AtBeginDocument` in the lwarp core.

```
\ifimki@splitindex
  \let\imki@startidx\imki@startidxunique
  \AtBeginDocument{\let\@wrindex\imki@wrindexunique}
  \let\imki@putindex\imki@putindexunique
  \let\imki@wrindexentry\imki@wrindexentryunique
  \let\imki@startidxsplit\@undefined
  \let\imki@wrindexsplit\@undefined
  \let\imki@putindexsplit\@undefined
\else
  \let\imki@startidx\imki@startidxsplit
  \AtBeginDocument{\let\@wrindex\imki@wrindexsplit}
  \let\imki@putindex\imki@putindexsplit
  \let\imki@wrindexentry\imki@wrindexentrysplit
  \let\imki@startidxunique\@undefined
  \let\imki@wrindexunique\@undefined
  \let\imki@putindexunique\@undefined
\fi
```

File 163 `lwarp-indentfirst.sty`

§ 257 Package indentfirst

Pkg `indentfirst` indentfirst is ignored.

Discard all options for lwarp-indentfirst:

for HTML output:

```
\LWR@ProvidesPackageDrop{indentfirst}
```

File 164 `lwarp-index.sty`

§ 258 Package index

(*Emulates or patches code by* David M. Jones.)

Pkg `index` index is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{index}
```

Use `\theLWR@autoindex` instead of `\thepage`. `\@tempswatrue` is used to force an immediate write to the index file instead of waiting until the end of the page.

```
\xpatchcmd{\newindex}
    {\x@newindex[thepage]}
    {%
        \@tempswatrue%
        \x@newindex[theLWR@autoindex]%
    }
    {}
    {\LWR@patcherror{index}{newindex}}

\xpatchcmd{\renewindex}
    {\x@renewindex[thepage]}
    {%
        \@tempswatrue%
        \x@renewindex[theLWR@autoindex]%
    }
    {}
    {\LWR@patcherror{index}{renewindex}}
```

Patched to set a new autoindex:

```
\xpatchcmd{\@wrindex}
    {\begingroup}
    {%
        \addtocounter{LWR@autoindex}{1}%                    lwarp
        \LWR@new@label{LWRindex-\arabic{LWR@autoindex}}%    lwarp
        \begingroup%
    }
    {}
    {\LWR@patcherror{index}{@wrindex}}
```

`\AtBeginDocument` lwarp core `\let`s `\@wrindex` to `\LWR@wrindex`. Since the index package has been loaded, `\let` to its version instead:

```
\let\LWR@index@wrindex\@wrindex

\AtBeginDocument{
\let\@wrindex\LWR@index@wrindex
}
```

Modified to add `\index@prologue`:

```
\AtBeginDocument{
\renewenvironment*{theindex}{%
    \LWR@indexsection{\indexname}%
    \ifx\index@prologue\@empty\else
        \index@prologue
        \bigskip
    \fi
    \let\item\LWR@indexitem%
    \let\subitem\LWR@indexsubitem%
    \let\subsubitem\LWR@indexsubsubitem%
}{}
}% AtBeginDocument
```

Disabled:

```
\def\@showidx#1{}
\let\@texttop\relax
\renewcommand*{\raggedbottom}{}
\renewcommand*{\flushbottom}{}
\renewcommand*{\markboth}[2]{}
\renewcommand*{\markright}[1]{}
```

File 165 `lwarp-inputenc.sty`

§ 259 Package inputenc

Pkg `inputenc` Error if inputenc is loaded after lwarp.

for HTML output:

```
\LWR@ProvidesPackageDrop{inputenc}
\LWR@loadbefore{inputenc}
```

File 166 `lwarp-inputenx.sty`

§ 260 Package inputenx

Pkg `inputenx` Error if inputenx is loaded after lwarp.

for HTML output:

```
\LWR@ProvidesPackageDrop{inputenx}
\LWR@loadbefore{inputenx}
```

File 167 `lwarp-intopdf.sty`

§ 261 Package intopdf

Pkg `intopdf` intopdf is emulated.

The MIME type and description are ignored for now.

for HTML output:

```
\LWR@ProvidesPackageDrop{intopdf}
\NewDocumentCommand{\attachandlink}{m o m m}{%
    \href{#1}{#4}%
}
```

File 168 `lwarp-keyfloat.sty`

§ 262 Package

keyfloat

(*Emulates or patches code by* Brian Dunn.)

Pkg `keyfloat` keyfloat is supported with minor adjustments.

⚠ `keywrap` If placing a `\keyfig[H]` inside a `keywrap`, use an absolute width for `\keyfig`, instead of `lw`-proportional widths. (The `[H]` option forces the use of a minipage, which internally adjusts for a virtual 6-inch wide minipage, which then corrupts the `lw` option.)

for HTML output:

```
\LWR@ProvidesPackagePass{keyfloat}
```

After keyfloat has loaded:

```
\AtBeginDocument{

\RenewDocumentCommand{\KFLT@onefigureimage}{}
{%
\LWR@traceinfo{KFLT@onefigureimage}%
% \begin{lrbox}{\KFLT@envbox}%
\ifthenelse{\NOT\equal{\KFLT@lw}{}}%
{\includegraphics%
[scale=\KFLT@s,width=\KFLT@imagewidth]{\KFLT@i}}%
{% not linewidth
\ifthenelse{\dimtest{\KFLT@w}{>}{0pt}}%
{% width is given
\ifthenelse{\dimtest{\KFLT@h}{>}{0pt}}%
{% w and h
\includegraphics%
[scale=\KFLT@s,%
width=\KFLT@imagewidth,height=\KFLT@h]{\KFLT@i}%
}% w and h
{% only w
\includegraphics%
[scale=\KFLT@s,width=\KFLT@imagewidth]{\KFLT@i}%
}% only w
}% width is given
{% width is not given
\ifthenelse{\dimtest{\KFLT@h}{>}{0pt}}%
{\includegraphics%
[scale=\KFLT@s,height=\KFLT@h]{\KFLT@i}}%
{\includegraphics%
```

```
[scale=\KFLT@s]{\KFLT@i}}%
}% width is not given
}% not linewidth
% \end{lrbox}%
% \unskip%
% \KFLT@findenvboxwidth%
% \begin{turn}{\KFLT@r}%
% \KFLT@frame{\usebox{\KFLT@envbox}}%
% \unskip%
% \end{turn}%
\LWR@traceinfo{KFLT@onefigureimage: done}%
}

\RenewDocumentEnvironment{KFLT@boxinner}{}
{%
\LWR@traceinfo{KFLT@boxinner}%
\LWR@stoppars%
}
{
\LWR@startpars%
\LWR@traceinfo{KFLT@boxinner: done}%
}


\DeclareDocumentEnvironment{KFLT@marginfloat}{O{-1.2ex} m}
{%
\LWR@BlockClassWP{float:right; width:2in; margin:10pt}{}{marginblock}%
\captionsetup{type=#2}%
}
{%
\endLWR@BlockClassWP%
}

\DeclareDocumentEnvironment{marginfigure}{o}
  {\begin{KFLT@marginfloat}{figure}}
  {\end{KFLT@marginfloat}}

\DeclareDocumentEnvironment{margintable}{o}
  {\begin{KFLT@marginfloat}{table}}
  {\end{KFLT@marginfloat}}

\DeclareDocumentEnvironment{keywrap}{m +m}
{%
\LWR@ensuredoingapar%
\setlength{\LWR@templengthone}{#1}%
\begin{LWR@BlockClassWP}{%
    float:right; width:\LWR@printlength{\LWR@templengthone};  % extra space
    margin:10pt%
}%
```

```
{%
    width:\LWR@printlength{\LWR@templengthone}%
}%
{marginblock}%
\setlength{\linewidth}{.95\LWR@templengthone}%
#2%
\end{LWR@BlockClassWP}%
}
{%
}

}% AtBeginDocument
```

File 169 `lwarp-layaureo.sty`

§ 263 Package layaureo

Pkg `layaureo` layaureo is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{layaureo}[2004/09/16]
```

File 170 `lwarp-layout.sty`

§ 264 Package layout

(*Emulates or patches code by* Kent McPherson, Johannes Braams, Hideo Umeki.)

Pkg `layout` layout is emulated.

for HTML output: Discard all options for lwarp-layout:

```
\LWR@ProvidesPackageDrop{layout}

\NewDocumentCommand{\layout}{s}{}
```

File 171 `lwarp-leading.sty`

§ 265 Package leading

Pkg `leading` leading is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{leading}[2008/12/11]
```

```
\newcommand\leading[1]{}
```

File 172 `lwarp-letterspace.sty`

§ 266 Package letterspace

(*Emulates or patches code by* R Schlicht.)

Pkg `letterspace` letterspace is a subset of microtype, which is pre-loaded by lwarp. All user options and macros are ignored and disabled.

for HTML output: Discard all options for lwarp-letterspace:

```
\LWR@ProvidesPackageDrop{letterspace}

\newcommand*\lsstyle{}
\newcommand\textls[2][]{}
\def\textls#1#{}
\newcommand*\lslig[1]{#1}
```

File 173 `lwarp-lettrine.sty`

§ 267 Package lettrine

(*Emulates or patches code by* Daniel Flipo.)

Pkg `lettrine` Emulated.

for HTML output: Discard all options for lwarp-lettrine:

```
\LWR@ProvidesPackageDrop{lettrine}
```

The initial letter is in a `<span>` of class `lettrine`, and the following text is in a `<span>` of class `lettrinetext`. `\lettrine [`⟨*keys*⟩`] {`⟨*letter*⟩`} {`⟨*additional text*⟩`}`

```
\DeclareDocumentCommand{\lettrine}{o m m}{%
\InlineClass{lettrine}{#2}\InlineClass{lettrinetext}{#3} % extra space
}

\newcounter{DefaultLines}
\setcounter{DefaultLines}{2}
\newcounter{DefaultDepth}
\newcommand*{\DefaultOptionsFile}{\relax}
\newcommand*{\DefaultLoversize}{0}
```

```
\newcommand*{\DefaultLraise}{0}
\newcommand*{\DefaultLhang}{0}
\newdimen\DefaultFindent
\setlength{\DefaultFindent}{\z@}
\newdimen\DefaultNindent
\setlength{\DefaultNindent}{0.5em}
\newdimen\DefaultSlope
\setlength{\DefaultSlope}{\z@}
\newdimen\DiscardVskip
\setlength{\DiscardVskip}{0.2\p@}
\newif\ifLettrineImage
\newif\ifLettrineOnGrid
\newif\ifLettrineRealHeight

\newcommand*{\LettrineTextFont}{\scshape}
\newcommand*{\LettrineFontHook}{}
\newcommand*{\LettrineFont}[1]{\InlineClass{lettrine}{#1}}
\newcommand*{\LettrineFontEPS}[1]{\includegraphics[height=1.5ex]{#1}}
```

File 174 `lwarp-lineno.sty`

§ 268 Package lineno

(*Emulates or patches code by* Stephan I. Böttcher.)

Pkg `lineno` lineno is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{lineno}

\newcommand*\resetlinenumber[1][\@ne]{}

\def\linenumbers{%
    \@ifnextchar[{\resetlinenumber}%]
                 {\@ifstar{\resetlinenumber}{}}%
    }

\newcommand*{\nolinenumbers}{}

\@namedef{linenumbers*}{\par\linenumbers*}
\@namedef{runninglinenumbers*}{\par\runninglinenumbers*}

\def\endlinenumbers{\par}
\let\endrunninglinenumbers\endlinenumbers
\let\endpagewiselinenumbers\endlinenumbers
\expandafter\let\csname endlinenumbers*\endcsname\endlinenumbers
\expandafter\let\csname endrunninglinenumbers*\endcsname\endlinenumbers
\let\endnolinenumbers\endlinenumbers
```

```
20
21 \def\pagewiselinenumbers{\linenumbers\setpagewiselinenumbers}
22
23 \def\runninglinenumbers{\setrunninglinenumbers\linenumbers}
24
25 \def\setpagewiselinenumbers{}
26
27 \def\setrunninglinenumbers{}
28
29 \def\linenomath{}%
30 \@namedef{linenomath*}{}%
31 \def\endlinenomath{}
32 \expandafter\let\csname endlinenomath*\endcsname\endlinenomath
33
34 \let\linelabel\label
35
36 \def\switchlinenumbers{\@ifstar{}{}}
37 \def\setmakelinenumbers#1{\@ifstar{}{}}
38
39 \def\leftlinenumbers{\@ifstar{}{}}
40 \def\rightlinenumbers{\@ifstar{}{}}
41
42 \newcounter{linenumber}
43 \newcount\c@pagewiselinenumber
44 \let\c@runninglinenumber\c@linenumber
45
46 \def\runningpagewiselinenumbers{}
47 \def\realpagewiselinenumbers{}
48
49
50 \NewDocumentCommand\modulolinenumbers{s o}{}
51
52 \chardef\c@linenumbermodulo=5
53 \modulolinenumbers[1]
54
55 \newcommand*\firstlinenumber[1]{}
56
57 \newcommand\internallinenumbers{}
58 \let\endinternallinenumbers\endlinenumbers
59 \@namedef{internallinenumbers*}{\internallinenumbers*}
60 \expandafter\let\csname endinternallinenumbers*\endcsname\endlinenumbers
61
62 \newcommand*{\linenoplaceholder}[1]{% redefine per language
63     (line number reference for \detokenize\expandafter{#1})
64 }
65
66 \newcommand*{\lineref}[2][]{\linenoplaceholder{#2}}
67 \newcommand*{\linerefp}[2][]{\linenoplaceholder{#2}}
68 \newcommand*{\linerefr}[2][]{\linenoplaceholder{#2}}
69
```

```
\newcommand\quotelinenumbers
   {\@ifstar\linenumbers{\@ifnextchar[\linenumbers{\linenumbers*}}}

\newdimen\linenumbersep
\newdimen\linenumberwidth
\newdimen\quotelinenumbersep

\quotelinenumbersep=\linenumbersep
\let\quotelinenumberfont\linenumberfont

\def\linenumberfont{\normalfont\tiny\sffamily}


\linenumberwidth=10pt
\linenumbersep=10pt

\def\thelinenumber{}

\def\LineNumber{}
\def\makeLineNumber{}
\def\makeLineNumberLeft{}
\def\makeLineNumberRight{}
\def\makeLineNumberOdd{}
\def\makeLineNumberEven{}
\def\makeLineNumberRunning{}


\newenvironment{numquote}     {\quote}{\endquote}
\newenvironment{numquotation} {\quotation}{\endquotation}
\newenvironment{numquote*}    {\quote}{\endquote}
\newenvironment{numquotation*}{\quotation}{\endquotation}

\newdimen\bframerule
\bframerule=\fboxrule

\newdimen\bframesep
\bframesep=\fboxsep

\newenvironment{bframe}
{%
    \LWR@forceminwidth{\bframerule}%
    \BlockClass[
        border:\LWR@printlength{\LWR@atleastonept} solid black ; %
        padding:\LWR@printlength{\bframesep}%
    ]{bframe}
}
{\endBlockClass}
```

File 175 `lwarp-lips.sty`

§ 269 Package lips

(*Emulates or patches code by* Matt Swift.)

Pkg `lips` lips is emulated.

```
% \LWR@ProvidesPackageDrop{lips}
\PackageInfo{lwarp}{Using the lwarp version of package ‘lips’.}%
\ProvidesPackage{lwarp-lips}

\NewDocumentCommand{\Lips}{}{\textellipsis}

\NewDocumentCommand{\BracketedLips}{}{[\textellipsis]}

\let\lips\Lips
\let\olips\lips

\DeclareOption*{}
\DeclareOption{mla}{
\let\lips\BracketedLips
}
\ProcessOptions\relax

\newcommand \LPNobreakList {}
```

File 176 `lwarp-listings.sty`

§ 270 Package listings

(*Emulates or patches code by* Carsten Heinz, Brooks Moses, Jobst Hoffmann.)

Pkg `listings` listings is supported with some limitations. Text formatting is not yet supported.

for HTML output:

```
\begin{warpHTML}

\LWR@ProvidesPackagePass{listings}
```

Force flexible columns. Fixed columns inserts spaces in the PDF output.

```
\lst@column@flexible
```

Patches to embed listings inside `pre` tags:

```
\let\LWR@origlst@Init\lst@Init
\let\LWR@origlst@DeInit\lst@DeInit

\let\LWR@origlsthkEveryPar\lsthk@EveryPar

\renewcommand{\l@lstlisting}[2]{\hypertocfloat{1}{lstlisting}{lol}{#1}{#2}}
```

`\lstset` {⟨*options*⟩}

Use the listings `literate` option to replace HTML entities:

```
\def\lstset@#1{\endgroup%
%  \ifx\@empty#1%
%          \@empty%
%     \else%
        \setkeys{lst}{%
            #1%
            ,literate=%
            {<}{\HTMLentity{lt}}{4}%
            {>}{\HTMLentity{gt}}{4}%
            {\&}{\HTMLentity{amp}}{5}%
        }%
%     \fi%
}
```

`\lst@Init` {⟨*backslash-processing*⟩} Done at the start of a listing.

```
\renewcommand{\lst@Init}[1]{%
```

Perform the listings initialization:

```
\LWR@traceinfo{lst@Init}%
\renewcommand*{\@captype}{lstlisting}%
\let\lst@aboveskip\z@\let\lst@belowskip\z@%
\gdef\lst@boxpos{t}%
\let\lst@frame\@empty
    \let\lst@frametshape\@empty
    \let\lst@framershape\@empty
    \let\lst@framebshape\@empty
    \let\lst@framelshape\@empty
\lstframe@\lst@frameround ffff\relax%
\lst@multicols\@empty%
\LWR@origlst@Init{#1}\relax%
```

Avoids extra horizontal space:

```
\def\lst@framelr{}%
```

```
\LWR@traceinfo{finished origlst@Init}%
```

```
\lst@ifdisplaystyle%
```

Creating a display.

Disable line numbers, produce the <pre>, then reenable line numbers.

```
\LWR@traceinfo{About to create verbatim.}%
\let\lsthk@EveryPar\relax%
\LWR@forcenewpage
\LWR@atbeginverbatim{2}{programlisting}%

\let\lsthk@EveryPar\LWR@origlsthkEveryPar%
\else%
```

Inline, so open a :

```
\ifbool{LWR@verbtags}{\LWR@htmltag{span class="inlineprogramlisting"}}{}%
\fi%
}

```

`\lst@DeInit` Done at the end of a listing.

```
\renewcommand*{\lst@DeInit}{%
\lst@ifdisplaystyle%
```

Creating a display.

Disable line numbers, produce the </pre>, then reenable line numbers:

```
\let\lsthk@EveryPar\relax%
\LWR@afterendverbatim{0}%
\let\lsthk@EveryPar\LWR@origlsthkEveryPar%
\else%
```

Inline, so create the closing :

```
\ifbool{LWR@verbtags}{\noindent\LWR@htmltag{/span}}{}%
\fi%
```

Final listings deinit:

```
\LWR@origlst@DeInit%
}
```

`\lst@MakeCaption` {⟨*t/b*⟩}

This is called BOTH at the top and at the bottom of each listing.

Patched for lwarp.

```
\def\lst@MakeCaption#1{%
\LWR@traceinfo{MAKING CAPTION at #1}%
  \lst@ifdisplaystyle
\LWR@traceinfo{making a listings display caption}%
    \ifx #1t%
```

```
        \ifx\lst@@caption\@empty\expandafter\lst@HRefStepCounter \else
                                  \expandafter\refstepcounter
        \fi {lstlisting}%
\LWR@traceinfo{About to assign label: !\lst@label!}%
%         \ifx\lst@label\@empty\else
% \label{\lst@label}\fi
\LWR@traceinfo{Finished assigning the label.}%
       \let\lst@arg\lst@intname \lst@ReplaceIn\lst@arg\lst@filenamerpl
       \global\let\lst@name\lst@arg \global\let\lstname\lst@name
       \lst@ifnolol\else
           \ifx\lst@@caption\@empty
               \ifx\lst@caption\@empty
                   \ifx\lst@intname\@empty \else \def\lst@temp{ }%
                   \ifx\lst@intname\lst@temp \else
```

This code places a contents entry for a non-float. This would have to be modified for lwarp:

```
\LWR@traceinfo{addcontents lst@name: -\lst@name-}%
%                            \addcontentsline{lol}{lstlisting}{\lst@name}
                   \fi\fi
               \fi
           \else
```

This would have to be modified for lwarp:

```
\LWR@traceinfo{addcontents lst@@caption: -\lst@@caption-}%
                 \addcontentsline{lol}{lstlisting}%
{\protect\numberline{\thelstlisting}%
{\protect\ignorespaces \LWR@isolate{\lst@@caption} \protect\relax}}%
           \fi
        \fi
    \fi
   \ifx\lst@caption\@empty\else
\LWR@traceinfo{lst@caption not empty-}%
       \lst@IfSubstring #1\lst@captionpos
           {\begingroup
\LWR@traceinfo{at the selected position}%
```

These space and box commands are not needed for HTML output:

```
%             \let\@@vskip\vskip
%             \def\vskip{\afterassignment\lst@vskip \@tempskipa}%
%             \def\lst@vskip{\nobreak\@@vskip\@tempskipa\nobreak}%
%             \par\@parboxrestore\normalsize\normalfont % \noindent (AS)
%             \ifx #1t\allowbreak \fi
            \ifx\lst@title\@empty
```

New lwarp code to create a caption:

```
                \lst@makecaption\fnum@lstlisting{\ignorespaces \lst@caption}
            \else
```

New lwarp code to create a title:

```
%                  \lst@maketitle\lst@title % (AS)
\LWR@traceinfo{Making title: \lst@title}%
\begin{BlockClass}{lstlistingtitle}% lwarp
\lst@maketitle\lst@title% lwarp
\end{BlockClass}% lwarp
             \fi
\LWR@traceinfo{About to assign label: !\lst@label!}%
        \ifx\lst@label\@empty\else
\leavevmode% gets rid of bad space factor error
\GetTitleStringExpand{\lst@caption}%
\edef\LWR@lntemp{\GetTitleStringResult}%
\edef\@currentlabelname{\detokenize\expandafter{\LWR@lntemp}}%
\label{\lst@label}\fi
\LWR@traceinfo{Finished assigning the label.}%
```

Not needed for lwarp:

```
%              \ifx #1b\allowbreak \fi
             \endgroup}{}%
    \fi
\LWR@traceinfo{end of making a listings display caption}%
  \else
\LWR@traceinfo{INLINE}%
  \fi
\LWR@traceinfo{DONE WITH CAPTION at #1}%
}
```

line numbers Patched to keep left line numbers outside of the left margin, and place right line numbers in a field `\VerbatimHTMLWidth` wide.

```
\lst@Key{numbers}{none}{%
    \let\lst@PlaceNumber\@empty
    \lstKV@SwitchCases{#1}%
    {none&\\%
     left&\def\lst@PlaceNumber{%
```

For now, lwarp places left line numbers inline. Ideally the entire line would be moved to the right, but conflicts with list indenting occurs.

```
%         \LWR@origllap{
            \LWR@orignormalfont%
            \lst@numberstyle{\thelstnumber}\kern\lst@numbersep%
%         }
    }\\%
     right&\def\lst@PlaceNumber{\LWR@origrlap{\LWR@orignormalfont
                \kern 6in \kern\lst@numbersep
                \lst@numberstyle{\thelstnumber}}}%
    }{\PackageError{Listings}{Numbers #1 unknown}\@ehc}}
```

```
\end{warpHTML}
```

File 177 **lwarp-longtable.sty**

§ 271 Package

longtable

(*Emulates or patches code by* David Carlisle.)

Pkg `longtable` longtable is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{longtable}
```

⚠ Misplaced `\noalign` Longtable `\endhead`, `\endfoot`, and `\endlastfoot` rows are not used for HTML, and these rows should be disabled. Use

```
\warpprintonly{row contents}
```

instead of

```
\begin{warpprint} ... \end{warpprint}
```

Doing so helps avoid "Misplaced `\noalign`." when using `\begin`{warpprint}.

Keep the `\endfirsthead` row, which is still relevent to HTML output.

⚠ `\kill` `\kill` is ignored, place a `\kill` line inside

```
\begin{warpprint} ... \end{warpprint}
```

or place it inside `\warpingprintonly`.

⚠ lateximage longtable is not supported inside a `lateximage`.

See:
http://tex.stackexchange.com/questions/43006/why-is-input-not-expandable

Env `longtable` * [⟨*horizalignment*⟩] {⟨*colspec*⟩} Emulates the `longtable` environment.

Per the caption package, the starred version steps the counter per caption. The unstarred version steps the counter once at the beginning, but not at each caption.

Options [c], [l], and [r] are thrown away.

```
\newenvironment{longtable*}[2][]{%
\LWR@floatbegin{table}%
\setcaptiontype{\LTcaptype}%
```

```
\caption@setoptions{longtable}%
\caption@setoptions{@longtable}%
\caption@LT@setup%
\booltrue{LWR@starredlongtable}%
\let\captionlistentry\LWR@LTcaptionlistentry%
\LWR@tabular{#2}
}
{\endLWR@tabular\LWR@floatend}

\newenvironment{longtable}[2][]{%
\LWR@floatbegin{table}%
\setcaptiontype{\LTcaptype}%
\caption@setoptions{longtable}%
\caption@setoptions{@longtable}%
\caption@LT@setup%
\refstepcounter{\LTcaptype}%
\let\captionlistentry\LWR@LTcaptionlistentry%
\LWR@tabular{#2}
}
{\endLWR@tabular\LWR@floatend}
```

Provided for compatibility, but ignored:

```
\newcounter{LTchunksize}
\def\endhead{\LWR@tabularendofline}% throws away options //[dim] and //*
\def\endfirsthead{\LWR@tabularendofline}
\def\endfoot{\LWR@tabularendofline}
\def\endlastfoot{\LWR@tabularendofline}
\newcommand\tabularnewline{\LWR@tabularendofline}
\newcommand{\setlongtables}{}% Obsolete command, does nothing.
\newlength{\LTleft}
\newlength{\LTright}
\newlength{\LTpre}
\newlength{\LTpost}
\newlength{\LTcapwidth}


\LetLtxMacro\LWR@origkill\kill
\renewcommand*{\kill}{\LWR@tabularendofline}
\appto\LWR@restoreorigformatting{%
\LetLtxMacro\kill\LWR@origkill%
}
```

File 178 `lwarp-lscape.sty`

§ 272 Package lscape

(*Emulates or patches code by* D. P. Carlisle.)

Pkg `lscape` lscape is emulated.

for HTML output: Discard all options for lwarp-lscape.

```
\LWR@ProvidesPackageDrop{lscape}

\newenvironment*{landscape}{}{}
```

File 179 `lwarp-ltablex.sty`

§ 273 Package ltablex

(*Emulates or patches code by* Anil K. Goel.)

Pkg `ltablex` ltablex is emulated by lwarp.

for HTML output: Relies on tabularx.

```
\RequirePackage{tabularx}

\LWR@ProvidesPackageDrop{ltablex}

\DeclareDocumentEnvironment{tabularx}{m o m}
{\longtable{#3}}
{\endlongtable}

\DeclareDocumentEnvironment{tabularx*}{m o m}
{\longtable{#3}}
{\endlongtable}

\newcommand*{\keepXColumns}{}
\newcommand*{\convertXColumns}{}
```

File 180 `lwarp-ltcaption.sty`

§ 274 Package ltcaption

(*Emulates or patches code by* Axel Sommerfeldt.)

Pkg `ltcaption` ltcaption is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{ltcaption}
```

`\LTcaptype` is already defined by lwarp.

`longtable*` is already defined by lwarp-longtable.

```
\newlength{\LTcapskip}
\newlength{\LTcapleft}
\newlength{\LTcapright}
\newcommand*{\LTcapmarginsfalse}{}
```

File 181 `lwarp-ltxgrid.sty`

§ 275 Package ltxgrid

Pkg `ltxgrid` ltxgrid is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{ltxgrid}
```

```
\newcommand*{\onecolumngrid}{}
\newcommand*{\twocolumngrid}{}
\newcommand*{\removestuff}{}
\newcommand*{\addstuff}[2]{}
\newcommand*{\replacestuff}[2]{}
```

File 182 `lwarp-ltxtable.sty`

§ 276 Package ltxtable

Pkg `ltxtable` ltxtable is emulated.

⚠ table numbering The print version does not seem to honor `longtable*` from the caption package, while lwarp does.

for HTML output:

```
\LWR@ProvidesPackageDrop{ltxtable}
```

`\LTXtable` {⟨*width*⟩} {⟨*file*⟩}

```
\newcommand*{\LTXtable}[2]{%
\input{#2}%
}
```

File 183 `lwarp-lua-check-hyphen.sty`

§ 277 Package lua-check-hyphen

Pkg `lua-check-hyphen` lua-check-hyphen is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{lua-check-hyphen}
```

```
\newcommand*{\LuaCheckHyphen}[1]{}
```

File 184 `lwarp-lua-visual-debug.sty`

§ 278 Package lua-visual-debug

Pkg `lua-visual-debug` lua-visual-debug is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{lua-visual-debug}[2016/05/30]
```

File 185 `lwarp-luacolor.sty`

§ 279 Package luacolor

Pkg `luacolor` luacolor is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{luacolor}
```

```
\newcommand{\luacolorProcessBox}[1]{}
```

File 186 `lwarp-luatodonotes.sty`

§ 280 Package

luatodonotes

(*Emulates or patches code by* Fabian Lipp.)

Pkg `luatodonotes` luatodonotes is emulated.

The documentation for todonotes and luatodonotes have an example with a todo inside a caption. If this example does not work it will be necessary to move the todo outside of the caption.

for HTML output:

```
\LWR@ProvidesPackagePass{luatodonotes}
```

Nullify options:

```
\@todonotes@additionalMarginEnabledfalse

\if@todonotes@disabled
\else

\newcommand{\ext@todo}{tdo}

\renewcommand{\l@todo}[2]{\hypertocfloat{1}{todo}{ldo}{#1}{#2}}

\let\LWRTODONOTES@orig@todototoc\todototoc

\renewcommand*{\todototoc}{%
\phantomsection%
\LWRTODONOTES@orig@todototoc%
}


\renewcommand{\@todonotes@drawMarginNoteWithLine}{%
\fcolorbox
    {\@todonotes@currentbordercolor}
    {\@todonotes@currentbackgroundcolor}
    {\arabic{@todonotes@numberoftodonotes}}
\marginpar{\@todonotes@drawMarginNote}
}

\renewcommand{\@todonotes@drawInlineNote}{%
\fcolorboxBlock%
    {\@todonotes@currentbordercolor}%
```

```
    {\@todonotes@currentbackgroundcolor}%
    {%
        \if@todonotes@authorgiven%
        {\@todonotes@author:\,}%
        \fi%
        \@todonotes@text%
    }%
}

\newcommand{\@todonotes@drawMarginNote}{%
    \if@todonotes@authorgiven%
        \@todonotes@author\par%
    \fi%
    \arabic{@todonotes@numberoftodonotes}: %
    \fcolorbox%
    {\@todonotes@currentbordercolor}%
    {\@todonotes@currentbackgroundcolor}%
    {%
        \@todonotes@sizecommand%
        \@todonotes@text %
    }%
}%

\renewcommand{\missingfigure}[2][]{%
\setkeys{todonotes}{#1}%
\addcontentsline{tdo}{todo}{\@todonotes@MissingFigureText: #2}%
\fcolorboxBlock%
    {\@todonotes@currentbordercolor}%
    {\@todonotes@currentfigcolor}%
    {%
        \setlength{\fboxrule}{4pt}%
        \fcolorbox{red}{white}{Missing figure} \quad #2%
    }
}

\LetLtxMacro\LWRTODONOTES@orig@todocommon\@todocommon

\RenewDocumentCommand{\@todocommon}{m m}{%
\begingroup%
\renewcommand*{\phantomsection}{}%
\LWRTODONOTES@orig@todocommon{#1}{#2}%
\endgroup%
}

\renewcommand{\@todoarea}[3][]{%
    \@todonotes@areaselectedtrue%
    \@todocommon{#1}{#2}%
    \todonotes@textmark@highlight{#3}%
    \zref@label{@todonotes@\arabic{@todonotes@numberoftodonotes}@end}%
}%
```

```
78
79
80 \DeclareDocumentCommand{\todonotes@textmark@highlight}{m}{%
81 \InlineClass[background:\LWR@origpound{}B3FFB3]{highlight}{#1}%
82 }
83
84 \fi% \if@todonotes@disabled
```

File 187 `lwarp-magaz.sty`

§ 281 Package magaz

Pkg `magaz` magaz is emulated.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{magaz}

2 \newcommand\FirstLine[1]{%
3     \begingroup%
4     \FirstLineFont{%
5         \LWR@textcurrentcolor{%
6             \LWR@textcurrentfont{%
7                 #1%
8             }%
9         }%
10    }%
11    \endgroup%
12 }
13
14 \providecommand\FirstLineFont{\scshape}
```

File 188 `lwarp-makeidx.sty`

§ 282 Package makeidx

(*Emulates or patches code by* LaTeX Project Team.)

Pkg `makeidx` makeidx is patched for use by lwarp.

for HTML output:

```
1 \LWR@ProvidesPackagePass{makeidx}
```

`\@wrindex` is redefined `\AtBeginDocument` by the lwarp core.

\printindex

```
\preto\printindex{%
    \LWR@orignewpage%
    \LWR@startpars%
}
```

File 189 `lwarp-marginfit.sty`

§ 283 Package marginfit

Pkg `marginfit` marginfit is ignored.

for HTML output: Discard all options for lwarp-marginfit:

```
\LWR@ProvidesPackageDrop{marginfit}
```

File 190 `lwarp-marginfix.sty`

§ 284 Package marginfix

(*Emulates or patches code by* Stephen Hicks.)

Pkg `marginfix` Emulated.

for HTML output: Discard all options for lwarp-marginfix:

```
\LWR@ProvidesPackageDrop{marginfix}

\newcommand*{\marginskip}[1]{}
\newcommand*{\clearmargin}{}
\newcommand*{\softclearmargin}{}
\newcommand*{\extendmargin}[1]{}
\newcommand*{\mparshift}[1]{}
\newdimen\marginheightadjustment
\newdimen\marginposadjustment
\newcommand*{\blockmargin}[1][]{}
\newcommand*{\unblockmargin}[1][]{}
\newcommand*{\marginphantom}[2][]{}
```

File 191 `lwarp-marginnote.sty`

§ 285 Package marginnote

(*Emulates or patches code by* Markus Kohm.)

Pkg `marginnote` Emulated.

for HTML output: Discard all options for lwarp-marginnote:

```
\LWR@ProvidesPackageDrop{marginnote}

\NewDocumentCommand{\marginnote}{+o +m o}{\marginpar{#2}}

\newcommand*{\marginnoteleftadjust}{}
\newcommand*{\marginnoterightadjust}{}
\newcommand*{\marginnotetextwidth}{}
\let\marginnotetextwidth\textwidth
\newcommand*{\marginnotevadjust}{}
\newcommand*{\marginfont}{}
\newcommand*{\raggedleftmarginnote}{}
\newcommand*{\raggedrightmarginnote}{}
```

File 192 `lwarp-mcaption.sty`

§ 286 Package mcaption

(*Emulates or patches code by* Stephan Hennig.)

Pkg `mcaption` mcaption is nullified.

for HTML output: Discard all options for lwarp-mcaption:

```
\LWR@ProvidesPackageDrop{mcaption}

\newenvironment{margincap}{}{}
\newcommand*{\margincapalign}{}
\newlength{\margincapsep}
```

File 193 `lwarp-mdframed.sty`

§ 287 Package mdframed

(*Emulates or patches code by* Marco Daniel, Elke Schubert.)

Pkg `mdframed` mdframed is loaded with options forced to `framemethod=none`.

§ 287.1 Limitations

support Most basic functionality is supported, including frame background colors and single-border colors and thickness, title and subtitle background colors and borders and thickness, border radius, and shadow. CSS classes are created for mdframed environments and frame titles.

⚠ loading When used, lwarp loads mdframed in HTML with `framemethod=none`.

font For title font, use

```
frametitlefont=\textbf,
```

instead of

```
frametitlefont=\bfseries,
```

where `\textbf` must appear just before the comma and will receive the following text as its argument (since the text happens to be between braces in the mdframed source). Since lwarp does not support `\bfseries` and friends, only one font selection may be made at a time.

theoremtitlefont `theoremtitlefont` is not supported, since the following text is not in braces in the mdframed source.

footnotes Footnotes are currently placed at the bottom of the HTML page.

ignored options `userdefinedwidth` and `align` are currently ignored.

CSS classes Environments created or encapsulated by mdframed are enclosed in a `<div>` of class `md<environmentname>`, or `mdframed` otherwise.

Frame titles are placed into a `<span>` of class `mdframedtitle`. Subtitles are in a `<span>` of class `mdframedsubtitle`, and likewise for subsubtitles.

Pre-existing hooks are used to patch extra functions before and after the frames.

§ 287.2 Package loading

for HTML output:

```
\RequirePackage{xcolor}% for \convertcolorspec

\LWR@ProvidesPackageDrop{mdframed}
```

amsthm must be loaded before mdframed

```
\LWR@origRequirePackage{amsthm}
```

Do not require Ti*k*z or pstricks:

```
\LWR@origRequirePackage[framemethod=none]{mdframed}
```

§ 287.3 Patches

Patch to remove PDF formatting and add HTML tags:

```
\AtBeginDocument{
\def\mdf@trivlist#1{%
  \edef\mdf@temp{%
%     \topsep=\the\topsep\relax%
%     \partopsep=\the\partopsep\relax%
%     \parsep=\the\parsep\relax%
  }%
%   \setlength{\topsep}{#1}%
%   \topskip\z@%
%   \partopsep\z@%
%   \parsep\z@%
%   \@nmbrlistfalse%
%   \@trivlist%
%   \labelwidth\z@%
%   \leftmargin\z@%
%   \itemindent\z@%
  \let\@itemlabel\@empty%
  \def\makelabel##1{##1}%
%   \item\relax\mdf@temp\relax%
}

\renewcommand*{\endmdf@trivlist}{%
\LWR@traceinfo{endmdf@trivlist}%
% \endtrivlist%
\LWR@listend%
}
}% AtBeginDocument
```

§ 287.4 Initial setup

To handle css and paragraphs, patch code at start and end of environment and contents. `\LWR@print@raggedright` helps avoid hyphenation.

```
\mdfsetup{
startcode={\LWR@mdframedstart\LWR@print@raggedright},
endcode={\LWR@mdframedend},
startinnercode={\LWR@startpars\LWR@print@raggedright},
endinnercode={\LWR@stoppars},
}
```

§ 287.5 Color and length HTML conversion

`\LWR@mdfprintcolor` `{`⟨*mdfcolorkey*⟩`}`

Given the mdframed key, print the color.

```
\newcommand*{\LWR@mdfprintcolor}[1]{%
\convertcolorspec{named}{\@nameuse{mdf@#1}}{HTML}\LWR@tempcolor%
\LWR@origpound\LWR@tempcolor
}
```

`\LWR@mdfprintlength` `{`⟨*mdflengthkey*⟩`}`

Given the mdframed key, print the length.

```
\newcommand*{\LWR@mdfprintlength}[1]{%
\LWR@printlength{\@nameuse{mdf@#1@length}}
}
```

§ 287.6 Environment encapsulation

`\LWR@mdframedstart` Actions before an mdframe starts.

Encapsulate a frame inside a `<div>` of the desired `class`.

```
\newcommand*{\LWR@mdframedstart}{%
\LWR@traceinfo{LWR@mdframedstart start}%
```

Turn off paragraph handling during the generation of the encapsulating tags:

```
\LWR@stoppars%
```

Open a `<div>` and with custom `class` and custom `style`:

```
\LWR@htmltagc{div class="\LWR@mdthisenv" \LWR@orignewline
style=" \LWR@orignewline
```

Convert and print the background color:

```
background: \LWR@mdfprintcolor{backgroundcolor} ; \LWR@orignewline
```

Convert and print the border color and width:

```
border: \LWR@mdfprintlength{linewidth} solid
\LWR@mdfprintcolor{linecolor} ; \LWR@orignewline
```

Convert and print the border radius:

```
border-radius: \LWR@mdfprintlength{roundcorner} ; \LWR@orignewline
```

Convert and print the shadow:

```
\ifbool{mdf@shadow}{%
    box-shadow:
    \LWR@mdfprintlength{shadowsize}
    \LWR@mdfprintlength{shadowsize}
    \LWR@mdfprintlength{shadowsize}
    \LWR@mdfprintcolor{shadowcolor} ;
}
{box-shadow: none ;}
\LWR@orignewline

"}
% \LWR@htmldivclass{\LWR@mdthisenv}
```

`mdframed` environment may not work with the HTML versions of the following, so restore them to their originals while inside `mdframed`:

```
\LWR@select@print@hspace%
\renewcommand*{\rule}{\LWR@print@rule}
\LetLtxMacro\makebox\LWR@print@makebox%

\LWR@startpars%
\LWR@traceinfo{LWR@mdframedstart done}%
}
```

`\LWR@mdframedend` Actions after an mdframe ends.

After closing the `<div>`, globally restore to the default environment type:

```
\newcommand*{\LWR@mdframedend}{
\LWR@traceinfo{LWR@mdframedend start}%
```

Close the custom `<div>`:

```
\LWR@htmldivclassend{\LWR@mdthisenv}
```

Reset future custom class to the default:

```
\gdef\LWR@mdthisenv{mdframed}
```

Resume paragraph handling:

```
\LWR@startpars%
\LWR@traceinfo{LWR@mdframedend done}%
}
```

§ 287.7 Mdframed environment

```
\renewenvironment{mdframed}[1][]{%
 \color@begingroup%
   \mdfsetup{userdefinedwidth=\linewidth,#1}%
   \mdf@startcode%
   \mdf@preenvsetting%
   \ifdefempty{\mdf@firstframetitle}{}%
            {\let\mdf@frametitlesave\mdf@frametitle%
             \let\mdf@frametitle\mdf@firstframetitle%
            }%
   \ifvmode\nointerlineskip\fi%
        \ifdefempty{\mdf@frametitle}{}%
            {\mdfframedtitleenv{\mdf@frametitle}%
%             \mdf@@frametitle@use%
            }%
   \mdf@trivlist{\mdf@skipabove@length}%%
   \mdf@settings%
%    \mdf@lrbox{\mdf@splitbox@one}%
%    \mdf@startinnercode%
  }%
  {%
%    \mdf@@ignorelastdescenders%
   \par%
%     \unskip\ifvmode\nointerlineskip\hrule \@height\z@ \@width\hsize\fi%%
   \ifmdf@footnoteinside%
      \def\mdf@reserveda{%
        \mdf@footnoteoutput%
%         \mdf@endinnercode%
%         \endmdf@lrbox%
%         \ifdefempty{\mdf@frametitle}{}%
%             {\mdfframedtitleenv{\mdf@frametitle}\mdf@@frametitle@use}%
%         \detected@mdf@put@frame
      }%
   \else%
      \def\mdf@reserveda{%
%         \mdf@endinnercode%
%         \endmdf@lrbox%
%         \ifdefempty{\mdf@frametitle}{}%
%             {\mdfframedtitleenv{\mdf@frametitle}\mdf@@frametitle@use}%
%         \detected@mdf@put@frame%
        \mdf@footnoteoutput%
        }%
   \fi%
   \mdf@reserveda%
  \aftergroup\endmdf@trivlist%
 \color@endgroup%
 \mdf@endcode%
}
```

\mdf@footnoteoutput

```
\renewrobustcmd*\mdf@footnoteoutput{%
    \LWR@printpendingmpfootnotes%
}
```

§ 287.8 Titles and subtitles

\mdfframedtitleenv {⟨*title*⟩}

Encapsulation of the original which places the title inside a of class mdframedtitle:

```
\LetLtxMacro\LWR@origmdfframedtitleenv\mdfframedtitleenv

\newlength{\LWR@titleroundcorner}

\renewrobustcmd\mdfframedtitleenv[1]{%
\LWR@traceinfo{LWR@mdframedtitleenv start}%
% \LWR@origmdfframedtitleenv{%
```

Open a with a custom class and custom style:

```
\LWR@htmltagc{span class="mdframedtitle" \LWR@orignewline
style=" \LWR@orignewline
```

Convert and print the title background color:

```
background:
\LWR@mdfprintcolor{frametitlebackgroundcolor}
; \LWR@orignewline
```

Convert and print the title rule:

```
\ifbool{mdf@frametitlerule}{%
    border-bottom:
    \LWR@mdfprintlength{frametitlerulewidth}
    solid
    \LWR@mdfprintcolor{frametitlerulecolor}
    ; \LWR@orignewline
}{}%
```

Finish the custom style and the opening span tag:

```
" \LWR@orignewline
}% span
```

Restrict paragraph tags inside a span:

```
\begin{LWR@nestspan}%
```

Print the title inside the span:

```
#1%
```

Closee the span and unnest the paragraph tag restriction:

```
\LWR@htmltagc{/span}%
\end{LWR@nestspan}%
% }
\LWR@traceinfo{LWR@mdframedtitleenv end}%
}
```

`\LWR@mdfsubtitlecommon` {⟨*sub -or- subsub*⟩} [⟨*options*⟩] {⟨*title*⟩}

Common code for `\LWR@mdfsubtitle` and `\LWR@mdfsubsubtitle`.

Encapsulate the subtitle inside a `<span>` of class `mdframedsubtitle`:

```
\NewDocumentCommand{\LWR@mdfsubtitlecommon}{m o m}
{% the following empty line is required

\LWR@traceinfo{LWR@mdframedsubtitlecommon start}%
```

Special handling for mdframed: Subtitles have `\par`s around them, so temporarily disable them here.

```
\let\par\LWR@origpar%
```

Open a `<span>` with a custom `class` and custom `style`:

```
\LWR@htmltagc{span class="mdframed#1title"
style=" \LWR@orignewline
```

Convert and print the background color:

```
background:
\LWR@mdfprintcolor{#1titlebackgroundcolor}
; \LWR@orignewline
```

Convert and print the above line:

```
\ifbool{mdf@#1titleaboveline}{%
    border-top:
    \LWR@mdfprintlength{#1titleabovelinewidth}
    solid
    \LWR@mdfprintcolor{#1titleabovelinecolor}
    ; \LWR@orignewline
}{}%
```

Convert and print the below line:

```
\ifbool{mdf@#1titlebelowline}{%
    border-bottom:
    \LWR@mdfprintlength{#1titlebelowlinewidth}
    solid
    \LWR@mdfprintcolor{#1titlebelowlinecolor}
    ; \LWR@orignewline
}{}%
```

Finish the custom style and the opening span tag:

```
"}% span
```

Restrict paragraph tags inside a span:

```
\begin{LWR@nestspan}%
```

Perform the original subtitle action:

```
\IfNoValueTF{#2}
{\@nameuse{LWR@origmdf#1title}{#3}}%
{\@nameuse{LWR@origmdf#1title}[#2]{#3}}%
```

Close the span and unnest the paragraph tag restriction:

```
\LWR@htmltagc{/span}% the following empty line is required
\end{LWR@nestspan}% must follow the /span or an extra <p> appears

\LWR@traceinfo{LWR@mdframedsubtitlecommon end}%
}
```

`\LWR@mdfsubtitle` `[⟨options⟩] {⟨title⟩}`

```
\newcommand*{\LWR@mdfsubtitle}{%
\LWR@mdfsubtitlecommon{sub}%
}
\let\mdfsubtitle\LWR@mdfsubtitle
```

`\LWR@mdfsubsubtitle` `[⟨options⟩] {⟨title⟩}`

```
\newcommand*{\LWR@mdfsubsubtitle}{%
\LWR@mdfsubtitlecommon{subsub}%
}
\let\mdfsubsubtitle\LWR@mdfsubsubtitle
```

§ 287.9 New environments

`\LWR@mdthisenv` Stores the environment of the frame about to be created:

```
\newcommand*{\LWR@mdthisenv}{mdframed}
```

`\newmdenv` `[⟨options⟩] {⟨env-name⟩}`

Modified from the original to remember the environment.

```
\renewrobustcmd*\newmdenv[2][]{%
\newenvironment{#2}%
{%
\mdfsetup{#1}%
\renewcommand*{\LWR@mdthisenv}{md#2}%
\begin{mdframed}%
}
{\end{mdframed}}%
}
```

`\surroundwithmdframed` [⟨*options*⟩] {⟨*environment*⟩}

Modified from the original to remember the environment.

```
\renewrobustcmd*{\surroundwithmdframed}[2][]{%
\BeforeBeginEnvironment{#2}{%
\renewcommand*{\LWR@mdthisenv}{md#2}%
\begin{mdframed}[#1]}%
\AfterEndEnvironment{#2}{\end{mdframed}}%
}
```

`\mdtheorem` [⟨*mdframed-options*⟩] {⟨*envname*⟩} [⟨*numberedlike*⟩] {⟨*caption*⟩} [⟨*within*⟩]

Modified from the original to remember the environment.

```
\DeclareDocumentCommand{\mdtheorem}{ O{} m o m o }%
 {\ifcsdef{#2}%
   {\mdf@PackageWarning{Environment #2 already exits\MessageBreak}}%
   {%
    \IfNoValueTF {#3}%
     {%#3 not given -- number relationship
      \IfNoValueTF {#5}%
        {%#3+#5 not given
        \@definecounter{#2}%
        \expandafter\xdef\csname the#2\endcsname{\@thmcounter{#2}}%
        \newenvironment{#2}[1][]{%
          \refstepcounter{#2}%
          \ifstrempty{##1}%
            {\let\@temptitle\relax}%
            {%
             \def\@temptitle{\mdf@theoremseparator%
                             \mdf@theoremspace%
                             \mdf@theoremtitlefont%
                             ##1}%
            \mdf@thm@caption{#2}{{#4}{\csname the#2\endcsname}{##1}}%
            }%
          \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname%
                                          \@temptitle}]}%
          {\end{mdframed}}%
        \newenvironment{#2*}[1][]{%
          \ifstrempty{##1}{\let\@temptitle\relax}{\def\@temptitle{:\ ##1}}%
          \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}]}%
          {\end{mdframed}}%
        }%
        {%#5 given -- reset counter
        \@definecounter{#2}\@newctr{#2}[#5]%
        \expandafter\xdef\csname the#2\endcsname{\@thmcounter{#2}}%
        \expandafter\xdef\csname the#2\endcsname{%
               \expandafter\noexpand\csname the#5\endcsname \@thmcountersep%
                  \@thmcounter{#2}}%
        \newenvironment{#2}[1][]{%
```

```
      \refstepcounter{#2}%
      \ifstrempty{##1}%
        {\let\@temptitle\relax}%
        {%
         \def\@temptitle{\mdf@theoremseparator%
                         \mdf@theoremspace%
                         \mdf@theoremtitlefont%
                         ##1}%
         \mdf@thm@caption{#2}{{#4}{\csname the#2\endcsname}{##1}}%
         }
      \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname%
                                      \@temptitle}]}%
      {\end{mdframed}}%
    \newenvironment{#2*}[1][]{%
      \ifstrempty{##1}%
        {\let\@temptitle\relax}%
        {%
         \def\@temptitle{\mdf@theoremseparator%
                         \mdf@theoremspace%
                         \mdf@theoremtitlefont%
                         ##1}%
         \mdf@thm@caption{#2}{{#4}{\csname the#2\endcsname}{##1}}%
         }%
      \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}]}%
      {\end{mdframed}}%
    }%
  }%
  {%#3 given -- number relationship
    \global\@namedef{the#2}{\@nameuse{the#3}}%
    \newenvironment{#2}[1][]{%
      \refstepcounter{#3}%
      \ifstrempty{##1}%
        {\let\@temptitle\relax}%
        {%
         \def\@temptitle{\mdf@theoremseparator%
                         \mdf@theoremspace%
                         \mdf@theoremtitlefont%
                         ##1}%
         \mdf@thm@caption{#2}{{#4}{\csname the#2\endcsname}{##1}}%
         }
      \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname%
                                      \@temptitle}]}%
      {\end{mdframed}}%
    \newenvironment{#2*}[1][]{%
      \ifstrempty{##1}{\let\@temptitle\relax}{\def\@temptitle{:\ ##1}}%
      \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}]}%
      {\end{mdframed}}%
  }%
\BeforeBeginEnvironment{#2}{\renewcommand*{\LWR@mdthisenv}{md#2}}% lwarp
\BeforeBeginEnvironment{#2*}{\renewcommand*{\LWR@mdthisenv}{md#2}}% lwarp
```

```
   }%
}
```

`\newmdtheoremenv` `[`⟨*mdframed-options*⟩`] {`⟨*envname*⟩`} [`⟨*numberedlike*⟩`] {`⟨*caption*⟩`} [`⟨*within*⟩`]`

Modified from the original to remember the environment.

```
\DeclareDocumentCommand\newmdtheoremenv{O{} m o m o }{%
 \ifboolexpr{ test {\IfNoValueTF {#3}} and test {\IfNoValueTF {#5}} }%
    {\newtheorem{#2}{#4}}%
    {%
     \IfValueT{#3}{\newtheorem{#2}[#3]{#4}}%
     \IfValueT{#5}{\newtheorem{#2}{#4}[#5]}%
    }%
\BeforeBeginEnvironment{#2}{%
\renewcommand*{\LWR@mdthisenv}{md#2}%
\begin{mdframed}[#1]}%
\AfterEndEnvironment{#2}{%
\end{mdframed}}%
}
```

File 194 `lwarp-memhfixc.sty`

§ 288 Package memhfixc

Pkg `memhfixc` memhfixc is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{memhfixc}
```

File 195 `lwarp-metalogo.sty`

§ 289 Package metalogo

(*Emulates or patches code by* Andrew Gilbert Moschou.)

Pkg `metalogo` metalogo is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{metalogo}

\newcommand\setlogokern[2]{}
\newcommand\setlogodrop[2][XeTeX]{}
\newcommand\setLaTeXa[1]{}
\newcommand\setLaTeXee[1]{}
\newcommand\seteverylogo[1]{}
\newcommand\everylogo[1]{}
```

File 196 `lwarp-mhchem.sty`

§ 290 Package

mhchem

(*Emulates or patches code by* Martin Hensel.)

Pkg `mhchem` mhchem is patched for use by lwarp.

mhchem expressions are converted to svg math. Inline expressions use hashed filenames to allow reuse, and assume that any mhchem options are global.

⚠ MathJax and mhchem The MathJax mhchem extension is not yet used. If MathJax is used for math in the rest of the document, lwarp converts standalone mhchem expressions into svg math images, but expressions inside math must be placed between `\displaymathother` and `\displaymathnormal`:

```
\displaymathother
\[ \ce{ ... } \]     ...    $ \ce { ... } $
\displaymathnormal
```

⚠ nested math When producing html output, lwarp does not support the use of nested dollar signs in mhchem expressions.

For some examples from the mhchem manual, change as follows:

```
$\ce{NaOH(aq,$\infty$)}$            % old
$\ce{NaOH(aq,\infty)}$              % new

$\ce{Fe(CN)_{$\frac{6}{2}$}$}$      % old
$\ce{Fe(CN)_{\frac{6}{2}}}$         % new

$\ce{NO_$x$}$                       % old
$\ce{NO_x}$                         % new

$\ce{NO_${x}$}$                     % old
$\ce{NO_{x}}$                       % new

$\ce{$cis${-}[PtCl2(NH3)2]}$        % old
$\ce{\mathit{cis}{-}[PtCl2(NH3)2]}$ % new
```

for HTML output:

```
1 \LWR@ProvidesPackagePass{mhchem}
```

The original definition of \ce:

```
\LetLtxMacro\LWR@mhchem@origce\ce
```

The new definition, called from the new \ce after math shift is set. The starred lateximage uses a hashed filename for the SVG image. The alt tag is set to the mhchem expression.

```
\newcommand{\LWR@mhchem@HTML@ce}[1]{%
\begin{lateximage}*[\textbackslash{}ce\{\LWR@HTMLsanitize{#1}\}]%
\LWR@mhchem@origce{#1}%
\end{lateximage}%
\endgroup%
\addtocounter{LWR@mhchem@cedepth}{-1}%
}
```

Only set math shift if outer depth:

```
\newcounter{LWR@mhchem@cedepth}
\setcounter{LWR@mhchem@cedepth}{0}
```

The new \ce. Sets math shift then continues.

```
\renewcommand{\ce}{%
\begingroup%
\ifnumequal{\value{LWR@mhchem@cedepth}}{0}{%
    \catcode`\$=3% math shift
}{}%
\addtocounter{LWR@mhchem@cedepth}{1}%
\LWR@mhchem@HTML@ce%
}
```

The original definition of \cesplit:

```
\LetLtxMacro\LWR@mhchem@origcesplit\cesplit
```

The new definition, called from the new \cesplit after math shift is set. The starred lateximage uses a hashed filename for the SVG image. The alt tag is set to the mhchem expression.

```
\newcommand*{\LWR@mhchem@HTML@cesplit}[2]
{%
\begin{lateximage}*[\textbackslash{}cesplit\{\LWR@HTMLsanitize{#2}\}]%
\LWR@mhchem@origcesplit{#1}{#2}%
\end{lateximage}%
\endgroup%
}
```

Only set math shift if outer depth:

```
\newcounter{LWR@mhchem@cesplitdepth}
\setcounter{LWR@mhchem@cesplitdepth}{0}
```

The new `\cesplit`. Sets math shift then continues.

```
\renewcommand{\cesplit}{%
\begingroup%
\ifnumequal{\value{LWR@mhchem@cesplitdepth}}{0}{%
    \catcode`\$=3% math shift
}{}%
\addtocounter{LWR@mhchem@cesplitdepth}{1}%
\LWR@mhchem@HTML@cesplit%
}
```

Resore originals inside a `lateximage`:

```
\appto\LWR@restoreorigformatting{%
\LetLtxMacro\ce\LWR@mhchem@origce%
\LetLtxMacro\cesplit\LWR@mhchem@origcesplit%
}
```

File 197 **`lwarp-microtype.sty`**

§ 291 Package

microtype

(*Emulates or patches code by* R Schlicht.)

Pkg `microtype`

microtype is pre-loaded by lwarp. All user options and macros are ignored and disabled.

for HTML output:

Discard all options for lwarp-microtype:

```
\LWR@ProvidesPackageDrop{microtype}
```

```
\DeclareDocumentCommand{\DeclareMicrotypeSet}{o m m}{}
\DeclareDocumentCommand{\UseMicrotypeSet}{o m}{}
\DeclareDocumentCommand{\DeclareMicrotypeSetDefault}{o m}{}
\DeclareDocumentCommand{\SetProtrusion}{o m m}{}
\DeclareDocumentCommand{\SetExpansion}{o m m}{}
\DeclareDocumentCommand{\SetTracking}{o m m}{}
\DeclareDocumentCommand{\SetExtraKerning}{o m m}{}
\DeclareDocumentCommand{\SetExtraSpacing}{o m m}{}
\DeclareDocumentCommand{\DisableLigatures}{o m}{}
\DeclareDocumentCommand{\DeclareCharacterInheritance}{o m m}{}
\DeclareDocumentCommand{\DeclareMicrotypeVariants}{m}{}
```

```
\DeclareDocumentCommand{\DeclareMicrotypeAlias}{m m}{}
\DeclareDocumentCommand{\LoadMicrotypeFile}{m}{}
\DeclareDocumentCommand{\DeclareMicrotypeBabelHook}{m m}{}
\DeclareDocumentCommand{\microtypesetup}{m}{}
\DeclareDocumentCommand{\microtypecontext}{m}{}
\DeclareDocumentCommand{\textmicrotypecontext}{m m}{#2}
\@ifpackageloaded{letterspace}{\let\MT@textls\relax}{%
\DeclareDocumentCommand{\lsstyle}{}{}
\DeclareDocumentCommand{\textls}{o +m}{}
\DeclareDocumentCommand{\lslig}{m}{#1}
}
\def\DeclareMicrotypeSet#1#{\@gobbletwo}
\def\DeclareMicrotypeVariants#1#{\@gobble}
\@onlypreamble\DeclareMicrotypeSet
\@onlypreamble\UseMicrotypeSet
\@onlypreamble\DeclareMicrotypeSetDefault
\@onlypreamble\DisableLigatures
\@onlypreamble\DeclareMicrotypeVariants
\@onlypreamble\DeclareMicrotypeBabelHook
```

File 198 `lwarp-midfloat.sty`

§ 292 Package midfloat

(*Emulates or patches code by* Sigitas Tolušis.)

Pkg `midfloat` midfloat is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{midfloat}

\newenvironment{strip}[1][]{}{}
\newskip\stripsep
```

File 199 `lwarp-midpage.sty`

§ 293 Package midpage

Pkg `midpage` midpage is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{midpage}

\newenvironment{midpage}
{\begin{BlockClass}[\LWR@print@mbox{margin-top:6ex} ; \LWR@print@mbox{margin-bottom:6ex}]{midpa
{\end{BlockClass}}
```

File 200 `lwarp-morefloats.sty`

§ 294 Package morefloats

Pkg `morefloats` morefloats is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{morefloats}
```

File 201 `lwarp-moreverb.sty`

§ 295 Package moreverb

(*Emulates or patches code by* Robin Fairbairns.)

Pkg `moreverb` moreverb is supported with some patches.

for HTML output:

```
\begin{warpHTML}
\LWR@ProvidesPackagePass{moreverb}

\BeforeBeginEnvironment{verbatimtab}{%
\LWR@forcenewpage
\LWR@atbeginverbatim{3}{Verbatim}%
}
\AfterEndEnvironment{verbatimtab}{%
\LWR@afterendverbatim{1}%
}


\LetLtxMacro\LWRMV@orig@verbatimtabinput\@verbatimtabinput

\renewcommand{\@verbatimtabinput}[2][]{%
\LWR@forcenewpage
\LWR@atbeginverbatim{3}{Verbatim}%
\LWRMV@orig@verbatimtabinput[#1]{#2}%
\LWR@afterendverbatim{1}%
}

\BeforeBeginEnvironment{listing}{%
\LWR@forcenewpage
\LWR@atbeginverbatim{3}{programlisting}%
}
```

```
25
26 \AfterEndEnvironment{listing}{%
27 \LWR@afterendverbatim{1}%
28 }
29
30 \BeforeBeginEnvironment{listingcont}{%
31 \LWR@forcenewpage
32 \LWR@atbeginverbatim{3}{programlisting}%
33 }
34
35 \AfterEndEnvironment{listingcont}{%
36 \LWR@afterendverbatim{1}%
37 }

38 \LetLtxMacro\LWRMV@@listinginput\@listinginput
39
40 \renewcommand{\@listinginput}[3][]{
41 \LWR@forcenewpage
42 \LWR@atbeginverbatim{3}{programlisting}%
43 \LWRMV@@listinginput[#1]{#2}{#3}%
44 \LWR@afterendverbatim{1}%
45 }
46
47
48 \renewenvironment*{boxedverbatim}
49 {
50 \LWR@forcenewpage
51 \LWR@atbeginverbatim{3}{boxedverbatim}%
52 \verbatim%
53 }
54 {
55 \endverbatim%
56 \LWR@afterendverbatim{1}%
57 }

58 \end{warpHTML}
```

File 202 **lwarp-morewrites.sty**

§ 296 Package

morewrites

Pkg `morewrites` Error if morewrites is loaded after lwarp.

Discard all options for lwarp-morewrites:

for HTML output:

```
1 \LWR@ProvidesPackageDrop{morewrites}
```

```
\LWR@loadbefore{morewrites}
```

File 203 `lwarp-mparhack.sty`

§ 297 Package mparhack

Pkg `mparhack` Ignored.

for HTML output: Discard all options for lwarp-mparhack:

```
\LWR@ProvidesPackageDrop{mparhack}
```

File 204 `lwarp-multicol.sty`

§ 298 Package multicol

(*Emulates or patches code by* Frank Mittelbach.)

Pkg `multicol` multicol is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{multicol}[2015/09/13]
```

Multicols are converted into a 1–3 column display, browser-supported.

The optional multicols heading is placed inside a `<div>` of class `multicolsheading`.

The content is placed inside a `<div>` of class `multicols`.

```
\begin{warpHTML}
```

Env `multicols` * {⟨*numcols*⟩} [⟨*heading*⟩]

```
\NewDocumentEnvironment{multicols}{s m o}
```

HTML `<div>` class to contain everything:

```
{
\LWR@forcenewpage
\BlockClass{multicols}
```

Optional HTML `<div>` class for the heading:

```
\IfValueT{#3}{\begin{BlockClass}{multicolsheading}#3\end{BlockClass}}}
```

When done with the environment, close the `<div>`:

```
{\endBlockClass}
```

Emulated null functions which are not used in HTML:

```
\newcommand*{\columnbreak}{}
\newcommand*{\RLmulticolcolumns}{}
\newcommand*{\LRmulticolcolumns}{}

\newlength{\premulticols}
\newlength{\postmulticols}
\newlength{\multicolsep}
\newlength{\multicolbaselineskip}
\newlength{\multicoltolerance}
\newlength{\multicolpretolerance}
\newcommand*{\columnseprulecolor}{\normalcolor}
\newcounter{columnbadness}
\newcounter{finalcolumnbadness}
\newcounter{collectmore}
\newcounter{unbalance}
\newlength{\multicolovershoot}
\newlength{\multicolundershoot}

\end{warpHTML}
```

File 205 `lwarp-multirow.sty`

§ 299 Package

multirow

(*Emulates or patches code by* Piet van Oostrum, Øystein Bache, Jerry Leichter.)

Pkg `multirow` multirow is emulated during HTML output, and used as-is while inside a `lateximage`.

In a `lateximage`, the original print-mode versions are temporarily restored by `\LWR@restoreorigformatting`.

See section 70.23 for the print-mode versions.

for HTML output: Remove the placeholder macro which was used if multirow was not loaded:

```
\LetLtxMacro\multirow\relax

\LWR@ProvidesPackagePass{multirow}
```

`\LWR@multirowborder` Set to `left` or `right` to create a thick border for the cell, for use by bigdelim:

```
\newcommand{\LWR@multirowborder}{}
```

§ 299.1 Multirow

\multirow [⟨*vpos*⟩] {⟨*numrows*⟩} [⟨*bigstruts*⟩] {⟨*width*⟩} [⟨*fixup*⟩] {⟨*text*⟩}

```
\NewDocumentCommand{\LWR@HTML@multirow}{O{c} m o m o +m}%
{%
\LWR@traceinfo{*** LWR@HTML@multirow #1 #2 #4}%
\LWR@maybenewtablerow%
\LWR@tabularleftedge%
```

Print the start of a new table data cell:

```
\LWR@htmltag{td rowspan="#2" %
```

The vertical alignment, if given:

```
\IfValueT{#1}{%
\ifstrequal{#1}{b}{style="\LWR@print@mbox{vertical-align:bottom}" }{}%
\ifstrequal{#1}{t}{style="\LWR@print@mbox{vertical-align:top}" }{}%
}%
```

The left/right border, if given:

```
\ifdefvoid{\LWR@multirowborder}{}{%
style="\LWR@print@mbox{border-\LWR@multirowborder:} 2px dotted black ; %
\LWR@print@mbox{padding-\LWR@multirowborder:} 2px" %
}%
```

A class adds the column spec and the rule:

```
class="td%
```

Append this column's spec:

```
\LWR@getexparray{LWR@tablecolspec}{\arabic{LWR@tableLaTeXcolindex}}%
```

If this column has a cmidrule, add "rule" to the end of the HTML class tag. Also add the vertical bar class.

```
\LWR@addcmidruletrim%
\LWR@addleftmostbartag%
\LWR@printbartag{\arabic{LWR@tableLaTeXcolindex}}%
"%


\LWR@tdstartstyles%
\LWR@addcmidrulewidth%
\LWR@addcdashline%
```

```
\LWR@addtabularrulecolors%
\LWR@tdendstyles%
}%
```

The column's < spec:

```
\LWR@getexparray{LWR@colbeforespec}{\arabic{LWR@tableLaTeXcolindex}}%
```

While printing the text, redefine \\ to generate a new line

```
\begingroup\LetLtxMacro{\\}{\LWR@endofline}#6\endgroup%
\LWR@stoppars%
\global\boolfalse{LWR@intabularmetadata}%
\renewcommand{\LWR@multirowborder}{}%
\LWR@traceinfo{*** LWR@HTML@multirow done}%
}%

\LWR@formatted{multirow}
```

§ 299.2 Combined multicolumn and multirow

⚠ \multicolumn & \multirow

lwarp does not support directly combining \multicolumn and \multirow. Use \multicolumnrow instead. To create a 2 column, 3 row cell:

```
\multicolumnrow{2}{c}[c]{3}[0]{1in}[0pt]{Text}
```

The two arguments for \multicolumn come first, followed by the five arguments for \multirow, many of which are optional, followed by the contents.

⚠ skipped cells

⚠ empty cells

As per \multirow, skipped cells to the right of the \multicolumnrow statement are not included in the source code on the same line. On the following lines, \mcolrowcell must be used for each cell of each column and each row to be skipped:

```
... &  \multicolumnrow{2}{c}[c]{3}[0]{1in}[0pt]{Text}  & ...
... &  \mcolrowcell          &          \mcolrowcell   & ...
... &  \mcolrowcell          &          \mcolrowcell   & ...
```

vposn

Note that recent versions of multirow include a new optional vposn argument.

\multicolumnrow {⟨*1:cols*⟩} {⟨*2:halign*⟩} [⟨*3:vpos*⟩] {⟨*4:numrows*⟩} [⟨*5:bigstruts*⟩] {⟨*6:width*⟩} [⟨*7:fixup*⟩] {⟨*8:text*⟩}

\@ifpackageloaded{multirow} determines if v2.0 or later of multirow was used, which included the \ProvidesPackage macro.

The HTML version follows.

`\AtBeginDocument` because the print version had to see if multirow was loaded before determining how to define `\LWR@print@multicolumnrow`.

```
\AtBeginDocument{

\NewExpandableDocumentCommand{\LWR@HTML@multicolumnrow}{m m O{} m O{} m O{} +m}{%
```

Figure out how many extra HTML columns to add for `@` and `!` columns:

```
\LWR@tabularhtmlcolumns{\arabic{LWR@tableLaTeXcolindex}}{#1}
```

Create the multicolumn/multirow tag:

```
\begingroup%
\LetLtxMacro{\\}{\LWR@endofline}%
\LWR@domulticolumn[#3][#4]{#1}{\arabic{LWR@tabhtmlcoltotal}}{#2}{#8}%
\endgroup%
```

Move to the next LaTeX column:

```
\addtocounter{LWR@tableLaTeXcolindex}{#1}%
\addtocounter{LWR@tableLaTeXcolindex}{-1}%
```

Skip any trailing `@` or `!` columns for this cell:

```
\global\booltrue{LWR@skipatbang}%
}

\LWR@expandableformatted{multicolumnrow}

}% \AtBeginDocument
```

File 206 `lwarp-multitoc.sty`

§ 300 Package

multitoc

Pkg `multitoc` multitoc is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{multitoc}

\newcommand{\multicolumntoc}{2}
\newcommand{\multicolumnlot}{2}
\newcommand{\multicolumnlof}{2}
\newcommand*{\immediateaddtocontents}[2]{}
```

File 207 `lwarp-musicography.sty`

§ 301 Package

musicography

(*Emulates or patches code by* Andrew A. Cashner.)

Pkg `musicography` musicography is patched for use by lwarp.

Images are used for the meter symbols, since the HTML fonts tend not to be the correct size. The HTML `alt` tag copies `C` and `3/2`, etc. Hashes are used for the meter images, which are then reused as necessary.

⚠ Note that browser support for musical symbols may be buggy. Copy/paste into a text editor works well.

for HTML output:

```
\LWR@ProvidesPackagePass{musicography}[2018/05/21]

\RenewDocumentCommand{\musSymbol}{ O{\musFont} m m m m }{%
\begin{lateximage}%
{#1\kern#2\raisebox{#3}{#5}\kern#4}%
\end{lateximage}%
}

\RenewDocumentCommand{\musStemmedNote}{ m }{%
\begin{lateximage}%
\musSymbol{0.05em}{0.5ex}{0.2em}{#1\musStem}%
\end{lateximage}%
}

\RenewDocumentCommand{\musFlaggedNote}{ m m }{%
\begin{lateximage}%
\musSymbol{0.05em}{0.5ex}{0pt}{#1\musStem}%
\musSymbol{0pt}{0pt}{0.9em}{#2}%
\end{lateximage}%
}

\RenewDocumentCommand{\musDottedNote}{ m }{%
\begin{lateximage}%
#1\musDot%
\end{lateximage}%
}

\RenewDocumentCommand{\musMeter}{ m m }{%
\begin{lateximage}*[#1/#2][#1#2]%
\musStack{#1}{#2}\kern0.05em%
```

```
\end{lateximage}%
}

\RenewDocumentCommand{\meterCplus}{ m }{%
\begin{lateximage}*[C#1]%
    \meterC{}\kern-0.7pt#1%
\end{lateximage}%
}

\RenewDocumentCommand{\meterC}{}{%
\begin{lateximage}*[C]%
\musSymbolMeter{\symbol{83}}%
\end{lateximage}%
}

\RenewDocumentCommand{\meterCutC}{}{%
\begin{lateximage}*[C|]%
\musSymbolMeter{\symbol{82}}%
\end{lateximage}%
}

\RenewDocumentCommand{\meterCThreeTwo}{}{%
\begin{lateximage}*[C3/2]%
\meterCplus{\musStack{3}{2}}%
\end{lateximage}%
}

\RenewDocumentCommand{\musFlat}       {}{\HTMLunicode{266D}}
\RenewDocumentCommand{\musDoubleFlat} {}{\HTMLunicode{1D12B}}
\RenewDocumentCommand{\musSharp}      {}{\HTMLunicode{266F}}
\RenewDocumentCommand{\musDoubleSharp}{}{\HTMLunicode{1D12A}}
\RenewDocumentCommand{\musNatural}    {}{\HTMLunicode{266E}}

\RenewDocumentCommand{\musWhole}{}{\HTMLunicode{1D15D}}
\RenewDocumentCommand{\musHalf}{}{\HTMLunicode{1D15E}}
\RenewDocumentCommand{\musQuarter}{}{\HTMLunicode{1D15F}}
\RenewDocumentCommand{\musEighth}{}{\HTMLunicode{1D160}}
\RenewDocumentCommand{\musSixteenth}{}{\HTMLunicode{1D161}}

\RenewDocumentCommand{\musWholeDotted}{}{\HTMLunicode{1D15D}\HTMLunicode{1D16D}}
\RenewDocumentCommand{\musHalfDotted}{}{\HTMLunicode{1D15E}\HTMLunicode{1D16D}}
\RenewDocumentCommand{\musQuarterDotted}{}{\HTMLunicode{1D15F}\HTMLunicode{1D16D}}
\RenewDocumentCommand{\musEighthDotted}{}{\HTMLunicode{1D160}\HTMLunicode{1D16D}}
\RenewDocumentCommand{\musSixteenthDotted}{}{\HTMLunicode{1D161}\HTMLunicode{1D16D}}
```

File 208 `lwarp-nameref.sty`

§ 302 Package nameref

Pkg `nameref` nameref is emulated by lwarp.

for HTML output: Discard all options for lwarp-nameref:

```
\typeout{Using the lwarp html version of package ‘nameref’, discarding options.}
\typeout{    Are not using ProvidesPackage, so that other packages}
\typeout{    do not attempt to patch lwarp’s version of ‘nameref’.}
\DeclareOption*{}
\ProcessOptions\relax
```

File 209 `lwarp-natbib.sty`

§ 303 Package natbib

(*Emulates or patches code by* Patrick W. Daly.)

Pkg `natbib` natbib is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{natbib}
```

Replace math < and > with `\textless` and `\textgreater`:

A macro to compare:

```
\newcommand{\LWRNB@NAT@open}{$<$}
```

To patch `\NAT@open` and `\NAT@close`

```
\newcommand{\LWRNB@patchnatbibopenclose}{
\ifdefstrequal{\NAT@open}{\LWRNB@NAT@open}
{
    \renewcommand{\NAT@open}{\textless}
    \renewcommand{\NAT@close}{\textgreater}
}{}
}
```

Do it now in case `angle` was selected as an option:

```
\LWRNB@patchnatbibopenclose
```

Also patch \setcitestyle to patch after settings are made:

```
\let\LWRNB@origsetcitestyle\setcitestyle

\renewcommand{\setcitestyle}[1]{%
\LWRNB@origsetcitestyle{#1}%
\LWRNB@patchnatbibopenclose%
}
```

File 210 **lwarp-nccfancyhdr.sty**

§ 304 Package nccfancyhdr

(*Emulates or patches code by* Alexander I. Rozhenko.)

Pkg nccfancyhdr nccfancyhdr is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{nccfancyhdr}

\newcommand*{\headrulewidth}{}
\newcommand*{\footrulewidth}{}
\newcommand{\headstrutheight}{}
\newcommand{\footstrutheight}{}
\newcommand*{\headrule}{}
\newcommand*{\footrule}{}

\newdimen\headwidth
\newcommand*{\extendedheaders}{}
\newcommand*{\normalheaders}{}

\newcommand*{\fancyhead}[2][]{}
\newcommand*{\fancyfoot}[2][]{}
\newcommand*{\fancyhf}[2][]{}
\newcommand*{\fancypagestyle}[2]{}
\newcommand*{\lhead}[2][]{}
\newcommand*{\chead}[2][]{}
\newcommand*{\rhead}[2][]{}
\newcommand*{\lfoot}[2][]{}
\newcommand*{\cfoot}[2][]{}
\newcommand*{\rfoot}[2][]{}

\newcommand{\nouppercase}[1]{#1}

\NewDocumentCommand{\fancycenter}{o o m m m}{}

\NewDocumentCommand{\newpagestyle}{m o m}{}

```

```
\newcommand*{\iffloatpage}[2]{#2}
\newcommand*{\ifftopfloat}[2]{#2}
\newcommand*{\iffbotfloat}[2]{#2}
```

File 211 `lwarp-needspace.sty`

§ 305 Package needspace

(*Emulates or patches code by* Peter Wilson.)

Pkg `needspace` needspace is not used during HTML conversion.

for HTML output: Discard all options for lwarp-needspace:

```
\LWR@ProvidesPackageDrop{needspace}

\DeclareDocumentCommand{\needspace}{m}{}
\DeclareDocumentCommand{\Needspace}{s m}{}
```

File 212 `lwarp-newclude.sty`

§ 306 Package newclude

Pkg `newclude` Error if newclude is loaded after lwarp.

Discard all options for lwarp-newclude:

for HTML output:

```
\LWR@ProvidesPackageDrop{newclude}

\LWR@loadbefore{newclude}
```

File 213 `lwarp-newunicodechar.sty`

§ 307 Package newunicodechar

Pkg `newunicodechar` Error if newunicodechar is loaded after lwarp.

Discard all options for lwarp-newunicodechar:

for HTML output:

```
\LWR@ProvidesPackageDrop{newunicodechar}

\LWR@loadbefore{newunicodechar}
```

File 214 `lwarp-nextpage.sty`

§ 308 Package nextpage

(*Emulates or patches code by* Peter Wilson.)

Pkg `nextpage` nextpage is nullified.

for HTML output: Discard all options for lwarp-nextpage.

```
\LWR@ProvidesPackageDrop{nextpage}

\DeclareDocumentCommand{\cleartoevenpage}{o}{}
\DeclareDocumentCommand{\movetoevenpage}{o}{}
\DeclareDocumentCommand{\cleartooddpage}{o}{}
\DeclareDocumentCommand{\movetooddpage}{o}{}
```

File 215 `lwarp-nicefrac.sty`

§ 309 Package nicefrac

(*Emulates or patches code by* Axel Reichert.)

Pkg `nicefrac` nicefrac is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{nicefrac}[1998/08/04]

\DeclareRobustCommand*{\LWR@HTML@@UnitsNiceFrac}[3][]{%
    {% localize font selection
        #1{%
            \LWR@textcurrentfont{%
                \InlineClass{numerator}{#2}%
                /%
                \InlineClass{denominator}{#3}%
            }%
        }%
    }%
}

\LWR@formatted{@UnitsNiceFrac}

\DeclareRobustCommand*{\LWR@HTML@@UnitsUglyFrac}[3][]{%
    {% localize font selection
```

```
        #1{\LWR@textcurrentfont{#2/#3}}%
    }%
}

\LWR@formatted{@UnitsUglyFrac}
```

For Mathjax:

```
\CustomizeMathJax{\newcommand{\nicefrac}[3][]{#2/#3}}
```

File 216 `lwarp-nonfloat.sty`

§ 310 Package nonfloat

(*Emulates or patches code by* Kai Rascher.)

Pkg `nonfloat` nonfloat is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{nonfloat}

\LetLtxMacro\topcaption\caption
\newcommand{\figcaption}{\def\@captype{figure}\caption}
\newcommand{\tabcaption}{\def\@captype{table}\topcaption}
\newenvironment{narrow}[2]{}{}
```

File 217 `lwarp-nonumonpart.sty`

§ 311 Package nonumonpart

Pkg `nonumonpart` nonumonpart is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{nonumonpart}
```

File 218 `lwarp-nopageno.sty`

§ 312 Package nopageno

Pkg `nopageno` nopageno is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{nopageno}
```

File 219 `lwarp-notespages.sty`

§ 313 Package notespages

Pkg `notespages` notespages is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{notespages}

\newcommand*{\npnotesname}{}
\newcommand*{\npnotestext}{}
\newcommand*{\remainingtextheight}{}
\newdimen\remainingtextheight
\newcommand*{\notestitletext}{}
\newcommand*{\notesareatext}{}
\newcommand*{\npnpinfo}[1]{}
\newcommand*{\tracingnpmarks}{}
\newcommand*{\notespage}[1][]{}
\newcommand*{\notespages}[1][]{}
\newcommand*{\notesfill}[1][]{}
\newcommand*{\setnotespages}[1]{}
\newcommand*{\definenotesoption}[2]{}
\newcommand{\definenotesstyle}[2]{}
\newcommand{\definetitlestyle}[2]{}
\newcommand{\nppatchchapter}[1]{}
\newcommand{\npunpatchchapter}{}
```

File 220 `lwarp-nowidow.sty`

§ 314 Package nowidow

(*Emulates or patches code by* Raphaël Pinson.)

Pkg `nowidow` nowidow is not used during HTML conversion.

Discard all options for lwarp-nowidow:

for HTML output:

```
\LWR@ProvidesPackageDrop{nowidow}
```

`\nowidow` [⟨*lines*⟩]

`\setnowidow` [⟨*lines*⟩]

```
\newcommand*{\nowidow}[1][]{}
```

```
3 \newcommand*{\setnowidow}[1][]{}
```

`\noclub` `[⟨lines⟩]`
`\setnoclub` `[⟨lines⟩]`

```
4 \newcommand*{\noclub}[1][]{}
5 \newcommand*{\setnoclub}[1][]{}
```

File 221 `lwarp-ntheorem.sty`

§ 315 Package ntheorem

(*Emulates or patches code by* Wolfgang May, Andreas Schedler.)

Pkg `ntheorem` ntheorem is patched for use by lwarp.

Table 15: Ntheorem package — css styling of theorems and proofs

Theorem: `<div>` of class `theorembody<theoremstyle>`

Theorem Header: `<span>` of class `theoremheader<style>`

where `<theoremstyle>` is `plain`, `break`, etc.

§ 315.1 Limitations

⚠ Font control This conversion is not total. Font control is via css, and the custom LaTeX font settings are ignored.

⚠ Equation numbering ntheorem has a bug with equation numbering in $\mathcal{AMS}$ environmentswhen the option `thref` is used. lwarp does not share this bug, so equations with `\split`, etc, are numbered correctly with lwarp's HTML output, but not with the print output. It is recommended to use cleveref instead of ntheorem's `thref` option.

§ 315.2 Options

Options `amsthm` or `standard` choose which set of theorems and proofs to initialize.

⚠ Disabled options The options `thmmarks` and `amsmath` are disabled, since they heavily modify the underlying math code. Theorem marks are emulated. The AMS-math modifications are not done.

Option `thref` is disabled because cleveref functions are used instead. `\thref` is emulated.

Option hyperref is disabled because lwarp emulated hyperref.

for HTML output: Some disabled options:

```
\DeclareOption{thref}{}


\newbool{LWR@ntheoremmarks}
\boolfalse{LWR@ntheoremmarks}

\DeclareOption{thmmarks}{
\booltrue{LWR@ntheoremmarks}
\newif\ifsetendmark\setendmarktrue
}


\newbool{LWR@ntheoremamsthm}
\boolfalse{LWR@ntheoremamsthm}

\DeclareOption{amsthm}{\booltrue{LWR@ntheoremamsthm}}


\DeclareOption{amsmath}{}
\DeclareOption{hyperref}{}

\LWR@ProvidesPackagePass{ntheorem}
```

§ 315.3 Remembering the theorem style

Storage for the style being used for new theorems.

```
\newcommand{\LWR@newtheoremstyle}{plain}

\AtBeginDocument{
\@ifpackageloaded{cleveref}{
\gdef\@thm#1#2#3{%
   \if@thmmarks
     \stepcounter{end\InTheoType ctr}%
   \fi
   \renewcommand{\InTheoType}{#1}%
   \if@thmmarks
     \stepcounter{curr#1ctr}%
     \setcounter{end#1ctr}{0}%
   \fi
   \refstepcounter[#1]{#2}%  <<< cleveref modification
   \theorem@prework
    \LWR@forcenewpage% lwarp
    \BlockClass{theorembody#1}%\LWR@thisthmstyle% lwarp
   \trivlist % latex's \trivlist, calling latex's \@trivlist unchanged
   \ifuse@newframeskips  % cf. latex.ltx for topsepadd: \@trivlist
```

```
    \ifthm@inframe
      \thm@topsep\theoreminframepreskipamount
      \thm@topsepadd\theoreminframepostskipamount
     \else
      \thm@topsep\theorempreskipamount
      \thm@topsepadd\theorempostskipamount
     \fi
   \else% oldframeskips
     \thm@topsep\theorempreskipamount
     \thm@topsepadd \theorempostskipamount
     \ifvmode\advance\thm@topsepadd\partopsep\fi
  \fi
  \@topsep\thm@topsep
  \@topsepadd\thm@topsepadd
  \advance\linewidth -\theorem@indent
  \advance\linewidth -\theorem@rightindent
  \advance\@totalleftmargin \theorem@indent
  \parshape \@ne \@totalleftmargin \linewidth
  \@ifnextchar[{\@ythm{#1}{#2}{#3}}{\@xthm{#1}{#2}{#3}}
}
}{% not @ifpackageloaded{cleveref}
\gdef\@thm#1#2#3{%
  \if@thmmarks
    \stepcounter{end\InTheoType ctr}%
  \fi
  \renewcommand{\InTheoType}{#1}%
  \if@thmmarks
    \stepcounter{curr#1ctr}%
    \setcounter{end#1ctr}{0}%
  \fi
  \refstepcounter{#2}%
  \theorem@prework
   \LWR@forcenewpage% lwarp
   \BlockClass{theorembody#1}%\LWR@thisthmstyle% lwarp
  \trivlist % latex's \trivlist, calling latex's \@trivlist unchanged
  \ifuse@newframeskips  % cf. latex.ltx for topsepadd: \@trivlist
    \ifthm@inframe
      \thm@topsep\theoreminframepreskipamount
      \thm@topsepadd\theoreminframepostskipamount
     \else
      \thm@topsep\theorempreskipamount
      \thm@topsepadd\theorempostskipamount
     \fi
   \else% oldframeskips
     \thm@topsep\theorempreskipamount
     \thm@topsepadd \theorempostskipamount
     \ifvmode\advance\thm@topsepadd\partopsep\fi
  \fi
  \@topsep\thm@topsep
  \@topsepadd\thm@topsepadd
```

```
   \advance\linewidth -\theorem@indent
   \advance\linewidth -\theorem@rightindent
   \advance\@totalleftmargin \theorem@indent
   \parshape \@ne \@totalleftmargin \linewidth
   \@ifnextchar[{\@ythm{#1}{#2}{#3}}{\@xthm{#1}{#2}{#3}}
}
}
}% AtBeginDocument
```

Patched to remember the style being used for new theorems:

```
\gdef\theoremstyle#1{%
   \@ifundefined{th@#1}{\@warning
           {Unknown theoremstyle `#1'. Using `plain'}%
           \theorem@style{plain}
             \renewcommand{\LWR@newtheoremstyle}{plain}% lwarp
             }%
      {
        \theorem@style{#1}
        \renewcommand{\LWR@newtheoremstyle}{#1}% lwarp
        }
}
```

Patched to remember the style for this theorem type, and set it later when the environment is started.

```

\gdef\@xnthm#1#2[#3]{%
  \ifthm@tempif
     \csedef{LWR@thmstyle#1}{\LWR@newtheoremstyle}% lwarp
     \expandafter\@ifundefined{c@#1}%
        {\@definecounter{#1}}{}%
     \@newctr{#1}[#3]%
     \expandafter\xdef\csname the#1\endcsname{%
       \expandafter\noexpand\csname the#3\endcsname \@thmcountersep
          {\noexpand\csname\the\theoremnumbering\endcsname{#1}}}%
     \expandafter\gdef\csname mkheader@#1\endcsname
       {\csname setparms@#1\endcsname
        \@thm{#1}{#1}{#2}
        }%
     \global\@namedef{end#1}{\@endtheorem}
     \AtBeginEnvironment{#1}{\edef\LWR@thisthmstyle{\@nameuse{LWR@thmstyle#1}}}% lwarp
  \fi
}

\gdef\@ynthm#1#2{%
  \ifthm@tempif
     \csedef{LWR@thmstyle#1}{\LWR@newtheoremstyle}% lwarp
     \expandafter\@ifundefined{c@#1}%
```

```
        {\@definecounter{#1}}{}%
     \expandafter\xdef\csname the#1\endcsname
        {\noexpand\csname\the\theoremnumbering\endcsname{#1}}%
     \expandafter\gdef\csname mkheader@#1\endcsname
       {\csname setparms@#1\endcsname
        \@thm{#1}{#1}{#2}
        }%
     \global\@namedef{end#1}{\@endtheorem}
     \AtBeginEnvironment{#1}{\edef\LWR@thisthmstyle{\@nameuse{LWR@thmstyle#1}}}% lwarp
  \fi
}

\gdef\@othm#1[#2]#3{%
  \@ifundefined{c@#2}{\@nocounterr{#2}}%
   {\ifthm@tempif
     \csedef{LWR@thmstyle#1}{\LWR@newtheoremstyle}% lwarp
     \global\@namedef{the#1}{\@nameuse{the#2}}%
     \expandafter\protected@xdef\csname num@addtheoremline#1\endcsname{%
              \noexpand\@num@addtheoremline{#1}{#3}}%
     \expandafter\protected@xdef\csname nonum@addtheoremline#1\endcsname{%
              \noexpand\@nonum@addtheoremline{#1}{#3}}%
    \theoremkeyword{#3}%
    \expandafter\protected@xdef\csname #1Keyword\endcsname
             {\the\theoremkeyword}%
     \expandafter\gdef\csname mkheader@#1\endcsname
       {\csname setparms@#1\endcsname
                \@thm{#1}{#2}{#3}
        }%
     \global\@namedef{end#1}{\@endtheorem}
     \AtBeginEnvironment{#1}{\edef\LWR@thisthmstyle{\@nameuse{LWR@thmstyle#1}}}% lwarp
  \fi}
}
```

§ 315.4 HTML cross-referencing

Mimics a float by incrementing the float counter and generating an HTML anchor. These are used for list-of-theorem cross-references.

```
\newcommand{\LWR@inctheorem}{%
\addtocounter{LWR@thisautoid}{1}%
\LWR@stoppars%
\LWR@htmltag{a id="\LWR@print@mbox{autoid-\arabic{LWR@thisautoid}}"}\LWR@htmltag{/a}%
\LWR@startpars%
}
```

§ 315.5 \newtheoremstyle

The following are patched for CSS.

These were in individual files `thp.sty` for plain, `thmb.sty` for margin break, etc. They are gathered together here.

Each theorem is encased in a `BlockClass` environment of class `theorembody<style>`.

Each header is encased in an `\InlineClass` of class `theoremheader<style>`.

```
\gdef\newtheoremstyle#1#2#3{%
  \expandafter\@ifundefined{th@#1}%
   {\expandafter\gdef\csname th@#1\endcsname{%
    \def\@begintheorem####1####2{%
    \LWR@inctheorem% lwarp
    #2}%
    \def\@opargbegintheorem####1####2####3{%
    \LWR@inctheorem% lwarp
    #3}%
}%
}%
{\PackageError{\basename}{Theorem style #1 already defined}\@eha}
}
```

§ 315.6 Standard styles

```
\renewtheoremstyle{plain}%
  {\item[
    \InlineClass{theoremheaderplain}{##1\ ##2\theorem@separator}]}%
  {\item[
    \InlineClass{theoremheaderplain}{##1\ ##2\ (##3)\theorem@separator}]}

\renewtheoremstyle{break}%
  {\item[
    \InlineClass{theoremheaderbreak}{##1\ ##2\theorem@separator}\newline
    ]}%
  {\item[
    \InlineClass{theoremheaderbreak}%
        {##1\ ##2\ (##3)\theorem@separator}\newline
    ]}

\renewtheoremstyle{change}%
  {\item[
    \InlineClass{theoremheaderchange}{##2\ ##1\theorem@separator}]}%
  {\item[
    \InlineClass{theoremheaderchange}{##2\ ##1\ (##3)\theorem@separator}]}

\renewtheoremstyle{changebreak}%
  {\item[
```

```
        \InlineClass{theoremheaderchangebreak}%
            {##2\ ##1\theorem@separator}\newline
    ]}%
  {\item[
        \InlineClass{theoremheaderchangebreak}%
            {##2\ ##1\ (##3)\theorem@separator}\newline
    ]}

\renewtheoremstyle{margin}%
  {\item[
        \InlineClass{theoremheadermargin}{##2 \qquad ##1\theorem@separator}
    ]}%
  {\item[
        \InlineClass{theoremheadermargin}{##2 \qquad ##1\ (##3)\theorem@separator}
    ]}

\renewtheoremstyle{marginbreak}%
  {\item[
    \InlineClass{theoremheadermarginbreak}%
        {##2 \qquad ##1\theorem@separator}\newline
    ]}%
  {\item[
    \InlineClass{theoremheadermarginbreak}%
        {##2 \qquad ##1\ (##3)\theorem@separator}\newline
    ]}

\renewtheoremstyle{nonumberplain}%
  {\item[
    \InlineClass{theoremheaderplain}{##1\theorem@separator}]}%
  {\item[
    \InlineClass{theoremheaderplain}{##1\ (##3)\theorem@separator}]}

\renewtheoremstyle{nonumberbreak}%
  {\item[
    \InlineClass{theoremheaderbreak}{##1\theorem@separator}\newline
    ]}%
  {\item[
    \InlineClass{theoremheaderbreak}{##1\ (##3)\theorem@separator}\newline
    ]}

\renewtheoremstyle{empty}%
  {\item[]}%
  {\item[
    \InlineClass{theoremheaderplain}{##3}]}

\renewtheoremstyle{emptybreak}%
  {\item[]}%
  {\item[
    \InlineClass{theoremheaderplain}{##3}] \ \newline}
```

§ 315.7 Additional objects

The following manually adjust the CSS for the standard configuration objects which are not a purely plain style:

```
\ifbool{LWR@ntheoremamsthm}{}{%
```

Upright text via CSS:

```
    \newtheoremstyle{plainupright}%
    {\item[
        \InlineClass{theoremheaderplain}{##1\ ##2\theorem@separator}]}%
    {\item[
        \InlineClass{theoremheaderplain}{##1\ ##2\ (##3)\theorem@separator}]}
```

Upright text and small caps header via CSS:

```
    \newtheoremstyle{nonumberplainuprightsc}%
    {\item[
        \InlineClass{theoremheadersc}{##1\theorem@separator}]}%
    {\item[
        \InlineClass{theoremheadersc}{##1\ (##3)\theorem@separator}]}
}% not amsthm
```

§ 315.8 Renewed standard configuration

The following standard configuration is renewed using the new CSS:

```
\ifbool{LWR@ntheoremamsthm}{}{%


\ifx\thm@usestd\@undefined
\else
    \theoremnumbering{arabic}
    \theoremstyle{plain}
    \RequirePackage{latexsym}
    \theoremsymbol{\Box}
    \theorembodyfont{\itshape}
    \theoremheaderfont{\normalfont\bfseries}
    \theoremseparator{}
    \renewtheorem{Theorem}{Theorem}
    \renewtheorem{theorem}{Theorem}
    \renewtheorem{Satz}{Satz}
    \renewtheorem{satz}{Satz}
    \renewtheorem{Proposition}{Proposition}
    \renewtheorem{proposition}{Proposition}
    \renewtheorem{Lemma}{Lemma}
    \renewtheorem{lemma}{Lemma}
    \renewtheorem{Korollar}{Korollar}
```

```
    \renewtheorem{korollar}{Korollar}
    \renewtheorem{Corollary}{Corollary}
    \renewtheorem{corollary}{Corollary}

    \theoremstyle{plainupright}
    \theorembodyfont{\upshape}
    \theoremsymbol{\HTMLunicode{25A1}}% UTF-8 white box
    \renewtheorem{Example}{Example}
    \renewtheorem{example}{Example}
    \renewtheorem{Beispiel}{Beispiel}
    \renewtheorem{beispiel}{Beispiel}
    \renewtheorem{Bemerkung}{Bemerkung}
    \renewtheorem{bemerkung}{Bemerkung}
    \renewtheorem{Anmerkung}{Anmerkung}
    \renewtheorem{anmerkung}{Anmerkung}
    \renewtheorem{Remark}{Remark}
    \renewtheorem{remark}{Remark}
    \renewtheorem{Definition}{Definition}
    \renewtheorem{definition}{Definition}

    \theoremstyle{nonumberplainuprightsc}
    \theoremsymbol{\HTMLunicode{220E}}% UTF-8 end-of-proof
    \renewtheorem{Proof}{Proof}
    \renewtheorem{proof}{Proof}
    \renewtheorem{Beweis}{Beweis}
    \renewtheorem{beweis}{Beweis}
    \qedsymbol{\HTMLunicode{220E}}% UTF-8 end-of-proof

    \theoremsymbol{}
\fi
}% not amsthm
```

§ 315.9 amsthm option

Only if the `amsthm` option was given:

```
\ifbool{LWR@ntheoremamsthm}{

\gdef\th@plain{%
  \def\theorem@headerfont{\normalfont\bfseries}\itshape%
  \def\@begintheorem##1##2{%
        \LWR@inctheorem% lwarp
      \item[
  \InlineClass{theoremheaderplain}{##1\ ##2.}
        ]}%
  \def\@opargbegintheorem##1##2##3{%
        \LWR@inctheorem% lwarp
     \item[
  \InlineClass{theoremheaderplain}{##1\ ##2\ (##3).}
```

```
        ]}}

\gdef\th@nonumberplain{%
  \def\theorem@headerfont{\normalfont\bfseries}\itshape%
  \def\@begintheorem##1##2{%
        \LWR@inctheorem% lwarp
      \item[
  \InlineClass{theoremheaderplain}{##1.}
        ]}%
  \def\@opargbegintheorem##1##2##3{%
        \LWR@inctheorem% lwarp
     \item[
  \InlineClass{theoremheaderplain}{##1\ (##3).}
        ]}}

\gdef\th@definition{%
  \def\theorem@headerfont{\normalfont\bfseries}\normalfont%
  \def\@begintheorem##1##2{%
        \LWR@inctheorem% lwarp
      \item[
  \InlineClass{theoremheaderdefinition}{##1\ ##2.}
        ]}%
  \def\@opargbegintheorem##1##2##3{%
        \LWR@inctheorem% lwarp
     \item[
  \InlineClass{theoremheaderdefinition}{##1\ ##2\ (##3).}
        ]}}

\gdef\th@nonumberdefinition{%
  \def\theorem@headerfont{\normalfont\bfseries}\normalfont%
  \def\@begintheorem##1##2{%
        \LWR@inctheorem% lwarp
      \item[
  \InlineClass{theoremheaderdefinition}{##1.}
        ]}%
  \def\@opargbegintheorem##1##2##3{%
        \LWR@inctheorem% lwarp
     \item[
  \InlineClass{theoremheaderdefinition}{##1\ (##3).}
        ]}}

\gdef\th@remark{%
  \def\theorem@headerfont{\itshape}\normalfont%
  \def\@begintheorem##1##2{%
        \LWR@inctheorem% lwarp
      \item[
  \InlineClass{theoremheaderremark}{##1\ ##2.}
        ]}%
  \def\@opargbegintheorem##1##2##3{%
        \LWR@inctheorem% lwarp
```

```
    \item[
  \InlineClass{theoremheaderremark}{##1\ ##2\ (##3).}
        ]}}

\gdef\th@nonumberremark{%
  \def\theorem@headerfont{\itshape}\normalfont%
  \def\@begintheorem##1##2{%
        \LWR@inctheorem% lwarp
     \item[
  \InlineClass{theoremheaderremark}{##1.}
        ]}%
  \def\@opargbegintheorem##1##2##3{%
        \LWR@inctheorem% lwarp
    \item[
  \InlineClass{theoremheaderremark}{##1\ (##3).}
        ]}}

\gdef\th@proof{%
  \def\theorem@headerfont{\normalfont\bfseries}\itshape%
  \def\@begintheorem##1##2{%
        \LWR@inctheorem% lwarp
     \item[
  \InlineClass{theoremheaderproof}{##1.}
        ]}%
  \def\@opargbegintheorem##1##2##3{%
        \LWR@inctheorem% lwarp
    \item[
  \InlineClass{theoremheaderproof}{##1\ (##3).}
        ]}}



\newcounter{proof}%
\if@thmmarks
    \newcounter{currproofctr}%
    \newcounter{endproofctr}%
\fi

\gdef\proofSymbol{\openbox}

\newcommand{\proofname}{Proof}

\newenvironment{proof}[1][\proofname]{
    \th@proof
    \def\theorem@headerfont{\itshape}%
    \normalfont
    \theoremsymbol{\HTMLunicode{220E}}% UTF-8 end-of-proof
    \@thm{proof}{proof}{#1}
}%
{\@endtheorem}
```

```
}{}% amsthm option
```

§ 315.10 Ending a theorem

Patched for css:

```
\let\LWR@origendtheorem\@endtheorem
\renewcommand{\@endtheorem}{%
\ifbool{LWR@ntheoremmarks}{%
    \ifsetendmark%
    \InlineClass{theoremendmark}{\csname\InTheoType Symbol\endcsname}%
    \setendmarkfalse%
    \fi%
}{}%
\LWR@origendtheorem% also does \@endtrivlist
\ifbool{LWR@ntheoremmarks}{\global\setendmarktrue}{}%
\endBlockClass%
}
```

§ 315.11 \NoEndMark

```
\gdef\NoEndMark{\global\setendmarkfalse}
```

§ 315.12 List-of

Redefined to reuse the float mechanism to add list-of-theorem links:

`\thm@thmline {`⟨*1: printed type*⟩`} {`⟨*2: #*⟩`} {`⟨*3: optional*⟩`} {`⟨*4: page*⟩`}`

```
\renewcommand{\thm@@thmline@noname}[4]{%
\hypertocfloat{1}{theorem}{thm}{#2 #3}{}%
}

\renewcommand{\thm@@thmline@name}[4]{%
\hypertocfloat{1}{theorem}{thm}{#1 #2 #3}{}%
}
```

This was redefined by ntheorem when loaded, so it is now redefined for lwarp:

```
\def\thm@@thmline{\thm@@thmline@name}
```

Patch for css:

```
\def\listtheorems#1{
\LWR@htmlelementclass{nav}{lothm}%
\begingroup
\c@tocdepth=-2%
```

```
\def\thm@list{#1}\thm@processlist
\endgroup
\LWR@htmlelementclassend{nav}{lothm}%
}
```

§ 315.13 Symbols

Proof QED symbol:

```
\newcommand{\qed}{\qquad\the\qedsymbol}

\AtBeginDocument{
\@ifundefined{LWR@orig@openbox}{
\LetLtxMacro\LWR@orig@openbox\openbox
\LetLtxMacro\LWR@orig@blacksquare\blacksquare
\LetLtxMacro\LWR@orig@Box\Box

\def\openbox{\text{\HTMLunicode{25A1}}}% UTF-8 white box
\def\blacksquare{\text{\HTMLunicode{220E}}}% UTF-8 end-of-proof
\def\Box{\text{\HTMLunicode{25A1}}}% UTF-8 white box

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\openbox\LWR@orig@openbox%
\LetLtxMacro\blacksquare\LWR@orig@blacksquare%
\LetLtxMacro\Box\LWR@orig@Box%
}% appto
}{}% @ifundefined
}% AtBeginDocument
```

§ 315.14 Cross-referencing

`\thref {`⟨*label*⟩`}`

```
\newcommand*{\thref}[1]{\cref{#1}}
```

File 222 `lwarp-octave.sty`

§ 316 Package octave

(*Emulates or patches code by* Andrew A. Cashner.)

Pkg `octave` octave is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{octave}[2017/10/31]
```

Remove the leading 1pt kern:

```
\RenewDocumentCommand{\@PrintTicks}{ m }{%
\kern-1pt%  lwarp
\@TickNum = #1%
\loop
\@Tick{}%
\advance\@TickNum by -1
\ifnum\@TickNum > 0
\repeat
}
```

Use unicode for the prime character:

```
\RenewDocumentCommand{\@Tick}{}{\HTMLunicode{2032}}
```

Catch the inline font:

```
\RenewDocumentCommand{\pitch}{ m o m }{%
\if@OctaveNumber%
{%
    \pitchfont{%
        \LWR@textcurrentfont{%  lwarp
            \MakeUppercase{#1}%
            \IfValueTF{#2}{#2}{}\textsubscript{#3}%
        }%
    }%
}%
\else%
{%
    \pitchfont{%
        \LWR@textcurrentfont{%  lwarp
            \@GetOctaveTick{#1}[#2]{#3}%
        }%
    }%
}%
\fi%
}
```

The original was hard to adapt to lwarp's handling of &.

```
\StartDefiningTabulars
\renewcommand{\octavetable}{%
\begin{tabular}{ll}
\octaveprimes \pitch{C}{0} & \octavenumbers \pitch{C}{0} \\
\octaveprimes \pitch{C}{1} & \octavenumbers \pitch{C}{1} \\
\octaveprimes \pitch{C}{2} & \octavenumbers \pitch{C}{2} \\
\octaveprimes \pitch{C}{3} & \octavenumbers \pitch{C}{3} \\
\octaveprimes \pitch{C}{4} & \octavenumbers \pitch{C}{4} \\
```

```
\octaveprimes \pitch{C}{5} & \octavenumbers \pitch{C}{5} \\
\octaveprimes \pitch{C}{6} & \octavenumbers \pitch{C}{6} \\
\octaveprimes \pitch{C}{7} & \octavenumbers \pitch{C}{7} \\
\end{tabular}
}
\StopDefiningTabulars
```

File 223 `lwarp-overpic.sty`

§ 317 Package overpic

(*Emulates or patches code by* Rolf Niepraschk.)

Pkg `overpic` overpic is patched for use by lwarp.

⚠ scaling The macros `\overpicfontsize` and `\overpicfontskip` are used during HTML generation. These are sent to `\fontsize` to adjust the font size for scaling differences between the print and HTML versions of the document. Renew these macros before using the `overpic` and `Overpic` environments.

See section 82.2 for the print-mode version of `\overpicfontsize` and `\overpicfontskip`.

for HTML output:

```
\LWR@ProvidesPackagePass{overpic}

\newcommand*{\overpicfontsize}{12}
\newcommand*{\overpicfontskip}{14}

\BeforeBeginEnvironment{overpic}{%
    \begin{lateximage}%
    \fontsize{\overpicfontsize}{\overpicfontskip}%
    \selectfont%
}

\AfterEndEnvironment{overpic}{\end{lateximage}}

\BeforeBeginEnvironment{Overpic}{%
    \begin{lateximage}%
    \fontsize{\overpicfontsize}{\overpicfontskip}%
    \selectfont%
}

\AfterEndEnvironment{Overpic}{\end{lateximage}}
```

File 224 `lwarp-pagegrid.sty`

§ 318 Package pagegrid

Pkg `pagegrid` pagegrid is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{pagegrid}
\newcommand*{\pagegridsetup}[1]{}
```

File 225 `lwarp-pagenote.sty`

§ 319 Package pagenote

Pkg `pagenote` pagenote works as-is, but the `page` option is disabled.

for HTML output:

```
\DeclareOption{page}{}
\LWR@ProvidesPackagePass{pagenote}
```

File 226 `lwarp-pagesel.sty`

§ 320 Package pagesel

Pkg `pagesel` pagesel is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{pagesel}
```

File 227 `lwarp-paralist.sty`

§ 321 Package paralist

(*Emulates or patches code by* Bernd Schandl.)

Pkg `paralist` paralist is supported with minor changes.

for HTML output:

```
\LWR@ProvidesPackagePass{paralist}
```

The compact environments are identical to the regular ones:

```
\LetLtxMacro\compactitem\itemize
\LetLtxMacro\compactenum\enumerate
\LetLtxMacro\compactdesc\description
\LetLtxMacro\endcompactitem\enditemize
\LetLtxMacro\endcompactenum\endenumerate
\LetLtxMacro\endcompactdesc\enddescription
```

For the inline environments, revert `\item` to its original print-mode version:

```
\AtBeginEnvironment{inparaitem}{\LetLtxMacro\item\LWR@origitem}
\AtBeginEnvironment{inparaenum}{\LetLtxMacro\item\LWR@origitem}
\AtBeginEnvironment{inparadesc}{\LetLtxMacro\item\LWR@origitem}
```

Manual formatting of the description labels:

```
\def\paradescriptionlabel#1{{\normalfont\textbf{#1}}}
```

File 228 **lwarp-parnotes.sty**

§ 322 Package

parnotes

(*Emulates or patches code by* Chelsea Hughes.)

Pkg parnotes parnotes is supported with some patches.

for HTML output:

```
\LWR@ProvidesPackagePass{parnotes}

\long\def\PN@parnote@real#1#2{%
    \parnotemark{#1}%
    % Unless this is the first parnote in \PN@text, add a separator first
    \unless\ifx\PN@text\@empty\g@addto@macro\PN@text{\parnoteintercmd}\fi
    % Redefine \@currentlabel to the parnote label, so \label works
    \g@addto@macro\PN@text{%
%         \phantomsection%
        \def\@currentlabel{#1}%
        \def\cref@currentlabel{%        lwarp
            [parnotemark][\arabic{parnotemark}][]\theparnotemark%
        }%
    }%
    \g@addto@macro\PN@text{%
        \LWR@textcurrentfont{%          lwarp
            \parnotemark{#1}\nolinebreak\thinspace#2%
        }%
    }%
```

```
}

\def\PN@parnotes@real{%
    % We call \par later, so this avoids recursion with \PN@parnotes@auto
    \PN@inparnotestrue
    \unless\ifvmode\par\fi
    % Avoid page breaks between a paragraph and its parnotes
    \nopagebreak\addvspace{\parnotevskip}%
    \LWR@forcenewpage%                  lwarp
    \begin{BlockClass}{footnotes}%      lwarp
    {\parnotefmt{\PN@text}\par}%
    \end{BlockClass}%                   lwarp
    \global\def\PN@text{}%
    \addvspace{\parnotevskip}%
    %
    % These can be enabled or disabled by package options
    %
    \PN@disable@indent
    \PN@reset@optional
    \PN@inparnotesfalse
}

\AtBeginDocument{
\crefname{parnotemark}{paragraph note}{paragraph notes}
\Crefname{parnotemark}{Paragraph note}{Paragraph notes}
}
```

File 229 `lwarp-parskip.sty`

§ 323 Package parskip

Pkg `parskip` parskip is ignored.

for HTML output: Discard all options for lwarp-parskip.

```
\LWR@ProvidesPackageDrop{parskip}
```

File 230 `lwarp-pbox.sty`

§ 324 Package pbox

(*Emulates or patches code by* Simon Law.)

Pkg `pbox` pbox is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{pbox}

\NewDocumentCommand{\pbox}{O{t} o O{t} m +m}{%
\booltrue{LWR@minipagefullwidth}%
\parbox[#1][#2][#3]{#4}{#5}%
}

\newcommand{\settominwidth}[3][\columnwidth]{%
\settowidth{#2}{#3}%
}

\newcommand{\widthofpbox}[1]{%
\widthof{#1}%
}
```

File 231 **lwarp-pdfcomment.sty**

§ 325 Package pdfcomment

Pkg `pdfcomment` pdfcomment is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{pdfcomment}[2016/06/13]

\newenvironment{pdfsidelinecomment}[2][]{}{}
\newcommand{\pdfcomment}[2][]{}
\newcommand{\pdfmargincomment}[2][]{}
\newcommand{\pdfmarkupcomment}[3][]{#2}
\newcommand{\pdffreetextcomment}[2][]{}
\newcommand{\pdfsquarecomment}[2][]{}
\newcommand{\pdfcirclecomment}[2][]{}
\newcommand{\pdflinecomment}[2][]{}
\newcommand{\pdftooltip}[3][]{#2}
\newcommand{\pdfcommentsetup}[2][]{}
\newcommand{\listofpdfcomments}[1][]{}
\newcommand{\setliststyle}[1]{}
\newcommand{\defineliststyle}[2]{}
\newcommand{\defineavatar}[2]{}
\newcommand{\definestyle}[2]{}
```

File 232 **lwarp-pdflscape.sty**

§ 326 Package pdflscape

Pkg `pdflscape` pdflscape is ignored.

for HTML output: Discard all options for lwarp-pdflscape:

```
\LWR@ProvidesPackageDrop{pdflscape}
```

File 233 `lwarp-pdfmarginpar.sty`

§ 327 Package pdfmarginpar

Pkg `pdfmarginpar` pdfmarginpar is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{pdfmarginpar}[2011/08/05]

\newcommand{\pdfmarginpar}[2][]{}
\newcommand{\pdfmarginparset}[1]{}
```

File 234 `lwarp-pdfpages.sty`

§ 328 Package pdfpages

(*Emulates or patches code by* Andreas Matthias.)

Pkg `pdfpages` pdfpages is patched for use by lwarp.

Option `link` and `linkname` work:

```
\hyperlink{<filename>.pdf.<pagenubmer}}{some text}
\hyperlink{<linkname>.<pagenubmer}}{some text}
```

Options which make no sense in HTML are disabled.

for HTML output:

```
\LWR@ProvidesPackagePass{pdfpages}
```

Disable option which have no meaning for HTML output:

```
\define@key{pdfpages}{fitpaper}[false]{}
\define@key{pdfpages}{landscape}[false]{}
\define@key{pdfpages}{openright}[false]{}
\define@key{pdfpages}{signature}{}
\define@key{pdfpages}{signature*}{}
```

```
\define@key{pdfpages}{booklet}[false]{}
\define@key{pdfpages}{rotateoversize}[false]{}
\define@key{pdfpages}{doublepages}[false]{}
\define@key{pdfpages}{doublepagestwist}[false]{}
\define@key{pdfpages}{doublepagestwistodd}[false]{}
\define@key{pdfpages}{doublepagestwist*}[false]{}
\define@key{pdfpages}{doublepagestwistodd*}[false]{}
\define@key{pdfpages}{duplicatepages}[2]{}
\define@key{pdfpages}{thread}[false]{}
\define@key{pdfpages}{threadname}{}
\define@key{pdfpages}{linkfit}{}
\define@key{pdfpages}{linktodoc}[false]{}
\define@key{pdfpages}{linktodocfit}{}
\define@key{pdfpages}{linkfilename}{}
\define@key{pdfpages}{survey}[false]{}
\define@key{pdfpages}{survey-nolink}[false]{}
\define@key{pdfpages}{newwindow}[false]{}
```

Use print mode while measuring the page numbers:

```
\xpretocmd{\AM@getpagecount}{\LWR@restoreorigformatting}{}{}
```

Emulate a bit of eso-pic:

```
\newif\ifESO@texcoord

\newcommand{\ESO@HookIIBG}{}

\renewcommand{\AM@AddToShipoutPicture}{\g@addto@macro\ESO@HookIIBG}

\renewcommand{\ClearShipoutPicture}{}
```

`\LWR@esopic@newpage` At each `\newpage`.

```
\newcommand*{\LWR@esopic@newpage}{%
```

Is there something to draw?

```
\ifdefvoid{\ESO@HookIIBG}%
{}%
{%
```

If the `link` option was specified, add a hyper taraget:

```
    \ifAM@link%
        \hypertarget{\AM@linkname.\AM@page}{}%
    \fi%
```

Draw inside a picture environment of the size of a virtual page:

```
    \begingroup%
```

```
    \setlength{\unitlength}{1in}%
    \begin{picture}(8,10.5)%
    \ESO@HookIIBG%
    \end{picture}%
    \endgroup%
    \global\let\ESO@HookIIBG\@empty%
}
}
```

`\AM@output` Patched to use `\LWR@esopic@newpage`.

```
\xpatchcmd{\AM@output}
    {\newpage}
    {\LWR@esopic@newpage}
    {}
    {\LWR@patcherror{pdfpages}{AM@output-1}}

\xpatchcmd{\AM@output}
    {\newpage}
    {\LWR@esopic@newpage}
    {}
    {\LWR@patcherror{pdfpages}{AM@output-2}}

\xpatchcmd{\AM@output}
    {\newpage}
    {\LWR@esopic@newpage}
    {}
    {\LWR@patcherror{pdfpages}{AM@output-3}}
```

`\includepdf` Patched to set a reasonable paper size.

```
\xpretocmd{\includepdf}{%
    \begingroup%
    \setlength{\paperwidth}{8in}%
    \setlength{\paperheight}{10.5in}%
}{}{}

\xapptocmd{\includepdf}{%
    \endgroup%
}{}{}
```

`\includepdfmerge` Patched to set a reasonable paper size.

```
\xpretocmd{\includepdfmerge}{%
    \begingroup%
    \setlength{\paperwidth}{8in}%
    \setlength{\paperheight}{10.5in}%
}{}{}

```

```
\xapptocmd{\includepdfmerge}{%
    \endgroup%
}{}{}
```

\AM@hyper@begin@i Hyper links are created by \LWR@esopic@newpage, so don't create them here:

```
\renewcommand{\AM@hyper@begin@i}{}
```

File 235 `lwarp-pdfprivacy.sty`

§ 329 Package pdfprivacy

Pkg pdfprivacy pdfprivacy is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{pdfprivacy}
```

File 236 `lwarp-pdfrender.sty`

§ 330 Package pdfrender

Pkg pdfrender pdfrender is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{pdfrender}

\newcommand*{\pdfrender}[1]{}
\newcommand{\textpdfrender}[2]{#2}
```

File 237 `lwarp-pdfsync.sty`

§ 331 Package pdfsync

(*Emulates or patches code by* J. Laurens.)

Pkg pdfsync Emulated.

for HTML output: Discard all options for lwarp-pdfsync:

```
\LWR@ProvidesPackageDrop{pdfsync}

\newcommand*{\pdfsync}{}
\newcommand*{\pdfsyncstart}{}
\newcommand*{\pdfsyncstop}{}
```

File 238 `lwarp-pdftricks.sty`

§ 332 Package pdftricks

(*Emulates or patches code by* C. V. Radhakrishnan, C. V. Rajagopal, Antoine Chambert-Loir.)

Pkg `pdftricks` pdftricks is patched for use by lwarp.

⚠ convert image files The pdftricks image files `<jobname>-fig*.pdf` must be converted to `.svg`, or else a missing file error will occur. The image files must also be converted again whenever they change. To convert the images:

Enter ⇒ `lwarpmk pdftosvg <jobname>-fig*.pdf`

for HTML output:

```
\LWR@ProvidesPackagePass{pdftricks}
```

Reuse the print-mode images:

```
\def\PDFTfigname{\BaseJobname-fig\thepsfig}
```

If the `.pdf` images have not yet been converted to `.svg` then an error about a missing file will occur. Warn the user to convert the images.

```
\PackageWarning{lwarp-pdftricks}{
When the pdftricks images change,
remember to convert PDF images to SVG using 'lwarpmk pdftosvg *-fig.pdf',
}

\AfterEndDocument{\typeout{***}}
\AfterEndDocument{\typeout{*** Note: If pdftricks images are not found, new, or updated,}}
\AfterEndDocument{\typeout{*** \space use 'lwarpmk pdftosvg \BaseJobname-fig*.pdf'}}
\AfterEndDocument{\typeout{***}}
```

File 239 `lwarp-pdfx.sty`

§ 333 Package pdfx

Pkg `pdfx` pdfx is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{pdfx}
```

File 240 `lwarp-pfnote.sty`

§ 334 Package pfnote

Pkg `pfnote` pfnote is emulated.

⚠ pfnote numbers While emulating pfnote, lwarp is not able to reset HTML footnote numbers per page number to match the printed version, as HTML has no concept of page numbers. lwarp therefore uses continuous footnote numbering even for pfnote.

for HTML output:

```
\LWR@ProvidesPackageDrop{pfnote}
```

File 241 `lwarp-phfqit.sty`

§ 335 Package phfqit

(*Emulates or patches code by* Philippe Faist.)

Pkg `phfqit` phfqit is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{phfqit}

\LetLtxMacro\LWR@origbitstring\bitstring

\renewcommand\bitstring[1]{%
\InlineClass[%
    text-decoration: overline underline ;
]{bitstring}{#1}%
% \phfqit@bitstring{#1}%
}

\appto\LWR@restoreorigformatting{%
\LetLtxMacro\bitstring\LWR@origbitstring%
}
```

File 242 `lwarp-placeins.sty`

§ 336 Package placeins

(*Emulates or patches code by* Donald Arseneau.)

Pkg placeins placeins is not used during HTML conversion.

Discard all options for lwarp-placeins:

for HTML output:

```
\LWR@ProvidesPackageDrop{placeins}
\newcommand*{\FloatBarrier}{}
```

File 243 `lwarp-prelim2e.sty`

§ 337 Package prelim2e

(*Emulates or patches code by* Martin Schröder.)

Pkg prelim2e Emulated.

for HTML output: Discard all options for lwarp-prelim2e:

```
\LWR@ProvidesPackageDrop{prelim2e}
\newcommand{\PrelimText}{}
\newcommand{\PrelimTextStyle}{}
\newcommand{\PrelimWords}{}
```

File 244 `lwarp-prettyref.sty`

§ 338 Package prettyref

(*Emulates or patches code by* Kevin S. Ruland.)

Pkg prettyref prettyref is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{prettyref}
\newrefformat{fig}{Figure \ref{#1}}
\newrefformat{tab}{Table \ref{#1}}
```

File 245 `lwarp-preview.sty`

§ 339 Package preview

Pkg preview preview is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{preview}[2017/04/24]

\newenvironment{preview}{}{}
\newenvironment{nopreview}{}{}
\NewDocumentCommand{\PreviewMacro}{s o o +m}{}
\NewDocumentCommand{\PreviewEnvironment}{s o o +m}{}
\newcommand{\PreviewSnarfEnvironment}[2][]{}
\NewDocumentCommand{\PreviewOpen}{s o}{}
\NewDocumentCommand{\PreviewClose}{s o}{}
\let\ifPreview\iffalse% \fi for syntax highlighting
```

File 246 `lwarp-psfrag.sty`

§ 340 Package psfrag

(*Emulates or patches code by* Michael C. Grant, David Carlisle.)

Pkg `psfrag` psfrag is patched for use by lwarp.

⚠ use psfrags The psfrags environment is modified to use lateximage to encapsulate the image. Always use a psfrags environment to contain any local \psfrag macros and the associated \includegraphics or \epsfig calls. Outside of a psfrags environment, psfrags adjustments will not be seen by lwarp.

⚠ Tip: Use a mono-spaced font for the tags in the EPS file.

for HTML output:

```
\LWR@ProvidesPackagePass{psfrag}[1998/04/11]
```

A lateximage captures the modified image from the document.

```
\BeforeBeginEnvironment{psfrags}{%
    \begin{lateximage}[(-psfrags-~\packagediagramname)]%
}

\AfterEndEnvironment{psfrags}{\end{lateximage}}
```

File 247 `lwarp-psfragx.sty`

§ 341 Package psfragx

(*Emulates or patches code by* Pascal Kockaert.)

Pkg `psfragx` psfragx is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{psfragx}[2012/05/02]
```

A `lateximage` captures the modified image from the document.

```
\def\pfx@includegraphicx#1#2{%
    \begin{lateximage}[(-psfragx-~\packagediagramname)]%
    \mbox{\pfx@overpix{#1}{#2}\endpfx@overpix}%
    \end{lateximage}%
}

\def\@@@overpix[#1]<#2>[#3]#4{%
    \begin{lateximage}[(-psfragx-~\packagediagramname)]%
    \pfx@overpix{#1,ovpfgd={#2},ovpbgd={#3}}{#4}%
}

\def\endoverpix{%
    \endpfx@overpix%
    \end{lateximage}%
}
```

File 248 **lwarp-pst-eps.sty**

§ 342 Package pst-eps

(*Emulates or patches code by* Herbert Voss.)

Pkg `pst-eps` pst-eps is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{pst-eps}

\renewenvironment{TeXtoEPS}{}{}
\renewcommand{\PSTtoEPS}[3][]{}
```

File 249 **lwarp-pstool.sty**

§ 343 Package pstool

(*Emulates or patches code by* Zebb Prime, Will Robertson.)

Pkg `pstool` pstool is patched for use by lwarp.

`\graphicspath` is ignored, and the file directory must be stated.

⚠ path and filename The filename must not have a file extension.

Use

Enter ⇒ `lwarpmk html`

followed by

Enter ⇒ `lwarpmk limages`

.

for HTML output:

```
\LWR@ProvidesPackagePass{pstool}
```

Each image is placed inside a `lateximage` to capture the results of psfrag.

```
\renewcommand\pstool@alwaysprocess[3][]{%
    \begin{lateximage}[(-pstool-~\packagediagramname)]%
    \includegraphics{#2.pdf}%
    \end{lateximage}%
}
\LetLtxMacro\pstool@neverprocess\pstool@alwaysprocess
\LetLtxMacro\pstool@maybeprocess\pstool@alwaysprocess

\renewcommand\pstool@@psfragfig[4]{%
    \begin{lateximage}[(-pstool-~\packagediagramname)]%
    \includegraphics{#2.pdf}%
    \end{lateximage}%
}
```

File 250 **`lwarp-pstricks.sty`**

§ 344 Package

pstricks

(*Emulates or patches code by* Timothy Van Zandt.)

Pkg `pstricks` pstricks is patched for use by lwarp.

⚠ use `pspicture` All pstricks content should be contained inside a `pspicture` environment.

for HTML output:

```
\LWR@ProvidesPackagePass{pstricks}

\BeforeBeginEnvironment{pspicture}{\begin{lateximage}[(pspicture)]}
\AfterEndEnvironment{pspicture}{\end{lateximage}}
```

File 251 `lwarp-quotchap.sty`

§ 345 Package

quotchap

(*Emulates or patches code by* Karsten Tinnefeld, Jan Klever.)

Pkg `quotchap` quotchap is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{quotchap}

\newcommand{\@quotchap}{}
\newlength{\LWR@quotchapwidth}

\let\@printcites\relax

\newcommand*{\@iprintcites}{%
```

Place the quotes inside a `<div>` of class `quotchap`, of the maximum selected width:

```
\begin{BlockClass}[max-width: \LWR@printlength{\LWR@quotchapwidth}]{quotchap}
%\begin{minipage}{\LWR@quotchapwidth}
\@quotchap
%\end{minipage}
\end{BlockClass}
```

Deactivate the quote printing:

```
\global\let\@printcites\relax
}

\NewEnviron{savequote}[1][\linewidth]{%
```

Remember the width, adjusted for HTML, and make the length assignment global, per:
https://tex.stackexchange.com/questions/300823/why-is-setlength-ineffective-inside-a-tabular-environment

```
\setlength{\LWR@quotchapwidth}{#1*2}%
\global\LWR@quotchapwidth=\LWR@quotchapwidth%
```

Remember the body, and activate the quote printing:

```
\global\let\@quotchap\BODY
\global\let\@printcites\@iprintcites%
```

```
}
```

The quotation author is placed inside a of class qauthor:

```
\newcommand{\qauthor}[1]{\begin{BlockClass}{qauthor}{#1}\end{BlockClass}}
```

\qsetcnfont is ignored:

```
\newcommand{\qsetcnfont}[1]{}
```

File 252 `lwarp-quoting.sty`

§ 346 Package quoting

(*Emulates or patches code by* Thomas Titz.)

Pkg quoting quoting is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{quoting}

\xpatchcmd{\quoting}{\quo@begintext}
    {\begin{LWR@blocktextcurrentfont}\quo@begintext}
    {}
    {\LWR@patcherror{quoting}{quoting}}

\xpatchcmd{\endquoting}{\quo@endtext}
    {\quo@endtext\end{LWR@blocktextcurrentfont}}
    {}
    {\LWR@patcherror{imakeidx}{endquoting}}
```

File 253 `lwarp-ragged2e.sty`

§ 347 Package ragged2e

(*Emulates or patches code by* Martin Schröder.)

Pkg ragged2e ragged2e is not used during HTML conversion.

Discard all options for lwarp-ragged2e:

for HTML output:

```
\LWR@ProvidesPackageDrop{ragged2e}

\LetLtxMacro\Centering\centering
```

```
\LetLtxMacro\RaggedLeft\raggedleft
\LetLtxMacro\RaggedRight\raggedright
\newcommand*{\justifying}{}
\newlength{\CenteringLeftskip}
\newlength{\RaggedLeftLeftskip}
\newlength{\RaggedRightLeftskip}
\newlength{\CenteringRightskip}
\newlength{\RaggedLeftRightskip}
\newlength{\RaggedRightRightskip}
\newlength{\CenteringParfillskip}
\newlength{\RaggedLeftParfillskip}
\newlength{\RaggedRightParfillskip}
\newlength{\JustifyingParfillskip}
\newlength{\CenteringParindent}
\newlength{\RaggedLeftParindent}
\newlength{\RaggedRightParindent}
\newlength{\JustifyingParindent}
\newenvironment*{Center}{\center}{\endcenter}
\newenvironment*{FlushLeft}{\flushleft}{\endflushleft}
\newenvironment*{FlushRight}{\flushright}{\endflushright}
\newenvironment*{justify}{\justifying}{\endjustifying}
```

File 254 `lwarp-realscripts.sty`

§ 348 Package realscripts

(*Emulates or patches code by* Will Robertson.)

Pkg `realscripts` realscripts is emulated. See `lwarp.css` for the `<span>` of class `supsubscript`.

for HTML output:

```
\LWR@ProvidesPackageDrop{realscripts}

\let\realsuperscript\textsuperscript
\let\realsubscript\textsubscript

\let\fakesuperscript\textsuperscript
\let\fakesubscript\textsubscript

\newlength{\subsupersep}

\newcommand*{\LWR@realscriptsalign}{}

\newcommand*{\LWR@setrealscriptsalign}[1]{%
\renewcommand*{\LWR@realscriptsalign}{}%
\ifthenelse{\equal{#1}{c}}{%
    \renewcommand{\LWR@realscriptsalign}{\LWR@print@mbox{text-align:center} ; }%
}{}%
```

```
\ifthenelse{\equal{#1}{r}}{%
    \renewcommand{\LWR@realscriptsalign}{\LWR@print@mbox{text-align:right} ; }%
}{}%
}
\DeclareDocumentCommand \textsubsuperscript {s O{l} mm} {%
\LWR@setrealscriptsalign{#2}%
\InlineClass[\LWR@realscriptsalign]{supsubscript}{%
\textsuperscript{#4}\textsubscript{#3}%
}%
}
\DeclareDocumentCommand \textsupersubscript {s O{l} mm} {%
\LWR@setrealscriptsalign{#2}%
\InlineClass[\LWR@realscriptsalign]{supsubscript}{%
\textsubscript{#4}\textsuperscript{#3}%
}%
}
```

File 255 `lwarp-refcheck.sty`

§ 349 Package refcheck

Pkg `refcheck` refcheck is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{refcheck}[2013/02/14]

\def\showrefnames{}
\def\norefnames{}
\def\showcitenames{}
\def\nocitenames{}
\def\setonmsgs{}
\def\setoffmsgs{}
\def\checkunlbld{}
\def\ignoreunlbld{}
\newcommand*{\refcheckxrdoc}[2][]{}
```

File 256 `lwarp-register.sty`

§ 350 Package register

(*Emulates or patches code by* Matthew Lovell.)

Pkg `register` register is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{register}[2018/11/10]

\xpatchcmd{\register}
    {\centering}
    {\begin{center}\begin{lateximage}[(-register-~\packagediagramname)]}
    {}
    {\LWR@patcherror{register}{register}}

\xpatchcmd{\endregister}
    {\leftskip}
    {%
        \end{lateximage}\end{center}%
        \leftskip%
    }%
    {}
    {\LWR@patcherror{register}{endregister}}

\expandafter\xapptocmd\csname register*\endcsname
    {\begin{center}\begin{lateximage}[(-register-~\packagediagramname)]}
    {}
    {\LWR@patcherror{register}{register*}}

\expandafter\xpatchcmd\csname endregister*\endcsname
    {\leftskip}
    {%
        \end{lateximage}\end{center}%
        \leftskip%
    }%
    {}
    {\LWR@patcherror{register}{endregister*}}

\setlength{\regWidth}{5in}
```

File 257 `lwarp-relsize.sty`

§ 351 Package relsize

(*Emulates or patches code by* Donald Arseneau, Bernie Cosell, Matt Swift.)

Pkg `relsize` relsize is patched for use by lwarp.

For HTML, only the inline macros are supported: `\textlarger`, `\textsmaller`, and `\textscale`. Each becomes an inline span of a modified `font-size`.

`\relsize`, `\larger`, `\smaller`, and `\relscale` are ignored.

While creating SVG math for HTML, the original definitions are temporarilty restored, and so should work as expected.

⚠ not small The HTML browser's setting for minumum font size may limit how small the output will be displayed.

for HTML output:

```
\LWR@ProvidesPackagePass{relsize}

\let\LWR@origrelsize\relsize
\LetLtxMacro\LWR@origlarger\larger
\LetLtxMacro\LWR@origsmaller\smaller
\let\LWR@relscale\relscale
\LetLtxMacro\LWR@origtextlarger\textlarger
\LetLtxMacro\LWR@origtextsmaller\textsmaller
\let\LWR@textscale\textscale

\appto\LWR@restoreorigformatting{%
\let\relsize\LWR@origrelsize%
\LetLtxMacro\larger\LWR@origlarger%
\LetLtxMacro\smaller\LWR@origsmaller%
\let\relscale\LWR@relscale%
\LetLtxMacro\textlarger\LWR@origtextlarger%
\LetLtxMacro\textsmaller\LWR@origtextsmaller%
\let\textscale\LWR@textscale%
}

\newcounter{LWR@relsizetemp}

\renewcommand*{\relsize}[1]{}
\renewcommand*{\larger}[1][]{}
\renewcommand*{\smaller}[1][]{}
\renewcommand*{\relscale}[1]{}

\renewcommand*{\textlarger}[2][1]{%
\setcounter{LWR@relsizetemp}{100+(#1*20)}%
\InlineClass[font-size:\arabic{LWR@relsizetemp}\%]{textlarger}{#2}%
}

\renewcommand*{\textsmaller}[2][1]{%
\setcounter{LWR@relsizetemp}{100-(#1*20)}%
\InlineClass[font-size:\arabic{LWR@relsizetemp}\%]{textsmaller}{#2}%
}

\renewcommand*{\textscale}[2]{%
\setcounter{LWR@relsizetemp}{100*\real{#1}}%
\InlineClass[font-size:\arabic{LWR@relsizetemp}\%]{textscale}{#2}%
}
```

File 258 `lwarp-repeatindex.sty`

§ 352 Package

repeatindex

Pkg `repeatindex`

repeatindex is emulated for lwarp.

lwarp must be used with a special style file:

```
\usepackage[makeindex,makeindexStyle={lwarp_repeatindex}]{lwarp}
```

where `lwarp_repeatindex.ist` may be copied from the following modified version of `lwarp.ist`:

```
preamble
"\\begin{theindex}
  \\providecommand*\\lettergroupDefault[1]{}
  \\providecommand*\\lettergroup[1]{%
      \\par\\textbf{#1}\\par
      \\nopagebreak
  }
"
headings_flag 1
heading_prefix "
  \\lettergroup{"
heading_suffix "}"
delim_0 "], \\hyperindexref{"
delim_1 ", \\hyperindexref{"
delim_2 ", \\hyperindexref{"
delim_n "}, \\hyperindexref{"
delim_r "} -- \\hyperindexref{"
delim_t "}"

item_0 "\n  \\item ["
```

(The modifications are the `delim_0` and `item_0` entries.)

for HTML output:

```
\LWR@ProvidesPackageDrop{repeatindex}[2001/10/13]
```

In the lwarp core, `\LWR@indexitem` is modified to accept the optional `\item` argument.

```
\RequirePackage{makeidx}
```

```
\def\entryprefix{\itshape}
\def\entrypostfix{\dots}
```

File 259 `lwarp-resizegather.sty`

§ 353 Package resizegather

Pkg `resizegather` resizegather is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{resizegather}
```

```
\newcommand*{\resizegathersetup}[1]{}
```

File 260 `lwarp-romanbar.sty`

§ 354 Package romanbar

(*Emulates or patches code by* H.-Martin Münch.)

Pkg `romanbar` romanbar is patched for use by lwarp.

An inline class with an overline and underline is used.

for HTML output:

```
\LWR@ProvidesPackagePass{romanbar}
```

```
\DeclareRobustCommand{\Roman@bar}[1]{% #1 is in Roman, i.e. MMXII
\InlineClass[%
    text-decoration: overline underline ;
]{romanbar}{#1}%
}
```

File 261 `lwarp-romanbarpagenumber.sty`

§ 355 Package romanbarpagenumber

Pkg `romanbarpagenumber` romanbarpagenumber is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{romanbarpagenumber}
```

File 262 `lwarp-rotating.sty`

§ 356 Package rotating

(*Emulates or patches code by* Robin Fairbairns, Sebastian Rahtz, Leonor Barroca.)

Pkg `rotating` rotating is emulated.

All rotations are ignored in HTML output.

for HTML output:

```
\LWR@ProvidesPackageDrop{rotating}

\LetLtxMacro\sidewaystable\table
\let\endsidewaystable\endtable

\LetLtxMacro\sidewaysfigure\figure
\let\endsidewaysfigure\endfigure

\newenvironment*{sideways}{}{}
\newenvironment*{turn}[1]{}{}
\newenvironment*{rotate}[1]{}{}
\NewDocumentCommand{\turnbox}{m +m}{#2}
\let\rotcaption\caption
\let\@makerotcaption\@makecaption
```

File 263 `lwarp-rotfloat.sty`

§ 357 Package rotfloat

(*Emulates or patches code by* Axel Sommerfeldt.)

Pkg `rotfloat` rotfloat is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{rotfloat}[2004/01/04]

\RequirePackage{float}
```

`\newfloat` `{`⟨*1: type*⟩`}` `{`⟨*2: placement*⟩`}` `{`⟨*3: ext*⟩`}` `[`⟨*4: within*⟩`]`

Emulates the `\newfloat` command from the float package. Sideways floats are `\let` to the same as regular floats.

"placement" is ignored.

```
\RenewDocumentCommand{\newfloat}{m m m o}{%
\IfValueTF{#4}%
{%
    \DeclareFloatingEnvironment[fileext=#3,within=#4]{#1}%
}%
{%
    \DeclareFloatingEnvironment[fileext=#3]{#1}%
}%
\csletcs{sideways#1}{#1}%
\csletcs{endsideways#1}{end#1}%
```

Remember the float style:

```
\csedef{LWR@floatstyle@#1}{\LWR@floatstyle}%
\csedef{LWR@floatstyle@sideways#1}{\LWR@floatstyle}%
```

newfloat package automatically creates the `\listof` command for new floats, but float does not, so remove `\listof` here in case it is manually created later:

```
\cslet{listof#1s}\relax%
\cslet{listof#1es}\relax%
\cslet{listofsideways#1s}\relax%
\cslet{listofsideways#1es}\relax%
}
```

File 264 `lwarp-rviewport.sty`

§ 358 Package rviewport

Pkg `rviewport`

rviewport is honored inside a `lateximage`, and otherwise ignored for HTML output.

If rviewport is important for an image, enclose the image inside a `lateximage` environment.

for HTML output:

```
\LWR@ProvidesPackagePass{rviewport}[2011/08/27]
```

```
\define@key{igraph}{rviewport}{}
```

File 265 `lwarp-savetrees.sty`

§ 359 Package savetrees

Pkg `savetrees` Emulated.

for HTML output: Discard all options for lwarp-savetrees:

```
\LWR@ProvidesPackageDrop{savetrees}
```

File 266 `lwarp-scalefnt.sty`

§ 360 Package scalefnt

(*Emulates or patches code by* D. Carlisle.)

Pkg `scalefnt` scalefnt is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{scalefnt}
\DeclareRobustCommand\scalefont[1]{}
```

File 267 `lwarp-schemata.sty`

§ 361 Package schemata

(*Emulates or patches code by* Charles P. Schaum.)

Pkg `schemata` schemata is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{schemata}

\LetLtxMacro\LWR@schemata@origschema\schema
\LetLtxMacro\LWR@schemata@origSchema\Schema

\renewcommand{\schema}[3][open]{%
\begin{lateximage}%
\LWR@print@normalsize
\LWR@schemata@origschema[#1]{#2}{#3}%
\end{lateximage}%
```

```
}

\renewcommand{\Schema}[5][open]{%
\begin{lateximage}%
\LWR@print@normalsize
\LWR@schemata@origSchema[#1]{#2}{#3}{#4}{#5}%
\end{lateximage}%
}
```

File 268 **lwarp-scrextend.sty**

§ 362 Package scrextend

Pkg `scrextend` scrextend is emulated.

This package may be loaded standalone, but is also loaded automatically if koma-script classes are in use. `\DeclareDocumentCommand` is used to overwrite the koma-script definitions.

for HTML output:

```
\LWR@ProvidesPackageDrop{scrextend}

\DeclareDocumentCommand{\setkomafont}{m m}{}
\DeclareDocumentCommand{\addkomafont}{m m}{}
\DeclareDocumentCommand{\usekomafont}{m}{}

\DeclareDocumentCommand{\usefontofkomafont}{m}{}
\DeclareDocumentCommand{\useencodingofkomafont}{m}{}
\DeclareDocumentCommand{\usesizeofkomafont}{m}{}
\DeclareDocumentCommand{\usefamilyofkomafont}{m}{}
\DeclareDocumentCommand{\useseriesofkomafont}{m}{}
\DeclareDocumentCommand{\useshapeofkomafont}{m}{}

\AtBeginDocument{
\let\LWR@maketitle\maketitle
\DeclareDocumentCommand{\maketitle}{o}{\LWR@maketitle}
}

\DeclareDocumentCommand{\extratitle}{m}{}
\DeclareDocumentCommand{\titlehead}{m}{}
\DeclareDocumentCommand{\subject}{m}{}
\DeclareDocumentCommand{\publishers}{m}{\published{#1}}
\DeclareDocumentCommand{\uppertitleback}{m}{}
\DeclareDocumentCommand{\lowertitleback}{m}{}
\DeclareDocumentCommand{\dedication}{m}{}

\DeclareDocumentCommand{\ifthispageodd}{m m}{#1}

```

```
\DeclareDocumentCommand{\titlepagestyle}{}{}

\DeclareDocumentCommand{\cleardoublepageusingstyle}{m}{}
\DeclareDocumentCommand{\cleardoubleemptypage}{}{}
\DeclareDocumentCommand{\cleardoubleplainpage}{}{}
\DeclareDocumentCommand{\cleardoublestandardpage}{}{}
\DeclareDocumentCommand{\cleardoubleoddpage}{}{}
\DeclareDocumentCommand{\cleardoubleoddpageusingstyle}{m}{}
\DeclareDocumentCommand{\cleardoubleoddemptypage}{}{}
\DeclareDocumentCommand{\cleardoubleoddplainpage}{}{}
\DeclareDocumentCommand{\cleardoubleoddstandardpage}{}{}
\DeclareDocumentCommand{\cleardoubleevenpage}{}{}
\DeclareDocumentCommand{\cleardoubleevenpageusingstyle}{m}{}
\DeclareDocumentCommand{\cleardoubleevenemptypage}{}{}
\DeclareDocumentCommand{\cleardoubleevenplainpage}{}{}
\DeclareDocumentCommand{\cleardoubleevenstandardpage}{}{}

\DeclareDocumentCommand{\multiplefootnoteseparator}{}{%
  \begingroup\let\thefootnotemark\multfootsep\@makefnmark\endgroup
}

\DeclareDocumentCommand{\multfootsep}{}{,}

\DeclareDocumentCommand{\footref}{m}{%
  \begingroup
    \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
  \endgroup
  \@footnotemark
}

\DeclareDocumentCommand{\deffootnote}{o m m m}{}
\DeclareDocumentCommand{\deffootnotemark}{m}{}
\DeclareDocumentCommand{\setfootnoterule}{o m}{}
\DeclareDocumentCommand{\raggedfootnote}{}{}

\DeclareDocumentCommand{\dictum}{o m}{
\begin{LWR@BlockClassWP}{\LWR@print@mbox{text-align:right}}{}{dictum}
    #2
    \IfValueT{#1}
    {
        \ifbool{FormatWP}
        {\begin{BlockClass}[\LWR@print@mbox{border-top:} 1px solid gray]{dictumauthor}}
        {\begin{BlockClass}{dictumauthor}}
        \dictumauthorformat{#1}
        \end{BlockClass}
    }
\end{LWR@BlockClassWP}
}

\DeclareDocumentCommand{\dictumwidth}{}{}
```

```
\DeclareDocumentCommand{\dictumauthorformat}{m}{(#1)}
\DeclareDocumentCommand{\dictumrule}{}{}
\DeclareDocumentCommand{\raggeddictum}{}{}
\DeclareDocumentCommand{\raggeddictumtext}{}{}
\DeclareDocumentCommand{\raggeddictumauthor}{}{}

\DeclareDocumentEnvironment{labeling}{o m}
{%
\def\sc@septext{#1}%
\list{}{}%
\let\makelabel\labelinglabel%
}
{
\endlist
}

\DeclareDocumentCommand{\labelinglabel}{m}{%
#1 \qquad \sc@septext%
}

\let\addmargin\relax
\let\endaddmargin\relax
\cslet{addmargin*}{\relax}
\cslet{endaddmargin*}{\relax}

\NewDocumentEnvironment{addmargin}{s O{} m}
{
\setlength{\LWR@templengthtwo}{#3}
\ifblank{#2}
{
    \begin{BlockClass}[
        \LWR@print@mbox{margin-left:\LWR@printlength{\LWR@templengthtwo}} ;
        \LWR@print@mbox{margin-right:\LWR@printlength{\LWR@templengthtwo}}
    ]{addmargin}
}
{
    \setlength{\LWR@templengthone}{#2}
    \begin{BlockClass}[
        \LWR@print@mbox{margin-left:\LWR@printlength{\LWR@templengthone}} ;
        \LWR@print@mbox{margin-right:\LWR@printlength{\LWR@templengthtwo}}
    ]{addmargin}
}
}
{\end{BlockClass}}
```

Ref to create a starred environment:
https://tex.stackexchange.com/questions/45401/use-the-s-star-argument-with-newdocumentenvironment

```
\ExplSyntaxOn
\cs_new:cpn {addmargin*} {\addmargin*}
\cs_new_eq:cN {endaddmargin*} \endaddmargin
\ExplSyntaxOff

\DeclareDocumentCommand{\marginline}{m}{\marginpar{#1}}
```

File 269 **lwarp-scrhack.sty**

§ 363 Package scrhack

Pkg `scrhack` scrhack is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{scrhack}
```

File 270 **lwarp-scrlayer.sty**

§ 364 Package scrlayer

(*Emulates or patches code by* Markus Kohm.)

Pkg `scrlayer` scrlayer is emulated.

⚠ Not fully tested! Please send bug reports!

for HTML output:

```
\LWR@ProvidesPackageDrop{scrlayer}

\newcommand*{\DeclareSectionNumberDepth}[2]{}
\newcommand*{\DeclareLayer}[2][]{}
\newcommand*{\DeclareNewLayer}[2][]{}
\newcommand*{\ProvideLayer}[2][]{}
\newcommand*{\RedeclareLayer}[2][]{}
\newcommand*{\ModifyLayer}[2][]{}
\newcommand*{\layerhalign}{}
\newcommand*{\layervalign}{}
\newcommand*{\layerxoffset}{}
\newcommand*{\layeryoffset}{}
\newcommand*{\layerwidth}{}
\newcommand*{\layerheight}{}
\providecommand*{\LenToUnit}[1]{\strip@pt\dimexpr#1*\p@/\unitlength}
\newcommand*{\putUL}[1]{}
\newcommand*{\putUR}[1]{}
\newcommand*{\putLL}[1]{}
```

```
\newcommand*{\putLR}[1]{}
\newcommand*{\putC}[1]{}
\newcommand*{\GetLayerContents}[1]{}
\newcommand{\IfLayerExists}[3]{#3}
\newcommand*{\DestroyLayer}[1]{}
\newcommand*{\layercontentsmeasure}{}
\newcommand*{\currentpagestyle}{}
\newcommand*{\BeforeSelectAnyPageStyle}[1]{}
\newcommand*{\AfterSelectAnyPageStyle}[1]{}
\newcommand*{\DeclarePageStyleAlias}[2]{}
\newcommand*{\DeclareNewPageStyleAlias}[2]{}
\newcommand*{\ProvidePageStyleAlias}[2]{}
\newcommand*{\RedeclarePageStyleAlias}[2]{}
\newcommand*{\DestroyPageStyleAlias}[1]{}
\newcommand*{\GetRealPageStyle}[1]{}
\newcommand*{\DeclarePageStyleByLayers}[3][]{}
\newcommand*{\DeclareNewPageStyleByLayers}[3][]{}
\newcommand*{\ProvidePageStyleByLayers}[3][]{}
\newcommand*{\RedeclarePageStyleByLayers}[3][]{}
\NewDocumentCommand{\ForEachLayerOfPageStyle}{s m m}{}
\newcommand*{\AddLayersToPageStyle}[2]{}
\newcommand*{\AddLayersAtBeginOfPageStyle}[2]{}
\newcommand*{\AddLayersAtEndOfPageStyle}[2]{}
\newcommand*{\RemoveLayersFromPageStyle}[2]{}
\newcommand*{\AddLayersToPageStyleBeforeLayer}[3]{}
\newcommand*{\AddLayersToPageStyleAfterLayer}[3]{}
\newcommand*{\UnifyLayersAtPageStyle}[1]{}
\newcommand*{\ModifyLayerPageStyleOptions}[2]{}
\newcommand*{\AddToLayerPageStyleOptions}[2]{}
\newcommand{\IfLayerPageStyleExists}[3]{#3}
\newcommand{\IfRealLayerPageStyleExists}[3]{#3}
\newcommand{\IfLayerAtPageStyle}[4]{#4}
\newcommand{\IfSomeLayerAtPageStyle}[4]{#4}
\newcommand{\IfLayersAtPageStyle}[4]{#4}
\newcommand*{\DestroyRealLayerPageStyle}[1]{}
\@ifundefined{footheight}{\newlength\footheight}{}
\DeclareDocumentCommand{\automark}{s o m}{}
\DeclareDocumentCommand{\manualmark}{}{}
\DeclareDocumentCommand{\MakeMarkcase}{m}{#1}
\DeclareDocumentCommand{\GenericMarkFormat}{}{}
\newcommand*{\@mkleft}[1]{}
\newcommand*{\@mkright}[1]{}
\newcommand*{\@mkdouble}[1]{}
\newcommand*{\@mkboth}[2]{}
\newcommand*{\scrlayerInitInterface}[1][]{}
\newcommand{\scrlayerAddToInterface}[3][]{}
\newcommand{\scrlayerAddCsToInterface}[3][]{}
\newcommand{\scrlayerOnAutoRemoveInterface}[2][]{}
```

File 271 `lwarp-scrlayer-notecolumn.sty`

§ 365 Package scrlayer-notecolumn

(*Emulates or patches code by* Markus Kohm.)

Pkg `scrlayer-notecolumn` scrlayer-notecolumn is emulated.

⚠ Not fully tested! Please send bug reports!

for HTML output:

```
\LWR@ProvidesPackageDrop{scrlayer-notecolumn}

\newcommand*{\DeclareNoteColumn}[2][]{}
\newcommand*{\DeclareNewNoteColumn}[2][]{}
\newcommand*{\ProvideNoteColumn}[2][]{}
\newcommand*{\RedeclareNoteColumn}[2][]{}
\NewDocumentCommand{\makenote}{s o m}{\marginpar{#3}}
\newcommand*{\syncwithnotecolumn}[1][]{}
\newcommand*{\syncwithnotecolumns}[1][]{}
\newcommand*{\clearnotecolumn}[1][]{}
\newcommand*{\clearnotecolumns}[1][]{}
```

File 272 `lwarp-scrlayer-scrpage.sty`

§ 366 Package scrlayer-scrpage

(*Emulates or patches code by* Markus Kohm.)

Pkg `scrlayer-scrpage` scrlayer-scrpage is emulated.

⚠ Not fully tested! Please send bug reports!

for HTML output:

```
\LWR@ProvidesPackageDrop{scrlayer-scrpage}

\@ifundefined{footheight}{\newlength\footheight}{}
\NewDocumentCommand{\lehead}{s o m}{}
\NewDocumentCommand{\cehead}{s o m}{}
\NewDocumentCommand{\rehead}{s o m}{}
\NewDocumentCommand{\lohead}{s o m}{}
\NewDocumentCommand{\cohead}{s o m}{}
\NewDocumentCommand{\rohead}{s o m}{}
\NewDocumentCommand{\lefoot}{s o m}{}
\NewDocumentCommand{\cefoot}{s o m}{}
```

```
\NewDocumentCommand{\refoot}{s o m}{}
\NewDocumentCommand{\lofoot}{s o m}{}
\NewDocumentCommand{\cofoot}{s o m}{}
\NewDocumentCommand{\rofoot}{s o m}{}
\NewDocumentCommand{\ohead}{s o m}{}
\NewDocumentCommand{\chead}{s o m}{}
\NewDocumentCommand{\ihead}{s o m}{}
\NewDocumentCommand{\ofoot}{s o m}{}
\NewDocumentCommand{\cfoot}{s o m}{}
\NewDocumentCommand{\ifoot}{s o m}{}
\DeclareDocumentCommand{\automark}{s o m}{}
\DeclareDocumentCommand{\manualmark}{}{}
\DeclareDocumentCommand{\MakeMarkcase}{m}{#1}
\DeclareDocumentCommand{\GenericMarkFormat}{}{}
\newcommand*{\defpairofpagestyles}[3][]{}
\newcommand*{\newpairofpagestyles}[3][]{}
\newcommand*{\renewpairofpagestyles}[3][]{}
\newcommand*{\providepairofpagestyles}[3][]{}
\newcommand*{\clearmainofpairofpagestyles}
\newcommand*{\clearplainofpairofpagestyles}
\newcommand*{\clearpairofpagestyles}
\NewDocumentCommand{\deftriplepagestyle}{m o o m m m m m m}{}
\NewDocumentCommand{\newtriplepagestyle}{m o o m m m m m m}{}
\NewDocumentCommand{\renewtriplepagestyle}{m o o m m m m m m}{}
\NewDocumentCommand{\providetriplepagestyle}{m o o m m m m m m}{}
\newcommand*{\defpagestyle}[3]{}
\newcommand*{\newpagestyle}[3]{}
\newcommand*{\providepagestyle}[3]{}
\newcommand*{\renewpagestyle}[3]{}
```

File 273 **lwarp-section.sty**

§ 367 Package section

Pkg `section` section is ignored.

(*Emulates or patches code by* Oliver Pretzel.)

for HTML output:

```
\LWR@ProvidesPackageDrop{section}

\ifx\chapter\undefined
 \def\chsize{\Large}\def\hdsize{\huge}\else
 \def\chsize{\huge}\def\hdsize{\Huge}
\fi
\let\ttsize\LARGE
\let\ausize\large
\let\dasize\large
```

```
\let\secsize\Large
\let\subsize\large
\let\hdpos\raggedright
\newcounter{hddepth}
\let\fpind\relax
\def\ttfnt{}
\def\hdfnt{}
\def\fefnt{}
\def\thfnt{}
\def\pgfnt{}
\def\hmkfnt{}
\let\mkcse\uppercase
\def\hddot{}
\def\cpdot{:}
\def\nmdot{}
\ifx\secindent\undefined
 \newdimen\secindent
 \newskip\secpreskp
 \newskip\secpstskp
 \newdimen\subindent
 \newskip\subpreskp
 \newskip\subpstskp
 \newskip\parpstskp
 \newcount\c@hddepth
\fi
```

File 274 `lwarp-sectionbreak.sty`

§ 368 Package sectionbreak

(*Emulates or patches code by* Michal Hoftich.)

Pkg `sectionbreak` sectionbreak is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{sectionbreak}

\renewcommand\asterism{\HTMLunicode{2042}}

\renewcommand\pre@sectionbreak{}
\renewcommand\post@sectionbreak{}

\renewcommand\print@sectionbreak[1]{%
\begin{center}
#1
\end{center}
}

```

File 275 `lwarp-sectsty.sty`

§ 369 Package sectsty

(*Emulates or patches code by* Rowland McDonnell.)

Pkg `sectsty` sectsty is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{sectsty}

\newcommand*{\partfont}          [1] {}
\newcommand*{\partnumberfont}    [1] {}
\newcommand*{\parttitlefont}     [1] {}
\newcommand*{\chapterfont}       [1] {}
\newcommand*{\chapternumberfont} [1] {}
\newcommand*{\chaptertitlefont}  [1] {}
\newcommand*{\sectionfont}       [1] {}
\newcommand*{\subsectionfont}    [1] {}
\newcommand*{\subsubsectionfont} [1] {}
\newcommand*{\paragraphfont}     [1] {}
\newcommand*{\subparagraphfont}  [1] {}
\newcommand*{\minisecfont}  [1] {}
\newcommand*{\allsectionsfont}[1] {}
\newcommand{\nohang}{}
```

`\sectionrule` is only to be used in `*font` commands, thus it is ignored.

```
\newcommand*{\sectionrule}[5]{}

\def\ulemheading#1#2{}
```

File 276 `lwarp-semantic-markup.sty`

§ 370 Package semantic-markup

(*Emulates or patches code by* Andrew A. Cashner.)

Pkg `semantic-markup` semantic-markup is patched for use by lwarp.

⚠ If using the `endnotes` option, add `\theendnotes` where desired.

for HTML output:

```
\LWR@ProvidesPackagePass{semantic-markup}[2018/05/21]
```

The endnotes must be printed by the user before the end of the document, since the end is after the HTML footer, etc.

```
\ifendnotes
\RenewDocumentCommand{\SetupEndnotes}{}{%
    \let\footnote=\endnote
%     \AtEndDocument{\DoBeforeEndnotes{\EndnoteFont\theendnotes}}%
}
\fi
```

HTML unicode characters from musicography are used.

```
\RequirePackage{musicography}

\let\fl\musFlat
\let\sh\musSharp
\let\na\musNatural
```

The `\musfig` is placed inside a hashed image, with a simple `alt` tag.

```
\RequirePackage{amsmath}

\RenewDocumentCommand{\musfig}{ m m }{%
    \LWR@subsingledollar*%
        {#1/#2}% alt tag
        {musfig}% addl' hashing
        {% contents
            \LWR@origensuredmath{%
                \genfrac{}{}{0pt}{1}{\text{#1}}{\text{#2}}%
            }%
        }%
}
```

The `\meter` is taken from musicography, and becomes a hashed image with a simple `alt` tag.

```
\RenewDocumentCommand{\meter}{ m m }{%
    \musMeter{#1}{#2}%
}
```

File 277 **lwarp-setspace.sty**

§ 371 Package setspace

(*Emulates or patches code by* Robin Fairbairns.)

Pkg `setspace` setspace is not used during HTML conversion.

Discard all options for lwarp-setspace:

for HTML output:

```
\LWR@ProvidesPackageDrop{setspace}

\newcommand*{\setstretch}[1]{}
\newcommand*{\SetSinglespace}[1]{}
\newcommand*{\singlespacing}{}
\newcommand*{\onehalfspacing}{}
\newcommand*{\doublespacing}{}

\newenvironment*{singlespace}
{
\LWR@forcenewpage
\BlockClass{singlespace}
}
{\endBlockClass}

\newenvironment*{singlespace*}
{
\LWR@forcenewpage
\BlockClass{singlespace}
}
{\endBlockClass}

\newenvironment*{spacing}[1]{

}{

}

\newenvironment*{onehalfspace}
{
\LWR@forcenewpage
\BlockClass{onehalfspace}
}
{\endBlockClass}

\newenvironment*{doublespace}
{
\LWR@forcenewpage
\BlockClass{doublespace}
}
{\endBlockClass}
```

File 278 `lwarp-shadow.sty`

§ 372 Package shadow

(*Emulates or patches code by* Mauro Orlandini.)

Pkg `shadow` shadow is emulated.

for HTML output: Discard all options for lwarp-shadow:

```
\LWR@ProvidesPackageDrop{shadow}

\newdimen\sboxsep
\newdimen\sboxrule
\newdimen\sdim

\newcommand{\shabox}[1]{%
\InlineClass{shabox}{#1}%
}
```

File 279 `lwarp-showidx.sty`

§ 373 Package showidx

Pkg `showidx` showidx is ignored.

for HTML output: Discard all options for lwarp-showidx:

```
\LWR@ProvidesPackageDrop{showidx}
```

`\@wrindex` is redefined `\AtBeginDocument` by the lwarp core.

File 280 `lwarp-showkeys.sty`

§ 374 Package showkeys

(*Emulates or patches code by* David Carlisle, Morten Høgholm.)

Pkg `showkeys` showkeys is ignored.

for HTML output:

Discard all options for lwarp-showkeys:

```
\LWR@ProvidesPackageDrop{showkeys}

\NewDocumentCommand{\showkeys}{s}{}
```

File 281 `lwarp-sidecap.sty`

§ 375 Package sidecap

(*Emulates or patches code by* Rolf Niepraschk, Hubert Gässlein.)

Pkg `sidecap` sidecap is emulated.

for HTML output: Discard all options for lwarp-sidecap.

```
\LWR@ProvidesPackageDrop{sidecap}
```

See:
http://tex.stackexchange.com/questions/45401/use-the-s-star-argument-with-newdocumentenvironment
regarding the creation of starred environments with xparse.

```
\NewDocumentEnvironment{SCtable}{soo}
{\IfValueTF{#3}{\table[#3]}{\table}}
{\endtable}

\ExplSyntaxOn
\cs_new:cpn {SCtable*} {\SCtable*}
\cs_new_eq:cN {endSCtable*} \endSCtable
\ExplSyntaxOff


\NewDocumentEnvironment{SCfigure}{soo}
{\IfValueTF{#3}{\figure[#3]}{\figure}}
{\endfigure}

\ExplSyntaxOn
\cs_new:cpn {SCfigure*} {\SCfigure*}
\cs_new_eq:cN {endSCfigure*} \endSCfigure
\ExplSyntaxOff


\newenvironment*{wide}{}{}
```

File 282 `lwarp-sidenotes.sty`

§ 376 Package sidenotes

(*Emulates or patches code by* Andy Thomas, Oliver Schebaum.)

Pkg `sidenotes` Patched for lwarp.

for HTML output: Load the original package:

```
\LWR@ProvidesPackagePass{sidenotes}
```

The following patch sidenotes for use with lwarp:

`\sidecaption` `* [⟨entry⟩] [⟨offset⟩] {⟨text⟩}`

```
\RenewDocumentCommand \sidecaption {s o o +m}
{
    \LWR@stoppars
    \begingroup
  \captionsetup{style=sidecaption}
  \IfBooleanTF{#1}
  { % starred
    \begin{BlockClass}[border:none ; box-shadow:none]{marginblock}
    \caption*{#4}
    \end{BlockClass}
  }
  { % unstarred
  \IfNoValueOrEmptyTF{#2}
    {\def\@sidenotes@sidecaption@tof{#4}}
    {\def\@sidenotes@sidecaption@tof{#2}}
    \begin{BlockClass}[border:none ; box-shadow:none]{marginblock}
    \caption[\@sidenotes@sidecaption@tof]{#4}
    \end{BlockClass}
  }
    \endgroup
    \LWR@startpars
}
```

Borrowed from the lwarp version of keyfloat:

```
\NewDocumentEnvironment{KFLTsidenotes@marginfloat}{O{-1.2ex} m}
{% start
\LWR@BlockClassWP{float:right; width:2in; margin:10pt}{}{marginblock}%
\captionsetup{type=#2}%
```

```
}
{%
\endLWR@BlockClassWP%
}

\RenewDocumentEnvironment{marginfigure}{o}
  {\begin{KFLTsidenotes@marginfloat}{figure}}
  {\end{KFLTsidenotes@marginfloat}}

\RenewDocumentEnvironment{margintable}{o}
  {\begin{KFLTsidenotes@marginfloat}{table}}
  {\end{KFLTsidenotes@marginfloat}}
```

The following were changed by sidenotes, and now are reset back to their lwarp-supported originals:

Restoring the definition from the LaTeX 2_ε `article.cls` source:

```
\renewenvironment{figure*}
               {\@dblfloat{figure}}
               {\end@dblfloat}

\renewenvironment{table*}
               {\@dblfloat{table}}
               {\end@dblfloat}
```

File 283 **`lwarp-SIunits.sty`**

§ 377 Package

SIunits

(*Emulates or patches code by* Marcel Heldoorn.)

Pkg `SIunits` SIunits is patched for use by lwarp.

It is recommended to use `\unit` where possible, which combines the entire expression into a single `lateximage`, and adds the `alt` tag containing the LaTeX code, allowing for copy/paste. When units are used outside of the `\unit` macro, each unit macro will have its own `lateximage`, and each will have the `alt` tag set to "`(<\mathimagename>)`", which defaults to "`(math image)`".

for HTML output:

```
\LWR@ProvidesPackagePass{SIunits}
```

Patched for copy/paste with the HTML `alt` tag:

```
\DeclareRobustCommand{\unit}[2]{%
\@inunitcommandtrue%    original
```

```
\LWR@subsingledollar*%  lwarp
{% alt tag
    \textbackslash{}unit\{\LWR@HTMLsanitize{#1}\}%
        \{ \LWR@HTMLsanitize{#2}\}% extra space
}%
{SIunits}% add'l hashing
{%
    \LWR@origensuredmath{%  lwarp modification
        \SI@fstyle{#1\@qsk\period@active{#2}}%  original
    }%
}% contents
\@inunitcommandfalse%   original
}
```

File 284 **lwarp-siunitx.sty**

§ 378 Package siunitx

(*Emulates or patches code by* Joseph Wright.)

Pkg siunitx siunitx is patched for use by lwarp.

fractions Due to *pdftotext* limitations, fraction output is replaced by symbol output for `per-mode` and `quotient-mode`.

⚠ math mode required Some units will require that the expression be placed inside math mode.

NOTE: As of this writing, the siunitx extension for MathJax is not currently hosted at any public CDN, thus siunitx is not usable with MathJax unless a local copy of this extension is created first.

⚠ tabular Tabular `S` columns are rendered as simple `c` columns, and tabular `s` columns are not supported. These may be replaced by `c` columns with each cell contained in `\num` or `\si`.

for HTML output:

```
\RequirePackage{xcolor}% for \convertcolorspec

\LWR@ProvidesPackagePass{siunitx}


\AtBeginDocument{% in case textcomp was not loaded
\DeclareSIUnit\bohr{\textit{a}\textsubscript{0}}
\DeclareSIUnit\clight{\textit{c}\textsubscript{0}}
\DeclareSIUnit\elementarycharge{\textit{e}}
\DeclareSIUnit\electronmass{\textit{m}\textsubscript{e}}
\DeclareSIUnit\hartree{\textit{E}\textsubscript{h}}
\DeclareSIUnit\planckbar{\LWR@siunitx@textplanckbar}
}% AtBeginDocument
```

\@ensuredmath is not supported inside an \hbox, so it must temporarily be restored to its original. Similar for \mbox. SVG math is created explicitly when necessary, using \LWR@subsingledollar.

```
\ExplSyntaxOn
%
```

Modified to set set HTML \textcolor if not black:

```
\cs_undefine:N \__siunitx_print_aux:
\cs_new_protected:Npn \__siunitx_print_aux:
  {
    \text
      {
        \__siunitx_ensure_ltr:n
          {
            \color@begingroup
            \__siunitx_print_color:
            \__siunitx_font_shape:
            \__siunitx_font_weight:
            \use:c
              {
                @@_ \l__siunitx_print_type_tl _
                text \l__siunitx_font_family_tl :
              }
            \bool_if:NTF \l__siunitx_font_math_mode_bool
              { \__siunitx_print_math: }
              {
                \LWR@findcurrenttextcolor% lwarp
                \ifdefstring{\LWR@tempcolor}{000000}% lwarp
                {\__siunitx_print_text:}% lwarp
                {% lwarp
                    \LWR@textcurrentcolor{% lwarp
                        \__siunitx_print_text:
                    }% lwarp
                }% lwarp
              }
            \color@endgroup
          }
      }
  }


\cs_undefine:N \__siunitx_set_math_fam:n
\cs_new_protected:Npn \__siunitx_set_math_fam:n #1 {
  \int_new:c { c__siunitx_math #1 _int }
  \group_begin:% lwarp
    \LetLtxMacro\@ensuredmath\LWR@origensuredmath% lwarp
```

```
    \LetLtxMacro\mbox\LWR@print@mbox% lwarp
    \hbox_set:Nn \l__siunitx_tmp_box
      {
        \ensuremath
          {
            \use:c { math #1 }
              {
                \int_gset:cn { c__siunitx_math #1 _int } { \fam }
              }
          }
      }
  \group_end:% lwarp
}

\cs_undefine:N \__siunitx_combined_output:n
\cs_new_protected:Npn \__siunitx_combined_output:n #1 {
    \group_begin:% lwarp
    \LetLtxMacro\@ensuredmath\LWR@origensuredmath% lwarp
    \LetLtxMacro\mbox\LWR@print@mbox% lwarp
  \bool_if:NTF \l__siunitx_number_parse_bool
    {
      \tl_clear:N \l__siunitx_number_out_tl
      \bool_set_false:N \l__siunitx_number_compound_bool
      \__siunitx_number_output_parse:n {#1}
    }
    {
      \__siunitx_unit_output_pre_print:
```

For `parse-numbers=false`:

```
%       \__siunitx_print:nn { number } { \ensuremath {#1} }
        \LWR@subsingledollar{% lwarp
            \textbackslash( \LWR@HTMLsanitize{#1} \textbackslash)% lwarp
        }{siunitx}{%
            \__siunitx_print:nn { number } {%
                \LWR@origensuredmath{#1}%
            }%
        }% lwarp

      \__siunitx_unit_output_print:
    }
    \group_end:% lwarp
}
%
```

For quotients, the fraction code is replaced by the symbol code:

```
\cs_undefine:N \__siunitx_number_output_quotient_fraction:
\cs_new_protected:Npn \__siunitx_number_output_quotient_fraction: {
```

```
  \bool_set_true:N \l__siunitx_number_compound_bool
  \__siunitx_number_output_quotient_aux_i:
  \tl_set_eq:NN \l__siunitx_number_out_tl
    \l__siunitx_number_numerator_tl
  \tl_put_right:NV \l__siunitx_number_out_tl \l__siunitx_output_quotient_tl
  \tl_put_right:NV \l__siunitx_number_out_tl
    \l__siunitx_number_denominator_tl
  \__siunitx_number_output_single_aux:
}
```

For units, the fraction code is replaced by the symbol code:

```
\cs_undefine:N \__siunitx_unit_format_fraction_fraction:
\cs_new_protected:Npn \__siunitx_unit_format_fraction_fraction: {
  \__siunitx_unit_format_fraction_symbol_aux:
  \int_compare:nNnT { \l__siunitx_unit_denominator_int } > { 1 }
    {
      \bool_if:NT \l__siunitx_unit_denominator_bracket_bool
        {
          \tl_put_left:NV \l__siunitx_unit_denominator_tl \l__siunitx_bracket_open_tl
          \tl_put_right:NV \l__siunitx_unit_denominator_tl \l__siunitx_bracket_close_tl
        }
    }
  \tl_set_eq:NN \l__siunitx_unit_tl \l__siunitx_unit_numerator_tl
  \tl_put_right:NV \l__siunitx_unit_tl \l__siunitx_per_symbol_tl
  \tl_put_right:NV \l__siunitx_unit_tl \l__siunitx_unit_denominator_tl
}
```

```
\cs_undefine:N \__siunitx_angle_print_astronomy_aux:
\cs_new_protected:Npn \__siunitx_angle_print_astronomy_aux: {
  \prop_get:NnNT \l__siunitx_number_out_prop { mantissa-integer }
    \l__siunitx_tmpa_tl
    { \__siunitx_print:nV { number } \l__siunitx_tmpa_tl }
 \ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}% lwarp
 {% lateximage
  \hbox_set:Nn \l__siunitx_angle_marker_box
    {
      \__siunitx_print:nn { number } { { \l__siunitx_output_decimal_tl } }
    }
  \hbox_set:Nn \l__siunitx_angle_unit_box
    {
      \__siunitx_print:nV { unit } \l__siunitx_unit_tl
      \skip_horizontal:n { -\scriptspace }
    }
  \__siunitx_angle_print_astronomy_aux:n { marker }
  \__siunitx_angle_print_astronomy_aux:n { unit }
  \hbox_set:Nn \l__siunitx_angle_marker_box
    {
      \box_use:N \l__siunitx_angle_marker_box
```

```
      \box_use:N \l__siunitx_angle_unit_box
    }
  \dim_compare:nNnTF
    { \l__siunitx_angle_marker_dim } > { \l__siunitx_angle_unit_dim }
    { \__siunitx_angle_print_astronomy_marker: }
    { \__siunitx_angle_print_astronomy_unit: }
 }% lateximage
 {% not a lateximage
      \__siunitx_print:nV { unit } \l__siunitx_unit_tl
      \__siunitx_print:nn { number } { { \l__siunitx_output_decimal_tl } }
 }% not a lateximage
  \prop_get:NnNT \l__siunitx_number_out_prop { mantissa-decimal }
    \l__siunitx_tmpa_tl
    { \__siunitx_print:nV { number } \l__siunitx_tmpa_tl }
}

\RenewDocumentCommand \num { o m } {
  \leavevmode
  \group_begin:% lwarp
    \LetLtxMacro\@ensuredmath\LWR@origensuredmath% lwarp
    \LetLtxMacro\mbox\LWR@print@mbox% lwarp
    \bool_set_false:N \l__siunitx_font_set_bool
    \IfNoValueF {#1}
      { \keys_set:nn { siunitx } {#1} }
    \__siunitx_number_output:n {#2}
  \group_end:% lwarp
}

\RenewDocumentCommand \numrange { o m m } {
  \leavevmode
  \group_begin:% lwarp
    \LetLtxMacro\@ensuredmath\LWR@origensuredmath% lwarp
    \LetLtxMacro\mbox\LWR@print@mbox% lwarp
    \bool_set_false:N \l__siunitx_font_set_bool
    \IfNoValueF {#1}
      { \keys_set:nn { siunitx } {#1} }
    \__siunitx_range_numbers:nn {#2} {#3}
  \group_end:% lwarp
}

\RenewDocumentCommand \ang { o > { \SplitArgument { 2 } { ; } } m } {
  \group_begin:% lwarp
    \LetLtxMacro\@ensuredmath\LWR@origensuredmath% lwarp
    \LetLtxMacro\mbox\LWR@print@mbox% lwarp
    \IfNoValueF {#1}
      { \keys_set:nn { siunitx } {#1} }
    \__siunitx_angle_output:nnn #2
  \group_end:% lwarp
}
```

```
189
190 \RenewDocumentCommand \si { o m } {
191   \leavevmode
192   \group_begin:% lwarp
193     \LetLtxMacro\@ensuredmath\LWR@origensuredmath% lwarp
194     \LetLtxMacro\mbox\LWR@print@mbox% lwarp
195     \bool_set_false:N \l__siunitx_font_set_bool
196     \IfNoValueTF {#1}
197       { \__siunitx_unit_output:nn {#2} { } }
198       {
199         \keys_set:nn { siunitx } {#1}
200         \__siunitx_unit_output:nn {#2} {#1}
201       }
202   \group_end:% lwarp
203 }
204
205
206 \RenewDocumentCommand{\SIrange}{o m m m}
207 {%
208   \leavevmode
209   \group_begin:% lwarp
210     \LetLtxMacro\@ensuredmath\LWR@origensuredmath% lwarp
211     \LetLtxMacro\mbox\LWR@print@mbox% lwarp
212     \bool_set_false:N \l__siunitx_font_set_bool
213     \IfNoValueTF {#1}
214       { \__siunitx_range_unit:nnnn {#4} { } {#2} {#3} }
215       {
216         \keys_set:nn { siunitx } {#1}
217         \__siunitx_range_unit:nnnn {#4} {#1} {#2} {#3}
218       }
219   \group_end:% lwarp
220 }
221
222 \ExplSyntaxOff
```

File 285 **lwarp-soul.sty**

§ 379 Package soul

(*Emulates or patches code by* Melchior FRANZ.)

Pkg `soul` Emulated.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{soul}[2003/11/17]
2 \RequirePackage{xcolor}% for \convertcolorspec
```

Storage for the colors to use:

```
\newcommand*{\LWR@soululcolor}{}

\newcommand*{\LWR@soulstcolor}{}

% \definecolor{LWR@soulhlcolordefault}{HTML}{F8E800}
% \newcommand*{\LWR@soulhlcolor}{LWR@soulhlcolordefault}
\newcommand*{\LWR@soulhlcolor}{}
```

`\so` {⟨*text*⟩}

Basic markup with css:

```
\newcommand{\so}[1]{%
\InlineClass(letter-spacing:.2ex){letterspacing}{#1}%
}
```

`\caps` {⟨*text*⟩}

```
\newcommand{\caps}[1]{%
    \InlineClass%
        (font-variant:small-caps;letter-spacing:.1ex)%
        {capsspacing}{#1}%
}
```

`\LWR@soulcolor` {⟨*text*⟩} {⟨*color*⟩} {⟨*class*⟩} {⟨*colorstyle*⟩} {⟨*FormatWPstyle*⟩}

Add colors if not empty:

```
\newcommand{\LWR@soulcolor}[5]{%
\ifcsempty{#2}%
{%
    \InlineClass(#5){#3}{#1}%
}%
{%
    \convertcolorspec{named}{\@nameuse{#2}}{HTML}\LWR@tempcolor%
    \LWR@htmlspanclass[#5;#4:\LWR@origpound\LWR@tempcolor]{#3}{#1}%
}%
}

\newcommand{\ul}[1]{%
\LWR@soulcolor{#1}{LWR@soululcolor}{uline}{text-decoration-color}%
    {text-decoration:underline; text-decoration-skip: auto;}%
}

\newcommand{\st}[1]{
\LWR@soulcolor{#1}{LWR@soulstcolor}{sout}{text-decoration-color}%
    {text-decoration:line-through}%
}
```

```
\newcommand{\hl}[1]{
\LWR@soulcolor{#1}{LWR@soulhlcolor}{highlight}{background-color}%
    {background:\LWR@origpound{}F8E800}
}
```

Nullified:

```
\newcommand*{\soulaccent}[1]{}
\newcommand*{\soulregister}[2]{}
\newcommand{\sloppyword}[1]{#1}
\newcommand*{\sodef}[5]{\DeclareRobustCommand*#1[1]{\so{##1}}}
\newcommand*{\resetso}{}
\newcommand*{\capsdef}[5]{}
\newcommand*{\capsreset}{}
\newcommand*{\capssave}[1]{}
\newcommand*{\capsselect}[1]{}
\newcommand*{\setul}[2]{}
\newcommand*{\resetul}{}
\newcommand*{\setuldepth}[1]{}
\newcommand*{\setuloverlap}[1]{}
```

Set colors:

```
\newcommand*{\setulcolor}[1]{\renewcommand{\LWR@soululcolor}{#1}}
\newcommand*{\setstcolor}[1]{\renewcommand{\LWR@soulstcolor}{#1}}
\newcommand*{\sethlcolor}[1]{\renewcommand{\LWR@soulhlcolor}{#1}}
```

Long versions of the user-level macros:

```
\let\textso\so
\let\textul\ul
\let\texthl\hl
\let\textcaps\caps
```

File 286 `lwarp-soulpos.sty`

§ 380 Package soulpos

(*Emulates or patches code by* Javier Bezos.)

Pkg `soulpos` soulpos is emulated.

for HTML output:

```
\RequirePackage{soul}
\RequirePackage{soulutf8}
\LWR@ProvidesPackageDrop{soulpos}
```

```
\NewDocumentCommand{\ulposdef}{m o m}{}

\newdimen\ulwidth

\newcommand\ifulstarttype[1]{%
\expandafter\@secondoftwo%
}

\newcommand\ifulendtype[1]{%
\expandafter\@secondoftwo%
}

\newcommand{\ulstarttype}{0}
\newcommand{\ulendtype}{0}
\newcommand\ulpostolerance{0}%
```

File 287 `lwarp-soulutf8.sty`

§ 381 Package soulutf8

Pkg `soulutf8` soulutf8 is emulated.

lwarp's HTML output naturally supports UTF-8 encoding.

for HTML output:

```
\LWR@ProvidesPackageDrop{soulutf8}
```

File 288 `lwarp-splitidx.sty`

§ 382 Package splitidx

(*Emulates or patches code by* Markus Kohm.)

Pkg `splitidx` splitidx is patched for use by lwarp.

If the `latexmk` option is selected for lwarp, *latexmk* will compile the document but will *not* compile the indexes. ***`lwarpmk printindex`*** and ***`lwarpmk htmlindex`*** will still be required.

⚠ `\thepage` When using `\AtWriteToIndex` or `\AtNextWriteToIndex`, the user must not refer to `\thepage` during HTML output, as the concept of a page number is meaningless. Instead, do

```
\addtocounter{LWR@autoindex}{1}
\LWR@new@label{LWRindex-\arabic{LWR@autoindex}}
```

where the \index-like action occurs, and then refer to \arabic{LWR@autoindex} instead of \thepage where the reference should occur.

See section 459.17 in the lwarp-patch-memoir package for the \@@wrspindexhyp macro as an example.

for HTML output:

```
\LWR@ProvidesPackagePass{splitidx}

\catcode`\_=12%
\xpatchcmd{\newindex}
    {\jobname-#2.idx}
    {\jobname-#2_html.idx}
    {}
    {\LWR@patcherror{splitidx}{@newindex}}
\catcode`\_=8%
```

Patched to use lwarp's automatic indexing counter instead of \thepage:

```
\renewcommand*{\@wrsindex}[2][]{%
  \ifx\relax#1\relax
    \if@splitidx
      \@wrsindex[idx]{#2}%
    \else
      \def\@tempa{#2}%
      \if@verbindex\@onelevel@sanitize\@tempa\fi
      \@wrindex{\@tempa}%
    \fi
  \else
    \def\@tempa{#2}%
    \csname index@#1@hook\endcsname
%     \expandafter\ifx\csname @@wrsindex\endcsname\relax
    \addtocounter{LWR@autoindex}{1}%                    lwarp
    \LWR@new@label{LWRindex-\arabic{LWR@autoindex}}%    lwarp
%       \@@@wrsindex{#1}{{\@tempa}{\thepage}}%
      \@@@wrsindex{#1}{{\@tempa}{\arabic{LWR@autoindex}}}%
%     \else
%       \def\@tempb{\@@wrsindex{#1}}%
%       \expandafter\@tempb\@tempa||\\%
%     \fi
    \endgroup
    \@esphack
  \fi
}
```

lwarp defines sectioning commands with xparse, so the below patches are done as temporary redefinitions instead of being \let.

```
\xpatchcmd{\printsubindex}
    {\let\section\subsection}
```

```
    {\renewcommand*{\section}{\subsection}}
    {}
    {\LWR@patcherror{splitidx}{printsubindex-section}}

\xpatchcmd{\printsubindex}
    {\let\chapter\section}
    {\renewcommand*{\chapter}{\section}}
    {}
    {\LWR@patcherror{splitidx}{printsubindex-chapter}}

\xpatchcmd{\printsubindex}
    {\let\@makechapterhead\section}
    {\def\@makechapterhead{\section}}
    {}
    {\LWR@patcherror{splitidx}{printsubindex-chapter}}
```

File 289 `lwarp-srcltx.sty`

§ 383 Package srcltx

Pkg `srcltx` srcltx is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{srcltx}[2006/11/12]

\newif\ifSRCOK \SRCOKfalse
\newcommand*\srcIncludeHook[1]{}
\newcommand*\srcInputHook[1]{}
\newcommand*\MainFile{}
\def\MainFile{\jobname.tex}
\newcommand*\CurrentInput{}
\gdef\CurrentInput{\MainFile}
\newcommand\Input{}
\let\Input\input
```

File 290 `lwarp-srctex.sty`

§ 384 Package srctex

Pkg `srctex` srctex is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{srctex}[2006/11/12]
\LWR@origRequirePackage{lwarp-srcltx}
```

File 291 `lwarp-stabular.sty`

§ 385 Package stabular

(*Emulates or patches code by* Sigitas Tolušis.)

Pkg `stabular` stabular is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{stabular}
```

Env `stabular` `[`⟨*vpos*⟩`]` `{`⟨*colspec*⟩`}`

```
\newenvironment{stabular}[2][c]
{
\begin{tabular}[#1]{#2}
\renewcommand{\noalign}[1]{}
}
{\end{tabular}}
```

Env `stabular` `{`⟨*width*⟩`}` `[`⟨*vpos*⟩`]` `{`⟨*colspec*⟩`}`

```
\NewDocumentEnvironment{stabular*}{m o m}
{
\begin{tabular}[#2]{#3}
\renewcommand{\noalign}[1]{}
}
{\end{tabular}}
```

File 292 `lwarp-stfloats.sty`

§ 386 Package stfloats

Pkg `stfloats` stfloats is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{stfloats}
```

```
\newcommand*{\fnbelowfloat}{}
\newcommand*{\fnunderfloat}{}
\newcommand*{\setbaselinefloat}{}
\newcommand*{\setbaselinefixed}{}
```

File 293 `lwarp-subfig.sty`

§ 387 Package

subfig

(*Emulates or patches code by* Steven Douglas Cochran.)

Pkg `subfig` subfig is supported and patched by lwarp.

⚠ `lof/lotdepth` At present, the package options for `lofdepth` and `lotdepth` are not working. These counters must be set separately after the package has been loaded.

In the document source, use `\hfill` and `\hspace*` subfig>inline between subfigures to spread them apart horizontally. The use of other forms of whitespace may cause paragraph tags to be generated, resulting in subfigures appearing on the following lines instead of all on a single line.

for HTML output: Accept all options for lwarp-subfig:

```
\LWR@ProvidesPackagePass{subfig}
```

`\sf@@@subfloat` {⟨*1 type*⟩} [⟨*2 LOF entry*⟩] [⟨*3 caption*⟩] {⟨*4 contents*⟩}

The outer minipage allows side-by-side subfloats with `\hfill` between.

```
\long\def\sf@@@subfloat#1[#2][#3]#4{%
\begin{minipage}{\linewidth}% lwarp

\IfValueTF{#2}{%
    \LWR@setlatestname{#2}%
}{%
    \IfValueTF{#3}{%
        \LWR@setlatestname{#3}%
    }{}%
}%
\LWR@stoppars% lwarp
    \@ifundefined{FBsc@max}{}%
        {\FB@readaux{\let\FBsuboheight\relax}}%
    \@tempcnta=\@ne
    \if@minipage
      \@tempcnta=\z@
    \else\ifdim \lastskip=\z@ \else
      \@tempcnta=\tw@
    \fi\fi
    \ifmaincaptiontop
      \sf@top=\sf@nearskip
      \sf@bottom=\sf@farskip
```

```
    \else
      \sf@top=\sf@farskip
      \sf@bottom=\sf@nearskip
    \fi
    \leavevmode

%     \setbox\@tempboxa \hbox{#4}%
%     \@tempdima=\wd\@tempboxa
%     \@ifundefined{FBsc@max}{}%
%         {\global\advance\Xhsize-\wd\@tempboxa
%          \dimen@=\ht\@tempboxa
%          \advance\dimen@\dp\@tempboxa
%          \ifdim\dimen@>\FBso@max
%            \global\FBso@max\dimen@
%          \fi}%
```

Do not use boxes, which interfere with `lateximages`:

```
%     \vtop%
    \bgroup
%       \vbox%
      \bgroup
        \ifcase\@tempcnta
          \@minipagefalse
        \or
%           \vskip\sf@top
        \or
          \ifdim \lastskip=\z@ \else
%             \@tempskipb\sf@top\relax\@xaddvskip
          \fi
        \fi
        \sf@ifpositiontop{%
          \ifx \@empty#3\relax \else
            \sf@subcaption{#1}{#2}{#3}%
%             \vskip\sf@capskip
%             \vskip\sf@captopadj
          \fi\egroup
%           \hrule width0pt height0pt depth0pt
            \LWR@startpars% lwarp
%   \box\@tempboxa
            #4
            \LWR@stoppars% lwarp
        }{%
        \LWR@startpars% lwarp
        \@ifundefined{FBsc@max}%
            {
%   \box\@tempboxa
                #4
            }%
            {\ifx\FBsuboheight\relax
```

```
%                \box\@tempboxa
                 #4
              \else
%                \vbox to \FBsuboheight{\FBafil\box\@tempboxa\FBbfil}%
                 #4
              \fi}%
        \LWR@stoppars% lwarp
          \egroup
          \ifx \@empty#3\relax \else
%             \vskip\sf@capskip
%             \hrule width0pt height0pt depth0pt
            \sf@subcaption{#1}{#2}{#3}%
         \fi
        }%
%       \vskip\sf@bottom
    \egroup
    \@ifundefined{FBsc@max}{}%
        {\addtocounter{FRobj}{-1}%
         \ifnum\c@FRobj=0\else
           \subfloatrowsep
         \fi}%
    \ifmaincaptiontop\else
      \global\advance\@nameuse{c@\@captype}\m@ne
    \fi
\end{minipage}% lwarp
\LWR@startpars% lwarp
  \endgroup\ignorespaces%
}%
```

`\sf@subcaption` {⟨*1 type*⟩} {⟨*2 LOF entry*⟩} {⟨*3 caption*⟩}

```
\long\def\sf@subcaption#1#2#3{%
\LWR@stoppars% lwarp
  \ifx \relax#2\relax \else
    \bgroup
      \let\label=\@gobble
      \let\protect=\string
      \def\@subcaplabel{%
        \caption@lstfmt{\@nameuse{p@#1}}{\@nameuse{the#1}}}%
      \sf@updatecaptionlist{#1}{#2}{\the\value{\@captype}}{\the\value{#1}}%
    \egroup
  \fi
  \bgroup
    \ifx \relax#3\relax
      \let\captionlabelsep=\relax
    \fi
%     \setbox0\vbox{%
%        \hb@xt@\the\@tempdima{%
%
```

```
% %           \hss
% %         \parbox[t]{\the\@tempdima}{%
%           \caption@make
%               {\@nameuse{sub\@captype name}}%
%               {\@nameuse{thesub\@captype}}%
%               {#3}
% %  }%
% %             \hss
%   }
%  }%
    \@ifundefined{FBsc@max}%
%         {\box0}%
        {
%  \parbox[t]{\the\@tempdima}{%
\LWR@traceinfo{sfsubcap B1}% lwarp
            \LWR@figcaption% lwarp
            \caption@make
                {\@nameuse{sub\@captype name}}%
                {\@nameuse{thesub\@captype}}%
                {\LWR@isolate{#3}}%

            \endLWR@figcaption% lwarp
\LWR@traceinfo{sfsubcap B2}% lwarp
%  }%
        }%
        {\dimen@\ht0%
         \advance\dimen@\dp0%
         \ifdim\dimen@>\FBsc@max
           \global\FBsc@max\dimen@
         \fi
         \FB@readaux{\let\FBsubcheight\relax}%
         \ifx\FBsubcheight\relax
           \def\next{
%  \parbox[t]{\the\@tempdima}
           }%
         \else
           \def\next{
%  \parbox[t][\FBsubcheight][t]{\the\@tempdima}
           }%
         \fi
%          \vbox{%
%            \hb@xt@\the\@tempdima{%

%              \hss
%              \next{%
\LWR@traceinfo{sfsubcap C1}% lwarp
                \caption@make
                    {\@nameuse{sub\@captype name}}%
                    {\@nameuse{thesub\@captype}}%
                    {#3}
```

```
\LWR@traceinfo{sfsubcap C1}% lwarp
%  }%
%               \hss
%
%  }
%            }
         }%
  \egroup
\LWR@startpars% lwarp
}
```

`\subfloat@label` Patches for `\sf@sub@label`:

```
\def\subfloat@label{%
\LWR@ensuredoingapar% lwarp
  \@ifnextchar(%   %) match left parenthesis
    {\sf@sub@label}
    {\sf@sub@label(Sub\@captype\space
                   \@ifundefined{thechapter}{}{\@nameuse{thechapter}\space}%
                   \@nameuse{p@sub\@captype}%
                   \@nameuse{thesub\@captype}.)}}
```

Patches for `\subref`.

`\sf@subref` {⟨*label*⟩}

The unstarred version uses a `\ref` link whose printed text comes from the `sub@<label>`:

```
\renewcommand{\sf@subref}[1]{%
\LWR@subnewref{#1}{sub@#1}%
}
```

`\sf@@subref` {⟨*label*⟩}

The starred version uses the printed `sub@<label>` which is stored as if it were a page number:

```
\renewcommand{\sf@@subref}[1]{\LWR@orig@pageref{sub@#1}}
```

Defining new subfloats. The `l@sub<type>` for each is redefined.

`\@newsubfloat` [⟨*keys/values*⟩] {⟨*float name*⟩}

```
\LetLtxMacro\LWR@orig@newsubfloat\@newsubfloat

\def\@newsubfloat[#1]#2{%
\LWR@orig@newsubfloat[#1]{#2}%
\renewcommand{\l@sub#2}[2]{\hypertocfloat{2}{sub#2}{\ext@sub#2}{##1}{##2}}%
}
```

Pre-defined for figures and tables:

`\l@subfigure` {⟨*text*⟩} {⟨*pagenum*⟩}

```
192 \renewcommand{\l@subfigure}[2]{\hypertocfloat{2}{subfigure}{lof}{#1}{#2}}
```

`\l@subtable` {⟨*text*⟩} {⟨*pagenum*⟩}

```
193 \renewcommand{\l@subtable}[2]{\hypertocfloat{2}{subtable}{lot}{#1}{#2}}
```

File 294 **lwarp-subfigure.sty**

§ 388 Package subfigure

Pkg `subfigure` subfigure is emulated by subfig.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{subfigure}
2 \RequirePackage{subfig}

3 \LetLtxMacro\subfigure\subfloat
4 \LetLtxMacro\subtable\subfloat
5 \LetLtxMacro\Subref\subref
6 \@ifundefined{figuretopcaptrue}{\newif\iffiguretopcap}{}
7 \newif\ifsubfiguretopcap
8 \newif\ifsubcaphang
9 \newif\ifsubcapcenter
10 \newif\ifsubcapcenterlast
11 \newif\ifsubcapnooneline
12 \newif\ifsubcapraggedright
13 \newskip\subfigtopskip
14 \newskip\subfigcapskip
15 \newdimen\subfigcaptopadj
16 \newskip\subfigbottomskip
17 \newdimen\subfigcapmargin
18 \newskip\subfiglabelskip
19 \newcommand*{\subcapsize}{}
20 \newcommand*{\subcaplabelfont}{}
21 \newcommand*{\subcapfont}{}
```

File 295 **lwarp-supertabular.sty**

§ 389 Package supertabular

(*Emulates or patches code by* Johannes Braams, Theo Jurriens.)

Pkg supertabular

supertabular is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{supertabular}
```

⚠ Misplaced alignment tab character &

For \tablefirsthead, etc., enclose them as follows:

```
\StartDefiningTabulars
\tablefirsthead
...
\StopDefiningTabulars
```

See section 9.9.

⚠ lateximage

supertabular and xtab are not supported inside a lateximage.

```
\newcommand{\LWRST@firsthead}{}

\newcommand{\tablefirsthead}[1]{%
    \long\gdef\LWRST@firsthead{#1}%
}

\newcommand{\tablehead}[1]{}
\newcommand{\tabletail}[1]{}

\newcommand{\LWRST@lasttail}{}

\newcommand{\tablelasttail}[1]{%
    \long\gdef\LWRST@lasttail{#1}%
}


\newcommand{\tablecaption}[2][]{%
    \long\gdef\LWRST@caption{%
        \ifblank{#1}%
            {\caption{#2}}%
            {\caption[#1]{#2}}%
    }%
}

\let\topcaption\tablecaption
\let\bottomcaption\tablecaption


\newcommand*{\LWRST@caption}{}

\newcommand*{\shrinkheight}[1]{}

\NewDocumentEnvironment{supertabular}{s o m}
{%
\LWR@traceinfo{supertabular}%
\begin{table}%
```

```
\LWRST@caption%
\begin{tabular}{#3}%
\TabularMacro\ifdefvoid{\LWRST@firsthead}%
{\LWR@getmynexttoken}%
{\expandafter\LWR@getmynexttoken\LWRST@firsthead}%
}%
{%
\ifdefvoid{\LWRST@lasttail}%
{}%
{%
\TabularMacro\ResumeTabular%
\LWRST@lasttail%
}%
\end{tabular}%
\end{table}%
\LWR@traceinfo{supertabular done}%
}

\NewDocumentEnvironment{mpsupertabular}{s o m}
{\minipage{\linewidth}\supertabular{#3}}
{\endsupertabular\endminipage}
```

File 296 `lwarp-syntonly.sty`

§ 390 Package syntonly

(*Emulates or patches code by* Frank Mittelbach, Rainer Schöpf.)

Pkg `syntonly` Emulated.

for HTML output: Discard all options for lwarp-syntonly:

```
\LWR@ProvidesPackageDrop{syntonly}

\newif\ifsyntax@
\syntax@false

\newcommand*{\syntaxonly}{}

\@onlypreamble\syntaxonly
```

File 297 `lwarp-t1enc.sty`

§ 391 Package t1enc

Pkg `t1enc` t1enc does not work with lwarp.

for HTML output:

```
\LWR@loadnever{t1enc}{fontenc, inputenc, inputenx}
```

File 298 `lwarp-tabls.sty`

§ 392 Package tabls

(*Emulates or patches code by* Donald Arseneau.)

Pkg `tabls` tabls is emulated. `\LWR@hline` is used to handle the optional argument when tabls is loaded.

for HTML output:

```
\LWR@ProvidesPackageDrop{tabls}

\newdimen\tablinesep
\newdimen\arraylinesep
\newdimen\extrarulesep
```

File 299 `lwarp-tabularx.sty`

§ 393 Package tabularx

(*Emulates or patches code by* David Carlisle.)

Pkg `tabularx` tabularx is emulated by lwarp.

for HTML output: Discard all options for lwarp-tabularx:

```
\LWR@ProvidesPackageDrop{tabularx}

\DeclareDocumentEnvironment{tabularx}{m o m}
{\tabular{#3}}
{\endtabular}

\DeclareDocumentEnvironment{tabularx*}{m o m}
```

```
{\tabular{#3}}
{\endtabular}
```

File 300 `lwarp-tabulary.sty`

§ 394 Package tabulary

(*Emulates or patches code by* David Carlisle.)

Pkg `tabulary` tabulary is emulated by lwarp.

for HTML output: Discard all options for lwarp-tabulary.

Column types `L`, `C`, `R`, and `J` are emulated by lwarp core code.

```
\LWR@ProvidesPackageDrop{tabulary}

\NewDocumentEnvironment{tabulary}{m o m}
{\tabular{#3}}
{\endtabular}

\NewDocumentEnvironment{tabulary*}{m o m}
{\tabular{#3}}
{\endtabular}

\newdimen\tymin
\newdimen\tymax
\def\tyformat{}
```

File 301 `lwarp-textarea.sty`

§ 395 Package textarea

(*Emulates or patches code by* Alexander I. Rozhenko.)

Pkg `textarea` textarea is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{textarea}

\newcommand\StartFromTextArea{}
\newcommand\StartFromHeaderArea{}
\newcommand*\RestoreTextArea{}
\newcommand*\ExpandTextArea[1][*]{}
\let\NCC@restoretextarea\@empty
```

File 302 `lwarp-textcomp.sty`

§ 396 Package textcomp

(*Emulates or patches code by* Frank Mittelbach, Robin Fairbairns, Werner Lemberg.)

Pkg `textcomp` textcomp is patched for use by lwarp.

§ 396.1 Limitations

Some textcomp symbols do not have Unicode equivalents, and thus are not supported.

⚠ missing symbols Many textcomp symbols are not supported by many fonts. In the css try referencing fonts which are more complete, but expect to see gaps in coverage.

§ 396.2 Package loading

for HTML output:

```
\LWR@ProvidesPackagePass{textcomp}
```

§ 396.3 HTML symbols

For HTML, use HTML entities or direct Unicode, depending on the engine.

`\AtBeginDocument` improves support for LuaLaTeX and XeLaTeX.

§ 396.3.1 pdfLaTeX symbols

```
\AtBeginDocument{
\ifPDFTeX% pdflatex or dvi latex
\newcommand*{\LWR@HTML@textdegree}{\HTMLentity{deg}}
\newcommand*{\LWR@HTML@textcelsius}{\HTMLunicode{2103}}
\newcommand*{\LWR@HTML@textohm}{\HTMLunicode{2126}}
\newcommand*{\LWR@HTML@textmu}{\HTMLunicode{00B5}}
\newcommand*{\LWR@HTML@textlquill}{\HTMLunicode{2045}}
\newcommand*{\LWR@HTML@textrquill}{\HTMLunicode{2046}}
\newcommand*{\LWR@HTML@textcircledP}{\HTMLunicode{2117}}
\newcommand*{\LWR@HTML@texttwelveudash}{\HTMLunicode{2014}}% emdash
\newcommand*{\LWR@HTML@textthreequartersemdash}{\HTMLunicode{2014}}% emdash
\newcommand*{\LWR@HTML@textmho}{\HTMLunicode{2127}}
\newcommand*{\LWR@HTML@textnaira}{\HTMLunicode{20A6}}
\newcommand*{\LWR@HTML@textpeso}{\HTMLunicode{20B1}}
\newcommand*{\LWR@HTML@textrecipe}{\HTMLunicode{211E}}
```

```
\newcommand*{\LWR@HTML@textinterrobangdown}{\HTMLunicode{2E18}}
\newcommand*{\LWR@HTML@textperthousand}{\HTMLunicode{2030}}
\newcommand*{\LWR@HTML@textpertenthousand}{\HTMLunicode{2031}}
\newcommand*{\LWR@HTML@textbaht}{\HTMLunicode{0E3F}}
\newcommand*{\LWR@HTML@textdiscount}{\%}
\newcommand*{\LWR@HTML@textservicemark}{\HTMLunicode{2120}}
\else
```

§ 396.3.2 XeLaTeX and LuaLaTeX symbols

NOTE: Some of the following do not print well in the listing. Consult the .dtx or .sty file for the actual characters.

```
\newcommand*{\LWR@HTML@textdegree}{°}
\newcommand*{\LWR@HTML@textcelsius}{℃}
\newcommand*{\LWR@HTML@textohm}{Ω}
\newcommand*{\LWR@HTML@textmu}{µ}
\newcommand*{\LWR@HTML@textlquill}{{}
\newcommand*{\LWR@HTML@textrquill}{}}
\newcommand*{\LWR@HTML@textcircledP}{℗}
\newcommand*{\LWR@HTML@texttwelveudash}{--}% emdash
\newcommand*{\LWR@HTML@textthreequartersemdash}{--}% emdash
\newcommand*{\LWR@HTML@textmho}{℧}
\newcommand*{\LWR@HTML@textnaira}{₦}
\newcommand*{\LWR@HTML@textpeso}{₱}
\newcommand*{\LWR@HTML@textrecipe}{℞}
\newcommand*{\LWR@HTML@textinterrobangdown}{¡}
\newcommand*{\LWR@HTML@textperthousand}{%‰}
\newcommand*{\LWR@HTML@textpertenthousand}{%‱}
\newcommand*{\LWR@HTML@textbaht}{฿}
\newcommand*{\LWR@HTML@textdiscount}{\%}
\newcommand*{\LWR@HTML@textservicemark}{}
\fi

\LWR@formatted{textdegree}
\LWR@formatted{textcelsius}
\LWR@formatted{textohm}
\LWR@formatted{textmu}
\LWR@formatted{textlquill}
\LWR@formatted{textrquill}
\LWR@formatted{textcircledP}
\LWR@formatted{texttwelveudash}
\LWR@formatted{textthreequartersemdash}
\LWR@formatted{textmho}
\LWR@formatted{textnaira}
\LWR@formatted{textpeso}
\LWR@formatted{textrecipe}
\LWR@formatted{textinterrobangdown}
\LWR@formatted{textperthousand}
```

```
\LWR@formatted{textpertenthousand}
\LWR@formatted{textbaht}
\LWR@formatted{textdiscount}
\LWR@formatted{textservicemark}
```

§ 396.4 HTML diacritics

For HTML, Unicode diacritical marks are used:

```
\newcommand*{\LWR@HTML@capitalcedilla}[1]{#1\HTMLunicode{0327}}
\newcommand*{\LWR@HTML@capitalogonek}[1]{#1\HTMLunicode{0328}}
\newcommand*{\LWR@HTML@capitalgrave}[1]{#1\HTMLunicode{0300}}
\newcommand*{\LWR@HTML@capitalacute}[1]{#1\HTMLunicode{0301}}
\newcommand*{\LWR@HTML@capitalcircumflex}[1]{#1\HTMLunicode{0302}}
\newcommand*{\LWR@HTML@capitaltilde}[1]{#1\HTMLunicode{0303}}
\newcommand*{\LWR@HTML@capitaldieresis}[1]{#1\HTMLunicode{0308}}
\newcommand*{\LWR@HTML@capitalhungarumlaut}[1]{#1\HTMLunicode{30B}}
\newcommand*{\LWR@HTML@capitalring}[1]{#1\HTMLunicode{30A}}
\newcommand*{\LWR@HTML@capitalcaron}[1]{#1\HTMLunicode{30C}}
\newcommand*{\LWR@HTML@capitalbreve}[1]{#1\HTMLunicode{306}}
\newcommand*{\LWR@HTML@capitalmacron}[1]{#1\HTMLunicode{304}}
\newcommand*{\LWR@HTML@capitaldotaccent}[1]{#1\HTMLunicode{307}}
```

`\textcircled` becomes a span with a rounded border. `\providecommand` is used to avoid conflict with xunicode.

```
\providecommand*{\LWR@HTML@textcircled}[1]{%
\InlineClass[border: 1px solid \LWR@currenttextcolor]{textcircled}{#1}%
}

\LWR@formatted{capitalcedilla}
\LWR@formatted{capitalogonek}
\LWR@formatted{capitalgrave}
\LWR@formatted{capitalacute}
\LWR@formatted{capitalcircumflex}
\LWR@formatted{capitaltilde}
\LWR@formatted{capitaldieresis}
\LWR@formatted{capitalhungarumlaut}
\LWR@formatted{capitalring}
\LWR@formatted{capitalcaron}
\LWR@formatted{capitalbreve}
\LWR@formatted{capitalmacron}
\LWR@formatted{capitaldotaccent}
\LWR@formatted{textcircled}

}% AtBeginDocument
```

File 303 `lwarp-textfit.sty`

§ 397 Package textfit

Pkg `textfit` textfit is emulated.

Text is placed into a `<span>` of class `textfit`. Sizes are approximated, and also limited by browser min/max font-size settings.

for HTML output:

```
\LWR@ProvidesPackageDrop{textfit}

\newsavebox{\LWR@textfitbox}

\newcommand*{\LWR@textfitscale}[2]{%
\setlength{\LWR@templengthone}{#1}%
\setlength{\LWR@templengthone}{%
    1em*\ratio{\LWR@templengthone}{\LWR@templengththwo}%
}%
\InlineClass[font-size:\LWR@printlength{\LWR@templengthone}]{textfit}{#2}%
}

\newcommand*{\scaletowidth}[2]{%
\sbox{\LWR@textfitbox}{#2}%
\settowidth{\LWR@templengththwo}{\usebox{\LWR@textfitbox}}%
\LWR@textfitscale{#1}{#2}%
}

\newcommand*{\scaletoheight}[2]{%
\sbox{\LWR@textfitbox}{#2}%
\settoheight{\LWR@templengthtwo}{\usebox{\LWR@textfitbox}}%
\LWR@textfitscale{#1}{#2}%
}
```

File 304 `lwarp-textpos.sty`

§ 398 Package textpos

(*Emulates or patches code by* Norman Gray.)

Pkg `textpos` textpos is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{textpos}
```

```
\NewDocumentEnvironment{textblock}{m r()}{}{}
\NewDocumentEnvironment{textblock*}{m o r()}{}{}
\newcommand*{\TPGrid}[3][]{}
\NewDocumentCommand{\TPMargin}{s o}{}
\newcommand*{\textblockcolour}[1]{}
\newcommand*{\textblockrulecolour}[1]{}
\newcommand*{\textblockcolor}[1]{}
\newcommand*{\textblockrulecolor}[1]{}
\newcommand*{\tekstblokkulur}[1]{}
\newcommand*{\tekstblokrulekulur}[1]{}
\newlength{\TPHorizModule}
\newlength{\TPVertModule}
\newlength{\TPboxrulesize}
\newcommand{\textblocklabel}[1]{}
\newcommand*{\showtextsize}{}
\newcommand{\textblockorigin}[2]{}
```

File 305 **lwarp-theorem.sty**

§ 399 Package theorem

(*Emulates or patches code by* Frank Mittelbach.)

Pkg `theorem` theorem is patched for use by lwarp.

Table 16: Theorem package — css styling of theorems and proofs

Theorem: `<div>` of class `theorembody<theoremstyle>`

Theorem Header: `<span>` of class `theoremheader`

where `<theoremstyle>` is `plain`, `break`, etc.

for HTML output:

```
\LWR@ProvidesPackagePass{theorem}
```

§ 399.1 Remembering the theorem style

Storage for the style being used for new theorems:

```
\newcommand{\LWR@newtheoremstyle}{plain}
```

Patched to remember the style being used for new theorems:

```
\gdef\theoremstyle#1{%
   \@ifundefined{th@#1}{\@warning
```

```
          {Unknown theoremstyle ‘#1’. Using ‘plain’}%
          \theorem@style{plain}%
           \renewcommand{\LWR@newtheoremstyle}{plain}% lwarp
          }%
      {%
          \theorem@style{#1}%
          \renewcommand{\LWR@newtheoremstyle}{#1}% lwarp
      }%
      \begingroup
        \csname th@\the\theorem@style \endcsname
      \endgroup}
```

Patched to remember the style for this theorem type, and set it later when the environment is started.

```
\gdef\@xnthm#1#2[#3]{%
   \expandafter\@ifdefinable\csname #1\endcsname
   {%
    \csedef{LWR@thmstyle#1}{\LWR@newtheoremstyle}% lwarp
    \@definecounter{#1}\@newctr{#1}[#3]%
    \expandafter\xdef\csname the#1\endcsname
      {\expandafter \noexpand \csname the#3\endcsname
       \@thmcountersep \@thmcounter{#1}}%
    \def\@tempa{\global\@namedef{#1}}%
    \expandafter \@tempa \expandafter{%
      \csname th@\the \theorem@style
            \expandafter \endcsname \the \theorem@bodyfont
     \@thm{#1}{#2}}%
    \global \expandafter \let \csname end#1\endcsname \@endtheorem
    \AtBeginEnvironment{#1}{\edef\LWR@thisthmstyle{\@nameuse{LWR@thmstyle#1}}}% lwarp
   }}

\gdef\@ynthm#1#2{%
    \expandafter\@ifdefinable\csname #1\endcsname
   {
    \csedef{LWR@thmstyle#1}{\LWR@newtheoremstyle}% lwarp
    \@definecounter{#1}%
    \expandafter\xdef\csname the#1\endcsname{\@thmcounter{#1}}%
    \def\@tempa{\global\@namedef{#1}}\expandafter \@tempa
     \expandafter{\csname th@\the \theorem@style \expandafter
     \endcsname \the\theorem@bodyfont \@thm{#1}{#2}}%
    \global \expandafter \let \csname end#1\endcsname \@endtheorem
    \AtBeginEnvironment{#1}{\edef\LWR@thisthmstyle{\@nameuse{LWR@thmstyle#1}}}% lwarp
   }}

\gdef\@othm#1[#2]#3{%
  \expandafter\ifx\csname c@#2\endcsname\relax
   \@nocounterr{#2}%
  \else
```

```
  \expandafter\@ifdefinable\csname #1\endcsname
  {
   \csedef{LWR@thmstyle#1}{\LWR@newtheoremstyle}% lwarp
   \expandafter \xdef \csname the#1\endcsname
    {\expandafter \noexpand \csname the#2\endcsname}%
   \def\@tempa{\global\@namedef{#1}}\expandafter \@tempa
    \expandafter{\csname th@\the \theorem@style \expandafter
    \endcsname \the\theorem@bodyfont \@thm{#2}{#3}}%
   \global \expandafter \let \csname end#1\endcsname \@endtheorem
   \AtBeginEnvironment{#1}{\edef\LWR@thisthmstyle{\@nameuse{LWR@thmstyle#1}}}% lwarp
   }%
 \fi}
```

§ 399.2 css patches

The following are patched for CSS.

These were in individual files `thp.sty` for plain, `thmb.sty` for margin break, etc. They are gathered together here.

Each theorem is encased in a `BlockClass` environment of class `theorembody<style>`.

Each header is encased in an `\InlineClass` of class `theoremheader`.

```
\gdef\th@plain{%
  \def\@begintheorem##1##2{%
        \item[
            \InlineClass{theoremheader}{##1\ ##2}
        ]
    }%
\def\@opargbegintheorem##1##2##3{%
   \item[
        \InlineClass{theoremheader}{##1\ ##2\ (##3)}
    ]
    }
}

\gdef\th@break{%
  \def\@begintheorem##1##2{%
    \item[
        \InlineClass{theoremheader}{##1\ ##2}\newline%
    ]
    }%
\def\@opargbegintheorem##1##2##3{%
  \item[
        \InlineClass{theoremheader}{##1\ ##2\ (##3)}\newline
    ]
    }
}
```

```
87
88 \gdef\th@marginbreak{%
89   \def\@begintheorem##1##2{
90     \item[
91         \InlineClass{theoremheader}{##2 \qquad ##1}\newline
92     ]
93     }%
94 \def\@opargbegintheorem##1##2##3{%
95     \item[
96         \InlineClass{theoremheader}{##2 \qquad ##1\ %
97         (##3)}\newline
98     ]
99     }
100 }
101
102 \gdef\th@changebreak{%
103   \def\@begintheorem##1##2{
104     \item[
105         \InlineClass{theoremheader}{##2\ ##1}\newline
106     ]
107     }%
108 \def\@opargbegintheorem##1##2##3{%
109     \item[
110         \InlineClass{theoremheader}{ ##2\ ##1\ %
111         (##3)}\newline
112     ]
113     }
114 }
115
116 \gdef\th@change{%
117   \def\@begintheorem##1##2{
118     \item[
119         \InlineClass{theoremheader}{##2\ ##1}
120     ]
121     }%
122 \def\@opargbegintheorem##1##2##3{%
123     \item[
124         \InlineClass{theoremheader}{##2\ ##1\ (##3)}
125     ]
126     }
127 }
128
129 \gdef\th@margin{%
130   \def\@begintheorem##1##2{
131     \item[
132         \InlineClass{theoremheader}{##2 \qquad ##1}
133     ]
134     }%
135 \def\@opargbegintheorem##1##2##3{%
136     \item[
```

```
            \InlineClass{theoremheader}{##2 \qquad ##1\ (##3)}
    ]
    }
}
```

Patched for css:

```
\gdef\@thm#1#2{\refstepcounter{#1}%
\LWR@forcenewpage% lwarp
    \BlockClass{theorembody\LWR@thisthmstyle}% lwarp
   \trivlist
   \@topsep \theorempreskipamount               % used by first \item
   \@topsepadd \theorempostskipamount           % used by \@endparenv
   \@ifnextchar [%
   {\@ythm{#1}{#2}}%
   {\@begintheorem{#2}{\csname the#1\endcsname}\ignorespaces}}

\gdef\@endtheorem{%
\endtrivlist
\endBlockClass
}
```

File 306 `lwarp-thinsp.sty`

§ 400 Package thinsp

Pkg `thinsp` thinsp is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{thinsp}

\AtBeginDocument{
\let\thinthinspace\relax% defined by some packages
\newcommand*{\thinthinspace}{\thinspace}
}

\newcommand*{\stretchthinspace}{\thinspace}
\newcommand*{\stretchthinthinspace}{\thinthinspace}
\newcommand*{\stretchnegthinspace}{\negthinspace}
```

File 307 `lwarp-threadcol.sty`

§ 401 Package threadcol

Pkg `threadcol` threadcol is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{threadcol}
\newcommand{\setthreadname}[1]{}
```

File 308 `lwarp-threeparttable.sty`

§ 402 Package

threeparttable

(*Emulates or patches code by* Donald Arseneau.)

Pkg `threeparttable` threeparttable is emulated.

Table note are contained inside a css `<div>` of class `tnotes`. If enumitem is used, the note item labels are also individually highlighted with an additional css `<span>` of class `tnoteitemheader`, otherwise they are plain text.

for HTML output:

```
\LWR@ProvidesPackageDrop{threeparttable}
```

`\LWR@printtablenote` {⟨*text*⟩}

Prints the table note item header inside a css class of `tnoteitemheader`.

```
\newcommand{\LWR@printtablenote}[1]{\InlineClass{tnoteitemheader}{#1}}
```

Env `threeparttable` [⟨*alignment*⟩] To emulate threeparttable:

```
\newenvironment*{threeparttable}[1][b]{}{}
```

Env `tablenotes` [⟨*options*⟩]

```
\newenvironment*{tablenotes}[1][]
{%
\LWR@forcenewpage
\BlockClass{tnotes}%
\ltx@ifpackageloaded{enumitem}{%
\setlist[description]{format=\LWR@printtablenote}%
}{}%
\description%
}
{%
\enddescription%
\endBlockClass%
}
```

`\tnote` {⟨*text*⟩}

```
\newcommand{\tnote}[1]{\LWR@htmlspan{sup}{#1}}
```

File 309 `lwarp-thumb.sty`

§ 403 Package thumb

Pkg `thumb` thumb is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{thumb}

\newcommand*{\Overviewpage}{}
\newlength{\thumbheight}
\newlength{\thumbwidth}
```

File 310 `lwarp-thumbs.sty`

§ 404 Package thumbs

Pkg `thumbs` thumbs is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{thumbs}

\newcommand{\addthumb}[4]{}
\newcommand{\addtitlethumb}[5]{}
\newcommand{\stopthumb}{}
\newcommand{\continuethumb}{}
\newcommand{\thumbsoverview}[1]{}
\newcommand{\thumbsoverviewback}[1]{}
\newcommand{\thumbsoverviewverso}[1]{}
\newcommand{\thumbsoverviewdouble}[1]{}
\newcommand{\thumbnewcolumn}{}
\newcommand{\addthumbsoverviewtocontents}[2]{}
\newcommand{\thumbsnophantom}{}
```

File 311 `lwarp-tikz.sty`

§ 405 Package tikz

(*Emulates or patches code by* Till Tantau.)

Pkg `tikz` tikz is supported.

⚠ displaymath and matrices

If using display math with `tikzpicture` or `\tikz`, along with matrices with the `&` character, the document must be modified as follows:

```
\usepackage{tikz}
\tikzset{every picture/.style={ampersand replacement=\&}}
```

and each instance of `&` in the tikz expression must be replaced with `\&`.

Accept all options for lwarp-tikz:

```
\LWR@ProvidesPackagePass{tikz}[2015/08/07]
```

catcodes

lwarp changes the catcode of $ for its own use. The Ti*k*z `babel` library temporarily changes catcodes back to normal for Ti*k*z's use. tikz v3.0.0 introduced the `babel` library which handles catcode changes. For older versions, lwarp must change $'s catcode itself.

Also see:
https://tex.stackexchange.com/questions/16199/test-if-a-package-or-package-option-is-loaded

```
\newbool{LWR@tikzbabel}

\@ifpackagelater{tikz}{2013/12/20}% Test for Tikz version v3.0.0
{\usetikzlibrary{babel}\booltrue{LWR@tikzbabel}}
{\boolfalse{LWR@tikzbabel}}
```

Env `pgfpicture`

The `\pgfpicture` environment is enclosed inside a `\lateximage`. Enclose the low-level `\pgfpicture` in a `lateximage`. This is also used by the higher-level `\tikz` and `tikzpicture`.

```
\preto\pgfpicture{%
    \begin{lateximage}%
    \ifbool{LWR@tikzbabel}% Test for Tikz version v3.0.0
    {}%
    {\catcode`\$=3}% dollar sign is math shift
}

\appto\endpgfpicture{\end{lateximage}}
```

Ti*k*z is placed inside an SVG image, so use the original meanings of the following:

```
\LetLtxMacro\pgfutil@minipage\LWR@print@minipage
\let\pgfutil@endminipage\endLWR@print@minipage

\let\pgfutil@raggedleft\LWR@print@raggedleft
\let\pgfutil@raggedright\LWR@print@raggedright
```

```
20
21 \def\pgfutil@font@tiny{\LWR@printtiny}
22 \def\pgfutil@font@scriptsize{\LWR@printscriptsize}
23 \def\pgfutil@font@footnotesize{\LWR@printfootnotesize}
24 \def\pgfutil@font@small{\LWR@print@small}
25 \def\pgfutil@font@normalsize{\LWR@print@normalsize}
26 \def\pgfutil@font@large{\LWR@printlarge}
27 \def\pgfutil@font@Large{\LWR@printLarge}
28 \def\pgfutil@font@huge{\LWR@printhuge}
29 \def\pgfutil@font@Huge{\LWR@printHuge}
30
31 \def\pgfutil@font@itshape{\LWR@origitshape}
32 \def\pgfutil@font@bfseries{\LWR@origbfseries}
33
34 \def\pgfutil@font@normalfont{\LWR@orignormalfont}
```

File 312 `lwarp-titleps.sty`

§ 406 Package titleps

(*Emulates or patches code by* Javier Bezos.)

Pkg `titleps` titleps is loaded and used by lwarp during HTML output. All user options and macros are ignored and disabled.

Discard all options for lwarp-titleps:

for HTML output:

```
1 \LWR@ProvidesPackageDrop{titleps}
```

`\pagestyle` and `\thispagestyle` are already disabled in the lwarp code.

`\newpagestyle` {⟨*name*⟩} [⟨*style*⟩] {⟨*commands*⟩}

```
2 \NewDocumentCommand{\newpagestyle}{m o m}{}
```

`\renewpagestyle` {⟨*name*⟩} [⟨*style*⟩] {⟨*commands*⟩}

```
3 \NewDocumentCommand{\renewpagestyle}{m o m}{}
```

`\sethead` [⟨*el*⟩] [⟨*ec*⟩] [⟨*er*⟩] {⟨*ol*⟩} {⟨*oc*⟩} {⟨*or*⟩}

```
4 \NewDocumentCommand{\sethead}{o o o m m m}{}
```

`\setfoot` [⟨*el*⟩] [⟨*ec*⟩] [⟨*er*⟩] {⟨*ol*⟩} {⟨*oc*⟩} {⟨*or*⟩}

```
5 \NewDocumentCommand{\setfoot}{o o o m m m}{}
```

\settitlemarks * {⟨*names*⟩}

```
\NewDocumentCommand{\settitlemarks}{s m}{}
```

\headrule

```
\newcommand*{\headrule}{}
```

\footrule

```
\newcommand*{\footrule}{}
```

\setheadrule {⟨*length*⟩}

```
\newcommand*{\setheadrule}[1]{}
```

\setfootrule {⟨*length*⟩}

```
\newcommand*{\setfootrule}[1]{}
```

\makeheadrule

```
\newcommand*{\makeheadrule}{}
```

\makefootrule

```
\newcommand*{\makefootrule}{}
```

\setmarkboth {⟨*code*⟩}

```
\newcommand{\setmarkboth}[1]{}
```

\widenhead

```
\NewDocumentCommand{\widenhead}{s o o m m}{}
```

\bottitlemarks

```
\newcommand*{\bottitlemarks}{}
```

\toptitlemarks

```
\newcommand*{\toptitlemarks}{}
```

\firsttitlemarks

```
\newcommand*{\firsttitlemarks}{}
```

\nexttitlemarks

```
\newcommand*{\nexttoptitlemarks}{}
```

\outertitlemarks

```
\newcommand*{\outertitlemarks}{}
```

\innertitlemarks

```
\newcommand*{\innertitlemarks}{}
```

\newtitlemark * {⟨*name*⟩}

```
\NewDocumentCommand{\newtitlemark}{s m}{}
```

\pretitlemark * {⟨*section*⟩} {⟨*text*⟩}

```
\NewDocumentCommand{\pretitlemark}{s m m}{}
```

\ifsamemark {⟨*group*⟩} {⟨*command*⟩} {⟨*true*⟩} {⟨*false*⟩}

```
\newcommand{\ifsamemark}[4]{}
```

\setfloathead * [⟨.⟩] [⟨.⟩] [⟨.⟩] {⟨.⟩} {⟨.⟩} {⟨.⟩} {⟨*extra*⟩} [⟨*which*⟩]

```
\NewDocumentCommand{\setfloathead}{s o o o m m m m m}{}
```

\setfloatfoot * [⟨.⟩] [⟨.⟩] [⟨.⟩] {⟨.⟩} {⟨.⟩} {⟨.⟩} {⟨*extra*⟩} [⟨*which*⟩]

```
\NewDocumentCommand{\setfloatfoot}{s o o o m m m m m}{}
```

\nextfloathead * [⟨.⟩] [⟨.⟩] [⟨.⟩] {⟨.⟩} {⟨.⟩} {⟨.⟩} {⟨*extra*⟩} [⟨*which*⟩]

```
\NewDocumentCommand{\nextfloathead}{s o o o m m m m m}{}
```

\nextfloatfoot * [⟨.⟩] [⟨.⟩] [⟨.⟩] {⟨.⟩} {⟨.⟩} {⟨.⟩} {⟨*extra*⟩} [⟨*which*⟩]

```
\NewDocumentCommand{\nextfloatfoot}{s o o o m m m m m}{}
```

\newmarkset {⟨*markset*⟩}

```
\newcommand{\newmarkset}[1]{}
```

\newextramark * {⟨*markset*⟩} {⟨*macro-name*⟩}

```
\NewDocumentCommand{\newextramarkset}{s m m}{}
```

\botextramarks {⟨*markset*⟩}

```
\newcommand{\botextramarks}[1]{}
```

\topextramarks {⟨*markset*⟩}

```
\newcommand{\topextramarks}[1]{}
```

\firstextramarks {⟨*markset*⟩}

```
\newcommand{\firstextramarks}[1]{}
```

\nextextramarks {⟨*markset*⟩}

```
\newcommand{\nexttopextramarks}[1]{}
```

\outerextramarks {⟨*markset*⟩}

```
\newcommand{\outerextramarks}[1]{}
```

\innerextramarks {⟨*markset*⟩}

```
\newcommand{\innerextramarks}[1]{}
```

File 313 `lwarp-titleref.sty`

§ 407 Package titleref

Pkg `titleref` titleref is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{titleref}

\LetLtxMacro\titleref\nameref

\providecounter{LWR@currenttitle}

\newcommand*{\currenttitle}{%
    \addtocounter{LWR@currenttitle}{1}%
    \label{currenttitle\arabic{LWR@currenttitle}}%
    \nameref{currenttitle\arabic{LWR@currenttitle}}%
}

```

```
\newcommand*{\theTitleReference}[2]{}
```

File 314 `lwarp-titlesec.sty`

§ 408 Package

titlesec

(*Emulates or patches code by* Javier Bezos.)

Pkg `titlesec` titlesec is emulated. All user options and macros are ignored and disabled.

Discard all options for lwarp-titlesec:

for HTML output:

```
\LWR@ProvidesPackageDrop{titlesec}
```

`\titlelabel` {⟨*label-format*⟩}

```
\newcommand*{\titlelabel}[1]{}
```

`\titleformat*` {⟨*command*⟩} {⟨*format*⟩}

`\titleformat` {⟨*command*⟩} [⟨*shape*⟩] {⟨*format*⟩} {⟨*label*⟩} {⟨*sep*⟩} {⟨*begfore*⟩} [⟨*after*⟩]

```
\newcommand\titleformat{%
  \@ifstar{\ttl@format@s}%
          {\ttl@format@i}}
\newcommand{\ttl@format@s}[1]{}
\NewDocumentCommand{\ttl@format@i}{m o m m m m o}{}
```

`\chaptertitlename`

```
\@ifundefined{@chapapp}{\let\@chapapp\chaptername}{}
\newcommand\chaptertitlename{\@chapapp}
```

`\titlespacing` * {⟨*command*⟩} {⟨*left*⟩} {⟨*before*⟩} {⟨*after*⟩} [⟨*right*⟩]

```
\NewDocumentCommand{\titlespacing}{s m m m m o}{}
```

`\filright`

```
\newcommand*{\filright}{}
```

`\filcenter`

```
\newcommand*{\filcenter}{}
```

\filleft

```
\newcommand*{\filleft}{}
```

\fillast

```
\newcommand*{\fillast}{}
```

\filinner

```
\newcommand*{\filinner}{}
```

\filouter

```
\newcommand*{\filouter}{}
```

\wordsep

```
\newcommand\wordsep{\fontdimen\tw@\font \@plus
  \fontdimen\thr@@\font \@minus \fontdimen4\font}
```

\titleline * [⟨*align*⟩] {⟨*material*⟩}

```
\NewDocumentCommand{\titleline}{s o m}{}
```

\titlerule [⟨*height*⟩]

```
\providecommand*\titlerule{\@ifstar{\ttl@row}{\ttl@rule}}
\newcommand*{\ttl@rule}[1][]{}
\newcommand*{\ttl@row}[2][]{}
```

\iftitlemeasuring {⟨*true*⟩} {⟨*false*⟩}

```
\newcommand{\iftitlemeasuring}[2]{#2}
```

\assignpagestyle {⟨*command*⟩} {⟨*pagestyle*⟩}

```
\newcommand{\assignpagestyle}[2]{#2}
```

\titleclass {⟨*name*⟩} [⟨*startlevel*⟩] {⟨*class*⟩} [⟨*cmd*⟩]

```
\NewDocumentCommand{\titleclass}{m o m o}
```

File 315 `lwarp-titletoc.sty`

§ 409 Package

titletoc

(*Emulates or patches code by* Javier Bezos.)

Pkg `titletoc` titletoc is emulated. All user options and macros are ignored and disabled.

Discard all options for lwarp-titletoc:

for HTML output:

```
\LWR@ProvidesPackageDrop{titletoc}
```

`\dottedcontents` {⟨*section*⟩} [⟨*left*⟩] {⟨*above*⟩} {⟨*label*⟩} {⟨*leader*⟩}

```
\NewDocumentCommand{\dottedcontents}{m o m m m}{}
```

`\titlecontents` * {⟨*section*⟩} [⟨*left*⟩] {⟨*above*⟩} {⟨*numbered*⟩} {⟨*numberless*⟩} {⟨*filler*⟩} [⟨*below or begin*⟩] [⟨*separator*⟩] [⟨*end*⟩]

```
\newcommand{\titlecontents}{\@ifstar{\ttl@tcstar}{\ttl@tcnostar}}
\NewDocumentCommand{\ttl@tcstar}{m o m m m m o o o}{}
\NewDocumentCommand{\ttl@tcnostar}{m o m m m m o}{}
```

`\contentsmargin` [⟨*correction*⟩] {⟨*right*⟩}

```
\newcommand{\contentsmargin}[2][]{}
```

`\thecontentslabel`

```
\newcommand*{\thecontentslabel}{thecontentslabel}
```

`\thecontentspage`

```
\newcommand*{\thecontentspage}{thecontentspage}
```

`\contentslabel` [⟨*format*⟩] {⟨*space*⟩}

```
\newcommand{\contentslabel}[2][]{\thecontentslabel}
```

`\contentspage` [⟨*format*⟩]

```
\newcommand{\contentspage}[1][]{\thecontentspage}
```

\contentspush {⟨*text*⟩}

```
\newcommand{\contentspush}[1]{}
```

\contentsuse {⟨*name*⟩} {⟨*text*⟩}

```
\newcommand{\contentsuse}[2]{}
```

\startcontents [⟨*name*⟩]

```
\newcommand*{\startcontents}[1][]{}
```

\stopcontents [⟨*name*⟩]

```
\newcommand*{\stopcontents}[1][]{}
```

\resumecontents [⟨*name*⟩]

```
\newcommand*{\resumecontents}[1][]{}
```

\printcontents [⟨*name*⟩] {⟨*prefix*⟩} {⟨*start*⟩} {⟨*code*⟩}

```
\newcommand{\printcontents}[4][]{}
```

\startlist [⟨*name*⟩] {⟨*list*⟩}

```
\newcommand{\startlist}[2][]{}
```

\stoplist [⟨*name*⟩] {⟨*list*⟩}

```
\newcommand{\stoplist}[2][]{}
```

\resumelist [⟨*name*⟩] {⟨*list*⟩}

```
\newcommand{\resumelist}[2][]{}
```

\printlist [⟨*name*⟩] {⟨*list*⟩} {⟨*prefix*⟩} {⟨*code*⟩}

```
\newcommand{\printlist}[4][]{}
```

File 316 **lwarp-titling.sty**

§ 410 Package titling

(*Emulates or patches code by* Peter Wilson.)

Pkg titling

package support
⚠ load order

lwarp supports the native LaTeX titling commands, and also supports the packages authblk and titling. If both are used, authblk should be loaded before titling.

\published and \subtitle

If using the titling package, additional titlepage fields for \published and \subtitle may be added by using \AddSubtitlePublished in the preamble. See section 64.8.

The various titling footnote restyling commands have no effect.

Pass all options to lwarp-titling:

for HTML output:

```
\LWR@ProvidesPackagePass{titling}
```

\@bsmtitlempty

Patch \@bsmtitlempty:

```
\let\LWR@orig@bsmtitlempty\@bsmtitlempty
\renewcommand*{\@bsmtitlempty}{%
\LWR@orig@bsmtitlempty%
}
```

\keepthetitle

Patch \keepthetitle:

```
\let\LWR@origkeepthetitle\keepthetitle
\renewcommand*{\keepthetitle}{%
\LWR@orig@keepthetitle%
}
```

\killtitle

Patch \killtitle:

```
\let\LWR@origkilltitle\killtitle
\renewcommand*{\killtitle}{%
\LWR@orig@killtitle%
}
```

Env titlingpage

```
\renewenvironment*{titlingpage}
{%
```

Start an HTML titlepage div:

```
\LWR@printpendingfootnotes
\begin{titlepage}
```

Prepare for a custom version of \maketitle inside the titlingpage:

```
\LWR@maketitlesetup
```

```
\let\maketitle\LWR@titlingmaketitle
}
{
```

At the end of the environment, end the HTML titlepage div:

```
\end{titlepage}
}
```

Patch the pre/post title/author/date to add HTML tags, then initilize:

```

\pretitle{}
\posttitle{}

\preauthor{}
\postauthor{}

\predate{}
\postdate{}
```

`\LWR@maketitlesetup` Patches `\thanks` macros.

```
\renewcommand*{\LWR@maketitlesetup}{%
```

Redefine the footnote mark:

```
\def\@makefnmark{\textsuperscript{\@thefnmark}}
```

`\thefootnote` ⇒ `\nameuse`{arabic}{footnote}, or
`\thefootnote` ⇒ `\nameuse`{fnsymbol}{footnote}

Redefine the footnote text:

```
\long\def\@makefntext##1{%
```

Make the footnote mark and some extra horizontal space for the tags:

```
\makethanksmark~%
```

`\makethanksmark` ⇒ `\thanksfootmark` ⇒ `\tamark` ⇒
`\@thefnmark` ⇒ `\itshape` a (or similar)

Print the text:

```
##1%
}% \@makefntext
}
```

\thanksfootmark

```
\renewcommand{\thanksfootmark}{%
%   \hb@xt@\thanksmarkwidth{\hfil\normalfont%
        \thanksscript{%
            \thanksfootpre \tamark \thanksfootpost%
        }%
%   }%
}
```

\maketitle HTML mode. Creates an HTML titlepage div and typesets the title, etc.

Code from the titling package is adapted, simplified, and modified for HTML output.

```
\renewcommand*{\maketitle}{%
```

An HTML titlepage is used for all classes.

```
\begin{titlepage}
```

Select which kind of footnote marks to use:

```
\@bsmarkseries
```

Set up special patches:

```
\LWR@maketitlesetup
```

Typeset the title, etc:

```
\@maketitle
```

Immediately generate any \thanks footnotes:

```
\@thanks
```

Close the HTML titlepage div:

```
\end{titlepage}
```

Reset the footnote counter:

```
\@bscontmark
}
```

`\@maketitle` Typesets the title, etc. Patched for HTML.

```
\DeclareDocumentCommand{\@maketitle}{}{%
    \maketitlehooka
    {
        \LWR@stoppars\LWR@htmltag{\LWR@tagtitle}
        \@bspretitle \@title \@bsposttitle
        \LWR@htmltag{\LWR@tagtitleend}\LWR@startpars
    }
    \maketitlehookb
    {
        \begin{BlockClass}{author}
        \renewcommand{\and}{
            \end{BlockClass}
            \begin{BlockClass}{oneauthor}
        }
        \begin{BlockClass}{oneauthor}
        \@bspreauthor \@author  \@bspostauthor
        \end{BlockClass}
        \end{BlockClass}
    }
    \maketitlehookc
    {
        \begin{BlockClass}{titledate}
        \@bspredate \@date \@bspostdate
        \end{BlockClass}
    }
    \maketitlehookd
}
```

`\LWR@titlingmaketitle` `\maketitle` for use inside an HTML `titlingpage` environment.

```
\renewcommand*{\LWR@titlingmaketitle}{%
```

Keep pending footnotes out of the title block:

```
\@thanks
```

Select which kind of footnote marks to use:

```
\@bsmarkseries
```

Set up special patches:

```
\LWR@maketitlesetup
```

Typeset the title, etc:

```
\@maketitle
```

Immediately generate any \thanks footnotes:

```
\@thanks
```

Reset the footnote counter:

```
\@bscontmark
}
```

\thanksmarkseries {⟨*series*⟩}

Sets the type of footnote marks used by \thanks, where type is 'arabic', 'roman', 'fnsymbol', etc.

```
\renewcommand{\thanksmarkseries}[1]{%
\def\@bsmarkseries{\renewcommand{\thefootnote}{\@nameuse{#1}{footnote}}}%
}
```

Set default titlepage thanks footnote marks. See section 64.7.

```
\@ifclassloaded{memoir}{
   \thanksmarkseries{arabic}
}{% not memoir
\if@titlepage
   \thanksmarkseries{arabic}
\else
   \thanksmarkseries{fnsymbol}
\fi
}% not memoir
```

File 317 **lwarp-tocbasic.sty**

§ 411 Package

tocbasic

(*Emulates or patches code by* Markus Kohm.)

Pkg tocbasic tocbasic is patched for use by lwarp.

This package may be loaded standalone, but is also loaded automatically if koma-script classes are in use. \DeclareDocumentCommand is used to overwrite the koma-script definitions.

for HTML output:

```
\LWR@ProvidesPackagePass{tocbasic}

\DeclareDocumentCommand{\usetocbasicnumberline}{o}{}
\DeclareDocumentCommand{\DeclareTOCStyleEntry}{o m m}{}
\DeclareDocumentCommand{\DeclareTOCEntryStyle}{m o m}{}
\DeclareDocumentCommand{\DefineTOCEntryOption}{m o m}{}
\DeclareDocumentCommand{\DefineTOCEntryBooleanOption}{m o m m m}{}
\DeclareDocumentCommand{\DefineTOCEntryCommandOption}{m o m m m}{}
\DeclareDocumentCommand{\DefineTOCEntryIfOption}{m o m m m}{}
\DeclareDocumentCommand{\DefineTOCEntryLengthOption}{m o m m m}{}
\DeclareDocumentCommand{\DefineTOCEntryNumberOption}{m o m m m}{}
\DeclareDocumentCommand{\CloneTOCEntryStyle}{m m}{}
\DeclareDocumentCommand{\TOCEntryStyleInitCode}{m m}{}
\DeclareDocumentCommand{\TOCEntryStyleStartInitCode}{m m}{}
```

File 318 `lwarp-tocbibind.sty`

§ 412 Package tocbibind

(*Emulates or patches code by* Peter Wilson.)

Pkg tocbibind tocbibind is patched for use by lwarp.

placement and TOC options An index may be placed inline with other HTML text, or on its own HTML page:

Pkg makeidx **Inline, with a manual TOC entry:**

A commonly-used method to introduce an index in a LaTeX document:

```
\cleardoublepage
\phantomsection
\addcontentsline{toc}{section}{\indexname}% or chapter
\printindex
```

Pkg makeidx **On its own HTML page, with a manual TOC entry:**

```
\begin{warpprint}
\cleardoublepage
\phantomsection
\addcontentsline{toc}{section}{\indexname}% or chapter
\end{warpprint}
\ForceHTMLPage
\ForceHTMLTOC
\printindex
```

Pkg tocbibind **Inline, with an automatic TOC entry:**

The tocbibind package may be used to automatically place an entry in the TOC.

```
\usepackage[nottoc]{tocbibind}
...
\cleardoublepage
\phantomsection % to fix print-version index link
\printindex
```

Pkg tocbibind **On its own HTML page, with an automatic TOC entry:**

```
\usepackage[nottoc]{tocbibind}
...
\cleardoublepage
\phantomsection % to fix print-version index link
\ForceHTMLPage
\printindex
```

Opt tocbibind numindex

numbered index section

Use the tocbibind numindex option to generate a numbered index. Without this option, the index heading has no number.

Other packages, such as imakeidx, may also have options for including the index in the Table of Contents.

for HTML output:

```
\let\simplechapterdelim\relax

\LWR@ProvidesPackagePass{tocbibind}

\renewenvironment{theindex}%
{%
    \if@bibchapter
       \if@donumindex
           \chapter{\indexname}
       \else
         \if@dotocind
           \chapter*{\indexname}
           \addcontentsline{toc}{chapter}{\LWR@isolate{\indexname}}
         \else
           \chapter*{\indexname}
         \fi
       \fi
    \else
       \if@donumindex
           \section{\indexname}
       \else
         \if@dotocind
           \section*{\indexname}
           \addcontentsline{toc}{\@tocextra}{\LWR@isolate{\indexname}}
         \else
           \section*{\indexname}
         \fi
       \fi
```

```
    \fi
\let\item\LWR@indexitem%
\let\subitem\LWR@indexsubitem%
\let\subsubitem\LWR@indexsubsubitem%
}{}
```

The following code is shared by anonchap.

```
\DeclareDocumentCommand{\simplechapter}{O{\@empty}}{%
    \def\@chapcntformat##1{%
        #1~\csname the##1\endcsname\simplechapterdelim\protect\quad%
    }%
}

\DeclareDocumentCommand{\restorechapter}{}{%
\let\@chapcntformat\@seccntformat%
}
```

File 319 `lwarp-tocenter.sty`

§ 413 Package tocenter

Pkg `tocenter` tocenter is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{tocenter}

\NewDocumentCommand{\ToCenter}{s o m m}{}
\NewDocumentCommand{\FromMargins}{s o m m m m}{}
```

File 320 `lwarp-tocloft.sty`

§ 414 Package tocloft

(*Emulates or patches code by* Peter Wilson.)

Pkg `tocloft` tocloft is emulated. Most user options and macros are ignored and disabled. `\newlistof` and `\cftchapterprecis` are supported.

Pkg `tocloft` ⚠ tocloft & other packages

If using tocloft with tocbibind, anonchap, fncychap, or other packages which change chapter title formatting, load tocloft with its `titles` option, which tells tocloft to use standard LaTeX commands to create the titles, allowing other packages to work with it.

Discard all options for lwarp-tocloft:

for HTML output:

```
\LWR@ProvidesPackageDrop{tocloft}
```

`\tocloftpagestyle` {⟨*style*⟩}

```
\newcommand{\tocloftpagestyle}[1]{}
```

`\cftmarktoc`

```
\newcommand*{\cftmarktoc}{}
```

`\cfttoctitlefont`

```
\newcommand*{\cfttoctitlefont}{}
```

`\cftaftertoctitle`

```
\newcommand*{\cftaftertoctitle}{}

\newlength{\cftbeforetoctitleskip}
\newlength{\cftaftertoctitleskip}
```

`\cftmarklof`

```
\newcommand*{\cftmarklof}{}
```

`\cftloftitlefont`

```
\newcommand*{\cftloftitlefont}{}
```

`\cftafterloftitle`

```
\newcommand*{\cftafterloftitle}{}

\newlength{\cftbeforeloftitleskip}
\newlength{\cftafterloftitleskip}
```

`\cftmarklot`

```
\newcommand*{\cftmarklot}{}
```

`\cftlottitlefont`

```
\newcommand*{\cftlottitlefont}{}
```

\cftafterlottitle

```
\newcommand*{\cftafterlottitle}{}

\newlength{\cftbeforelottitleskip}
\newlength{\cftafterlottitleskip}
```

\cftdot

```
\providecommand*{\cftdot}{.}
```

\cftdotsep

```
\providecommand*{\cftdotsep}{1}
```

\cftnodots

```
\providecommand*{\cftnodots}{5000}
```

\cftdotfill {⟨*sep*⟩}

```
\providecommand{\cftdotfill}[1]{}
```

\cftsetpnumwidth {⟨*length*⟩}

```
\DeclareDocumentCommand{\cftsetpnumwidth}{m}{}
```

\cftsetrmarg {⟨*length*⟩}

```
\DeclareDocumentCommand{\cftsetrmarg}{m}{}
```

\cftpnumalign {⟨*alignment*⟩}

```
\DeclareDocumentCommand{\cftpnumalign}{m}{}

\LWR@providelength{\cftparskip}
```

The part-related items are also provided by memoir:

```
\LWR@providelength{\cftbeforepartskip}
\LWR@providelength{\cftpartindent}
\LWR@providelength{\cftpartnumwidth}
\providecommand*{\cftpartfont}{}
\providecommand*{\cftpartpresnum}{}
\providecommand*{\cftpartaftersnum}{}
```

```
\providecommand*{\cftpartaftersnumb}{}
\providecommand*{\cftpartleader}{}
\providecommand*{\cftpartdotsep}{1}
\providecommand*{\cftpartpagefont}{}
\providecommand*{\cftpartafterpnum}{}
```

memoir uses the full name “chapter” instead of “chap”:

```
\LWR@providelength{\cftbeforechapskip}
\LWR@providelength{\cftchapindent}
\LWR@providelength{\cftchapnumwidth}
\newcommand*{\cftchapfont}{}
\newcommand*{\cftchappresnum}{}
\newcommand*{\cftchapaftersnum}{}
\newcommand*{\cftchapaftersnumb}{}
\newcommand*{\cftchapleader}{}
\newcommand*{\cftchapdotsep}{1}
\newcommand*{\cftchappagefont}{}
\newcommand*{\cftchapafterpnum}{}
```

The following do not appear in memoir:

```
\LWR@providelength{\cftbeforesecskip}
\LWR@providelength{\cftsecindent}
\LWR@providelength{\cftsecnumwidth}
\newcommand*{\cftsecfont}{}
\newcommand*{\cftsecpresnum}{}
\newcommand*{\cftsecaftersnum}{}
\newcommand*{\cftsecaftersnumb}{}
\newcommand*{\cftsecleader}{}
\newcommand*{\cftsecdotsep}{1}
\newcommand*{\cftsecpagefont}{}
\newcommand*{\cftsecafterpnum}{}

\LWR@providelength{\cftbeforesubsecskip}
\LWR@providelength{\cftsubsecindent}
\LWR@providelength{\cftsubsecnumwidth}
\newcommand*{\cftsubsecfont}{}
\newcommand*{\cftsubsecpresnum}{}
\newcommand*{\cftsubsecaftersnum}{}
\newcommand*{\cftsubsecaftersnumb}{}
\newcommand*{\cftsubsecleader}{}
\newcommand*{\cftsubsecdotsep}{1}
\newcommand*{\cftsubsecpagefont}{}
\newcommand*{\cftsubsecafterpnum}{}

\LWR@providelength{\cftbeforesubsubsecskip}
\LWR@providelength{\cftsubsubsecindent}
\LWR@providelength{\cftsubsubsecnumwidth}
```

```
\newcommand*{\cftsubsubsecfont}{}
\newcommand*{\cftsubsubsecpresnum}{}
\newcommand*{\cftsubsubsecaftersnum}{}
\newcommand*{\cftsubsubsecaftersnumb}{}
\newcommand*{\cftsubsubsecleader}{}
\newcommand*{\cftsubsubsecdotsep}{1}
\newcommand*{\cftsubsubsecpagefont}{}
\newcommand*{\cftsubsubsecafterpnum}{}

\LWR@providelength{\cftbeforeparaskip}
\LWR@providelength{\cftparaindent}
\LWR@providelength{\cftparanumwidth}
\newcommand*{\cftparafont}{}
\newcommand*{\cftparapresnum}{}
\newcommand*{\cftparaaftersnum}{}
\newcommand*{\cftparaaftersnumb}{}
\newcommand*{\cftparaleader}{}
\newcommand*{\cftparadotsep}{1}
\newcommand*{\cftparapagefont}{}
\newcommand*{\cftparaafterpnum}{}

\LWR@providelength{\cftbeforesubparaskip}
\LWR@providelength{\cftsubparaindent}
\LWR@providelength{\cftsubparanumwidth}
\newcommand*{\cftsubparafont}{}
\newcommand*{\cftsubparapresnum}{}
\newcommand*{\cftsubparaaftersnum}{}
\newcommand*{\cftsubparaaftersnumb}{}
\newcommand*{\cftsubparaleader}{}
\newcommand*{\cftsubparadotsep}{1}
\newcommand*{\cftsubparapagefont}{}
\newcommand*{\cftsubparaafterpnum}{}

\LWR@providelength{\cftbeforefigskip}
\LWR@providelength{\cftfigindent}
\LWR@providelength{\cftfignumwidth}
\newcommand*{\cftfigfont}{}
\newcommand*{\cftfigpresnum}{}
\newcommand*{\cftfigaftersnum}{}
\newcommand*{\cftfigaftersnumb}{}
\newcommand*{\cftfigleader}{}
\newcommand*{\cftfigdotsep}{1}
\newcommand*{\cftfigpagefont}{}
\newcommand*{\cftfigafterpnum}{}

\LWR@providelength{\cftbeforesubfigskip}
\LWR@providelength{\cftsubfigindent}
\LWR@providelength{\cftsubfignumwidth}
\newcommand*{\cftsubfigfont}{}
```

```
\newcommand*{\cftsubfigpresnum}{}
\newcommand*{\cftsubfigaftersnum}{}
\newcommand*{\cftsubfigaftersnumb}{}
\newcommand*{\cftsubfigleader}{}
\newcommand*{\cftsubfigdotsep}{1}
\newcommand*{\cftsubfigpagefont}{}
\newcommand*{\cftsubfigafterpnum}{}

\LWR@providelength{\cftbeforetabskip}
\LWR@providelength{\cfttabindent}
\LWR@providelength{\cfttabnumwidth}
\newcommand*{\cfttabfont}{}
\newcommand*{\cfttabpresnum}{}
\newcommand*{\cfttabaftersnum}{}
\newcommand*{\cfttabaftersnumb}{}
\newcommand*{\cfttableader}{}
\newcommand*{\cfttabdotsep}{1}
\newcommand*{\cfttabpagefont}{}
\newcommand*{\cfttabafterpnum}{}

\LWR@providelength{\cftbeforesubtabskip}
\LWR@providelength{\cftsubtabindent}
\LWR@providelength{\cftsubtabnumwidth}
\newcommand*{\cftsubtabfont}{}
\newcommand*{\cftsubtabpresnum}{}
\newcommand*{\cftsubtabaftersnum}{}
\newcommand*{\cftsubtabaftersnumb}{}
\newcommand*{\cftsubtableader}{}
\newcommand*{\cftsubtabdotsep}{1}
\newcommand*{\cftsubtabpagefont}{}
\newcommand*{\cftsubtabafterpnum}{}

\DeclareDocumentCommand{\cftsetindents}{m m m}{}

\newcommand{\pagenumbersoff}[1]{}
\newcommand{\pagenumberson}[1]{}
```

`\newlistentry` [⟨*within*⟩] {⟨*counter*⟩} {⟨*ext*⟩} {⟨*level-1*⟩}

```
\DeclareDocumentCommand{\newlistentry}{o m m m}
{%
\LWR@traceinfo{newlistentry #2 #3 #4}%
\IfValueTF{#1}%
{%
    \@ifundefined{c@#2}{%
        \newcounter{#2}[#1]%
        \expandafter\edef\csname the#2\endcsname{%
            \expandafter\noexpand\csname the#1\endcsname.\noexpand\arabic{#2}%
```

```
        }%
    }{}%
}%
{%
    \@ifundefined{c@#2}{%
        \newcounter{#2}%
    }{}%
}%
\@namedef{l@#2}##1##2{%
    \hypertocfloat{1}{#2}{#3}{##1}{##2}%
    \def\cftwhatismyname{#2}% from memoir
}%
\expandafter\newlength\csname cftbefore#2skip\endcsname%
\expandafter\newlength\csname cft#2indent\endcsname%
\expandafter\newlength\csname cft#2numwidth\endcsname%
\@namedef{cft#2font}{}%
\@namedef{cft#2presnum}{}%
\@namedef{cft#2aftersnum}{}%
\@namedef{cft#2aftersnumb}{}%
\@namedef{cft#2leader}{}%
\@namedef{cft#2dotsep}{1}%
\@namedef{cft#2pagefont}{}%
\@namedef{cft#2afterpnum}{}%
\@namedef{toclevel@#2}{#4}%
\@namedef{cft#2fillnum}##1{}%
\LWR@traceinfo{newlistentry done}%
}
```

`\newlistof` [⟨*within*⟩] {⟨*type*⟩} {⟨*ext*⟩} {⟨*listofname*⟩}

Emulated through the `\newfloat` mechanism.

```
\DeclareDocumentCommand{\newlistof}{o m m m}
{%
\IfValueTF{#1}
{\newlistentry[#1]{#2}{#3}{0}}
{\newlistentry{#2}{#3}{0}}
\@namedef{ext@#2}{#3}
\@ifundefined{c@#3depth}{\newcounter{#3depth}}{}
\setcounter{#3depth}{1}
\@namedef{cftmark#3}{}
\@namedef{listof#2}{\listof{#2}{#4}}
\@namedef{@cftmake#3title}{}
\expandafter\newlength\csname cftbefore#3titleskip\endcsname
\expandafter\newlength\csname cftafter#3titleskip\endcsname
\@namedef{cft#3titlefont}{}
\@namedef{cftafter#3title}{}
\@namedef{cft#3prehook}{}
\@namedef{cft#3posthook}{}
}
```

`\cftchapterprecis` {⟨*text*⟩}

```
\newcommand{\cftchapterprecis}[1]{%
  \cftchapterprecishere{#1}
  \cftchapterprecistoc{#1}}
\newcommand{\cftchapterprecishere}[1]{%
  \begin{quote}\textit{#1}\end{quote}}
\newcommand{\cftchapterprecistoc}[1]{
  \addtocontents{toc}{%
  {
     \protect\begin{quote}#1\protect\end{quote}}
  }
}
```

File 321 `lwarp-tocstyle.sty`

§ 415 Package tocstyle

Pkg `tocstyle` tocstyle is ignored.

⚠ Not fully tested! Please send bug reports!

for HTML output:

```
\LWR@ProvidesPackageDrop{tocstyle}
```

```
\newcommand*{\usetocstyle}[2][]{}
\newcommand*{\deactivatetocstyle}[1][]{}
\newcommand*{\reactivatetocstyle}[1][]{}
\NewDocumentCommand{\settocfeature}{o o m m}{}
\NewDocumentCommand{\settocstylefeature}{o m m}{}
\NewDocumentCommand{\newtocstyle}{o o m m}{}
\newcommand*{\aliastoc}[2]{}
\newcommand*{\showtoc}[2][]{}
\newcommand{\iftochasdepth}[4]{}
```

File 322 `lwarp-todo.sty`

§ 416 Package todo

(*Emulates or patches code by* Federico Garcia.)

Pkg `todo` todo is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{todo}
```

```
\renewcommand\todoitem[2]{%
    \refstepcounter{todo}%
    \item[%
        \HTMLunicode{2610} \quad
        \ref{todopage:\thetodo}
     ] : {\todoformat\ifx#1\todomark\else\textbf{#1} \fi}#2%
    \label{todolbl:\thetodo}%
}%

\renewcommand\doneitem[2]{%
    \stepcounter{todo}%
    \item[%
        \HTMLunicode{2611} \quad
        \ref{todopage:\thetodo}
    ] \@nameuse{@done\the\c@todo}:
        {\todoformat\ifx#1\todomark\else\textbf{#1} \fi}#2%
}

\xpatchcmd{\@displaytodo}
    {\todoformat #1}{\todoformat \textbf{#1}}{}
    {\PackageWarning{lwarp-todo}{Unable to patch @displaytodo.}}

\xpatchcmd{\@displayfulltodo}
    {\todoformat #1}{\todoformat \textbf{#1}}{}
    {\PackageWarning{lwarp-todo}{Unable to patch @displayfulltodo.}}

\patchcmd{\todoenv}{\itshape see text.}{\textit{see text.}}{}
    {\PackageWarning{lwarp-todo}{Unable to patch todoenv.}}

\patchcmd{\astodos}{\todoformat #1}{\todoformat \textbf{#1}}{}
    {\PackageWarning{lwarp-todo}{Unable to patch astodos.}}

\AtBeginDocument{
\crefname{todo}{todo}{todos}
\Crefname{todo}{Todo}{Todos}
}
```

File 323 **lwarp-todonotes.sty**

§ 417 Package todonotes

(*Emulates or patches code by* Henrik Skov Midtiby.)

Pkg `todonotes` todonotes is emulated.

The documentation for todonotes and luatodonotes have an example with a todo inside a caption. If this example does not work it will be necessary to move the todo outside of the caption.

for HTML output:

```
\LWR@ProvidesPackagePass{todonotes}

\if@todonotes@disabled
\else

\newcommand{\ext@todo}{tdo}

\renewcommand{\l@todo}[2]{\hypertocfloat{1}{todo}{ldo}{#1}{#2}}


\let\LWRTODONOTES@orig@todototoc\todototoc

\renewcommand*{\todototoc}{%
\phantomsection%
\LWRTODONOTES@orig@todototoc%
}

\renewcommand{\@todonotes@drawMarginNoteWithLine}{
\fcolorbox
    {\@todonotes@currentbordercolor}
    {\@todonotes@currentbackgroundcolor}
    {\arabic{@todonotes@numberoftodonotes}}
\marginpar{\@todonotes@drawMarginNote}
}

\renewcommand{\@todonotes@drawInlineNote}{%
\fcolorboxBlock%
    {\@todonotes@currentbordercolor}%
    {\@todonotes@currentbackgroundcolor}%
    {%
        \if@todonotes@authorgiven%
        {\@todonotes@author:\,}%
        \fi%
        \@todonotes@text%
    }%
}

\renewcommand{\@todonotes@drawMarginNote}{%
    \if@todonotes@authorgiven%
        \@todonotes@author\par%
    \fi%
    \arabic{@todonotes@numberoftodonotes}: %
    \fcolorbox%
    {\@todonotes@currentbordercolor}%
    {\@todonotes@currentbackgroundcolor}%
    {%
```

```
        \@todonotes@sizecommand%
        \@todonotes@text %
    }%
}%

\renewcommand{\@todonotes@drawLineToRightMargin}{}

\renewcommand{\@todonotes@drawLineToLeftMargin}{}

\renewcommand{\missingfigure}[2][]{%
\setkeys{todonotes}{#1}%
\addcontentsline{tdo}{todo}{\@todonotes@MissingFigureText: #2}%
\fcolorboxBlock%
    {\@todonotes@currentbordercolor}%
    {\@todonotes@currentfigcolor}%
    {%
        \setlength{\fboxrule}{4pt}%
        \fcolorbox{red}{white}{Missing figure} \quad #2%
    }
}

\LetLtxMacro\LWRTODONOTES@orig@todo\@todo

\RenewDocumentCommand{\@todo}{o m}{%
\begingroup%
\renewcommand*{\phantomsection}{}%
\IfValueTF{#1}{%
    \LWRTODONOTES@orig@todo[#1]{#2}%
}{%
    \LWRTODONOTES@orig@todo{#2}%
}
\endgroup%
}

\fi% \if@todonotes@disabled
```

File 324 **lwarp-tram.sty**

§ 418 Package tram

Pkg tram tram is emulated.

⚠ block only The HTML emulation uses a , which must not appear inside an HTML or an HTML paragraph. For this reason, the tram environment should only be used to contain paragraphs inside a \parbox or minipage. tram should not be used to mark up inline text.

To disable `tram`, allowing source compatibility with inline uses:

```
\begin{warpHTML}
\renewenvironment{tram}[1][]{}{}
\end{warpHTML}
```

for HTML output:

```
\LWR@ProvidesPackageDrop{tram}

\newenvironment{tram}[1][]%
    {\BlockClass[background:lightgray]{tram}}
    {\endBlockClass}
```

File 325 `lwarp-transparent.sty`

§ 419 Package transparent

(*Emulates or patches code by* Heiko Oberdiek.)

Pkg `transparent` Emulated. `\texttransparent` works for inline objects. `\transparent` only works for `\includegraphics`.

⚠ Not XeLaTeX! Note that transparent does not work with XeLaTeX.

for HTML output: Discard all options for lwarp-transparent:

```
\LWR@ProvidesPackageDrop{transparent}

\newcommand*{\transparent}[1]{\edef\LWR@opacity{#1}}

\newcommand*{\texttransparent}[2]{%
\begingroup%
\transparent{#1}%
\InlineClass[opacity: #1]{transparent}{#2}%
\endgroup%
}
```

File 326 `lwarp-trimclip.sty`

§ 420 Package trimclip

Pkg `trimclip` trimclip is nullified.

for HTML output:

```
\LWR@ProvidesPackageDrop{trimclip}
```

The third argument, the text, is not touched. This allows \bgroup / \egroup, and verbatim content.

```
\csdef{trimbox}{\@ifstar\@gobble\@gobble}
\csletcs{trimbox*}{trimbox}
\def\endtrimbox{}
\csletcs{endtrimbox*}{endtrimbox}

\csletcs{clipbox}{trimbox}
\csletcs{clipbox*}{trimbox}
\csletcs{endclipbox}{endtrimbox}
\csletcs{endclipbox*}{endtrimbox}

\csletcs{marginbox}{trimbox}
\csletcs{marginbox*}{trimbox}
\csletcs{endmarginbox}{endtrimbox}
\csletcs{endmarginbox*}{endtrimbox}
```

File 327 `lwarp-trivfloat.sty`

§ 421 Package

trivfloat

(*Emulates or patches code by* Joseph Wright.)

Pkg `trivfloat` trivfloat is forced to use the built-in lwarp emulation for floats.

To create a new float type and change its name:

```
\trivfloat{example}
\renewcommand{\examplename}{Example Name}
\crefname{example}{example}{examples}
\Crefname{example}{Example}{Examples}
```

Discard all options for lwarp-trivfloat. This tells trivfloat not to use floatrow or memoir.

```
\LWR@ProvidesPackageDrop{trivfloat}
\LWR@origRequirePackage{trivfloat}
```

`\tfl@chapter@fix` Nullified at the beginning of the document. Is used by trivfloat to correct float chapter numbers, but is not needed for lwarp.

for HTML output:

```
\begin{warpHTML}
```

```
\AtBeginDocument{\DeclareDocumentCommand{\tfl@chapter@fix}{m m}{}}
\end{warpHTML}
```

§ 421.1 Combining \newfloat, \trivfloat, and algorithmicx

for HTML & PRINT:

```
\begin{warpall}
```

For both print and HTML output:

⚠ When using float, trivfloat, or algorithmicx at the same time, be aware of conflicting file usage. algorithmicx uses `.loa`. trivfloat by default starts with `.loa` and goes up for additional floats, skipping `.lof` and `.lot`.

⚠ When using `\newfloat`, be sure to manually assign higher letters to the `\newfloat` files to avoid `.loa` used by algorithmicx, and any files used by trivfloat. Also avoid using `.lof` and `.lot`.

⚠ When using `\trivfloat`, you may force it to avoid conflicting with algorithmicx by starting trivfloat's file extensions with `.lob`:

```
\makeatletter
\setcounter{tfl@float@cnt}{1} % start trivfloats with .lob
\makeatletter
```

```
\end{warpall}
```

File 328 **lwarp-turnthepage.sty**

§ 422 Package turnthepage

Pkg turnthepage turnthepage is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{turnthepage}
\newcommand{\turnthepage}{}
```

File 329 **lwarp-twoup.sty**

§ 423 Package twoup

Pkg twoup twoup is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{twoup}[2007/02/26]
\newcommand{\cleartolastpage}{}
```

File 330 `lwarp-typearea.sty`

§ 424 Package typearea

(*Emulates or patches code by* Markus Kohm.)

Pkg `typearea` typearea is emulated.

This package may be loaded standalone, but is also loaded automatically if koma-script classes are in use. `\DeclareDocumentCommand` is used to overwrite the koma-script definitions.

for HTML output:

```
\LWR@ProvidesPackageDrop{typearea}
\DeclareDocumentCommand{\typearea}{o m}{}
\DeclareDocumentCommand{\recalctypearea}{}{}
\@ifundefined{footheight}{\newlength\footheight}{}
\DeclareDocumentCommand{\areaset}{o m m}{}
\DeclareDocumentCommand{\activateareas}{}{}
\DeclareDocumentCommand{\storeareas}{m}{}
\DeclareDocumentCommand{\BeforeRestoreareas}{s m}{}
\DeclareDocumentCommand{\AfterRestoreareas}{s m}{}
\DeclareDocumentCommand{\AfterCalculatingTypearea}{s m}{}
\DeclareDocumentCommand{\AfterSettingArea}{s m}{}
```

File 331 `lwarp-ulem.sty`

§ 425 Package ulem

(*Emulates or patches code by* Donald Arseneau.)

Pkg `ulem` Patched for use by lwarp.

for HTML output: Use the original package:

```
\LWR@ProvidesPackagePass{ulem}[2012/05/18]
```

Basic markup commands, using CSS:

```
\NewDocumentCommand{\LWR@HTML@uline}{+m}{%
    \InlineClass%
        (text-decoration:underline; text-decoration-skip: auto)%
        {uline}{\LWR@isolate{#1}}%
}
\LWR@formatted{uline}

\NewDocumentCommand{\LWR@HTML@uuline}{+m}{%
    \InlineClass%
        (%
            text-decoration:underline; text-decoration-skip: auto;%
            text-decoration-style:double%
        )%
        {uuline}{\LWR@isolate{#1}}%
}
\LWR@formatted{uuline}

\NewDocumentCommand{\LWR@HTML@uwave}{+m}{%
    \InlineClass%
        (%
            text-decoration:underline; text-decoration-skip: auto;%
            text-decoration-style:wavy%
        )%
        {uwave}{\LWR@isolate{#1}}%
}
\LWR@formatted{uwave}

\NewDocumentCommand{\LWR@HTML@sout}{+m}{%
    \InlineClass%
        (text-decoration:line-through)%
        {sout}{\LWR@isolate{#1}}%
}
\LWR@formatted{sout}

\NewDocumentCommand{\LWR@HTML@xout}{+m}{%
    \InlineClass%
        (text-decoration:line-through)%
        {xout}{\LWR@isolate{#1}}%
}

\NewDocumentCommand{\LWR@HTML@dashuline}{+m}{%
    \InlineClass%
        (%
            text-decoration:underline;%
            text-decoration-skip: auto;%
            text-decoration-style:dashed%
        )%
        {dashuline}{\LWR@isolate{#1}}%
}
\LWR@formatted{xout}
```

```
52
53 \NewDocumentCommand{\LWR@HTML@dotuline}{+m}{%
54     \InlineClass%
55         (%
56             text-decoration:underline;%
57             text-decoration-skip: auto;%
58             text-decoration-style: dotted%
59         )%
60         {dotuline}{\LWR@isolate{#1}}%
61 }
62 \LWR@formatted{dotuline}
```

Nullified/emulated macros:

```
63 \NewDocumentCommand{\LWR@HTML@markoverwith}{m}{}
64 \LWR@formatted{markoverwith}
65
66 \NewDocumentCommand{\LWR@HTML@ULon}{+m}{\uline{#1}\egroup}
67 \LWR@formatted{ULon}
```

File 332 `lwarp-underscore.sty`

§ 426 Package underscore

Pkg `underscore` underscore is ignored.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{underscore}
```

File 333 `lwarp-units.sty`

§ 427 Package units

(*Emulates or patches code by* Axel Reichert.)

Pkg `units` units is patched for use by lwarp.

Values are not styled by CSS, and take the style of the surrounding HTML text.

Units are styled according to the print verison, so they will be forced to upright roman in HTML if the print version does so. It may be necessary to adjust the document's body CSS to match the print version.

for HTML output:

```
1 \LWR@ProvidesPackagePass{units}[1998/08/04]
```

```
\DeclareRobustCommand*{\LWR@HTML@unit}[2][]{%
\ifblank{#1}%
    {\LWR@textcurrentfont{#2}}%
    {%
        #1%
        \ifthenelse{\boolean{B@UnitsLoose}}{~}{\,}%
        \LWR@textcurrentfont{#2}%
    }%
}
\LWR@formatted{unit}

\DeclareRobustCommand*{\LWR@HTML@unitfrac}[3][]{%
\ifblank{#1}%
    {%
            \nicefrac{#2}{#3}%
    }%
    {%
            #1%
            \ifthenelse{\boolean{B@UnitsLoose}}{~}{\,}%
            \nicefrac{#2}{#3}%
    }%
}

\LWR@formatted{unitfrac}
```

For Mathjax:

```
\CustomizeMathJax{\newcommand{\unit}[2][]{#1 #2}}
\CustomizeMathJax{\newcommand{\unitfrac}[3][]{#1 #2/#3}}
```

File 334 `lwarp-unitsdef.sty`

§ 428 Package

unitsdef

(*Emulates or patches code by* Patrick Happel.)

Pkg `unitsdef` unitsdef is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{unitsdef}

\renewcommand{\unitvaluesep}{\,}

\renewcommand{\unittimes}{\@@setunitsepfalse\HTMLunicode{22c5}}% \cdot

\renewunit{\arcmin}{%
    \ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
```

```
        {\ensuremath{{}^\prime}}%
        {\HTMLunicode{2032}}% prime
}

\renewunit{\arcsec}{%
    \ifnumcomp{\value{LWR@lateximagedepth}}{>}{0}%
        {\ensuremath{{}^{\prime\prime}}}%
        {\HTMLunicode{2033}}% dbl prime
}

\renewrobustcmd{\SI}[2]{%
  \begingroup%
    \let\unit@@xspace\relax%
    \unitSIdef\selectfont%
      \LWR@textcurrentfont{#1#2}% lwarp
  \endgroup%
}
```

File 335 `lwarp-upref.sty`

§ 429 Package upref

Pkg `upref` Ignored.

for HTML output: Discard all options for lwarp-upref:

```
\LWR@ProvidesPackageDrop{upref}
```

File 336 `lwarp-url.sty`

§ 430 Package url

(*Emulates or patches code by* Donald Arseneau.)

Pkg `url` url is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{url}
```

url uses math mode to print its string inside a group, so the original meaning of math is restored first.

```
\LetLtxMacro\LWR@url@origUrl@FormatString\Url@FormatString

\renewcommand*{\Url@FormatString}{%
```

```
    \InlineClass{verbatim}{%
        \LWR@restoreorigformatting%
        \LWR@url@origUrl@FormatString%
    }%
}
```

File 337 `lwarp-uspace.sty`

§ 431 Package uspace

Pkg `uspace` uspace is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{uspace}
```

File 338 `lwarp-verse.sty`

§ 432 Package verse

(*Emulates or patches code by* Peter Wilson.)

Pkg `verse` verse is supported and patched by lwarp.

for HTML output: Pass all options for lwarp-verse:

```
\LWR@ProvidesPackagePass{verse}
```

When using verse or memoir, always place a \\ after each line.

`\attrib` The documentation for the verse and memoir packages suggest defining an `\attrib` command, which may already exist in current documents, but it will only work for print output. lwarp provides `\attribution`, which works for both print and HTML output. To combine the two so that `\attrib` is used for print and `\attribution` is used for HTML:

```
\begin{warpHTML}
\let\attrib\attribution
\end{warpHTML}
```

Len `\vleftskip` Len `\vleftmargini` Len `\HTMLvleftskip` Len `\HTMLleftmargini` These lengths are used by verse and memoir to control the left margin, and they may already be set by the user for print output. New lengths `\HTMLvleftskip` and `\HTMLleftmargini` are provided to control the margins in HTML output. These new

lengths may be set by the user before any `verse` environment, and persist until they are manually changed again. One reason to change `\HTMLleftmargini` is if there is a wide `\flagverse` in use, such as the word “Chorus”, in which case the value of `\HTMLleftmargini` should be set to a wide enough length to contain “Chorus”. The default is wide enough for a stanza number.

⚠ spacing Horizontal spacing relies on *pdftotext*’s ability to discern the layout (`-layout` option) of the text in the HTML-tagged PDF output. For some settings of `\HTMLleftmargini` or `\HTMLleftskip` the horizontal alignment may not work out exactly, in which case a label may be shifted by one space.

Env `verse` The `verse` environment will be placed inside a HTML `<pre>`.

```
\AfterEndPreamble{
\LWR@traceinfo{Patching verse.}
```

At the beginning of the `verse` environment:

```
\AtBeginEnvironment{verse}
{%
```

Use the original `list` environment inside a `<pre>` to attempt to preserve formatting.

```
\LWR@restoreoriglists%
```

Pkg `verse` Cls `memoir` `\flagverse` Len `\vleftskip` The verse or memoir packages can place stanza numbers to the left with their `\flagverse` command. Do not allow them to go into the left margin, which would cause *pdfcrop* to crop the entire page further to the left:

```
\ifdef{\vleftskip}{%
\setlength{\vleftskip}{\HTMLvleftskip}
\setlength{\leftmargini}{\HTMLleftmargini}
}{}
\LWR@forcenewpage
\LWR@atbeginverbatim{3}{verse}%
}
```

After the end of the `verse` environment, which places the `<pre>` tag at the regular left margin:

```
\AtEndEnvironment{verse}{%
\leavevmode%
\LWR@afterendverbatim{1}%
}
```

Patch to place poemtitle inside an HTML `<span>` of class `poemtitle`:

```
\ifdef{\poemtitle}{
\DeclareDocumentCommand{\@vstypeptitle}{m}{%
   \vspace{\beforepoemtitleskip}%
   {\InlineClass{poemtitle}{\poemtitlefont #1}\par}%
   \vspace{\afterpoemtitleskip}%
 }
}{}

\LWR@traceinfo{Finished patching verse.}
}% AfterEndPreamble
```

File 339 `lwarp-vertbars.sty`

§ 433 Package vertbars

(*Emulates or patches code by* Peter Wilson.)

Pkg `vertbars` vertbars is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{vertbars}

\newlength{\barwidth}
\setlength{\barwidth}{0.4pt}
\newlength{\barspace}
\setlength{\barspace}{1em}

\newenvironment{vertbar}{
    \LWR@forcenewpage
    \LWR@forceminwidth{\barwidth}
    \begin{BlockClass}[%
        border-left: \LWR@printlength{\LWR@atleastonept} solid black ; %
        padding-left: \LWR@printlength{\barspace}%
    ]{vertbar}
}{
    \end{BlockClass}
}
```

File 340 `lwarp-vmargin.sty`

§ 434 Package vmargin

Pkg `vmargin` vmargin is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{vmargin}
```

```
\newcommand*{\LWRVM@customsize}[2]{}
\newcommand*{\setpapersize}[2][]{\ifstrequal{#2}{custom}{\LWRVM@customsize}{}}
\newcommand*{\setmargins}[8]{}
\newcommand*{\setmarginsrb}[8]{}
\newcommand*{\setmargnohf}[4]{}
\newcommand*{\setmargnohfrb}[4]{}
\newcommand*{\setmarg}[4]{}
\newcommand*{\setmargrb}[4]{}
\newlength{\PaperWidth}
\setlength{\PaperWidth}{8.5in}
\newlength{\PaperHeight}
\setlength{\PaperHeight}{11in}
\newif\ifLandscape
```

File 341 `lwarp-vowel.sty`

§ 435 Package vowel

(*Emulates or patches code by* FUKUI REI.)

Pkg `vowel` vowel is patched for use by lwarp.

This package has been tested with *pdflatex* and the Type 1 TIPA fonts using the following package load sequence:

```
\usepackage[T3,T1]{fontenc}
\usepackage[utf8]{inputenc}
\usepackage[noenc]{tipa}
\usepackage{vowel}
```

for HTML output:

```
\LWR@ProvidesPackagePass{vowel}
```

```
\renewenvironment{vowel}[1][]
    {%
        \begin{lateximage}[(-vowel-~\packagediagramname)]%
        \@vowel[#1]%
    }
    {%
        \@@vowel%
        \end{lateximage}%
    }
```

File 342 `lwarp-vpe.sty`

§ 436 Package vpe

Pkg `vpe` vpe is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{vpe}[2012/04/18]
```

File 343 `lwarp-vwcol.sty`

§ 437 Package vwcol

(*Emulates or patches code by* Will Robertson.)

Pkg `vwcol` vwcol is patched for use with lwarp.

The `width` option is ignored. All `vwcol` environments adjust to 1–3 equal-width columns, depening on the width of the browser window.

The remaining options are supported, except for `lines` and `maxrecursion`.

for HTML output:

```
\LWR@ProvidesPackagePass{vwcol}
```

Factored from `\vwcol`. Each is given a style tag to append to the final style.

`\LWR@vwcol@addrule` {⟨*style tag*⟩}

```
\newcommand*{\LWR@vwcol@addrule}[1]{%
    \appto{\LWR@vwcolstyle}{%
        #1: %
        \LWR@printlength{\vwcol@rule} solid \LWR@origpound\LWR@vwcol@rulecolor ; %
    }%
}
```

`\LWR@vwcol@addrule` {⟨*style tag*⟩}

```
\newcommand*{\LWR@vwcol@addgap}[1]{%
    \appto{\LWR@vwcolstyle}{%
        #1: %
        \LWR@printlength{\vwcol@sep} ; %
    }%
}
```

Env `vwcol` {⟨*key/values*⟩}

Redefine the environment to add a HTML style. The style is built depending on the required options.

```
\renewenvironment*{vwcol}[1][]{%
```

New paragraph, and process the options:

```
\par\noindent%
\vwcolsetup{#1}%
```

Begin with no style:

```
\newcommand*{\LWR@vwcolstyle}{}
```

`presep` and `postsep` are created with HTML `margin`s:

```
\if@vwcol@presep
    \appto{\LWR@vwcolstyle}{margin-left: 1em ; padding-left: .5em ; }
\fi
\if@vwcol@postsep
    \appto{\LWR@vwcolstyle}{margin-right: 1em ; padding-right: .5em ; }
\fi
```

`sep` becomes `column-gap`:

```
\ifdimgreater{\vwcol@sep}{1sp}{
    \LWR@vwcol@addgap{column-gap}
    \LWR@vwcol@addgap{-moz-column-gap}
    \LWR@vwcol@addgap{-webkit-column-gap}
}{}
```

`rule` become `column-rule`, while `prerule` and `postrule` become HTML borders:

```
\convertcolorspec{named}{\vwcol@rulecol}{HTML}\LWR@vwcol@rulecolor%
\ifdimgreater{\vwcol@rule}{0pt}{
    \ifdimless{\vwcol@rule}{1pt}{
        \setlength{\vwcol@rule}{1pt}
    }{}
    \LWR@vwcol@addrule{column-rule}
    \LWR@vwcol@addrule{-moz-column-rule}
    \LWR@vwcol@addrule{-webkit-column-rule}
    \if@vwcol@prerule\LWR@vwcol@addrule{border-left}\fi
    \if@vwcol@postrule\LWR@vwcol@addrule{border-right}\fi
}{}
```

Each of the justify options becomes a `text-align`. Indentation is added where appropriate.

```
\ifdefequal{\vwcol@justify}{\RaggedRight}{
    \appto{\LWR@vwcolstyle}{text-align: left ; }
    \ifdimgreater{\vwcol@parindent}{0pt}{
        \appto{\LWR@vwcolstyle}{%
```

```
            text-indent: \LWR@printlength{\vwcol@parindent} ; %
        }
    }{}
}{}

\ifdefequal{\vwcol@justify}{\RaggedLeft}{
    \appto{\LWR@vwcolstyle}{text-align: right ; }
}{}

\ifdefequal{\vwcol@justify}{\Centering}{
    \appto{\LWR@vwcolstyle}{text-align: center ; }
}{}

\ifdefequal{\vwcol@justify}{\justifying}{
    \appto{\LWR@vwcolstyle}{text-align: justify ; }
    \ifdimgreater{\vwcol@parindent}{0pt}{
        \appto{\LWR@vwcolstyle}{%
            text-indent: \LWR@printlength{\vwcol@parindent} ; %
        }
    }{}
}{}
```

Create the with the assembled style:

```
\BlockClass[\LWR@vwcolstyle]{multicols}
}
```

When the environment ends:

```
{
\endBlockClass
}
```

File 344 `lwarp-wallpaper.sty`

§ 438 Package wallpaper

(*Emulates or patches code by* Michael H.F. Wilkinson.)

Pkg `wallpaper` wallpaper is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{wallpaper}

\newcommand*{\CenterWallPaper}[2]{}
\newcommand*{\ThisCenterWallPaper}[2]{}
\newcommand*{\TileWallPaper}[3]{}
\newcommand*{\ThisTileWallPaper}[3]{}
\newcommand*{\TileSquareWallPaper}[2]{}
\newcommand*{\ThisTileSquareWallPaper}[2]{}
\newcommand*{\ULCornerWallPaper}[2]{}
```

```
\newcommand*{\ThisULCornerWallPaper}[2]{}
\newcommand*{\LLCornerWallPaper}[2]{}
\newcommand*{\ThisLLCornerWallPaper}[2]{}
\newcommand*{\URCornerWallPaper}[2]{}
\newcommand*{\ThisURCornerWallPaper}[2]{}
\newcommand*{\LRCornerWallPaper}[2]{}
\newcommand*{\ThisLRCornerWallPaper}[2]{}
\newcommand*{\ClearWallPaper}{}
\newlength{\wpXoffset}
\newlength{\wpYoffset}
```

File 345 `lwarp-wasysym.sty`

§ 439 Package wasysym

Pkg `wasysym` wasysym does not work with *pdftotext*.

for HTML output:

```
\LWR@loadnever{wasysym}{textcomp, amssymb, amsfonts, mnsymbol, fdsymbol}
```

File 346 `lwarp-watermark.sty`

§ 440 Package watermark

(*Emulates or patches code by* Alexander I. Rozhenko.)

Pkg `watermark` watermark is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{watermark}

\newcommand{\watermark}[1]{}
\newcommand{\leftwatermark}[1]{}
\newcommand{\rightwatermark}[1]{}
\newcommand{\thiswatermark}[1]{}
\newcommand{\thispageheading}[1]{}
```

File 347 `lwarp-widows-and-orphans.sty`

§ 441 Package widows-and-orphans

Pkg `widows-and-orphans` widows-and-orphans is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{widows-and-orphans}[2018/09/01]
```

```
\NewDocumentCommand\WaOsetup{m}{}
\NewDocumentCommand\WaOparameters{}{}
\NewDocumentCommand\WaOignorenext{}{}
```

File 348 **lwarp-wrapfig.sty**

§ 442 Package wrapfig

(*Emulates or patches code by* Donald Arseneau.)

Pkg `wrapfig` wrapfig is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{wrapfig}


\newcommand*{\LWR@wrapposition}{}

\newcommand*{\LWR@subwrapfigure}[2]{%
\renewcommand*{\LWR@wrapposition}{}%
\ifthenelse{%
    \equal{#1}{r}\OR\equal{#1}{R}\OR%
    \equal{#1}{o}\OR\equal{#1}{O}%
}%
{\renewcommand*{\LWR@wrapposition}{float:right}}%
{\renewcommand*{\LWR@wrapposition}{float:left}}%
\setlength{\LWR@templengthone}{#2}%
\LWR@BlockClassWP{%
    width:\LWR@printlength{\LWR@templengthone}; \LWR@wrapposition; %
    margin:10pt%
}%
{%
    width:\LWR@printlength{\LWR@templengthone}; \LWR@wrapposition%
}%
{marginblock}%
}


\NewDocumentEnvironment{wrapfigure}{o m o m}
{%
\LWR@subwrapfigure{#2}{#4}%
\captionsetup{type=figure}%
}
{%
\endLWR@BlockClassWP%
}


\NewDocumentEnvironment{wraptable}{o m o m}
```

```
{%
\LWR@subwrapfigure{#2}{#4}%
\captionsetup{type=table}%
}
{%
\endLWR@BlockClassWP%
}


\NewDocumentEnvironment{wrapfloat}{m o m o m}
{%
\LWR@subwrapfigure{#3}{#5}%
\captionsetup{type=#1}%
}
{%
\endLWR@BlockClassWP%
}

\newlength{\wrapoverhang}
```

File 349 `lwarp-xbmks.sty`

§ 443 Package xbmks

Pkg `xbmks` xbmks is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{xbmks}[2018/07/04]


\newcommand{\xbmksetup}[1]{}
\NewDocumentCommand{\pdfbookmarkx}{o m o m}{}
\NewDocumentCommand{\currentpdfbookmarkx}{m o m}{}
\NewDocumentCommand{\subpdfbookmarkx}{m o m}{}
\NewDocumentCommand{\belowpdfbookmarkx}{m o m}{}
```

File 350 `lwarp-xcolor.sty`

§ 444 Package xcolor

(*Emulates or patches code by* Dr. Uwe Kern.)

Pkg `xcolor` xcolor is supported by lwarp.

§ 444.1 Limitations

\colorboxBlock and \fcolorboxBlock

`\colorboxBlock` and `\fcolorboxBlock` are provided for increased HTML compatibility, and they are identical to `\colorbox` and `\fcolorbox` in print mode. In HTML mode they place their contents into a `<div>` instead of a `<span>`. These `<div>`s are set to `display: inline-block` so adjacent `\colorboxBlock`s appear side-by-side in HTML, although text is placed before or after each.

Print-mode definitions for `\colorboxBlock` and `\fcolorboxBlock` are created by lwarp's core if xcolor is loaded.

background: none

`\fcolorbox` and `\fcolorboxBlock` allow a background color of `none`, in which case only the frame is drawn, which can be useful for HTML.

color support

Color definitions, models, and mixing are fully supported without any changes required.

colored tables

`\rowcolors` is supported, except that the optional argument is ignored so far.

colored text and boxes

`\textcolor`, `\colorbox`, and `\fcolorbox` are supported.

\color and \pagecolor

`\color` and `\pagecolor` are ignored. Use CSS or `\textcolor` where possible.

§ 444.2 xcolor definitions: location and timing

The lwarp core and its lwarp-xcolor package are tightly integrated to allow comparable results for print, HTML, and print inside an HTML `lateximage`. This requires a number of definitions and redefintions depending on whether each of xcolor and `lateximage` is being used, and whether print or HTML is being generated. Some of these actions are one-time when xcolor is loaded, and others are temporary as `lateximage` is used.

When xcolor is loaded in print mode: No special actions are taken at the time that xcolor is loaded in print mode, but see `\AtBeginDocument` below.

When lwarp-xcolor is loaded in HTML mode: xcolor's original definitions are saved for later restoration. `\LWR@restoreorigformatting` is appended to restore these definitions for use inside a `lateximage`. New HTML-mode definitions are created for `\textcolor`, `\pagecolor`, `\nopagecolor`, `\colorbox`, `\colorboxBlock`, `\fcolorbox`, `\fcolorboxBlock`, and `fcolorminipage`.

`\AtBeginDocument` in print or HTML mode: See Section 83. If xcolor has been loaded, the print-mode `\fcolorbox` is modified to accept a background color of `none`, and additional definitions are created for lwarp's new macros print-mode macros `\colorboxBlock`, `\fcolorboxBlock`, and `fcolorminipage`. The HTML versions of these macros will already have been created by lwarp-xcolor if it has been loaded.

For use inside an HTML `lateximage`, `\LWR@restoreorigformatting` is appended to temporarily set these functions to their print-mode versions.

In a `lateximage` in HTML mode: `\LWR@restoreorigformatting` temporarily restores the print-mode definitions of xcolor's functions. See `\LWR@restoreorigformatting` on page 511.

`\color`:

Print: Used as-is.

HTML: Ignored by *pdftotext*, and will not appear.

HTML `lateximage`: Colors will appear in a `lateximage`.

`\textcolor`:

Print: Used as-is.

HTML: Redefined by lwarp-xcolor, page 971.

HTML `lateximage`: Remembers and reuses the print version.

`\pagecolor`:

Print: Used as-is.

HTML: Ignored.

HTML `lateximage`: Colors will be picked up in a `lateximage`.

`\nopagecolor`:

Print: Used as-is.

HTML: Ignored.

HTML `lateximage`: Colors will be picked up in a `lateximage`.

`\colorbox`:

Print: Used as-is.

HTML: Redefined by lwarp-xcolor, page 972.

HTML `lateximage`: Remembers and reuses the print version.

`\colorboxBlock`:

Print: Becomes `\colorbox`.

HTML: Newly defined by lwarp-xcolor to use a `<div>`, page 972.

HTML `lateximage`: Remembers and reuses the print version `\colorbox`.

`\fcolorbox`:

Print: Modified to allow a background of `none`.
`\LWR@print@fcolorbox` at section 83

HTML: Redefined by lwarp-xcolor, page 973.

HTML lateximage: Remembers and reuses the print version.

\fcolorboxBlock:

Print: Becomes \fcolorbox. Section 83

HTML: Newly defined by lwarp-xcolor to use a , page 974.

HTML lateximage: Remembers and reuses the print version \fcolorbox.

fcolorminipage:

Print: Newly defined in the lwarp core.
LWR@print@fcolorminipage at section 83

HTML: Newly defined by lwarp-xcolor, page 975.

HTML lateximage: Uses the print version.

\boxframe:

Print: Used as-is.

HTML: Redefined by lwarp-xcolor, page 976.

HTML lateximage: Remembers and reuses the print version.

§ 444.3 Package loading

for HTML output:

```
\LWR@ProvidesPackagePass{xcolor}
\begin{warpHTML}
```

§ 444.4 Remembering and restoring original definitions

Remember the following print-mode actions to be restored when inside a lateximage environment:

```
\LetLtxMacro\LWR@print@pagecolor\pagecolor
\LetLtxMacro\LWR@print@nopagecolor\nopagecolor
```

\LWR@restoreorigformatting

Inside a lateximage the following gets restored to their print-mode actions:

```
\appto\LWR@restoreorigformatting{%
\LetLtxMacro\pagecolor\LWR@print@pagecolor%
\LetLtxMacro\nopagecolor\LWR@print@nopagecolor%
}
```

§ 444.5 HTML color style

\LWR@findcurrenttextcolor

Sets \LWR@tempcolor to the current color.

```
\renewcommand*{\LWR@findcurrenttextcolor}{%
\protect\colorlet{LWR@current@color}{.}%
\protect\convertcolorspec{named}{LWR@current@color}{HTML}\LWR@tempcolor%
}
```

\LWR@currenttextcolorstyle

Prints a color style for the current color.

```
\newcommand*{\LWR@currenttextcolorstyle}{%
\LWR@findcurrenttextcolor%
\ifdefstring{\LWR@tempcolor}{000000}%
{}%
{color: \LWR@origpound\LWR@tempcolor ; }%
}
```

\LWR@textcurrentcolor {⟨*text*⟩} Like \textcolor but uses the current \color instead.

```
\DeclareDocumentCommand{\LWR@textcurrentcolor}{m}{%
\begingroup%
\LWR@FBcancel%
\LWR@findcurrenttextcolor%
\InlineClass[color:\LWR@origpound\LWR@tempcolor]{textcolor}{%
    \renewcommand*{\LWR@currenttextcolor}{\LWR@origpound\LWR@tempcolor}%
    #1%
}%
\endgroup%
}
```

\LWR@colorstyle {⟨*2: model*⟩} {⟨*3: color*⟩}

For a color style, prints the color converted to HTML colors.

```
\NewDocumentCommand{\LWR@colorstyle}{m m}{%
\begingroup%
\LWR@FBcancel%
```

Use the xcolor package to convert to an HTML color space:

```
\convertcolorspec{#1}{#2}{HTML}\LWR@tempcolor%
```

Print the converted color:

```
\LWR@origpound\LWR@tempcolor%
\endgroup%
}
```

\LWR@backgroundcolor [⟨*model*⟩] {⟨*color*⟩} {⟨*text*⟩}

Similar to \textcolor, but prints black text against a color background.

Converted into an HTML hex color span.

```
\NewDocumentCommand{\LWR@backgroundcolor}{O{named} m m}{%
\begingroup%
\LWR@FBcancel%
\InlineClass[background:\LWR@colorstyle{#1}{#2}]{backgroundcolor}{%
#3%
}%
\endgroup%
}
```

§ 444.6 HTML border

\LWR@borderpadding {⟨*colorstyle*⟩} {⟨*color*⟩} Prints the HTML attributes for a black border and padding. \LWR@forceminwidth must be used first in order to set the border width.

```
\newcommand*{\LWR@borderpadding}[2]{%
border:\LWR@printlength{\LWR@atleastonept} solid \LWR@colorstyle{#1}{#2} ; %
padding:\LWR@printlength{\fboxsep}%
}
```

§ 444.7 High-level macros

\textcolor [⟨*model*⟩] {⟨*color*⟩} {⟨*text*⟩}

Converted into an HTML hex color span.

```
\NewDocumentCommand{\LWR@HTML@textcolor}{o m m}{%
\begingroup%
```

Set the PDF color, to be picked up by SVG math if possible.

The print-mode \color command cannot accept the named option with color mixing, but it works with no option at all.

```
\IfValueTF{#1}{%
    \color[#1]{#2}%
}{%
    \color{#2}%
}%

\LWR@FBcancel%
\IfValueTF{#1}{%
\InlineClass[color:\LWR@colorstyle{#1}{#2}]{textcolor}{%
\renewcommand*{\LWR@currenttextcolor}{\LWR@origpound\LWR@tempcolor}%
#3%
```

```
}%
}{%
\InlineClass[color:\LWR@colorstyle{named}{#2}]{textcolor}{%
\renewcommand*{\LWR@currenttextcolor}{\LWR@origpound\LWR@tempcolor}%
#3%
}%
}%
\endgroup%
}

\LWR@formatted{textcolor}
```

\pagecolor [⟨*model*⟩] {⟨*color*⟩}

Ignored. Use CSS instead.

```
\renewcommand*{\pagecolor}[2][named]{}
```

\nopagecolor Ignored.

```
\renewcommand*{\nopagecolor}{}
```

\colorbox [⟨*model*⟩] {⟨*color*⟩} {⟨*text*⟩}

Converted into an HTML hex background color .

```
\NewDocumentCommand{\LWR@HTML@colorbox}{O{named} m +m}{%
\begingroup%
\LWR@FBcancel%
\InlineClass[%
background:\LWR@colorstyle{#1}{#2} ; %
padding:\LWR@printlength{\fboxsep}%
]{colorbox}{#3}%
\endgroup%
}

\AtBeginDocument{
\LWR@formatted{colorbox}
}
```

\colorboxBlock [⟨*model*⟩] {⟨*color*⟩} {⟨*text*⟩}

Converted into an HTML hex background color .

```
\NewDocumentCommand{\LWR@HTML@colorboxBlock}{O{named} m +m}{%
```

```
\begingroup%
\LWR@FBcancel%

\LWR@stoppars%

\begin{BlockClass}[%
background:\LWR@colorstyle{#1}{#2} ; %
padding:\LWR@printlength{\fboxsep}%
]{colorboxBlock}
#3
\end{BlockClass}%
\endgroup%
```

Prevent paragraph tags around horizontal white space until the start of the next paragraph:

```
\global\booltrue{LWR@minipagethispar}%
}

\AtBeginDocument{
\LWR@formatted{colorboxBlock}
}
```

\fcolorbox [⟨*framemodel*⟩] {⟨*framecolor*⟩} [⟨*boxmodel*⟩] {⟨*boxcolor*⟩} {⟨*text*⟩}

Converted into a framed HTML hex background color span.

A background color of none creates a colored frame without a background color.

```
\NewDocumentCommand{\LWR@HTML@fcolorbox}{O{named} m O{named} m +m}{%
\LWR@traceinfo{HTML fcolorbox #2 #4}%
\begingroup%
\LWR@FBcancel%
\LWR@forceminwidth{\fboxrule}%
\ifthenelse{\equal{#4}{none}}%
{% no background color
    \InlineClass[%
    \LWR@borderpadding{#1}{#2}%
    ]{fcolorbox}{#5}%
}%
{% yes background color
    \InlineClass[%
    \LWR@borderpadding{#1}{#2} ; %
    background:\LWR@colorstyle{#3}{#4}%
    ]{fcolorbox}{#5}%
}%
\endgroup%
```

```
}

\AtBeginDocument{
\LWR@formatted{fcolorbox}
}
```

\fcolorboxBlock [⟨*framemodel*⟩] {⟨*framecolor*⟩} [⟨*boxmodel*⟩] {⟨*boxcolor*⟩} {⟨*text*⟩}

Converted into a framed HTML hex background color span.

A background color of `none` creates a colored frame without a background color.

```
\NewDocumentCommand{\LWR@HTML@fcolorboxBlock}{O{named} m O{named} m +m}{%
\LWR@traceinfo{HTML fcolorboxBlock #2 #4}%
\begingroup%
\LWR@FBcancel%
\LWR@forceminwidth{\fboxrule}%


\LWR@stoppars%

\ifthenelse{\equal{#4}{none}}%
{% no background color
    \begin{BlockClass}[%
    \LWR@borderpadding{#1}{#2}%
    ]{fcolorboxBlock}
    #5
    \end{BlockClass}%
}%
{% yes background color
    \convertcolorspec{#3}{#4}{HTML}\LWR@tempcolortwo%
    \begin{BlockClass}[%
    background:\LWR@origpound\LWR@tempcolortwo\ ; %
    \LWR@borderpadding{#1}{#2}%
    ]{fcolorboxBlock}
    #5
    \end{BlockClass}%
}%
\endgroup%
```

Prevent paragraph tags around horizontal white space until the start of the next paragraph:

```
\global\booltrue{LWR@minipagethispar}%
\LWR@traceinfo{HTML fcolorboxBlock done}%
}

\AtBeginDocument{
```

```
\LWR@formatted{fcolorboxBlock}
}
```

Creates a framed HTML around its contents.

A print-output version is defined in the lwarp core: section 83

\LWR@subfcolorminipage {⟨*framemodel*⟩} {⟨*framecolor*⟩} {⟨*background tag*⟩} {⟨*height*⟩}

```
\NewDocumentCommand{\LWR@subfcolorminipage}{m m m m}{%
\LWR@stoppars%
\begin{BlockClass}[%
#3%
\LWR@borderpadding{#1}{#2} ; %
\IfValueT{#4}{height:\LWR@printlength{\LWR@tempheight} ; }%
width:\LWR@printlength{\LWR@tempwidth}%
]{fcolorminipage}%
}
```

Env fcolorminipage [⟨*1:framemodel*⟩] {⟨*2:framecolor*⟩} [⟨*3:boxmodel*⟩] {⟨*4:boxcolor*⟩} [⟨*5:align*⟩] [⟨*6:height*⟩] [⟨*7:inner-align*⟩] {⟨*8:width*⟩}

```
\NewDocumentEnvironment{LWR@HTML@fcolorminipage}{O{named} m O{named} m O{c} o o m}
{%
\LWR@FBcancel%
\setlength{\LWR@tempwidth}{#8}%
\IfValueT{#6}{\setlength{\LWR@tempheight}{#6}}%
\LWR@forceminwidth{\fboxrule}%
\convertcolorspec{#1}{#2}{HTML}\LWR@tempcolor%
\ifthenelse{\equal{#4}{none}}%
{\LWR@subfcolorminipage{#1}{#2}{}{#6}}%
{%
    \convertcolorspec{#3}{#4}{HTML}\LWR@tempcolortwo%
    \LWR@subfcolorminipage{#1}{#2}{background:\LWR@origpound\LWR@tempcolortwo\ ; }{#6}%
}%
}
{%
    \end{BlockClass}%
```

Prevent paragraph tags around horizontal white space until the start of the next paragraph:

```
    \global\booltrue{LWR@minipagethispar}%
}

\AtBeginDocument{
```

```
\LWR@formattedenv{fcolorminipage}
}
```

\boxframe {⟨*width*⟩} {⟨*height*⟩} {⟨*depth*⟩}

The depth is added to the height, but the box is not decended below by the depth. `\textcolor` is honored.

```
\newcommand*{\LWR@HTML@boxframe}[3]{%
{%
\setlength{\LWR@tempwidth}{#1}%
\setlength{\LWR@tempheight}{#2}%
\addtolength{\LWR@tempheight}{#3}%
\LWR@forceminwidth{\fboxrule}%
\LWR@findcurrenttextcolor%
\InlineClass[%
display:inline-block ; %
border:\LWR@printlength{\LWR@atleastonept} solid \LWR@currenttextcolor{} ; %
width:\LWR@printlength{\LWR@tempwidth} ; %
height:\LWR@printlength{\LWR@tempheight}%
]{boxframe}{}%
}%
}

\LWR@formatted{boxframe}
```

§ 444.8 Row colors

\rowc@l@rs [⟨*cmds*⟩] {⟨*startrow*⟩} {⟨*odd color*⟩} {⟨*even color*⟩}

```
\newcommand*{\LWR@xcolortempcolor}{}

\def\rowc@l@rs[#1]#2#3#4%
{
\global\rownum=1
   \global\@rowcolorstrue
   \@ifxempty{#3}%
     {\def\@oddrowcolor{\@norowcolor}}%
     {%
        \convertcolorspec{named}{#3}{HTML}\LWR@xcolortempcolor%
        \edef\@oddrowcolor{%
            \csdef{LWR@xcolorrowHTMLcolor}{\LWR@xcolortempcolor}%
        }%
     }%
   \@ifxempty{#4}%
     {\def\@evenrowcolor{\@norowcolor}}%
     {%
        \convertcolorspec{named}{#4}{HTML}\LWR@xcolortempcolor%
```

```
        \edef\@evenrowcolor{%
            \csdef{LWR@xcolorrowHTMLcolor}{\LWR@xcolortempcolor}%
        }%
    }%
  \if@rowcmd
    \def\@rowcolors
    {%
%         #1%
        \if@rowcolors
%         \noalign{%
            \relax\ifnum\rownum<#2\@norowcolor\else
            \ifodd\rownum\@oddrowcolor\else\@evenrowcolor\fi\fi%
%          }%
        \fi%
    }%
  \else
    \def\@rowcolors
    {%
        \if@rowcolors
            \ifnum\rownum<#2%
%            \noalign{%
                \@norowcolor
%             }
            \else
%            #1%
%            \noalign{%
                \ifodd\rownum\@oddrowcolor\else\@evenrowcolor\fi%
%             }%
            \fi
        \fi%
    }%
  \fi
  \ignorespaces%
}
```

`\@norowcolor` Turns off color for this row.

```
\def\@norowcolor{%
\renewcommand{\LWR@xcolorrowHTMLcolor}{}%
}
```

`\@rowc@lors` Executed at the end of each row.

```
\def\@rowc@lors{%
%   \noalign{%
        \global\advance\rownum\@ne%
%   }%
    \@rowcolors%
}
```

```
\end{warpHTML}
```

File 351 `lwarp-xechangebar.sty`

§ 445 Package xechangebar

Pkg `xechangebar` xechangebar is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{xechangebar}[2017/08/03]
\LWR@origRequirePackage{lwarp-changebar}
```

File 352 `lwarp-xeCJK.sty`

§ 446 Package xeCJK

Pkg `xeCJK` Error if xeCJK is loaded after lwarp.

Load xeCJK before lwarp so that lwarp can take control of the sectioning commands.

Discard all options for lwarp-xeCJK:

for HTML output:

```
\LWR@ProvidesPackageDrop{xeCJK}
\LWR@loadbefore{xeCJK}
```

File 353 `lwarp-xellipsis.sty`

§ 447 Package xellipsis

(*Emulates or patches code by* Donald P. Goodman III.)

Pkg `xellipsis` xellipsis is patched for use by lwarp.

When non-zero, each of the spaces is converted to an HTML thin unbreakable space.

for HTML output:

```
\LWR@ProvidesPackagePass{xellipsis}
\newcommand*{\LWR@xellipsespace}[1]{%
\ifdim#1=0pt\else%
    \ifdim#1<\fontdimen2\font%
        \,%
```

```
    \else%
        ~%
    \fi%
\fi%
}

\def\xelip{%
\mbox{%
    \LWR@xellipsespace{\xelipprebef}%
    \xelipprechar%
    \LWR@xellipsespace{\xelippreaft}%
    \LWR@xellipsespace{\xelipbef}%
    \xelipchar%
    \xel@loopi = 1%
    \loop\ifnum\xelipnum>\xel@loopi%
        \advance\xel@loopi by1%
        \LWR@xellipsespace{\xelipgap}%
        \xelipchar%
    \repeat%
    \LWR@xellipsespace{\xelipaft}%
    \LWR@xellipsespace{\xelippostbef}%
    \xelippostchar%
    \LWR@xellipsespace{\xelippostaft}%
}%
}%
```

File 354 `lwarp-xfrac.sty`

§ 448 Package xfrac

(*Emulates or patches code by* The LaTeX3 Project.)

Pkg `xfrac` Supported by adding xfrac instances.

for HTML output:

```
\LWR@ProvidesPackagePass{xfrac}
```

⚠ font size

In the user's document preamble, lwarp should be loaded after font-related setup. During HTML conversion, this font is used by lwarp to generate its initial PDF output containing HTML tags, later to be converted by *pdftotext* to a plain text file. While the text may be in any font which *pdftotext* can read, the math is directly converted into SVG images using this same user-selected font. `xfrac` below is set for the Latin Modern (lmr) font. If another font is used, it may be desirable to redefine `\xfracHTMLfontsize` with a different em size.

`\sfrac` `[`⟨*instance*⟩`] {`⟨*num*⟩`} [`⟨*sep*⟩`] {`⟨*denom*⟩`}`

A text-mode instance for the default font is provided below. The numerator and denominator formats are adjusted to encase everything in HTML tags. `\scalebox` is made null inside the numerator and denominator, since the HTML tags should not be scaled, and we do not want to introduce additional HTML tags for scaling.

In math mode, which will appear inside a `lateximage`, no adjustments are necessary.

for HTML & PRINT:

```
\begin{warpall}
```

`\xfracHTMLfontsize` User-redefinable macro which controls the font size of the fraction.

```
\newcommand*{\xfracHTMLfontsize}{.6em}
```

```
\end{warpall}
```

for HTML output:

```
\begin{warpHTML}
```

instances Instances of xfrac for various font choices:

Produce CSS for a small raised numerator and a small denominator.

Scaling is turned off so that *pdftotext* correctly reads the result.

```
\DeclareInstance{xfrac}{default}{text}{
    numerator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{numerator}{#1}\,%
        \endgroup%
    },
    denominator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{denominator}{#1}%
        \endgroup%
    },
```

For *pdftotext*, do not scale the text:

```
    scaling = false
}

\DeclareInstance{xfrac}{lmr}{text}{
    numerator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{numerator}{#1}\,%
        \endgroup%
```

```
    },
    denominator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{denominator}{#1}%
        \endgroup%
    },
```

For *pdftotext*, do not scale the text:

```
    scaling = false
}

\DeclareInstance{xfrac}{lmss}{text}{
    numerator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{numerator}{#1}\,%
        \endgroup%
    },
    denominator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{denominator}{#1}%
        \endgroup%
    },
```

For *pdftotext*, do not scale the text:

```
    scaling = false
}

\DeclareInstance{xfrac}{lmtt}{text}{
    numerator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{numerator}{#1}\,%
        \endgroup%
    },
    denominator-format = {%
        \begingroup%
        \RenewDocumentCommand{\scalebox}{m o m}{##3}%
        \InlineClass{denominator}{#1}%
        \endgroup%
    },
```

For *pdftotext*, do not scale the text:

```
    scaling = false
```

```
}

\end{warpHTML}
```

File 355 `lwarp-xltabular.sty`

§ 449 Package xltabular

(*Emulates or patches code by* Rolf Niepraschk, Herbert Voss.)

Pkg `xltabular` xltabular is emulated by lwarp.

for HTML output: Relies on tabularx.

⚠ table numbering At present, an `xltabular` without a caption or with only a `\caption*` may be misnumbered in HTML, so it may be necessary to place at the end of the table:

```
\warpHTMLonly{\addtocounter{table}{-1}}
```

```
\RequirePackage{tabularx}

\LWR@ProvidesPackageDrop{xltabular}

\DeclareDocumentEnvironment{xltabular}{o m m}
{\longtable{#3}}
{\endlongtable}
```

File 356 `lwarp-xltxtra.sty`

§ 450 Package xltxtra

(*Emulates or patches code by* Will Robertson, Jonathan Kew.)

Pkg `xltxtra` xltxtra is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{xltxtra}

\RequirePackage{realscripts}
\RequirePackage{metalogo}
\newcommand*\TeX@logo@spacing[6]{}

\newcommand*{\vfrac}[2]{%
\textsuperscript{#1}/\textsubscript{#2}%
```

```
}

\newcommand\namedglyph[1]{%
  \@tempcnta=\XeTeXglyphindex "#1"\relax
  \ifnum\@tempcnta>0
    \XeTeXglyph\@tempcnta
  \else
    \xxt@namedglyph@fallback{#1}%
  \fi}

\newcommand\xxt@namedglyph@fallback[1]{[#1]}

\DeclareDocumentCommand{\showhyphens}{m}{}
```

File 357 `lwarp-xmpincl.sty`

§ 451 Package xmpincl

(*Emulates or patches code by* Maarten Sneep.)

Pkg `xmpincl` Emulated.

for HTML output: Discard all options for lwarp-xmpincl:

```
\LWR@ProvidesPackageDrop{xmpincl}

\newcommand*{\includexmp}[1]{}
```

File 358 `lwarp-xpiano.sty`

§ 452 Package xpiano

(*Emulates or patches code by* Enrico Gregorio.)

Pkg `xpiano` xpiano is patched for use by lwarp.

for HTML output:

```
\LWR@ProvidesPackagePass{xpiano}

\ExplSyntaxOn
\NewDocumentCommand{\LWR@print@keyboard}{ O{}m }
{
\xpiano_keyboard:nn { #1 } { #2 }
}

```

```
\NewDocumentCommand{\LWR@HTML@keyboard}{ O{}m }
{
\begin{lateximage}*
    [(-xpiano-~\packagediagramname{}: \detokenize\expandafter{#2})]
    [\detokenize\expandafter{#1}]
\xpiano_keyboard:nn { #1 } { #2 }
\end{lateximage}
}
\ExplSyntaxOff

\LWR@formatted{keyboard}
```

File 359 **lwarp-xtab.sty**

§ 453 Package

xtab

(*Emulates or patches code by* Peter Wilson.)

Pkg xtab xtab is emulated.

for HTML output:

```
\LWR@ProvidesPackageDrop{xtab}
```

⚠ Misplaced alignment tab character &

For \tablefirsthead, etc., enclose them as follows:

```
\StartDefiningTabulars
\tablefirsthead
...
\StopDefiningTabulars
```

See section 9.9.

⚠ lateximage supertabular and xtab are not supported inside a lateximage.

```
\newcommand{\LWRXT@firsthead}{}

\newcommand{\tablefirsthead}[1]{%
    \long\gdef\LWRXT@firsthead{#1}%
}

\newcommand{\tablehead}[1]{}

\newcommand{\tablelasthead}[1]{}

\newcommand{\notablelasthead}{}

\newcommand{\tabletail}[1]{}

```

```
\newcommand{\LWRXT@lasttail}{}

\newcommand{\tablelasttail}[1]{%
    \long\gdef\LWRXT@lasttail{#1}%
}


\newcommand{\tablecaption}[2][]{%
    \long\gdef\LWRXT@caption{%
        \ifblank{#1}%
            {\caption{#2}}%
            {\caption[#1]{#2}}%
    }%
}

\let\topcaption\tablecaption
\let\bottomcaption\tablecaption


\newcommand*{\LWRXT@caption}{}

\newcommand*{\shrinkheight}[1]{}

\newcommand*{\xentrystretch}[1]{}

\NewDocumentEnvironment{xtabular}{s o m}
{%
\LWR@traceinfo{xtabular}%
\table%
\LWRXT@caption%
\begin{tabular}{#3}%
\TabularMacro\ifdefvoid{\LWRXT@firsthead}%
{\LWR@getmynexttoken}%
{\expandafter\LWR@getmynexttoken\LWRXT@firsthead}%
}%
{%
\ifdefvoid{\LWRXT@lasttail}%
{}%
{%
\TabularMacro\ResumeTabular%
\LWRXT@lasttail%
}%
\end{tabular}%
\endtable%
\LWR@traceinfo{xtabular done}%
}

\NewDocumentEnvironment{mpxtabular}{s o m}
{\minipage{\linewidth}\xtabular{#3}}
{\endxtabular\endminipage}
```

File 360 `lwarp-xunicode.sty`

§ 454 Package xunicode

Pkg `xunicode` Error if xunicode is loaded after lwarp.

Patch lwarp-xunicode, but also verify that is was loaded before lwarp:

for HTML output:

```
\LWR@loadbefore{xunicode}%

\LWR@ProvidesPackagePass{xunicode}[2011/09/09]
```

`\textcircled` becomes a span with a rounded border. `\providecommand` is used to avoid conflict with textcomp.

```
\providecommand*{\LWR@HTML@textcircled}[1]{%
    \InlineClass[border: 1px solid \LWR@currenttextcolor]{textcircled}{#1}%
}

\LWR@formatted{textcircled}
```

File 361 `lwarp-xurl.sty`

§ 455 Package xurl

Pkg `xurl` xurl is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{xurl}
```

File 362 `lwarp-xy.sty`

§ 456 Package xy

(*Emulates or patches code by* Kristoffer H. Rose, Ross Moore.)

Pkg `xy` xy is patched for use by lwarp.

⚠ `\xypolygon` `\xypolygon` must be used inside the xy environment, or inside `\xy` … `\endxy`.

for HTML output:

```
\LWR@ProvidesPackagePass{xy}
```

```
\AtBeginDocument{

\preto{\xy}{\begin{lateximage}[(-xy--\packagediagramname)]}
\appto{\endxy}{\end{lateximage}}

\@ifundefined{xymatrix}{}{
\LetLtxMacro\LWR@origxymatrix\xymatrix

\renewcommand{\xymatrix}[1]{%
\begin{lateximage}[(-xy- xymatrix \packagediagramname)]
\LWR@origxymatrix{#1}
\end{lateximage}
}
}

\@ifundefined{xygraph}{}{
\LetLtxMacro\LWR@origxygraph\xygraph

\renewcommand{\xygraph}[1]{%
\begin{lateximage}[(-xy- xygraph \packagediagramname)]
\LWR@origxygraph{#1}
\end{lateximage}
}
}

}
```

File 363 **lwarp-zwpagelayout.sty**

§ 457 Package

zwpagelayout

(*Emulates or patches code by* Zdeněk Wagner.)

Pkg zwpagelayout zwpagelayout is ignored.

for HTML output:

```
\LWR@ProvidesPackageDrop{zwpagelayout}

\def\noBboxes{}
\@onlypreamble\noBboxes

\expandafter\ifx\csname definecolor\endcsname\relax \else
  \definecolor{cmykblack}{cmyk}{0,0,0,1}
  \definecolor{grblack}{gray}{0}
%   \ifzwpl@redefineblack
%     \definecolor{black}{cmyk}{0,0,0,1}\color{black}
%   \fi
  \definecolor{cmykred}{cmyk}{0,1,1,0}
```

```
  \definecolor{cmykgreen}{cmyk}{1,0,1,0}
  \definecolor{cmykblue}{cmyk}{1,1,0,0}
  \definecolor{rgbred}{rgb}{1,0,0}
  \definecolor{rgbgreen}{rgb}{0,1,0}
  \definecolor{rgbblue}{rgb}{0,0,1}
%   \ifzwpl@redefinetocmyk
%     \definecolor{red}{cmyk}{0,1,1,0}
%     \definecolor{green}{cmyk}{1,0,1,0}
%     \definecolor{blue}{cmyk}{1,1,0,0}
%   \fi
\fi

\let\OverprintXeTeXExtGState\relax

\DeclareRobustCommand\SetOverprint{\ignorespaces}
\DeclareRobustCommand\SetKnockout{\ignorespaces}
\DeclareRobustCommand\textoverprint[1]{{\SetOverprint#1}}
\DeclareRobustCommand\textknockout[1]{{\SetKnockout#1}}

\def\SetPDFminorversion#1{}
\@onlypreamble\SetPDFminorversion

\newcommand*\Vcorr{}

\DeclareRobustCommand\vb[1][]{}
\NewDocumentCommand{\NewOddPage}{* o}{}
\NewDocumentCommand{\NewEvenPage}{* o}{}
\def\SetOddPageMessage#{\gdef\ZW@oddwarning}
\def\SetEvenPageMessage#{\gdef\Z@@evenwarning}
\def\ZW@oddwarning{Empty page inserted}\let\ZW@evenwarning\ZW@oddwarning

\def\clap#1{#1}

\def\CropFlap{2in}
\def\CropSpine{1in}
\def\CropXSpine{1in}
\def\CropXtrim{.25in}
\def\CropYtrim{.25in}
\def\UserWidth{5in}
\def\UserLeftMargin{1in}
\def\UserRightMargin{1in}
\def\UserTopMargin{1in}
\def\UserBotMargin{1in}
\def\thePageNumber{\LWR@origpound\,\arabic{page}}
\ifXeTeX
\def\ifcaseZWdriver{\ifcase2}
\else
\def\ifcaseZWdriver{\ifcase1}
\fi
\DeclareRobustCommand\ZWifdriver[2]{}
```

File 364 `lwarp-patch-komascript.sty`

§ 458 Package

patch-komascript

Pkg `lwarp-patch-komascript`

Patches for komascript classes.

lwarp loads this package when scrbook, scrartcl, or scrreprt classes are detected.

Many features are ignored during the HTML conversion. The goal is source-level compatibility.

`\titlehead`, `\subject`, `\captionformat`, `\figureformat`, and `\tableformat` are not yet emulated.

⚠ Not fully tested! Please send bug reports!

Some features have not yet been tested. Please contact the author with any bug reports.

for HTML output:

```
\ProvidesPackage{lwarp-patch-komascript}
```

typearea is emulated.

```
\RequirePackage{lwarp-typearea}
```

tocbasic is emulated.

```
\RequirePackage{lwarp-tocbasic}
```

scrextend patches most of the new macros.

```
\RequirePackage{lwarp-scrextend}
```

Indexing macros, simplified for lwarp:

```
\AtBeginDocument{

\renewcommand*{\idx@heading}{%
  \idx@@heading{\indexname}%
}

\renewenvironment{theindex}{%
  \idx@heading%
  \index@preamble\par\nobreak
```

```
    \let\item\LWR@indexitem%
    \let\subitem\LWR@indexsubitem%
    \let\subsubitem\LWR@indexsubsubitem%
}
{}

\renewcommand*\indexspace{}

}% AtBeginDocument
```

The \minisec is placed inside a of class minisec.

```
\renewcommand*{\minisec}[1]{
\begin{BlockClass}{minisec}
#1
\end{BlockClass}
}
```

The part and chapter preambles are placed as plain text just after each heading.

```
\@ifundefined{setpartpreamble}{}{
\RenewDocumentCommand{\setpartpreamble}{o o +m}{%
\renewcommand{\part@preamble}{#3}%
}
}

\@ifundefined{setchapterpreamble}{}{
\RenewDocumentCommand{\setchapterpreamble}{o o +m}{%
\renewcommand{\chapter@preamble}{#3}%
}
}
```

Simple captions are used in all cases.

```
\LetLtxMacro\captionbelow\caption
\LetLtxMacro\captionabove\caption

\LetLtxMacro\captionofbelow\captionof
\LetLtxMacro\captionofabove\captionof

\RenewDocumentEnvironment{captionbeside}{o m o o o s}
{}
{%
\IfValueTF{#1}%
{\caption[#1]{#2}}%
{\caption{#2}}%
}

\RenewDocumentEnvironment{captionofbeside}{m o m o o o s}
```

```
{}
{%
\IfValueTF{#2}%
{\captionof{#1}[#2]{#3}}%
{\captionof{#1}{#3}}%
}

\RenewDocumentCommand{\setcapindent}{s m}{}
\renewcommand*{\setcaphanging}{}
\renewcommand*{\setcapwidth}[2][]{}
\renewcommand*{\setcapdynwidth}[2][]{}
\RenewDocumentCommand{\setcapmargin}{s o m}{}
```

File 365 `lwarp-patch-memoir.sty`

§ 459 Package

patch-memoir

(*Emulates or patches code by* Peter Wilson.)

Pkg `lwarp-patch-memoir` Patches for memoir class.

⚠ Not fully tested! Please send bug reports!

lwarp loads this package when the memoir class is detected.

⚠ options clash

While emulating memoir, lwarp pre-loads a number of packages (section 459.1). This can cause an options clash when the user's document later loads the same packages with options. To fix this problem, specify the options before loading lwarp:

```
\documentclass{memoir}
...
\PassOptionsToPackage{options_list}{package_name}
...
\usepackage{lwarp}
...
\usepackage{package_name}
```

`\verbfootnote` is not supported.

`\newfootnoteseries`, etc. are not supported.

lwarp loads pagenote to perform memoir's pagenote functions, but there are minor differences in `\pagenotesubhead` and related macros.

Poem numbering is not supported.

The `verbatim` environment does not yet support the memoir enhancements. It is currently recommended to load and use fancyvrb instead.

The memoir glossary system is not yet supported by *lwarpmk*. The glossaries package may be used instead, but does require the glossary entries be changed from the memoir syntax to the glossaries syntax.

for HTML output:

```
\ProvidesPackage{lwarp-patch-memoir}
```

§ 459.1 Packages

These are pre-loaded to provide emulation for many of memoir's functions. memoir pretends that abstract, etc. are already loaded, via its "emulated" package mechanism, but lwarp is directly loading the "`lwarp-`" version of each, which happens to avoid memoir's emulation system.

```
\RequirePackage{lwarp-abstract}% req'd
\RequirePackage{lwarp-array}% req'd
\RequirePackage{lwarp-booktabs}% req'd
% \RequirePackage{lwarp-ccaption}% emualated below
\RequirePackage{lwarp-changepage}% req'd
\RequirePackage{lwarp-crop}
\RequirePackage{lwarp-dcolumn}% req'd
\RequirePackage{lwarp-enumerate}% req'd
\RequirePackage{lwarp-epigraph}% req'd
\RequirePackage{lwarp-fancyvrb}% req'd
\RequirePackage{lwarp-footmisc}% req'd
\RequirePackage{lwarp-framed}% req'd
\RequirePackage{lwarp-hanging}% req'd
\RequirePackage{lwarp-makeidx}% req'd
\DisemulatePackage{moreverb}
\RequirePackage{lwarp-moreverb}
\RequirePackage{lwarp-mparhack}
\RequirePackage{lwarp-needspace}% req'd
\RequirePackage{lwarp-nextpage}% req'd
\RequirePackage{lwarp-pagenote}% req'd
\RequirePackage{lwarp-parskip}
\RequirePackage{lwarp-setspace}% req'd
\RequirePackage{lwarp-showidx}
\RequirePackage{lwarp-subfigure}% red'q
\makeindex
```

subfigure is emulated via subfig, which pre-defines `subfigure` and `subtable`, but memoir does not, so they must be tested for here:

```
\LetLtxMacro\LWR@memorignewsubfloat\newsubfloat
\RenewDocumentCommand{\newsubfloat}{O{} m}{%
    \@ifundefined{c@sub#2}{%
        \LWR@memorignewsubfloat[#1]{#2}%
```

```
    }{}%
}

\RequirePackage{lwarp-tabularx}% req'd
\RequirePackage{lwarp-titling}% req'd
% \RequirePackage{lwarp-tocbibind}% not emulated by memoir
\RequirePackage{lwarp-tocloft}% req'd
\RequirePackage{lwarp-verse}% req'd
```

§ 459.2 Preliminary setup

Bypass the memoir package mechanism:

```
\LetLtxMacro\LWR@orig@label\@mem@old@label
```

memoir already set the page size to a default, so it must be forced large for lwarp's use, to avoid tag overflows off the page.

```
\setstocksize{190in}{20in}
\setlrmarginsandblock{2in}{2in}{*}
\setulmarginsandblock{1in}{1in}{*}
```

§ 459.3 Laying out the page

```
\renewcommand*{\stockavi}{}
\renewcommand*{\stockav}{}
\renewcommand*{\stockaiv}{}
\renewcommand*{\stockaiii}{}
\renewcommand*{\stockbvi}{}
\renewcommand*{\stockbv}{}
\renewcommand*{\stockbiv}{}
\renewcommand*{\stockbiii}{}
% \renewcommand*{\stockmetriccrownvo}{}% in docs but not in the package
\renewcommand*{\stockmlargecrownvo}{}
\renewcommand*{\stockmdemyvo}{}
\renewcommand*{\stockmsmallroyalvo}{}
\renewcommand*{\pageavi}{}
\renewcommand*{\pageav}{}
\renewcommand*{\pageaiv}{}
\renewcommand*{\pageaiii}{}
\renewcommand*{\pagebvi}{}
\renewcommand*{\pagebv}{}
\renewcommand*{\pagebiv}{}
\renewcommand*{\pagebiii}{}
% \renewcommand*{\pagemetriccrownvo}{}% in docs but not in the package
\renewcommand*{\pagemlargecrownvo}{}
\renewcommand*{\pagemdemyvo}{}
\renewcommand*{\pagemsmallroyalvo}{}

```

```
\renewcommand*{\stockdbill}{}
\renewcommand*{\stockstatement}{}
\renewcommand*{\stockexecutive}{}
\renewcommand*{\stockletter}{}
\renewcommand*{\stockold}{}
\renewcommand*{\stocklegal}{}
\renewcommand*{\stockledger}{}
\renewcommand*{\stockbroadsheet}{}
\renewcommand*{\pagedbill}{}
\renewcommand*{\pagestatement}{}
\renewcommand*{\pageexecutive}{}
\renewcommand*{\pageletter}{}
\renewcommand*{\pageold}{}
\renewcommand*{\pagelegal}{}
\renewcommand*{\pageledger}{}
\renewcommand*{\pagebroadsheet}{}

\renewcommand*{\stockpottvo}{}
\renewcommand*{\stockfoolscapvo}{}
\renewcommand*{\stockcrownvo}{}
\renewcommand*{\stockpostvo}{}
\renewcommand*{\stocklargecrownvo}{}
\renewcommand*{\stocklargepostvo}{}
\renewcommand*{\stocksmalldemyvo}{}
\renewcommand*{\stockdemyvo}{}
\renewcommand*{\stockmediumvo}{}
\renewcommand*{\stocksmallroyalvo}{}
\renewcommand*{\stockroyalvo}{}
\renewcommand*{\stocksuperroyalvo}{}
\renewcommand*{\stockimperialvo}{}
\renewcommand*{\pagepottvo}{}
\renewcommand*{\pagefoolscapvo}{}
\renewcommand*{\pagecrownvo}{}
\renewcommand*{\pagepostvo}{}
\renewcommand*{\pagelargecrownvo}{}
\renewcommand*{\pagelargepostvo}{}
\renewcommand*{\pagesmalldemyvo}{}
\renewcommand*{\pagedemyvo}{}
\renewcommand*{\pagemediumvo}{}
\renewcommand*{\pagesmallroyalvo}{}
\renewcommand*{\pageroyalvo}{}
\renewcommand*{\pagesuperroyalvo}{}
\renewcommand*{\pageimperialvo}{}

\renewcommand*{\memfontfamily}{}
\renewcommand*{\memfontenc}{}
\renewcommand*{\memfontpack}{}

\renewcommand*{\anyptfilebase}{}
\renewcommand*{\anyptsize}{10}
```

```
118
119 \renewcommand*{\setstocksize}[2]{}
120 \renewcommand*{\settrimmedsize}[3]{}
121 \renewcommand*{\settrims}[2]{}
122
123 % \newlength{\lxvchars}
124 % \setlength{\lxvchars}{305pt}
125 % \newlength{\xlvchars}
126 % \setlength{\xlvchars}{190pt}
127 \renewcommand*{\setxlvchars}[1]{}
128 \renewcommand*{\setlxvchars}[1]{}
129
130 \renewcommand*{\settypeblocksize}[3]{}
131 \renewcommand*{\setlrmargins}[3]{}
132 \renewcommand*{\setlrmarginsandblock}[3]{}
133 \renewcommand*{\setbinding}[1]{}
134 \renewcommand*{\setulmargins}[3]{}
135 \renewcommand*{\setulmarginsandblock}[3]{}
136 \renewcommand*{\setcolsepandrule}[2]{}
137
138 \renewcommand*{\setheadfoot}[2]{}
139 \renewcommand*{\setheaderspaces}[3]{}
140 \renewcommand*{\setmarginnotes}[3]{}
141 \renewcommand*{\setfootins}[2]{}
142 \renewcommand*{\checkandfixthelayout}[1][]{}
143 \renewcommand*{\checkthelayout}[1]{}
144 \renewcommand*{\fixthelayout}{}
145 %
146 % \newlength{\stockheight}
147 % \newlength{\trimtop}
148 % \newlength{\trimedge}
149 % \newlength{\stockwidth}
150 % \newlength{\spinemargin}
151 % \newlength{\foremargin}
152 % \newlength{\uppermargin}
153 % \newlength{\headmargin}
154 %
155 \renewcommand*{\typeoutlayout}{}
156 \renewcommand*{\typeoutstandardlayout}{}
157 \renewcommand*{\settypeoutlayoutunit}[1]{}
158 \renewcommand*{\fixpdflayout}{}
159 \renewcommand*{\fixdvipslayout}{}
160
161 \renewcommand*{\medievalpage}[1][]{}
162 \renewcommand*{\isopage}[1][]{}
163 \renewcommand*{\semiisopage}[1][]{}
164
165 \renewcommand{\setpagebl}[3]{}
166 \renewcommand{\setpageml}[3]{}
167 \renewcommand{\setpagetl}[3]{}
```

```
\renewcommand{\setpagetm}[3]{}
\renewcommand{\setpagetr}[3]{}
\renewcommand{\setpagemr}[3]{}
\renewcommand{\setpagebr}[3]{}
\renewcommand{\setpagebm}[3]{}
\renewcommand{\setpagecc}[3]{}
```

§ 459.4 Text and fonts

```
\let\miniscule\tiny
\let\HUGE\Huge

\renewcommand*{\abnormalparskip}[1]{}
\renewcommand*{\nonzeroparskip}{}
\renewcommand*{\traditionalparskip}{}

\let\onelineskip\baselineskip

\let\OnehalfSpacing\onehalfspacing
\let\DoubleSpacing\doublespacing
\renewcommand*{\setPagenoteSpacing}[1]{}
\renewcommand*{\setFloatSpacing}[1]{}
\let\SingleSpacing\singlespacing
\let\setSingleSpace\SetSinglespace
\let\SingleSpace\singlespace
\let\endSingleSpace\endsinglespace
\let\Spacing\spacing
\let\endSpacing\endspacing
\let\OnehalfSpace\onehalfspace
\let\endOnehalfSpace\endonehalfspace
\csletcs{OnehalfSpace*}{onehalfspace}
\csletcs{endOnehalfSpace*}{endonehalfspace}
\let\DoubleSpace\doublespace
\let\endDoubleSpace\enddoublespace
\csletcs{DoubleSpace*}{doublespace}
\csletcs{endDoubleSpace*}{enddoublespace}
\renewcommand*{\setDisplayskipStretch}[1]{}
\renewcommand*{\memdskipstretch}{}
\renewcommand*{\noDisplayskipStretch}{}
\renewcommand*{\memdskips}{}

\renewcommand*{\midsloppy}{}
\renewenvironment*{midsloppypar}{}{}

\renewcommand*{\sloppybottom}{}
```

§ 459.5 Titles

```
\csletcs{titlingpage*}{titlingpage}
```

```
\csletcs{endtitlingpage*}{endtitlingpage}
\let\titlingpageend\relax
\newcommand{\titlingpageend}[2]{}
\let\andnext\and
\renewcommand*{\thanksmarkstyle}[1]{}
\renewcommand{\thanksfootmark}{%
\thanksscript{\tamark}%
}

% \newlength{\thanksmarksep}
```

§ 459.6 Abstracts

```
\renewcommand*{\abstractcol}{}
\renewcommand*{\abstractintoc}{}
\renewcommand*{\abstractnum}{}
\renewcommand*{\abstractrunin}{}
```

§ 459.7 Docment divisions

```

\def\@apppage{%
    \part*{\appendixpagename}
}
\renewcommand\mempreaddapppagetotochook{}
\renewcommand\mempostaddapppagetotochook{}

\def\@sapppage{%
    \part*{\appendixpagename}
}

\csletcs{frontmatter*}{frontmatter}
\csletcs{mainmatter*}{mainmatter}
\renewcommand*{\raggedbottomsection}{}
\renewcommand*{\normalbottomsection}{}
\renewcommand*{\bottomsectionskip}{}
\renewcommand*{\bottomsectionpenalty}{}
\csletcs{appendixpage*}{appendixpage}
\renewcommand*{\namedsubappendices}{}
\renewcommand*{\unnamedsubappendices}{}
\renewcommand*{\setsecnumdepth}[1]{}% todo tocvsec2
\renewcommand*{\maxsecnumdepth}[1]{}% todo tocvsec2
\renewcommand*{\beforebookskip}{}
\renewcommand*{\afterbookskip}{}
\renewcommand*{\beforepartskip}{}
\renewcommand*{\afterpartskip}{}
\renewcommand*{\midbookskip}{}
\renewcommand*{\midpartskip}{}
\renewcommand*{\printbookname}{}
```

```
\renewcommand*{\booknamefont}{}
\renewcommand*{\booknamenum}{}
\renewcommand*{\printbooknum}{}
\renewcommand*{\booknumfont}{}
\renewcommand*{\printpartname}{}
\renewcommand*{\partnamefont}{}
\renewcommand*{\partnamenum}{}
\renewcommand*{\printpartnum}{}
\renewcommand*{\partnumfont}{}
\renewcommand*{\printbooktitle}[1]{}
\renewcommand*{\booktitlefont}{}
\renewcommand{\printparttitle}[1]{}
\renewcommand*{\parttitlefont}{}
\renewcommand*{\bookpageend}{}
\renewcommand*{\bookblankpage}{}
\renewcommand*{\nobookblankpage}{}
\renewcommand*{\partpageend}{}
\renewcommand*{\partblankpage}{}
\renewcommand*{\nopartblankpage}{}
\RenewDocumentCommand{\newleadpage}{s o m m}{}% todo
\RenewDocumentCommand{\renewleadpage}{s o m m}{}% todo
\renewcommand*{\leadpagetoclevel}{chapter}

\renewcommand*{\openright}{}
\renewcommand*{\openleft}{}
\renewcommand*{\openany}{}
\renewcommand*{\clearforchapter}{}
\renewcommand*{\memendofchapterhook}{}
\renewcommand*{\chapterheadstart}{}
% \newlength{\beforechapskip}
\renewcommand*{\afterchapternum}{}
% \newlength{\midchapskip}
\renewcommand*{\afterchaptertitle}{}
% \newlength{\afterchapskip}
\renewcommand*{\printchaptername}{}
\renewcommand*{\chapnamefont}{}
\renewcommand*{\chapternamenum}{}
\renewcommand*{\printchapternum}{}
\renewcommand*{\chapnumfont}{}
\renewcommand{\printchaptertitle}[1]{}
\renewcommand*{\chaptitlefont}{}
\renewcommand*{\printchapternonum}{}
\renewcommand*{\indentafterchapter}{}
\renewcommand*{\noindentafterchapter}{}
\renewcommand*{\insertchapterspace}{}

\renewcommand*{\chapterstyle}[1]{}
\renewcommand{\makechapterstyle}[2]{}
\renewcommand*{\chapindent}{}
\let\chapterprecis\cftchapterprecis
```

```
\let\chapterprecishere\cftchapterprecishere
\let\chapterprecistoc\cftchapterprecistoc
\renewcommand*{\precisfont}{}
\renewcommand*{\prechapterprecis}{}
\renewcommand*{\postchapterprecis}{}
\renewcommand{\precistoctext}[1]{}
\renewcommand*{\precistocfont}{}
\renewcommand*{\precistocformat}{}
% \newlength{\prechapterprecisshift}

\renewcommand*{\setbeforesecskip}[1]{}
\renewcommand*{\setaftersecskip}[1]{}
\renewcommand*{\setsecindent}[1]{}
\renewcommand*{\setsecheadstyle}[1]{}
\renewcommand*{\setbeforesubsecskip}[1]{}
\renewcommand*{\setaftersubsecskip}[1]{}
\renewcommand*{\setsubsecindent}[1]{}
\renewcommand*{\setsubsecheadstyle}[1]{}
\renewcommand*{\setbeforesubsubsecskip}[1]{}
\renewcommand*{\setaftersubsubsecskip}[1]{}
\renewcommand*{\setsubsubsecindent}[1]{}
\renewcommand*{\setsubsubsecheadstyle}[1]{}
\renewcommand*{\setbeforeparaskip}[1]{}
\renewcommand*{\setafterparaskip}[1]{}
\renewcommand*{\setparaindent}[1]{}
\renewcommand*{\setparaheadstyle}[1]{}
\renewcommand*{\setbeforesubparaskip}[1]{}
\renewcommand*{\setaftersubparaskip}[1]{}
\renewcommand*{\setsubparaindent}[1]{}
\renewcommand*{\setsubparaheadstyle}[1]{}
\renewcommand{\@hangfrom}[1]{#1}
\renewcommand{\sethangfrom}[1]{}
\renewcommand{\setsecnumformat}[1]{}

\renewcommand*{\hangsecnum}{}
\renewcommand*{\defaultsecnum}{}

\renewcommand*{\sechook}{}
\renewcommand{\setsechook}[1]{}
\renewcommand*{\subsechook}{}
\renewcommand{\setsubsechook}[1]{}
\renewcommand*{\subsubsechook}{}
\renewcommand{\setsubsubsechook}[1]{}
\renewcommand*{\parahook}{}
\renewcommand{\setparahook}[1]{}
\renewcommand*{\subparahook}{}
\renewcommand{\setsubparahook}[1]{}

\RenewDocumentCommand{\plainbreak}{s m}{\begin{center}~\end{center}}

```

```
\RenewDocumentCommand{\fancybreak}{s +m}{%
\begin{center}#2\end{center}%
}

\RenewDocumentCommand{\plainfancybreak}{s m m +m}{%
\begin{center}#4\end{center}%
}

\RenewDocumentCommand{\pfbreak}{s}{%
\begin{center}
\pfbreakdisplay
\end{center}
}

% \newlength{\pfbreakskip}
\renewcommand{\pfbreakdisplay}{*\quad*\quad*}

\renewcommand{\makeheadstyles}[2]{}
\renewcommand*{\headstyles}[1]{}
```

§ 459.8 Pagination and headers

```
\renewcommand*{\savepagenumber}{}
\renewcommand*{\restorepagenumber}{}
\renewcommand*{\uppercaseheads}{}
\renewcommand*{\nouppercaseheads}{}

\renewcommand*{\bookpagemark}[1]{}
\renewcommand*{\partmark}[1]{}
\renewcommand*{\bibmark}{}
\renewcommand*{\indexmark}{}
\renewcommand*{\glossarymark}{}

\LWR@origpagestyle{empty}
\renewcommand*{\ps@empty}{}
\renewcommand*{\makepagestyle}[1]{}
\renewcommand*{\emptypshook}{}%
% \renewcommand*{\empty@oddhead}{}
% \renewcommand*{\empty@oddfoot}{}
% \renewcommand*{\empty@evenhead}{}
% \renewcommand*{\empty@evenfoot}{}
\renewcommand*{\@oddhead}{}
\renewcommand*{\@oddfoot}{}
\renewcommand*{\@evenhead}{}
\renewcommand*{\@evenfoot}{}
\renewcommand*{\aliaspagestyle}[2]{}
\renewcommand*{\copypagestyle}[2]{}

\renewcommand*{\makeevenhead}[4]{}
```

```
\renewcommand*{\makeoddhead}[4]{}
\renewcommand*{\makeevenfoot}[4]{}
\renewcommand*{\makeoddfoot}[4]{}
\renewcommand*{\makerunningwidth}[3]{}
% \newlength{\headwidth}
\renewcommand*{\makeheadrule}[3]{}
\renewcommand*{\makefootrule}[3]{}
\renewcommand*{\makeheadfootruleprefix}[3]{}
% \newlength{\normalrulethickness}
% \setlength{\normalrulethickness}{.4pt}
% \newlength{\footruleheight}
% \newlength{\footruleskip}
\renewcommand*{\makeheadposition}[5]{}
\renewcommand{\makepsmarks}[2]{}
\renewcommand*{\makeheadfootstrut}[3]{}

\renewcommand{\createplainmark}[3]{}
\renewcommand{\memUChead}[1]{}
\renewcommand{\createmark}[5]{}
\renewcommand*{\clearplainmark}[1]{}
\renewcommand*{\clearmark}[1]{}
\renewcommand{\addtopsmarks}[3]{}
\renewcommand{\ifonlyfloats}[2]{#2}
\renewcommand*{\mergepagefloatstyle}[3]{}

\renewcommand*{\framepichead}{}
\renewcommand*{\framepictextfoot}{}
\renewcommand*{\framepichook}{}
\renewcommand*{\showheadfootlocoff}{}
\renewcommand*{\showtextblocklocoff}{}
```

§ 459.9 Paragraphs and lists

```
\renewcommand{\hangfrom}[1]{#1}
\let\centerfloat\centering
\renewcommand*{\raggedyright}[1][]{}
% \newlength{\ragrparindent}
\renewcommand{\sourceatright}[2][]{\attribution{#2}}
\let\memorigdbs\LWR@endofline
\let\memorigpar\par
\let\atcentercr\LWR@endofline

\renewcommand*{\linenottooshort}[1][]{}
\renewcommand*{\russianpar}{}
\renewcommand*{\lastlinerulefill}{}
\renewcommand*{\lastlineparrule}{}
\renewcommand*{\justlastraggedleft}{}
\renewcommand*{\raggedrightthenleft}{}
\renewcommand*{\leftcenterright}{}
```

```
\renewcommand{\leftspringright}[4]{%
\begin{minipage}{#1\linewidth}#3\end{minipage}\qquad%
\begin{minipage}{#2\linewidth}\begin{flushright}#4\end{flushright}\end{minipage}%
}

\renewenvironment*{blockdescription}
{\LWR@descriptionstart\LWR@origdescription}
{\enddescription}
\renewcommand*{\blockdescriptionlabel}[1]{\textbf{#1}}
\renewenvironment*{labelled}[1]{\begin{description}}{\end{description}}
\renewenvironment*{flexlabelled}[6]{\begin{description}}{\end{description}}
\renewcommand*{\tightlists}{}
\renewcommand*{\defaultlists}{}
\RenewDocumentCommand{\firmlists}{s}{}
\renewcommand*{\firmlist}{}
\renewcommand*{\tightlist}{}
\renewcommand*{\zerotrivseps}{}
\renewcommand*{\savetrivseps}{}
\renewcommand*{\restoretrivseps}{}
```

§ 459.10 Contents lists

```
\csletcs{tableofcontents*}{tableofcontents}
\csletcs{listoffigures*}{listoffigures}
\csletcs{listoftables*}{listoftables}
\renewenvironment{KeepFromToc}{}{}
\renewcommand*{\onecoltocetc}{}
\renewcommand*{\twocoltocetc}{}
\renewcommand*{\ensureonecol}{}
\renewcommand*{\restorefromonecol}{}
\renewcommand*{\doccoltocetc}{}
\renewcommand*{\maxtocdepth}[1]{}% tocvsec2
\renewcommand*{\settocdepth}[1]{}% tocvsec2

\renewcommand{\tocheadstart}{}
\renewcommand{\printtoctitle}[1]{}
\renewcommand{\tocmark}{}
\renewcommand{\aftertoctitle}{}
\renewcommand{\lofheadstart}{}
\renewcommand{\printloftitle}[1]{}
\renewcommand{\lofmark}{}
\renewcommand{\afterloftitle}{}
\renewcommand{\lotheadstart}{}
\renewcommand{\printlottitle}[1]{}
\renewcommand{\lotmark}{}
\renewcommand{\afterlottitle}{}

\renewcommand*{\setpnumwidth}[1]{}
```

```
\renewcommand*{\setrmarg}[1]{}
\renewcommand*{\cftbookbreak}{}
\renewcommand*{\cftpartbreak}{}
\renewcommand*{\cftchapterbreak}{}

% \newlength{\cftbeforebookskip}
% \newlength{\cftbookindent}
% \newlength{\cftbooknumwidth}
\renewcommand*{\cftbookfont}{}
\renewcommand*{\cftbookname}{}
\renewcommand*{\cftbookpresnum}{}
\renewcommand*{\cftbookaftersnum}{}
\renewcommand*{\cftbookaftersnumb}{}
\renewcommand*{\cftbookleader}{}
\renewcommand*{\cftbookdotsep}{1}
\renewcommand*{\cftbookpagefont}{}
\renewcommand*{\cftbookafterpnum}{}
\renewcommand*{\cftbookformatpnum}[1]{}
\renewcommand*{\cftbookformatpnumhook}[1]{}
```

Part is already defined by tocloft.

```
% \newlength{\cftbeforechapterskip}
% \newlength{\cftchapterindent}
% \newlength{\cftchapternumwidth}
\renewcommand*{\cftchapterfont}{}
\renewcommand*{\cftchaptername}{}
\renewcommand*{\cftchapterpresnum}{}
\renewcommand*{\cftchapteraftersnum}{}
\renewcommand*{\cftchapteraftersnumb}{}
\renewcommand*{\cftchapterleader}{}
\renewcommand*{\cftchapterdotsep}{1}
\renewcommand*{\cftchapterpagefont}{}
\renewcommand*{\cftchapterafterpnum}{}
\renewcommand*{\cftchapterformatpnum}[1]{}
\renewcommand*{\cftchapterformatpnumhook}[1]{}

% \newlength{\cftbeforesectionskip}
% \newlength{\cftsectionindent}
% \newlength{\cftsectionnumwidth}
\renewcommand*{\cftsectionfont}{}
\renewcommand*{\cftsectionname}{}
\renewcommand*{\cftsectionpresnum}{}
\renewcommand*{\cftsectionaftersnum}{}
\renewcommand*{\cftsectionaftersnumb}{}
\renewcommand*{\cftsectionleader}{}
\renewcommand*{\cftsectiondotsep}{1}
\renewcommand*{\cftsectionpagefont}{}
\renewcommand*{\cftsectionafterpnum}{}
\renewcommand*{\cftsectionformatpnum}[1]{}
```

```
\renewcommand*{\cftsectionformatpnumhook}[1]{}

% \newlength{\cftbeforesubsectionskip}
% \newlength{\cftsubsectionindent}
% \newlength{\cftsubsectionnumwidth}
\renewcommand*{\cftsubsectionfont}{}
\renewcommand*{\cftsubsectionname}{}
\renewcommand*{\cftsubsectionpresnum}{}
\renewcommand*{\cftsubsectionaftersnum}{}
\renewcommand*{\cftsubsectionaftersnumb}{}
\renewcommand*{\cftsubsectionleader}{}
\renewcommand*{\cftsubsectiondotsep}{1}
\renewcommand*{\cftsubsectionpagefont}{}
\renewcommand*{\cftsubsectionafterpnum}{}
\renewcommand*{\cftsubsectionformatpnum}[1]{}
\renewcommand*{\cftsubsectionformatpnumhook}[1]{}

% \newlength{\cftbeforesubsubsectionskip}
% \newlength{\cftsubsubsectionindent}
% \newlength{\cftsubsubsectionnumwidth}
\renewcommand*{\cftsubsubsectionfont}{}
\renewcommand*{\cftsubsubsectionname}{}
\renewcommand*{\cftsubsubsectionpresnum}{}
\renewcommand*{\cftsubsubsectionaftersnum}{}
\renewcommand*{\cftsubsubsectionaftersnumb}{}
\renewcommand*{\cftsubsubsectionleader}{}
\renewcommand*{\cftsubsubsectiondotsep}{1}
\renewcommand*{\cftsubsubsectionpagefont}{}
\renewcommand*{\cftsubsubsectionafterpnum}{}
\renewcommand*{\cftsubsubsectionformatpnum}[1]{}
\renewcommand*{\cftsubsubsectionformatpnumhook}[1]{}

% \newlength{\cftbeforeparagraphskip}
% \newlength{\cftparagraphindent}
% \newlength{\cftparagraphnumwidth}
\renewcommand*{\cftparagraphfont}{}
\renewcommand*{\cftparagraphname}{}
\renewcommand*{\cftparagraphpresnum}{}
\renewcommand*{\cftparagraphaftersnum}{}
\renewcommand*{\cftparagraphaftersnumb}{}
\renewcommand*{\cftparagraphleader}{}
\renewcommand*{\cftparagraphdotsep}{1}
\renewcommand*{\cftparagraphpagefont}{}
\renewcommand*{\cftparagraphafterpnum}{}
\renewcommand*{\cftparagraphformatpnum}[1]{}
\renewcommand*{\cftparagraphformatpnumhook}[1]{}

% \newlength{\cftbeforesubparagraphskip}
% \newlength{\cftsubparagraphindent}
% \newlength{\cftsubparagraphnumwidth}
```

```
\renewcommand*{\cftsubparagraphfont}{}
\renewcommand*{\cftsubparagraphname}{}
\renewcommand*{\cftsubparagraphpresnum}{}
\renewcommand*{\cftsubparagraphaftersnum}{}
\renewcommand*{\cftsubparagraphaftersnumb}{}
\renewcommand*{\cftsubparagraphleader}{}
\renewcommand*{\cftsubparagraphdotsep}{1}
\renewcommand*{\cftsubparagraphpagefont}{}
\renewcommand*{\cftsubparagraphafterpnum}{}
\renewcommand*{\cftsubparagraphformatpnum}[1]{}
\renewcommand*{\cftsubparagraphformatpnumhook}[1]{}

% \newlength{\cftbeforefigureskip}
% \newlength{\cftfigureindent}
% \newlength{\cftfigurenumwidth}
\renewcommand*{\cftfigurefont}{}
\renewcommand*{\cftfigurename}{}
\renewcommand*{\cftfigurepresnum}{}
\renewcommand*{\cftfigureaftersnum}{}
\renewcommand*{\cftfigureaftersnumb}{}
\renewcommand*{\cftfigureleader}{}
\renewcommand*{\cftfiguredotsep}{1}
\renewcommand*{\cftfigurepagefont}{}
\renewcommand*{\cftfigureafterpnum}{}
\renewcommand*{\cftfigureformatpnum}[1]{}
\renewcommand*{\cftfigureformatpnumhook}[1]{}

% \newlength{\cftbeforesubfigureskip}
% \newlength{\cftsubfigureindent}
% \newlength{\cftsubfigurenumwidth}
\newcommand*{\cftsubfigurefont}{}
\newcommand*{\cftsubfigurename}{}
\newcommand*{\cftsubfigurepresnum}{}
\newcommand*{\cftsubfigureaftersnum}{}
\newcommand*{\cftsubfigureaftersnumb}{}
\newcommand*{\cftsubfigureleader}{}
\newcommand*{\cftsubfiguredotsep}{1}
\newcommand*{\cftsubfigurepagefont}{}
\newcommand*{\cftsubfigureafterpnum}{}
\newcommand*{\cftsubfigureformatpnum}[1]{}
\newcommand*{\cftsubfigureformatpnumhook}[1]{}

% \newlength{\cftbeforetableskip}
% \newlength{\cfttableindent}
% \newlength{\cfttablenumwidth}
\renewcommand*{\cfttablefont}{}
\renewcommand*{\cfttablename}{}
\renewcommand*{\cfttablepresnum}{}
\renewcommand*{\cfttableaftersnum}{}
\renewcommand*{\cfttableaftersnumb}{}
```

```
\renewcommand*{\cfttableleader}{}
\renewcommand*{\cfttabledotsep}{1}
\renewcommand*{\cfttablepagefont}{}
\renewcommand*{\cfttableafterpnum}{}
\renewcommand*{\cfttableformatpnum}[1]{}
\renewcommand*{\cfttableformatpnumhook}[1]{}

% \newlength{\cftbeforesubtableskip}
% \newlength{\cftsubtableindent}
% \newlength{\cftsubtablenumwidth}
\newcommand*{\cftsubtablefont}{}
\newcommand*{\cftsubtablename}{}
\newcommand*{\cftsubtablepresnum}{}
\newcommand*{\cftsubtableaftersnum}{}
\newcommand*{\cftsubtableaftersnumb}{}
\newcommand*{\cftsubtableleader}{}
\newcommand*{\cftsubtabledotsep}{1}
\newcommand*{\cftsubtablepagefont}{}
\newcommand*{\cftsubtableafterpnum}{}
\newcommand*{\cftsubtableformatpnum}[1]{}
\newcommand*{\cftsubtableformatpnumhook}[1]{}

\renewcommand*{\booknumberline}[1]{}
\renewcommand*{\partnumberline}[1]{}
\renewcommand*{\chapternumberline}[1]{}
\renewcommand*{\numberlinehook}[1]{}
% \renewcommand*{\cftwhatismyname}{}%
\renewcommand*{\booknumberlinehook}[1]{}
\renewcommand*{\partnumberlinehook}[1]{}
\renewcommand*{\chapternumberlinehook}[1]{}
\renewcommand{\numberlinebox}[2]{}
\renewcommand{\booknumberlinebox}[2]{}
\renewcommand{\partnumberlinebox}[2]{}
\renewcommand{\chapternumberlinebox}[2]{}
%
% \newlength{\cftparfillskip}
\renewcommand*{\cftpagenumbersoff}[1]{}
\renewcommand*{\cftpagenumberson}[1]{}
\renewcommand*{\cftlocalchange}[3]{}
\renewcommand*{\cftaddtitleline}[4]{}
\renewcommand*{\cftaddnumtitleline}[4]{}
\renewcommand{\cftinsertcode}[2]{}
\renewcommand{\cftinserthook}[2]{}
\renewcommand{\settocpreprocessor}[2]{}
\DeclareRobustCommand{\cftpagenumbersoff}[1]{}
\DeclareRobustCommand{\cftpagenumberson}[1]{}
```

§ 459.11 Floats and captions

`\newfloat` `[`⟨*1: within*⟩`]` `{`⟨*2: type*⟩`}` `{`⟨*3: ext*⟩`}` `{`⟨*4: capname*⟩`}`

```
\RenewDocumentCommand{\newfloat}{o m m m}{%
\IfValueTF{#1}%
{\DeclareFloatingEnvironment[fileext=#3,within=#1,name={#4}]{#2}}%
{\DeclareFloatingEnvironment[fileext=#3,name={#4}]{#2}}%
```

newfloat package automatically creates the `\listof` command for new floats, but float does not, so remove `\listof` here in case it is manually created later.

```
\cslet{listof#2s}\relax%
\cslet{listof#2es}\relax%
}
```

`\newlistof` `[`⟨*within*⟩`]` `{`⟨*type*⟩`}` `{`⟨*ext*⟩`}` `{`⟨*listofname*⟩`}`

Emulated through the `\newfloat` mechanism. Note that memoir uses a different syntax than tocloft for the name.

```
\RenewDocumentCommand{\newlistof}{o m m m}
{%
\IfValueTF{#1}
{\newlistentry[#1]{#2}{#3}{0}}
{\newlistentry{#2}{#3}{0}}
\@namedef{ext@#2}{#3}%
\@ifundefined{c@#3depth}{\newcounter{#3depth}}{}%
\setcounter{#3depth}{1}%
\@namedef{#3mark}{}%
\@namedef{#2}{\listof{#2}{#4}}
\@namedef{@cftmake#3title}{}
\@ifundefined{cftbefore#3titleskip}{
    \expandafter\newlength\csname cftbefore#3titleskip\endcsname
    \expandafter\newlength\csname cftafter#3titleskip\endcsname
}{}
\@namedef{cft#3titlefont}{}
\@namedef{cftafter#3title}{}
\@namedef{cft#3prehook}{}
\@namedef{cft#3posthook}{}
}

\renewcommand{\setfloatadjustment}[2]{}
```

Borrowed from the lwarp version of keyfloat:

```
\NewDocumentEnvironment{KFLTmemoir@marginfloat}{O{-1.2ex} m}
{% start
\LWR@BlockClassWP{float:right; width:2in; margin:10pt}{}{marginblock}%
\captionsetup{type=#2}%
}
{%
\endLWR@BlockClassWP%
}
```

```
\DeclareDocumentEnvironment{marginfigure}{o}
  {\begin{KFLTmemoir@marginfloat}{figure}}
  {\end{KFLTmemoir@marginfloat}}

\DeclareDocumentEnvironment{margintable}{o}
  {\begin{KFLTmemoir@marginfloat}{table}}
  {\end{KFLTmemoir@marginfloat}}

\renewcommand{\setmarginfloatcaptionadjustment}[2]{}
\renewcommand{\setmpjustification}[2]{}
\renewcommand*{\mpjustification}{}
\renewcommand*{\setfloatlocations}[2]{}
\DeclareDocumentCommand{\suppressfloats}{o}{}
\renewcommand*{\FloatBlock}{}
\renewcommand*{\FloatBlockAllowAbove}{}
\renewcommand*{\FloatBlockAllowBelow}{}
\renewcommand*{\setFloatBlockFor}{}

\renewcommand{\captiontitlefinal}[1]{}

\renewcommand{\flegtable}{\tablename}
\renewcommand{\flegfigure}{\figurename}
\renewcommand{\flegtoctable}{}
\renewcommand{\flegtocfigure}{}


\renewcommand{\subcaption}[2][]{%
\ifblank{#1}{\subfloat[#2]{}}{\subfloat[#1][#2]{}}%
}

\renewcommand{\contsubcaption}{\ContinuedFloat\subcaption}

\LetLtxMacro\subcaptionref\subref

\renewcommand*{\tightsubcaptions}{}
\renewcommand*{\loosesubcaptions}{}

\renewcommand*{\subcaptionsize}[1]{}
\renewcommand*{\subcaptionlabelfont}[1]{}
\renewcommand*{\subcaptionfont}[1]{}
\renewcommand*{\subcaptionstyle}[1]{}

\renewcommand*{\hangsubcaption}{}
\renewcommand*{\shortsubcaption}{}
\renewcommand*{\normalsubcaption}{}

\RenewDocumentEnvironment{sidecaption}{o m o}
{}
```

```
{
\IfValueTF{#1}{\caption[#1]{#2}}{\caption{#2}}%
\IfValueT{#3}{\label{#3}}%
}

% \newlength{\sidecapwidth}
% \newlength{\sidecapsep}
\renewcommand*{\setsidecaps}[2]{}
\renewcommand*{\sidecapmargin}[1]{}
% \newif\ifscapmargleft
\scapmargleftfalse
\renewcommand*{\setsidecappos}[1]{}

\RenewDocumentEnvironment{sidecontcaption}{m o}
{}
{%
\ContinuedFloat%
\caption{#1}%
```

Without \@captype, the section is referred to instead.

```
\IfValueT{#2}{\label[\@captype]{#2}}%
}
```

\sidenamedlegend does not appear to use the TOC argument.

```
\renewenvironment{sidenamedlegend}[2][]{
\begin{center}
\@nameuse{\@captype name}\CaptionSeparator#2
\end{center}
}
{}

\renewenvironment{sidelegend}[1]
{\begin{center}
#1

}
{\end{center}}

\renewcommand*{\sidecapstyle}{}
\renewcommand*{\overridescapmargin}[1]{}
% \newlength{\sidecapraise}
\renewcommand*{\sidecapfloatwidth}{\linewidth}

\LetLtxMacro\ctabular\tabular
\LetLtxMacro\endctabular\endtabular

\renewcommand{\autorows}[5][]{%
```

```
#5
}

\renewcommand{\autocols}[5][]{%
#5
}
```

§ 459.12 Page notes

```
\renewcommand*{\feetabovefloat}{}
\renewcommand*{\feetbelowfloat}{}
\renewcommand*{\feetatbottom}{}

\renewcommand*{\verbfootnote}[2][]{
\PackageError{lwarp,memoir}
{Verbatim footnotes are not yet supported by lwarp.}
{This may be improved some day.}
}

\renewcommand*{\plainfootnotes}{}
\renewcommand*{\twocolumnfootnotes}{}
\renewcommand*{\threecolumnfootnotes}{}
\renewcommand*{\paragraphfootnotes}{}
\renewcommand*{\footfudgefiddle}{}

\renewcommand*{\newfootnoteseries}[1]{
\PackageError{lwarp,memoir}
{Memoir footnote series are not yet supported by lwarp.}
{This may be improved some day.}
}

\renewcommand*{\plainfootstyle}[1]{}
\renewcommand*{\twocolumnfootstyle}[1]{}
\renewcommand*{\threecolumnfootstyle}[1]{}
\renewcommand*{\paragraphfootstyle}[1]{}

\renewcommand*{\footfootmark}{}
\renewcommand*{\footmarkstyle}[1]{}

% \newlength{\footmarkwidth}
% \newlength{\footmarksep}
% \newlength{\footparindent}

\renewcommand*{\foottextfont}{}

\renewcommand*{\marginparmargin}[1]{}
\renewcommand*{\sideparmargin}[1]{}

\LetLtxMacro\sidepar\marginpar
```

```
\renewcommand*{\sideparfont}{}
\renewcommand*{\sideparform}{}
\LWR@providelength{\sideparvshift}

\renewcommand*{\parnopar}{}

\renewcommand{\sidebar}[1]{\begin{quote}#1\end{quote}}
\renewcommand*{\sidebarmargin}[1]{}
\renewcommand*{\sidebarfont}{}
\renewcommand*{\sidebarform}{}
% \newlength{\sidebarhsep}
% \newlength{\sidebarvsep}
% \newlength{\sidebarwidth}
% \newlength{\sidebartopsep}
\renewcommand{\setsidebarheight}[1]{}
\renewcommand*{\setsidebars}[6]{}
\renewcommand*{\footnotesatfoot}{}
\renewcommand*{\footnotesinmargin}{}

\LetLtxMacro\sidefootnote\footnote
\LetLtxMacro\sidefootnotemark\footnotemark
\LetLtxMacro\sidefootnotetext\footnotetext

\renewcommand*{\sidefootmargin}[1]{}
% \newlength{\sidefoothsep}
% \newlength{\sidefootvsep}
% \newlength{\sidefootwidth}
% \newlength{\sidefootadjust}
% \newlength{\sidefootheight}
\renewcommand*{\setsidefootheight}[1]{}
% \renewcommand*{\sidefootfont}{}% in docs but not in the package
\renewcommand*{\setsidefeet}[6]{}
\renewcommand*{\sidefootmarkstyle}[1]{}
\renewcommand*{\sidefoottextfont}{}
\renewcommand*{\sidefootform}{}

\renewcommand*{\continuousnotenums}{\pncontopttrue}% from pagenote
\renewcommand*{\notepageref}{}
\renewcommand*{\prenotetext}{}
\renewcommand*{\postnotetext}{}
\renewcommand*{\idtextinnotes}[1]{}
\renewcommand*{\printpageinnotes}[1]{}
\renewcommand*{\printpageinnoteshyperref}[1]{}
\renewcommand*{\foottopagenote}{}
\renewcommand*{\pagetofootnote}{}
```

§ 459.13 Decorative text

```
\renewcommand*{\epigraphposition}[1]{}
```

```
\renewcommand*{\epigraphtextposition}[1]{}
\renewcommand*{\epigraphsourceposition}[1]{}
\renewcommand*{\epigraphfontsize}[1]{}
\renewcommand*{\epigraphforheader}[2][]{}
\renewcommand*{\epigraphpicture}{}
```

§ 459.14 Poetry

```
\renewcommand*{\vinphantom}{}
\renewcommand*{\vleftofline}[1]{#1}
% \let\linenumberfrequency\poemlines
% \renewcommand*{\linenumberfont}[1]{}

\DeclareDocumentCommand{\PoemTitle}{s o o m}{%
\IfValueTF{#2}%
{\poemtitle[#2]{#4}}%
{\poemtitle{#4}}%
}

\renewcommand*{\NumberPoemTitle}{}
\renewcommand*{\PlainPoemTitle}{}
\renewcommand*{\poemtitlepstyle}{}
\renewcommand*{\poemtitlestarmark}[1]{}
\renewcommand*{\poemtitlestarpstyle}{}
\renewcommand*{\PoemTitleheadstart}{}
\renewcommand*{\printPoemTitlenonum}{}
\renewcommand*{\printPoemTitlenum}{}
\renewcommand*{\afterPoemTitlenum}{}
\renewcommand*{\printPoemTitletitle}[1]{}
\renewcommand*{\afterPoemTitle}{}
\newlength{\midpoemtitleskip}
\renewcommand*{\PoemTitlenumfont}{}
\renewcommand*{\PoemTitlefont}{}
```

§ 459.15 Boxes, verbatims and files

```
\renewenvironment{qframe}{\framed}{\endframed}
\renewenvironment{qshade}{\shaded}{\endshaded}
```

Use the comment package:

```
\renewcommand*{\commentsoff}[1]{\includecomment{#1}}
\renewcommand*{\commentson}[1]{\excludecomment{#1}}
\LetLtxMacro\renewcomment\commentson

\renewcommand*{\setverbatimfont}[1]{}
\renewcommand*{\tabson}[1]{}
\renewcommand*{\tabsoff}{}
\renewcommand*{\wrappingon}{}
```

```
\renewcommand*{\wrappingoff}{}
\renewcommand*{\verbatimindent}{}
\renewcommand*{\verbatimbreakchar}[1]{}

\DefineVerbatimEnvironment{fboxverbatim}{Verbatim}{frame=single}
```

`boxedverbatim` is already defined by moreverb. `boxedverbatim*` does not appear to work at all, even in a minimal print memoir document.

```
\renewcommand*{\bvbox}{}
\renewcommand*{\bvtopandtail}{}
\renewcommand*{\bvsides}{}
\renewcommand*{\nobvbox}{}
% \newlength\bvboxsep
\renewcommand*{\bvtoprulehook}{}
\renewcommand*{\bvtopmidhook}{}
\renewcommand*{\bvendrulehook}{}
\renewcommand*{\bvleftsidehook}{}
\renewcommand*{\bvrightsidehook}{}
\renewcommand*{\bvperpagetrue}{}
\renewcommand*{\bvperpagefalse}{}
\renewcommand{\bvtopofpage}[1]{}
\renewcommand{\bvendofpage}[1]{}
\renewcommand*{\linenumberfrequency}[1]{}
\renewcommand*{\resetbvlinenumber}{}
\renewcommand*{\setbvlinenums}[2]{}
\renewcommand*{\linenumberfont}[1]{}
\renewcommand*{\bvnumbersinside}{}
\renewcommand*{\bvnumbersoutside}{}
```

§ 459.16 Cross referencing

```
\renewcommand*{\fref}[1]{\cref{#1}}
\renewcommand*{\tref}[1]{\cref{#1}}
\renewcommand*{\pref}[1]{\cpageref{#1}}
\renewcommand*{\Aref}[1]{\cref{#1}}
\renewcommand*{\Bref}[1]{\cref{#1}}
\renewcommand*{\Pref}[1]{\cref{#1}}
\renewcommand*{\Sref}[1]{\cref{#1}}
\renewcommand*{\figurerefname}{Figure}
\renewcommand*{\tablerefname}{Table}
\renewcommand*{\pagerefname}{page}
\renewcommand*{\bookrefname}{Book~}
\renewcommand*{\partrefname}{Part~}
\renewcommand*{\chapterrefname}{Chapter~}
\renewcommand*{\sectionrefname}{\S}
\renewcommand*{\appendixrefname}{Appendix~}
\LetLtxMacro\titleref\nameref
\renewcommand*{\headnameref}{}
```

```
\renewcommand*{\tocnameref}{}

\providecounter{LWR@currenttitle}

\renewcommand*{\currenttitle}{%
    \addtocounter{LWR@currenttitle}{1}%
    \label{currenttitle\arabic{LWR@currenttitle}}%
    \nameref{currenttitle\arabic{LWR@currenttitle}}%
}

\renewcommand*{\theTitleReference}[2]{}
\renewcommand*{\namerefon}{}
\renewcommand*{\namerefoff}{}
```

§ 459.17 Back matter

Redefined to write the LWR@autoindex counter instead of page. Note that memoir has two versions, depending on the use of hyperref.

```
\AtBeginDocument{

\def\@@wrindexhyp#1||\\{%
    \addtocounter{LWR@autoindex}{1}%
    \LWR@new@label{LWRindex-\arabic{LWR@autoindex}}%
%     \ifshowindexmark\@showidx{#1}\fi
    \protected@write\@auxout{}%
    {\string\@@wrindexm@m{\@idxfile}{#1}{\arabic{LWR@autoindex}}}%
    \endgroup
    \@esphack}%
```

\specialindex behaves like a regular \index, pointing to where \specialindex is used. If \specialindex is used inside a figure or table after the \caption, then the hyperlink will be given the name of that particular figure or table.

```
\def\@@wrspindexhyp#1||\\{%
    \addtocounter{LWR@autoindex}{1}%
    \LWR@new@label{LWRindex-\arabic{LWR@autoindex}}%
%     \ifshowindexmark\@showidx{#1}\fi
    \protected@write\@auxout{}%
    {%
%         \string\@@wrindexm@m{\@idxfile}{#1}{\@nameuse{the\@sptheidx}}%
        \string\@@wrindexm@m{\@idxfile}{#1}{\arabic{LWR@autoindex}}%
    }%
    \endgroup
    \@esphack}%

}% \AtBeginDocument
```

Patched to use `_html` filename and `\BaseJobname`:

```
\catcode`\_=12%
\renewcommand*{\makeindex}[1][\BaseJobname]{%
  \if@filesw
    \def\gindex{\@bsphack%
      \@ifnextchar [{\@index}{\@index[\BaseJobname]}}
    \def\specialindex{\@bsphack\@spindex}%
    \makememindexhook
    \expandafter\newwrite\csname #1@idxfile\endcsname
    \expandafter\immediate\openout \csname #1@idxfile\endcsname #1_html.idx\relax
    \typeout{Writing index file #1_html.idx }%
  \fi}
\catcode`\_=8%
```

Patched to use `_html` filename and `\BaseJobname`. This will later be patched by the lwarp core.

```
\catcode`\_=12%
\renewcommand{\printindex}[1][\BaseJobname]{\@input@{#1_html.ind}}
\catcode`\_=8%

\DeclareDocumentCommand{\newblock}{}{}
%
\renewcommand*{\showindexmarks}{}
\renewcommand*{\hideindexmarks}{}

\renewcommand*{\xindyindex}{}
```

§ 459.18 Miscellaneous

```
\renewcommand*{\changemarks}{}
\renewcommand*{\nochangemarks}{}
\renewcommand*{\added}[1]{}
\renewcommand*{\deleted}[1]{}
\renewcommand*{\changed}[1]{}

\renewcommand*{\showtrimsoff}{}
\renewcommand*{\showtrimson}{}
\renewcommand*{\trimXmarks}{}
\renewcommand*{\trimLmarks}{}
\renewcommand*{\trimFrame}{}
\renewcommand*{\trimNone}{}
\renewcommand*\trimmarkscolor{}
\renewcommand*{\trimmarks}{}
\renewcommand*{\tmarktl}{}
\renewcommand*{\tmarktr}{}
\renewcommand*{\tmarkbr}{}
\renewcommand*{\tmarkbl}{}
```

```
\renewcommand*{\tmarktm}{}
\renewcommand*{\tmarkmr}{}
\renewcommand*{\tmarkbm}{}
\renewcommand*{\tmarkml}{}
\renewcommand*{\trimmark}{}
\renewcommand*{\quarkmarks}{}
\renewcommand*{\registrationColour}[1]{}

\renewcommand*{\leavespergathering}[1]{}

\renewcommand*{\noprelistbreak}{}

\renewcommand*{\cleartorecto}{}
\renewcommand*{\cleartoverso}{}

\renewenvironment{vplace}[1][]{}{}
```

§ 459.19 ccaption emulation

```
\renewcommand*{\captiondelim}[1]{\renewcommand*{\CaptionSeparator}{#1}}
\renewcommand*{\captionnamefont}[1]{}
\renewcommand*{\captiontitlefont}[1]{}
\renewcommand*{\flushleftright}{}
\renewcommand*{\centerlastline}{}
\renewcommand*{\captionstyle}[2][]{}
\DeclareDocumentCommand{\captionwidth}{m}{}
\renewcommand*{\changecaptionwidth}{}
\renewcommand*{\normalcaptionwidth}{}
\renewcommand*{\hangcaption}{}
\renewcommand*{\indentcaption}[1]{}
\renewcommand*{\normalcaption}{}
\renewcommand{\precaption}[1]{}
\renewcommand{\postcaption}[1]{}
\renewcommand{\midbicaption}[1]{}
\renewcommand{\contcaption}[1]{%
% \ContinuedFloat%
% \caption{#1}%
\begin{LWR@figcaption}% later becomes \caption*
\LWR@isolate{\@nameuse{\@captype name}}~%
\thechapter.\the\value{\@captype}\CaptionSeparator\LWR@isolate{#1}%
\end{LWR@figcaption}
}

\newlength{\abovelegendskip}
\setlength{\abovelegendskip}{0.5\baselineskip}
\newlength{\belowlegendskip}
\setlength{\belowlegendskip}{\abovelegendskip}
```

The extra \\ here forces a <br> in HTML when \legend is used in a \marginpar.

```
\renewcommand{\legend}[1]{\begin{center}#1\\\end{center}}

\renewcommand{\namedlegend}[2][]{
\begin{center}
\@nameuse{fleg\@captype}\CaptionSeparator#2\\
\end{center}
\@nameuse{flegtoc\@captype}{#1}
}

\renewcommand{\newfixedcaption}[3][\caption]{%
  \renewcommand{#2}{\def\@captype{#3}#1}}
\renewcommand{\renewfixedcaption}[3][\caption]{%
  \renewcommand{#2}{\def\@captype{#3}#1}}
\renewcommand{\providefixedcaption}[3][\caption]{%
  \providecommand{#2}{\def\@captype{#3}#1}}

\renewcommand{\bitwonumcaption}[6][]{%
\ifblank{#2}{\caption{#3}}{\caption[#2]{#3}}%
\addtocounter{\@captype}{-1}%
\begingroup%
\csdef{\@captype name}{#4}%
\ifblank{#5}{\caption{#6}}{\caption[#5]{#6}}%
\endgroup%
\ifblank{#1}{}{\label{#1}}%
}

\LetLtxMacro\bionenumcaption\bitwonumcaption% todo

\renewcommand{\bicaption}[5][]{%
\ifblank{#2}{\caption{#3}}{\caption[#2]{#3}}%
\begin{LWR@figcaption}% later becomes \caption*
\LWR@isolate{#4} \thechapter.\the\value{\@captype}\CaptionSeparator\LWR@isolate{#5}%
\end{LWR@figcaption}
\ifblank{#1}{}{\label{#1}}%
}

\renewcommand{\bicontcaption}[3]{%
\contcaption{#1}%
\begingroup%
\csdef{\@captype name}{#2}%
\contcaption{#3}%
\endgroup%
}

% only in ccaption, not in memoir:
% \LetLtxMacro\longbitwonumcaption\bitwonumcaption%
% \LetLtxMacro\longbionenumcaption\bitwonumcaption%
% \LetLtxMacro\longbicaption\bicaption%

\RenewDocumentCommand{\subtop}{O{} O{} m}{%
```

```
\subfloat[#1][#2]{#3}%
}

\RenewDocumentCommand{\subbottom}{O{} O{} m}{%
\subfloat[#1][#2]{#3}%
}

\renewcommand{\contsubtop}{%
\ContinuedFloat\addtocounter{\@captype}{1}%
\subtop}

\renewcommand{\contsubbottom}{%
\ContinuedFloat\addtocounter{\@captype}{1}%
\subbottom}

\renewcommand{\subconcluded}{}

\let\subfigure\subbottom
\let\subtable\subtop

\let\contsubtable\contsubtop
\let\contsubfigure\contsubbottom

\newcommand{\newfloatentry}[4][\@empty]{TODO: newfloatentry}
\newcommand{\newfloatlist}[5][\@empty]{TODO: newfloatlist}
\newcommand{\newfloatenv}[4][\@empty]{TODO: newfloatenv}
\DeclareRobustCommand{\newfloatpagesoff}[1]{}
\DeclareRobustCommand{\newfloatpageson}[1]{}
\newcommand{\setnewfloatindents}[3]{}
```

§ 459.20 Final patchwork

```
\newlistof{tableofcontents}{toc}{\contentsname}
\newlistof{listoffigures}{lof}{\listfigurename}
\newlistof{listoftables}{lot}{\listtablename}
```

Change History

§ 460 Chg Hist

For the most recent changes, see page 1044.

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Troubleshooting Index

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Entries with higher page numbers are often duplicates of entries with lower page numbers, as the same warning may occur within the user manual and again within the source code for a given package.

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