



The **lwarp** package

v0.24 — 2017/03/15

L^AT_EX to HTML5

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Abstract

The **lwarp** package allows L^AT_EX 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 L^AT_EX, LuaL^AT_EX, or XeL^AT_EX. 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.

A modular package-loading system uses the **lwarp** version of a package for HTML when available. Several dozen L^AT_EX packages are supported with these high-level source compatibility replacements.

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

To update existing projects, see [section 1, Updates](#).

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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Package 1

lwarp.sty

1 Updates

For a detailed list of changes, see the Change History on page [405](#).

v0.24:

- `tikz`'s `babel` library is load automatically as needed.
- `subfig` has been added, along with `lofdepth` and `lotdepth`.
- `picture` and `tikzpicture` now may be inline.

v0.22:

- Support has been added for tabular column types `D`, `!`, and `X`. Unknown column types are converted to `l`.
- Additional packages are supported, including `abstract`, `dcolumn`, `tabularx`, and `varioref`.

v0.21:

- Documentation for installing on Windows has been updated and improved.
- For Windows compatibility, the `lateximages` shell script has been replaced with a `lateximages.txt` file, which is parsed by `lwarpmk` to generate `lateximages`. This does not require any changes in the user's code.
- Windows `lwarpmk` again now functions.
- For improved error handling, `lwarp` now verifies the order in which packages are loaded, and signals an error for misplaced packages. `inputenc`, `fontenc`, `newunicode`, and `fontspec` must be loaded before `lwarp`, and the other packages which `lwarp` knows about must be loaded after.
- `lwarp` no longer requires a `\title` be assigned.

v0.20:

- The `makefile` and related infrastructure has been replaced by the `lwarpmk` utility. This provides increased portability, reduced dependencies, and much simpler installation and setup.
- The `lwarp-newproject` package is now used to locally create support files.

- The print and HTML versions of a document may co-exist with their own sets of auxiliary files.
- Package handling is now controlled by a modular system which looks for and loads an `lwarp-<package>` version if available.
- High-level source compatibility is provided for all supported packages, almost totally eliminating the need for `warpprint` and `warpHTML` environments.
- A large number of additional packages are supported.
- A new tutorial is included in the documentation, and many obsolete sections have been removed.
- `\NewHTMLdescription` sets the HTML meta description tag for each file. See section 6.8.
- `\HTMLFileName` may now be empty, allowing filenames without a prefix. Lwarp no longer automatically appends a `-` character. For existing projects, add a `-` to the end of `\HTMLFileName`.
- `\HomeHTMLFileName` and `\HTMLFileName` no longer use escaped underscore characters. Underscores may be used in filenames as-is.
- `lwarp` now tries to auto-detect the operating system, and `\warpOSwindows` is only needed if the auto-detection fails to detect Windows.
- Tabular column types `@`, `>`, and `<` are now supported.
- `BlockClass` and `\InlineClass` add an optional style.
- The `sidebar` and `example` environments have been moved to the test suite, and are no longer included in `lwarp`.

v0.19:

- `MATHJAX` now may be used to display math via the `mathjax` option. See sections 6.2 and 6.10.2. To use MathJax with a pre-existing project, copy or link the file `lwarp_mathjax.txt` to the project's directory.
- `\rule` added, supporting width, height, raise, `\textcolor`.
- `\LateximageFontSizeName` provides user-adjustable font size for math and lateximages.
- `\minipagefullwidth` requests that the next minipage be full-width in HTML, but still the assigned width in print.
- `minipage` improved side-by-side rendering.
- CSS class `tablenotes` is provided for table note items.
- `\warpprintonly` replaces `\rowprintedonly`, and `\warpHTMLonly` is added. These behave like the `warpprint` and `warpHTML` environments, and are generally useful, so they replace the previously table-specific syntax.

- `cleveref` is loaded `\AtEndPreamble` for improved reliability. See section 59.
- `\xfracHTMLfontsize` controls `xfrac` font size in HTML.
- `Tikz` improved catcode handling.

v0.18:

- The `verse` package and the verse-related commands from the `memoir` package are now supported.
- Responsive web design has been improved for the sideTOC.
- `\includegraphics` now maintains relative sized for `em`, `ex`, and `%`.

v0.17:

- `mdframed` package is supported.

v0.16:

- Font and input encoding are now controlled by the user, and `lwarp` is loaded after fonts have been selected.
- Support for $\text{X}\text{\LaTeX}$ and $\text{Lua}\text{\LaTeX}$. See section 6.1.

2 Introduction

The `lwarp` project aims to allow a rich \LaTeX document to be converted to a reasonable HTML interpretation. 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 show that these new features degrade gracefully, although the SVG format for math may not be available on small cell phones.

`pdflatex`, `xelatex`, or `lualatex` is 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 JPG are used as-is.

SVG images may be used for math, and are also used for `picture`, and `Tikz` environments, as this format has better browser and e-book support than MathML (as of this writing), while still allowing for the high-quality display and printing of images (again, subject to potentially bug-ridden¹ 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.² Custom \LaTeX macros may be used as-is in math expressions, since the math is evaluated entirely inside \LaTeX .

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, one per math expression. `lwarp` maintains \LaTeX control for cross-referencing and equation numbering/formatting.

The `lwarp` package allows \LaTeX to directly generate HTML5 tags from a \LaTeX source document, with only minor intervention on the user’s part. 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

¹Firefox has had an on-again/off-again bug for quite some time regarding printing SVGs at high resolution.

²There 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!

a L^AT_EX-generated PDF file which happens to have HTML5 tags, to a number of HTML5 plain-text files and accompanying images.

A special `lwarp-newproject` package is used to set up the auxiliary files necessary for the HTML conversion. 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 usual L^AT_EX version. These `lwarp-packagename.sty` files contain code used to emulate or replace functions for HTML output.

Enough functionality is provided to convert a typical article containing technical content. Not every package has been tested, but many of the most useful ones are known to work, either as-is or through emulation with replacement code. (See table 1 on page 21.)

2.1 Supported packages and features

Supported classes include `book`, `report`, and `article`. `memoir` is planned, but in the meantime many of the packages used by `memoir` are already supported.

Table 1 lists some of the various L^AT_EX features which may be used. *Supported* means that the package or macro may be used as-is, perhaps with minor limitations. *Emulated* means that the original package or macro is not used, but similar functionality is provided in a way which is intended to be compatible with the user's L^AT_EX code.

Table 1: L^AT_EX–HTML generation — `lwarp` package — Supported functions

Package or Macro	Status
Engines:	pdfL ^A T _E X, X _Y L ^A T _E X, LuaL ^A T _E X
Classes:	<code>book</code> , <code>report</code> , or <code>article</code> . <code>memoir</code> is planned.
Sectioning:	Supported, with hyperlinks. Honors <code>tocdepth</code> and <code>secnumdepth</code> . Adds <code>filedepth</code> for splitting the HTML output. Files may be numbered sequentially or named according to section name. Common short words and punctuation is removed from the filenames.

lwarp Supported Functions — continued

Package or Macro	Status
Table of Contents, Figures, Tables:	Supported, with hyperlinks.
<code>\maketitle</code> , <code>titlepage</code> , titling:	Supported, with optional titling-based commands for published and subtitle.
<code>abstract</code> :	Supported
Cross-references:	Emulated, with hyperlinks.
<code>hyperref</code> :	Emulated. HTML hyperlinks are generated for TOC, LOF, LOT, <code>\nameref</code> , <code>\ref</code> , the <code>cleveref</code> com- mands, and index entries.
Footnotes:	Supported, emulated as pagenotes per HTML page.
Indexing:	<code>texindy</code> is used, with hyperlinks.
Bibliography:	Supported, without hyperlinks so far.
Math:	Supported. Converted to SVG images with HTML ALT tags containing the \LaTeX source for the math expression. MathJax supported as an alternative. \mathcal{AMS} environments are supported. User-defined macros are available during conversion, due to native \LaTeX processing.
Floats:	Supported, appear where declared. <code>float</code> is emu- lated, <code>newfloat</code> is supported, <code>caption</code> and <code>subcap-</code> <code>tion</code> are supported, <code>subfig</code> is supported, <code>capt-of</code> is supported, <code>placeins</code> is ignored, <code>trivfloat</code> is sup- ported, <code>floatrow</code> is emulated, <code>keyfloat</code> is supported, <code>wrapfig</code> is emulated.
<code>tabular</code> :	Emulated. <code>\multirow</code> and <code>\multicolumn</code> are available, but cannot be used at the same time. Nested tables are not supported.
<code>array</code> :	Supported inside math environments, emulated elsewhere.
<code>multirow</code> :	Emulated.
<code>longtable</code> :	Emulated. Converted to a tabular. Captions supported. Extra headings and <code>\kill</code> lines must be enclosed in <code>\warpprintonly{}</code>

lwarp Supported Functions — continued

Package or Macro	Status
<code>booktabs:</code>	Emulated. <code>\toprule</code> and <code>\bottomrule</code> form black rules, <code>\midrule</code> forms silver rules, as demonstrated on this table. <code>\cmidrule</code> , demonstrated at this line, does not use width or trim options.
<code>threeparttable:</code>	Emulated
<code>graphics, graphicx:</code>	Emulated. <code>\includegraphics</code> supports <code>width</code> , <code>height</code> , <code>origin</code> , <code>angle</code> , and <code>scale</code> tags, and adds <code>class</code> . References to PDF files are changed to SVG, other image types are accepted as well. <code>\rotatebox</code> and <code>\scalebox</code> are supported as well as HTML can handle.
<code>rotating:</code>	Emulated. All objects are displayed unrotated.
<code>Lists:</code>	Supported
<code>enumitem:</code>	Supported, although spacing is still controlled by CSS.
<code>Environments:</code>	Standard L ^A T _E X environments are supported.
<code>theorem:</code>	Supported, with added CSS tags.
<code>picture and tikz:</code>	Converted to an SVG image.
<code>minipage:</code>	Supported with some HTML5-imposed limitations. Nested minipages are supported. Footnotes appear at the bottom of the HTML page.
<code>fancyvrb:</code>	Supported except for verbatim footnotes.
<code>mdframed:</code>	Supported
<code>multicol:</code>	Emulated, with CSS3. Converted to up to three columns with an optional heading, per browser support. Single-column if unsupported.
<code>siunitx:</code>	Supported except for <code>per-mode=fraction</code> .
<code>xfrac:</code>	Supported
<code>Direct formatting:</code>	<code>\emph</code> , <code>\textsuperscript</code> , <code>\textbf</code> , etc are supported. <code>\bfseries</code> , etc. are not yet supported.

lwarp Supported Functions — continued

Package or Macro	Status
Ordinals:	<code>nth</code> , <code>fmtcount</code> , and <code>engord</code> are supported.
Text ligatures:	Ligatures for symbols are supported. Ligatures for <code>f</code> , <code>q</code> , <code>t</code> 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 <code>thin-unbreakable</code> , <code>unbreakable</code> , <code>\enskip</code> , <code>\quad</code> , <code>\qqquad</code> , <code>\hspace</code> .
Rules:	<code>\rule</code> with <code>width</code> , <code>height</code> , <code>raise</code> , <code>text color</code> .
HTML reserved characters:	<code>\&</code> , <code>\textless</code> , and <code>\textgreater</code> are converted to HTML entities.
xcolor:	Supported. Full package color names, any color models, and <code>mixing</code> is converted to hex web colors via <code>\convertcolorspec</code> . Patched commands are <code>\textcolor</code> , <code>\colorbox</code> , and <code>\fcolorbox</code> . <code>\pagecolor</code> is not supported.
Where:	
Supported:	The existing \LaTeX package is used.
Emulated:	The \LaTeX package is not used, but some/all of its functions are emulated. Null functions, lengths, and counters are provided for source compatibility.

Supported packages include everything listed in the table of contents, plus each of the following in table 2, and certainly others as well. Not all have been thoroughly tested. Many are simply nullified during HTML output. Others are not affected by the output mode and thus work as-is.

These packages and features probably works with little or no change to the user's source code. Special environments are provided to mark blocks of code which are for print only, HTML only, or both, should it be necessary.

Table 2: Additional supported packages

`babel`, `bm`, `calc`, `cleveref`, `csquotes`, `enumitem`, `fancyvrb`, `fileerr`, `newtxmath`, `siunitx`, `somedefs`, `theorem`, `tikz`, `trace`, `varioref`, `xspace`

3 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.

3.1 Internet class

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

3.2 TeX4ht

Prog **TeX4ht** <http://tug.org/tex4ht/>

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.

3.3 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** **H^Ev^Ea**: <http://hevea.inria.fr/> (not on CTAN)

Prog **TtH** **T_TH**: <http://hutchinson.belmont.ma.us/tth/>

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

Prog **LaTeXML** **L^AT_EXML**: <http://dlmf.nist.gov/LaTeXML/>

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

Prog **LaTeX2HTML** **L^AT_EX2HTML**: <http://www.latex2html.org/>
and <http://ctan.org/pkg/latex2html>.

Prog **TeX2page** **T_EX2page**: <http://ds26gte.github.io/tex2page/index.html>

Finally, GladTeX may be used to directly insert L^AT_EX math into HTML:

Prog GladTeX **GladTeX:** <http://humenda.github.io/GladTeX/>

3.4 AsciiDoc

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 L^AT_EX and HTML.

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

Prog AsciiDoc **AsciiDoc:** <http://asciidoc.org/> (The original version.)

The Asciidoctor-LaTeX project is adding additional L^AT_EX-related features.

Asciidoctor-LaTeX:

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

3.5 Pandoc

Prog Pandoc

A markup system which also reads and writes L^AT_EX and HTML.

Pandoc: <http://pandoc.org/>

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

3.6 Word Processors

Prog Word It should be noted that the popular word processors have advanced through the years in their abilities to represent math with a L^AT_EX-ish input syntax, unicode math fonts, and high-quality output, and also generate HTML with varying success.

Prog LibreOffice

Prog OpenOffice See recent developments in Microsoft® Word® and LibreOffice™ Writer.

3.7 Commercial Systems

Prog	Adobe	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™.
Prog	FrameMaker	
Prog	InDesign	
	Flare	
Prog	Madcap	3.8 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.

4 Installation

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

4.1 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.

T_EX Live: If using a T_EX Live distribution, try installing via tlmgr:

```
Enter ⇒ tlmgr install lwarp
```

MiK_TE_X: If using MiK_TE_X, try using the package installer.

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

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

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

T_EX Live:

```
Enter ⇒ kpsewhich -var-value TEXMFLOCAL
```

MiK_TE_X:

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 MiK_TE_X, start the program called MiK_TE_X Settings (Admin) and click on the button called Refresh FNDB.

Table 3: Required software programs

Provided by your L^AT_EX distribution:

From T_EXLive: <http://tug.org/texlive/>.

L^AT_EX: pdf_latex, xelatex, or lualatex.

The lwarp package: This package.

The lwarp-newproject package: Accompanies lwarp, and used to create configuration files.

The lwarpmk utility: Provided along with this package. This should be an operating-system executable in the same way that pdf_latex or latexmk is. It is possible to have the lwarp-newproject 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 package is used by lwarp to create indexes. On a MiK_TE_X 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 L^AT_EX code. On a MiK_TE_X system, Perl may need to be installed first.

pdftcrop: Used to pull images out of the L^AT_EX PDF.

Poppler PDF utilities:

These might be provided by your operating-system package manager.

From Poppler: poppler.freedesktop.org.

For Windows, also see:

<https://sourceforge.net/projects/poppler-win32/> and:
<http://blog.alivate.com.au/poppler-windows/>

pdftotext: Used to convert PDF to text.

pdfseparate: Used to pull images out of the L^AT_EX PDF.

pdftocairo: Used to convert images to SVG.

Perl:

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

perl.org, strawberryperl.com

Automatically downloaded from the internet as required:

MathJax: Optionally used to display math. Automatically loaded from the MathJax website when needed.

From: mathjax.org

CTAN .dtx and .ins files: Another form of T_EX package is the .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 documentation:

Enter ⇒ `pdflatex lwarp.dtx` (several times)

6. Create the .sty files:

Enter ⇒ `pdflatex lwarp.ins`

7. Copy the .sty files somewhere such as the T_EX Live local tree found in the previous CTAN TDS section, under the subdirectory:

`<texlocal>/tex/latex/local/lwarp`

8. Copy the documentation `lwarp.pdf` to a `source` directory in the local tree, such as:

`<texlocal>/doc/local/lwarp`

9. Renew the cache:

Enter ⇒ `mktexlsr` — or —

Enter ⇒ `texhash`

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

10. See section 4.2.1 to generate your local copy of `lwarpmk`.
11. Once the local version of `lwarpmk.lua` is installed, it may be made available system-wide as per section 4.2.

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. This approach is especially useful if you would like to temporarily test `lwarp` before deciding whether to permanently install it.

Just testing!

4.2 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 4.2.1.)

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 4.2.1.

Otherwise, continue with the following:

2. Locate the file `lwarpmk.lua`, which should be in the `scripts` directory of the TDS tree. On a T_EX Live or MiK_TE_X 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 4.2.1.)

3. Create `lwarpmk`:

Unix: Create a symbolic link and make it executable:

- (a) Locate the T_EX 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 T_EX Live: Create a new `lwarpmk.exe` file:

- (a) Locate the T_EX 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 MiK_TE_X: Create a new `lwarpmk.bat` file:

- (a) Locate the 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.

4.2.1 Using a local copy of `lwarpmk`

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

1. When compiling the tutorial in section 5, use the `lwarpmk` option for the `lwarp-newproject` package:
`\usepackage[lwarpmk]{lwarp-newproject}`
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.`

4.3 Installing additional utilities

The T_EX utilities `latexmk` and `pdfcrop` may be provided by the installation of additional T_EX-relatex operating-system packages.

The tools from the POPPLER project may also be provided by your operating system's package-installation tools. For Windows, see table 3 on page 29.

Perl may require installation as well. See table 3.

To test for the existence of the additional utilities: Enter the following in a command line:

```
Enter ⇒ luatex -version

Enter ⇒ xindy -version

Enter ⇒ latexmk -version

Enter ⇒ perl -version

Enter ⇒ pdfcrop -version

Enter ⇒ pdftotext -v

Enter ⇒ pdfseparate -version

Enter ⇒ pdftocairo -v
```

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

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

To add the Poppler utilities to a Windows machine:

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

8. Click "Ok" when done.

Prog `perl`

To add 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.

5 Tutorial

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

5.1 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:

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

Enter \Rightarrow `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`.

File `lwarp_tutorial.txt`

 Note: `.txt` suffix!

 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 \Rightarrow `pdflatex tutorial.tex` (several times)

(`xelatex` or `lualatex` may be used as well.)

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

(Two of the new files are configuration files for the helper program `lwarpmk`. Whenever a print version of the document is created while the `lwarp-newproject` package is used, the configuration files for `lwarpmk` are updated to record the operating system, \LaTeX program (`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
\usepackage[T1]{fontenc}
\usepackage[utf8]{inputenc}
\else
\usepackage{fontspec}         % XeLaTeX or LuaLaTeX
\fi

% --- HTML FILENAME AND LATEXMK SETTINGS ---
% \newcommand{\HomeHTMLFilename}{index} % Filename of the homepage.
% \newcommand{\HTMLFileName}{node-} % Filename prefix of other pages.
% \newcommand{\UseLatexmk}{true}% Uncomment to use latexmk

% --- LWARP IS LOADED NEXT ---
\usepackage{lwarp-newproject}  % Possibly with the [lwarpmk] option.
\usepackage{lwarp}
% \boolfalse{FileSectionNames} % If false, numbers the files.

% --- OTHER PACKAGES ARE LOADED AFTER LWARP ---
\usepackage{makeidx} \makeindex
\usepackage{xcolor}

\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 sideTOC
\SetFirstPageTop{Name and \fbox{HOMEPAGE LOGO}}
\SetPageTop{\fbox{LOGO}}
\SetPageBottom{Contact Information and Copyright}
\NewCSS{lwarp_sagebrush.css}
```

```
\begin{document}
\maketitle % (or a titlepage environment)

% --- An abstract may be placed here. ---

\tableofcontents \listoffigures % --- MUST BE BEFORE THE FIRST SECTION.

\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}
\fbbox{\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:  $r = r_0 + vt - \frac{1}{2}at^2$ 
\begin{equation}
a^2 + b^2 = c^2
\end{equation}

\printindex

\end{document}
```

Table 4: Files created in a new project

tutorial.pdf: The PDF output from L^AT_EX.

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 L^AT_EX files `tutorial.aux`, `tutorial.log`. 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_html.xdy: Used by `lwarp` while creating an index. This file should not need to be modified by the user.

lwarp_mathjax.txt: Inserted into the HTML files when `MathJax` is used to display math. This file should not need to 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-newproject` 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.

5.2 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 \Rightarrow `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 \Rightarrow `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 \Rightarrow `lwarpmk again`

Enter \Rightarrow `lwarpmk print`

`lwarpmk again` updates the date code for the file, triggering a recompile the next time the document is made.³

5. Process the index.

Enter \Rightarrow `lwarpmk printindex`

6. Recompile again to include the index.

Enter \Rightarrow `lwarpmk print`

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

³ 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.

5.3 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 into 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`⁴, `Some-math.html`, and the document's index in `_Index.html`.⁵

2. View the homepage in a web browser.

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

math

Note that `math` is still displayed as its plain-text \LaTeX source until the images of the math expressions have not yet been generated. Math may be displayed as SVG images or by a MathJax script, as seen in sections 5.4 and 5.5.

3. Force a recompile:

```
Enter ⇒ lwarpmk again
```

```
Enter ⇒ lwarpmk html
```

```
Enter ⇒ lwarpmk print
```

4. Process the HTML index and recompile:

```
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.

⁴ `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`.

⁵ `index.html` is commonly used as a homepage, so the document index is in `_Index.html`.

5.4 Generating the SVG images

math as SVG images By default `lwarp` represents math as SVG images with the \LaTeX source included in `alt` tags. In this way, the math displays as it was drawn by \LaTeX , and the \LaTeX source may be copied and pasted into some other document.

picture and Tikz `lwarp` uses the same mechanism for `picture` and `Tikz` environments.

1. Create the SVG images:

```
Enter ⇒ lwarpmk limages
```

```
Enter ⇒ lwarpmk html
```

2. Move to the tutorial's math page and reload.
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 `Tikz` environment is added or removed, the SVG images must be re-created with `lwarpmk limages` to maintain the proper image file sequence numbers.


⚠ **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. There is no attempt at reusing the same file each time the same expression occurs, so each time $\$x\$$ is used, for example, yet another file is created. For a document with a large amount of math, see section 5.5 to use MathJax instead.

5.5 Using MathJax for math

math with MathJax Math may also be represented using the MathJax Javascript project.

1. In the tutorial's source code, change
`\usepackage{lwarp}`
to
`\usepackage[mathjax]{lwarp}`
2. Recompile

Enter \Rightarrow `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 .

5.6 Changing the CSS style

\NewCSS **\NewCSS** may be used to choose which `.css` file is used to display each section of the web page. Use **\NewCSS** before `\begin{document}` to assign the style of the home page. If different parts of the website should have different styles, call **\NewCSS** again before each section heading which creates a new file.

The styles provided by `lwarp` include:


lwarp.css: A default style if **\NewCSS** is not used. This style is comparable to a plain L^AT_EX document. To set this style, you may use **\NewCSS{lwarp.css}**, or no **\NewCSS** 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 **\NewCSS** entry in the tutorial `lwarpmk.html`, and then reload the 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 **\NewCSS{<project>.css}**.

 **Rename it!** Note that `sample_project.css` is overwritten whenever `lwarp-newproject` 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.

5.7 Customizing the HTML output

⚠ Placement!

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 use `lwarpmk clearall` to clear all the HTML, PDF, and auxiliary files. Also, if `\HomeHTMLFilename`, `\HTMLFileName`, or `\UseLatexmk` are changed, it is necessary to reenale the `lwarp-newproject` package and then recompile the print version in order to recreate the configuration files for `lwarpmk`.

Placed in the preamble just before `lwarp` is loaded:

<code>\HomeHTMLFilename</code>	\HomeHTMLFilename: Filename of the homepage, without the “.html” suffix. Defaults to the <code>\BaseJobname</code> . A common setting is: <code>\newcommand{HomeHTMLFilename}{index}</code> causing the homepage to be the file <code>index.html</code> . Underscores are allowed in <code>\HomeHTMLFilename</code> and <code>\HTMLFileName</code> , but usually must be escaped elsewhere, such as <code>\item [\href{file_name.pdf}{text}] \</code>
filename underscore	
<code>\HTMLFileName</code>	\HTMLFileName: A filename prefix for the rest of the HTML web pages. Useful for numbered web pages with a common prefix. May be empty.
<code>\UseLatexmk</code>	\UseLatexmk: A macro which controls whether <code>lwarp</code> uses <code>latexmk</code> to compile the document. This setting is written to <code>lwarpmk</code> ’s configuration files. Defaults to false. Set to true with: <code>\newcommand*{\UseLatexmk}{true}</code>

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

Ctr <code>tocdepth</code>	tocdepth: Sectioning depth of the table of contents. See section 10 for a list of L ^A T _E X stack depths.
Ctr <code>SideTOCDepth</code>	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 <code>SideTOCDepth</code> . 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: <code>SideTOCDepth = FileDepth</code> , or <code>SideTOCDepth = FileDepth+1</code> If <code>SideTOCDepth < FileDepth</code> , web pages will be inaccessible via the sideTOC.
⚠	
Ctr <code>FileDepth</code>	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`

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. 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`.

⚠ Inaccessible pages!

⚠ 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`

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` is prefixed.

HTML filenames

Example HTML filenames:

Numbered HTML nodes:

Example: Homepage `index.html`, and `node-1`, `node-2`. (See `\SetHTMLFileNumber` to number grouped by chapter, for example.)

```
\newcommand{\HomeHTMLFileName}{index}
\newcommand{\HTMLFileName}{node-}
\usepackage{lwarp}
\boolfalse{FileSectionNames}
```

Named HTML sections, no prefix:

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

```
\newcommand{\HomeHTMLFileName}{index}
\newcommand{\HTMLFileName}{}
```

```
\usepackage{lwrap}
\booltrue{FileSectionNames}
```

Named HTML sections, with prefix:

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

```
\newcommand{\HomeHTMLFileName}{mywebsite}
\newcommand{\HTMLFileName}{mywebsite-}
\usepackage{lwrap}
\booltrue{FileSectionNames}
```

<code>\abstractname</code>	\abstractname: The name of the abstract. This may also be over-written by the babel package. Defaults to “Abstract”.
<code>\MetaLanguage</code>	\MetaLanguage: The HTML language meta header. Defaults to en-US.
<code>\SetFirstPageTop</code>	\SetFirstPageTop: <code>{\langle contents \rangle}</code> A user-definable custom action applied to the top of the home page. Useful for logos, etc. Defaults empty. Ignored in print output.
<code>\SetPageTop</code>	\SetPageTop: <code>{\langle contents \rangle}</code> A user-definable custom action applied to the top of pages other than the home page. Useful for logos, etc. Defaults empty. <code>\LinkHome</code> may be used to place a link back to the homepage. Ignored in print output.
<code>\SetPageBottom</code>	\SetPageBottom: <code>{\langle contents \rangle}</code> A user-definable custom action applied to the bottom of each web page. Useful for authors, copyright notices, contact information, etc. Defaults empty. <code>\LinkHome</code> may be used to place a link back to the homepage. Ignored in print output.

Placed in the home page before the first section break:

<code>\tableofcontents</code>	\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 <code>tocdepth</code> .
-------------------------------	---

Placed before any sectioning command which causes a file break:

<code>\NewCSS</code>	\NewCSS: <code>{\langle filename.css \rangle}</code> 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 <code>\NewCSS</code> command. If <code>\NewCSS</code> is not used, a default plain style is used to mimic printed L ^A T _E X output. <code>lwrap_sagebrush.css</code> is a semi-fancy colored style as shown in this tutorial. Change it to <code>lwrap_formal.css</code> for a more formal look, or comment out the <code>\NewCSS</code> command to see the default. <code>\NewCSS</code> may be used before each file break to set the CSS for individual pages of the website.
----------------------	---

`\NewHTMLdescription` **\NewHTMLdescription:** `{\langle description \rangle}` Sets the HTML description tag for the following files. May be changed before each sectioning command which would cause a file split.

Placed in the document wherever necessary:

Env **warpprint** **warpprint:** An environment which is only used while generating print output. Place here 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.

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.

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

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

5.8 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, at “HTML FILENAME AND LATEXMK SETTINGS”, insert the line:

```
\newcommand{\UseLatexmk}{true}
```

2. Directly recompile the printed version of the document.

⚠ NOT `lwarpmk`!

```
Enter ⇒ pdflatex tutorial.tex
```

```
(Or xelatex or lualatex)
```

`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.

5.9 Using XeLaTeX or LuaLaTeX

X_YLaTeX or LuaLaTeX may be used instead of LaTeX.

1. Remove the auxiliary files for the project:

```
Enter ⇒ lwarpmk cleanall
```

2. Be sure that

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

is still enabled in `tutorial.tex`.

3. Use `xelatex` or `lualatex` to recompile the printed version.

```
Enter ⇒ xelatex tutorial.tex -or-
```

```
Enter ⇒ lualatex tutorial.tex
```

When the recompile occurs and `lwarp-newproject` is loaded, the configuration files for `lwarpmk` are modified to remember which TeX engine was used. X_YLaTeX or LuaLaTeX will be used for future runs of `lwarpmk`.

4. To recompile the document:

```
Enter ⇒ lwarpmk print -and-
```

```
Enter ⇒ lwarpmk html
```

5. Also rememeber to update the indexes and recompile again.

5.10 Cleaning auxiliary files

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

```
Enter ⇒ lwarpmk clean
```

5.11 Cleaning auxiliary and output files

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

```
Enter ⇒ lwarpmk cleanall
```

5.12 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 project_a
```

```
Enter ⇒ lwarpmk html project_b
```

5.13 Using the make utility

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

```
lwarpmk pdftohtml [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.

6 Additional details

6.1 Font and UTF-8 support

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 usually prevents the use of bit-mapped fonts.

vector fonts
Computer Modern



While using `pdflatex`, if no font-related package is specified, the default bit-mapped Computer Modern font is used, so simply add

```
usepackage{lmodern}
```

to the preamble to enable the related vector font instead, or use

```
\usepackage{dejavu}
```

or other other font packages, which may provide an increased coverage of Unicode mappings. Avoid bit-mapped fonts.



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

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

1. `documentclass{article/book/report}` goes here, followed by any of:
2. Font and UTF-8 related commands:

- For X_YLaTeX or LuaLaTeX:

Pkg `fontspec`

- `fontspec` and font choices

`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`:

Pkg `lmodern`

- `lmodern` or other font-related packages

Pkg `fontenc`

- `fontenc`

Pkg `inputenc`

- `inputenc`

Pkg `newunicodechar`

- `newunicodechar`

File `glyphtounicode`

- `\input glyphtounicode.tex`

- `\input glyphtounicode-cmr.tex`% from the `pdfx` package

- `\pdfgentounicode=1`

Pkg	<code>cmap</code>	– <code>cmap</code>
Pkg	<code>textcomp</code>	– <code>textcomp</code>
Pkg	<code>microtype</code> <code>ligatures</code>	– <code>microtype</code> is automatically used by <code>lwarp</code> to turn off f,q,t,T,Q ligatures for the same browser-related reasons shown above. Also, the monospaced font is used during HTML tag generation to turn off \TeX ligatures.

3. `\usepackage{lwarp}` (section 6.2) goes after any of the above, followed by:

4. ... the rest of the preamble and the main document.

6.2 lwarp package loading and options

`lwarp` supports `book`, `report`, and `article` classes.

Pkg	<code>lwarp</code>	Load the <code>lwarp</code> package immediately after the font and UTF-8 setup commands.
Opt lwarp	<code>warpprint</code>	Select the <code>warpprint</code> option to generate print output (default), or the <code>warpHTML</code> option to generate HTML5 output. The default is print output, so the print version may be compiled with the usual <code>pdflatex</code> , etc. When <code>lwarp-newproject</code> is loaded in print mode, it creates <code><project>_html.tex</code> , which sets the <code>warpHTML</code> option before calling the user's source code <code><project>.tex</code> . In this way, <code><project>.tex</code> can <code>\usepackage{lwarp}</code> without any options to create a printed version, while <code><project>_html.tex</code> will create an HTML version.
Opt lwarp	<code>warpHTML</code>	
Opt lwarp	<code>mathsvg</code>	For math display, select <code>mathsvg</code> (default), or <code>mathjax</code> . For more information about the math options, see section 6.10.2.
Opt lwarp	<code>mathjax</code>	

6.3 Selecting the operating system

`lwarp` tries to detect which operating system is being used.

Prog	<code>MS-Windows</code>	If MS-WINDOWS is not correctly detected, use the command <code>\warpOSwindows</code> in the document preamble after <code>lwarp</code> is loaded. This modifies the operating-system path separator used by <code>lwarp</code> .
Prog	<code>Windows</code>	
	<code>\warpOSwindows</code>	

6.4 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}
```

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}
```

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}
```

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

`\warpprintonly` $\{\langle actions \rangle\}$

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

`\warpHTMLonly` $\{\langle actions \rangle\}$

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

6.5 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`
- Variable spaces such as `\vspace`. `\hfill` is turned into a `\quad`. Fixed spaces such as `\quad` are emulated correctly.
- Manual page positions such as the `textpos` package, which is emulated but only in a limited way.

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 8: [Troubleshooting](#).

6.6 Commands for a successful HTML conversion

Some commonly-used L^AT_EX expressions should be modified to allow for a smooth conversion to both HTML and print-formatted outputs:

Page references: The printed page does not translate to the HTML page, so references to page numbers are converted to parentheses containing `\pagerefPageFor`, which defaults to “see ”, followed by a hyperlink to the appropriate object. Ex: “Sec. [1.23](#) on page (see sec. [1.23](#))”. `\pagerefPageFor` may be redefined to “page for ”, empty, etc.

\bfseries, etc: Use `\textbf` instead.

\centering, \raggedright, \raggedleft:

Use the environments `center`, `flushright`, `flushleft` instead.

Superscripts and other non-math uses of math mode:

Use `x` instead of x^x

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

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

Filenames in lists:

[filename underscore](#)

Escape underscores in the filenames:

`\item[\href{file_name.pdf}{text}]`

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.

\fbox around a minipage:

\fbox can only be used around inline items during HTML output.

For an \fbox around a minipage, you may:

- Place the \fbox command and its closing brace inside `warpprint` environments.
- Use `\mdframed` instead.
- 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}
```

Also see section 8: [Troubleshooting](#).

6.7 Title page

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

```
\title{Document Title} % One line only
\subtitle{Optional Document Subtitle \\ with optional multiple lines}
\author{Author One\affiliation{Affiliation One} \and
  Author Two\affiliation{Affiliation Two} }
\date{Optional date}
\published{Optional Journal Name \\ Optional multiple lines}
```

The title is used in the meta tags in the HTML files, and the rest are used in `\maketitle`.

- | | |
|------------------------------|---|
| <code>\maketitle</code> | Use <code>\maketitle</code> just after the <code>\begin{document}</code> , as this will establish the title of the homepage. Optionally, use a <code>titlepage</code> environment instead. |
| Env <code>titlepage</code> | The <code>titlepage</code> environment may be used to hold a custom title page. The <code>titlepage</code> will be set in a <code>div class titlepage</code> , and <code>\printtitle</code> , etc. may be used inside this environment. |
| Env <code>titlingpage</code> | Another form of custom title page, where <code>\maketitle</code> is allowed, and additional information may be included as well. |

`\title` $\{\langle title \rangle\}$



Avoid newlines in the `\title`; these will interfere with the file break and CSS detection. Use the `\subtitle` command instead. In HTML, the title will appear in a heading `h1`.

`\author` $\{\langle author \rangle\}$



In `\author`, use `\protect` before formatting commands such as `\textsc`. In HTML, the author will appear in a `div` class `author`. `\affiliation` is a new addition to `lwarp`.

`\date` $\{\langle date \rangle\}$

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

`\subtitle` $\{\langle subtitle \rangle\}$

A new command which sets a subtitle. Newlines are allowed. The default is empty. In HTML, this will appear in a `div` class `subtitle`.

`\published` $\{\langle published \rangle\}$

A new command which sets a publisher. The default is empty. In HTML, this will appear in a `div` class `published`.

`\thanks` $\{\langle text \rangle\}$

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

6.8 HTML page meta descriptions

`\NewHTMLdescription` $\{\langle A \text{ description of the web page.} \rangle\}$ 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 `\NewHTMLdescription` 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 `\NewHTMLdescription` just before each `\section` command, and that description will be placed inside the HTML page for that `\section`. The same description will be used for all following HTML files as well, until reset by a new `\NewHTMLdescription`. It is best to use a unique description for each HTML file.

[disabling](#) To disable the generation of HTML description meta tags, use:
`\NewCSSdescription{}`

6.9 CSS

File `lwarp.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`. `project.css` should refer to `lwarp.css` as follows:

File `project.css`

File `sample_project.css`

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

/* Load default lwarp settings: */
@import url("lwarp.css") ;
/* or lwarp_formal.css, lwarp_sagebrush.css */

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

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

An example file called `sample_project.css` is provided, and may be renamed `project.css`.

`\NewCSS` For each section at which HTML files are split, `\NewCSS` may be used before the sectioning command to select a CSS file for that and all following sections. This may be changed numerous times throughout the file, resulting in different HTML pages having different CSS files assigned.

6.10 Special cases and limitations

6.10.1 Text formatting

`\textbf`, etc. are supported, but `\bfseries`, etc. are not yet supported.

6.10.2 Math

Math may be rendered as SVG graphics or using the MATHJAX JavaScript display engine.

[SVG math option](#) For SVG math, math is rendered as usual by \LaTeX into the initial PDF file using

the current font⁶, 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 L^AT_EX with its fine control and precision, then displayed or printed at any size, depending on (sometimes broken) browser support. An HTML ALT tag carries the L^AT_EX code which generated the math, allowing copy/paste of the L^AT_EX math expression into other documents.

SVG image font size 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*, for ex:

```
\renewcommand{\LateximageFontSizeName}{large}
```

SVG files As currently implemented, each instance of math creates a new SVG file. In text with many references to math variables, this can result in a large number of files with duplicate content. In the future, some method of content-based naming and checksumming may be used to remove the need for duplicate files.

SVG inline Another approach would be to in-line the SVG files directly into the HTML. This avoids having a large number of files and potentially speeds loading the images, but dis-allows the possibility of sharing one file among many instances without user intervention.

PNG files Others 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 also larger as well.

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.

MathJax math option The popular MathJax alternative (mathjax.org) may be used to display math.

Prog **MathJax**


When MathJax is enabled, math is rendered twice:

1. As regular L^AT_EX PDF output placed inside an HTML comment, allowing equation numbering and cross referencing to be almost entirely under the control of L^AT_EX, and
2. As detokenized printed L^AT_EX 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 L^AT_EX values, and the MathJax cross-referencing system is ignored in favor of the L^AT_EX internal system, seamlessly integrating with the rest of the L^AT_EX code.

MathJax limitations Limitations when using MathJax include:

Prog **MathJax**

⁶See section 137 regarding fonts and fractions.

chapter numbers	<ul style="list-style-type: none"> In document classes which have chapters, <code>\tagged</code> equations have the chapter number prepended in HTML output, unlike \LaTeX. <code>\tag*</code> equations (correctly) do not. This may be improved with future versions of the MathJax support script. <p>https://groups.google.com/forum/#!topic/mathjax-users/jUteWUcE2bY</p>
subequations	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Footnotes inside equations are not yet supported while using MathJax.
lateximage	<ul style="list-style-type: none"> Math appearing inside a <code>lateximage</code>, and therefore also inside a <code>Tikz</code> or <code>picture</code> environment, is rendered as SVG math even if MathJax is used in the rest of the document.
siunitx	<ul style="list-style-type: none"> Usage of <code>siunitx</code> inside a math equation is supported via a third-party MathJax extension. While inside a math expression, do not use <code>\SI</code> or <code>\si</code> inside <code>\text</code>, where it will be rendered as normal text. <p>https://github.com/mathjax/MathJax-third-party-extensions/tree/master/siunitx</p>
 <code>siunitx</code> inside an equation	
\LaTeX macros	<ul style="list-style-type: none"> MathJax does not automatically support custom \LaTeX macros, but they may be set up by the user.
custom MathJax macros	For an example of using custom \LaTeX macros with MathJax, see page 215.

6.10.3 Graphics

<code>\graphicspath</code>	<code>\graphicspath</code> only works for a single directory; all graphics must be in this directory.
units	For <code>\includegraphics</code> , avoid <code>px</code> and <code>%</code> units for width and height, or enclose them inside <code>warpHTML</code> environments. For font-proportional image sizes, use <code>ex</code> or <code>em</code> . For fixed-sized images, use <code>cm</code> , <code>mm</code> , <code>in</code> , <code>pt</code> , or <code>pc</code> . Using the keys <code>width=.5\linewidth</code> , or similar for <code>\textwidth</code> or <code>\textheight</code> to give fixed-sized images proportional to a 6 by 9 inch text area.
options	<code>\includegraphics</code> accepts <code>width</code> and <code>height</code> , <code>origin</code> , <code>rotate</code> and <code>scale</code> , plus a new <code>class</code> key.
HTML class	With HTML output, <code>\includegraphics</code> accepts an optional <code>class=xyz</code> 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.

⚠ image file types

For `\includegraphics` the user should provide both `.pdf` and `.svg` images, but always refer to `.pdf` images in the document source. All `\includegraphics` references to `.pdf` will automatically be changed to `.svg` for HTML output, and will be left as `.pdf` for print output. Images may also be `.jpg` and `.png`, and will be used as-is for either 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 L^AT_EX, so expect some ugly results for scaling and rotating.

6.10.4 Xcolor

support Color definitions, models, and mixing are fully supported without any changes required.

tables Colored tables are ignored so far. Use CSS to style tables.

colored text and boxes `\textcolor`, `\colorbox`, and `\fcolorbox` are supported.

`\color` and `\pagecolor` `\color` and `\pagecolor` are ignored. Use CSS or `\textcolor` where possible.

6.10.5 Tabular

column types

- Vertical rules are not yet supported.
- `*` in a column specification is not used (so far). Repeat the column type the correct number of times.
- Only one each of `@`, `!`, `>`, and `<` may be used at each column, and they are used in that order.
- `\newcolumntype` is ignored; unknown column types are set to `l`.
- `tabularx` ignores the width, but `X` columns do produce paragraph columns or multicolumns.

⚠ `\multirow & \multicolumn`

- Multirow and multicolumn cannot be used at the same time. (No rectangular holes wider than one column or taller than one row.)

⚠ `\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 with rules`

- If a multirow reaches to the bottom of a table, and `\bottomrule` does not go over to that edge, try adding a line of empty cells below the `\bottomrule`.

This may be a browser bug.

rule at last row

- If a `\midrule` is desired after the last row, an additional row of blank cells must be used.

⚠ paragraphs

- Multiple paragraphs in one cell of a p, b, m column must have `\newline` between paragraphs.

`\cmidrule` width, trim

- `\cmidrule` does not support width or trim options due to CSS limitations.

`longtable` headings

- For `longtable`, place headings and footings which do not apply to HTML inside `\warpprintonly{}`.

⚠ `\warpprintonly`

- 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 relevant to HTML output.

⚠ 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 \\}
```

6.10.6 Minipages

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

⚠ 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`.

side-by-side

Side-by-side minipages may be separated by `\quad`, `\qqquad`, `\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 `<div>` cannot appear inside a ``. While in a ``, minipages and parboxes are ignored. 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` tag, 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 L^AT_EX PDF output they do not. Use a `flushleft` or similar environment in the child minipage to force a text alignment.

6.10.7 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`.
For title font, use

`frametitlefont=\textbf,`

font 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.

6.10.8 float, trivfloat, and/or algorithmicx together

- ⚠ package conflicts If using `\newfloat`, `trivfloat`, and/or `algorithmicx` together, see section [132.1](#).

6.10.9 caption and subcaption packages

To ensure proper float numbering, set caption positions such as:

```
\captionsetup[table]{position=top}
\captionsetup[figure]{position=bottom}
```

Similarly for `subtable`, `subfigure`, and `longtable`.

6.10.10 `subfig` package

⚠ `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.

horizontal spacing In the document source, use `\hfill` and `\hspace*` 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.

6.10.11 `floatrow` package

⚠ `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.

6.10.12 `abstract` package

`abstract` is supported. 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.

6.10.13 cleveref and varioref packages

`cleveref` and `varioref` are supported, but printed page numbers do not map to HTML. See section 6.6 to redefine the message which is printed for page number references.

6.10.14 verse and memoir


`\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 <code>\leftskip</code> Len <code>\leftmargini</code> Len <code>\TMLvleftskip</code> Len <code>\TMLleftmargini</code>	These lengths are used by <code>verse</code> and <code>memoir</code> to control the left margin, and they may already be set by the user for print output. New lengths <code>\HTMLvleftskip</code> and <code>\HTMLleftmargini</code> are provided to control the margins in HTML output. These new lengths may be set by the user before any <code>verse</code> environment, and persist until they are manually changed again. One reason to change <code>\HTMLleftmargini</code> is if there is a wide <code>\flagverse</code> in use, such as the word “Chorus”, in which case the value of <code>\HTMLleftmargini</code> should be set to a wide enough length to contain “Chorus”. The default is wide enough for a stanza number.
---	---

Horizontal spacing relies on `pdftotext`’s ability to discern the `-layout` 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.

6.10.15 siunitx package

Pkg <code>siunitx</code>  <code>per-mode</code>	Do not use <code>per-mode=fraction</code> , which cannot be seen by the final <code>pdftotext</code> conversion.
---	--

6.10.16 newclude package

Pkg <code>newclude</code>  <code>loading</code>	<code>newclude</code> modifies <code>\label</code> in a non-adaptive way, so <code>newclude</code> must be loaded before <code>lwarp</code> is loaded.
---	--

Ex:

```
\documentclass{article}
... <font setup>
\usepackage{newclude}
\usepackage[warpHTML]{lwarp}
...
```

6.10.17 newtxmath package

Pkg **newtxmath** The proper load order is:

 loading sequence

1. ...
2. `\usepackage{lwarp}`
3. ...
4. `\usepackage{amsthm}`
5. `\usepackage{newtxmath}`
6. ...

6.10.18 babel package

Pkg **babel** If using **babel** with French, use

 **French**

`\frenchbsetup{StandardLists=true}`

to preserve the special HTML and **enumitem** list handling.

`\CaptionSeparator`

Also, 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}{:~}`

6.10.19 enumitem package

Pkg **enumitem**

enumitem

enumitem is pre-loaded during HTML output. Many of the spacing options are rendered irrelevant by **pdftotext** and HTML. Numbering, labels, and `\newlist` function correctly.

6.10.20 enumerate package

Pkg **enumerate**

enumerate conflicts with **enumitem** if both are loaded at the same time, but **lwarp**

does not actually load `enumerate`. While generating HTML, `lwarp` only loads `enumitem`, and `enumerate` is simulated by `enumitem` using the functionality of the `shortlabels` option.

A problem may occur during print output if `enumitem` is loaded, either manually or by some other package such as `siunitx`. If these are used, `enumerate` will conflict with `enumitem` during print output.

7 Expanding the code base

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.

An environment may be converted to a `lateximage` then displayed with an image of the resulting L^AT_EX output. See section 60 for an example of the `picture` environment.

To create a custom HTML block or inline CSS class, see section 29.7.

7.1 Creating an `lwarp` version of a package

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 T_EX 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 `\LWR@ProvidesPackageDrop` or `\LWR@ProvidesPackagePass`. If `Dropped`, 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 `Passed`, the original package is loaded first, with the supplied options, then the `lwarp-` version continues loading as well. 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.

8 Troubleshooting

8.1 Using the `lwarp.sty` package

Also see:

Section 6.5: [Commands to be placed into the `warpprint` environment](#)

Section 6.6: [Commands for a successful HTML conversion](#)

Section 6.10: [Special cases and limitations](#)

Text is not converting:

- Font-related UTF-8 information must be embedded in the PDF file. See section 6.1 regarding vector fonts.

Undefined HTML settings:

See the warning regarding the placement of the HTML settings at section 5.7.

Obscure error messages:

- 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.

Missing sections:

- See section 5.7 regarding the `FileDepth` and `SideTOCDepth` counters, and the use of `\tableofcontents` in the home page.

Missing HTML files:

See the warning regarding changes to the HTML settings at section 5.7.

Missing / incorrect cross-references:

- Use `lwarpmk` again followed by `lwarpmk html` or `lwarpmk print` to compile the document one more time.

Em-dashes or En-dashes in listing captions and titles:

Use $\text{Xe}\text{L}\text{A}\text{T}\text{E}\text{X}$ or $\text{L}\text{u}\text{a}\text{L}\text{A}\text{T}\text{E}\text{X}$.

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.

Print document contains HTML tags:

- Be sure that the document selects `\usepackage[warpprint]{lwarp}` instead of `[warpHTML]`.

HTML document contains a single unformatted print document:

- Be sure that the document selects `\usepackage[warpHTML]{lwarp}` instead of `[warpprint]`.

Images are appearing in strange places:

- `lwarpmk limages` to refresh the `lateximage` images.

“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.

Plain-looking document:

- The document’s CSS stylesheet may not be available, or may be linked incorrectly. Verify any `\NewCSS` 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 5.7.
- Verify that the proper CSS is actually being used.

- 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.

8.1.1 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.

8.2 Compiling the `lwarp.dtx` file

Illogical error messages caused by an out-of-sync `lwarp.sty` file:

1. Delete the `lwarp.sty` file.
2. `pdflatex lwarp.ins` to generate a new `lwarp.sty` file.
3. `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}`

9 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 relevant 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.

There is still room to improve the factoring of the code, and doing so will become important if support for other output formats is added. Rather than wait until the code is pristine, the author felt it best to publish early and accept input before pushing on towards a perhaps less-than-ideal solution.

Testing has primarily been done with the Icedweasel/Firefox browser.

10 Stack depths

Stacks are created to track depth inside the \LaTeX document structure. This depth is translated to HTML headings as shown in table 5. “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 will 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.

Table 5: Section depths and HTML headings

Section	L ^A T _E X 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

11 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 margin 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”.

 **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.

12 Detecting the T_EX Engine — pdf_latex, lua_a-tex, xelatex

```

1 \RequirePackage{iftex}
2
3 \ifLuaTeX
4 \RequirePackage{luatex85}% until the geometry package is updated
5 \fi

```

13 Unicode Input Characters

for HTML & PRINT: If using pdf_latex, 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.

```

6
7 \RequirePackage{newunicodechar}
8
9 \newunicodechar{×}{\texttimes}
10
11 \ifPDFTeX
12 \newunicodechar{ff}{ff}% the first arguments are ligatures
13 \newunicodechar{fi}{fi}
14 \newunicodechar{fl}{fl}
15 \newunicodechar{ffi}{ffi}
16 \newunicodechar{ffl}{ffl}
17 \newunicodechar{--}{--}
18 \newunicodechar{-}{-}

```

In PDF_TE_X, preserve upright quotes in verbatim text:

```

19 \RequirePackage{upquote}
20 \else
21 \fi

```

14 Handling package options

Pkg **etoolbox** Provides `\ifbool` and other functions.

```

22 \RequirePackage{etoolbox}[2011/01/03]
23 % requires v2.6 for \BeforeBeginEnvironment, etc.

```

Pkg	ifplatform	Provides <code>\ifwindows</code> to try to automatically detect Windows OS.
		24 <code>\RequirePackage{ifplatform}% sense op-system platform</code>
Pkg	comment	Provides conditional code blocks.
		25 <code>\RequirePackage{comment}</code> 26 <code>\excludecomment{testing}</code>
Pkg	kvoptions	Allows key/value package options.
		27 <code>\RequirePackage{kvoptions}</code> 28 <code>\SetupKeyvalOptions{family=LWR,prefix=LWR@}</code>
Bool	warpingprint	Set to true/false depending on the package option selections for print/HTML output
Bool	warpingHTML	and mathsvg/mathjax:
Bool	mathjax	29 <code>\newbool{warpingprint}</code> 30 <code>\newbool{warpingHTML}</code> 31 <code>\newbool{mathjax}</code>
	\warpprintonly	<code>{\langle contents \rangle}</code> Only process the contents if producing printed output. 32 <code>\newcommand{\warpprintonly}[1]{\ifbool{warpingprint}{#1}{}}</code>
	\warpHTMLonly	<code>{\langle contents \rangle}</code> Only process the contents if producing HTML output. 33 <code>\newcommand{\warpHTMLonly}[1]{\ifbool{warpingHTML}{#1}{}}</code>
Env	warpall	Anything in the warpall environment will be generated for print or HTML outputs. 34 <code>\includecomment{warpall}</code>
Env	warpprint	Anything in the warpprint environment will be generated for print output only.
Opt lwarp	warpprint	If the warpprint option is given, boolean warpingprint is true and boolean warpingHTML is false, and may be used for <code>\ifbool</code> tests. 35 <code>\DeclareVoidOption{warpprint}{%</code> 36 <code>\PackageInfo{lwarp}{Using option 'warpprint'}</code> 37 <code>\includecomment{warpprint}%</code> 38 <code>\excludecomment{warpHTML}%</code>

```

39 \booltrue{warpingprint}%
40 \boolfalse{warpingHTML}%
41 }

```

Env **warpHTML** Anything in the **warpHTML** environment will be generated for HTML output only.

Opt **lwarp** **warpHTML** If the **warpHTML** option is given, boolean **warpingHTML** is true and boolean **warpingprint** is false, and may be used for **\ifbool** tests.

```

42 \DeclareVoidOption{warpHTML}{%
43 \PackageInfo{lwarp}{Using option 'warpHTML'}
44 \excludecomment{warpprint}%
45 \includecomment{warpHTML}%
46 \booltrue{warpingHTML}%
47 \boolfalse{warpingprint}%
48 }

```

Opt **lwarp** **mathsvg** Option **mathsvg** selects SVG math display: If the **mathsvg** option is given, boolean **mathjax** is false, and may be used for **\ifbool** tests.

```

49 \DeclareVoidOption{mathsvg}{%
50 \PackageInfo{lwarp}{Using option 'mathsvg'}
51 \boolfalse{mathjax}%
52 }

```

Opt **lwarp** **mathjax** Option **mathjax** selects MathJax math display: If the **mathjax** option is given, boolean **mathjax** is true, may be used for **\ifbool** tests.

```

53 \DeclareVoidOption{mathjax}{%
54 \PackageInfo{lwarp}{Using option 'mathjax'}
55 \booltrue{mathjax}%
56 }

```

Opt **lwarp** **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.

```

57 \DeclareStringOption[\jobname]{BaseJobname}

```

The default is print output, and SVG math if the user chose HTML output.

```

58 \includecomment{warpprint}%
59 \excludecomment{warpHTML}%
60 \booltrue{warpingprint}%
61 \boolfalse{warpingHTML}%
62 \boolfalse{mathjax}%

```

```

63
64
65 % \ExecuteOptions{warpprint,mathsvg}
66
67 \ProcessKeyvalOptions*\relax

```

Assign the `\BaseJobname` if the user hasn't provided one:

```

68 \providecommand*\BaseJobname{\LWR@BaseJobname}

```

`\@nameedef` $\{\langle name \rangle\} \{\langle defn \rangle\}$

Expands `<defn>` before assigning to `<name>`

```

69 \def\@nameedef#1{\expandafter\edef\csname #1\endcsname}

```

15 Misplaced packages

Several packages should only be loaded before `lwarp`, and others should only be loaded after.

Packages which should only be loaded before `lwarp` have their own

`lwarp-<packagename>.sty`

which will trigger an error if they are loaded after `lwarp`. Examples include `fontspec`, `inputenc`, `fontenc`, and `newunicodechar`.

`\LWR@loadafter` $\{\langle packagename \rangle\}$ Error if this package was loaded before `lwarp`.

```

70 \newcommand*\LWR@loadafter[1]{%
71 \ifpackageloaded{#1}
72 {
73 \PackageError{lwarp}
74 {Package #1, or one which uses #1, must be loaded after lwarp}
75 {Move \detokenize{\usepackage}{#1} after \detokenize{\usepackage}{lwarp}.
76 Package #1 may also be loaded by something else, which must also be moved
77 after lwarp.}
78 }
79 {}
80 }

```

`\LWR@loadbefore` $\{\langle packagename \rangle\}$ Error if this package is after `lwarp`.

```

81 \newcommand*\LWR@loadbefore[1]{%
82 \PackageError{lwarp}

```

```

83 {Package #1 must be loaded before lwarp}
84 {Move \detokenize{\usepackage}{#1} before \detokenize{\usepackage}{lwarp}.}
85 }

```

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`:

```

86 \LWR@loadafter{abstract}
87 \LWR@loadafter{afterpage}
88 \LWR@loadafter{algorithmicx}
89 \LWR@loadafter{alltt}
90 \LWR@loadafter{bookmark}
91 \LWR@loadafter{booktabs}
92 \LWR@loadafter{changepage}
93 \LWR@loadafter{dcolumn}
94 \LWR@loadafter{draftwatermark}
95 \LWR@loadafter{enumerate}
96 \LWR@loadafter{epigraph}
97 \LWR@loadafter{eso-pic}
98 \LWR@loadafter{everypage}
99 \LWR@loadafter{extramarks}
100 \LWR@loadafter{fancyhdr}
101 \LWR@loadafter{floatrow}
102 \LWR@loadafter{float}
103 \LWR@loadafter{ftnright}
104 \LWR@loadafter{geometry}
105 \LWR@loadafter{graphics}
106 \LWR@loadafter{graphicx}
107 \LWR@loadafter{hyperref}
108 \LWR@loadafter{indentfirst}
109 \LWR@loadafter{keyfloat}
110 \LWR@loadafter{layout}
111 \LWR@loadafter{letterspace}
112 \LWR@loadafter{listings}
113 \LWR@loadafter{longtable}
114 \LWR@loadafter{lscap}
115 \LWR@loadafter{ltcaption}
116 \LWR@loadafter{mcaption}
117 \LWR@loadafter{mdframed}
118 \LWR@loadafter{microtype}
119 %\LWR@loadafter{multicol}% loaded by ltxdoc
120 \LWR@loadafter{multirow}
121 \LWR@loadafter{nameref}
122 \LWR@loadafter{needspace}
123 \LWR@loadafter{newtxmath}
124 \LWR@loadafter{nextpage}
125 \LWR@loadafter{nowidow}

```

```

126 \LWR@loadafter{pagenote}
127 \LWR@loadafter{parskip}
128 \LWR@loadafter{placeins}
129 \LWR@loadafter{ragged2e}
130 \LWR@loadafter{rotating}
131 \LWR@loadafter{setspace}
132 \LWR@loadafter{showkeys}
133 \LWR@loadafter{sidecap}
134 \LWR@loadafter{subfig}
135 \LWR@loadafter{tabularx}
136 \LWR@loadafter{textpos}
137 \LWR@loadafter{threeparttable}
138 \LWR@loadafter{tikz}
139 \LWR@loadafter{titleps}
140 \LWR@loadafter{titlesec}
141 \LWR@loadafter{titletoc}
142 \LWR@loadafter{tocloft}
143 \LWR@loadafter{trivfloat}
144 \LWR@loadafter{varioref}
145 \LWR@loadafter{verse}
146 \LWR@loadafter{wallpaper}
147 \LWR@loadafter{wrapfig}
148 \LWR@loadafter{xcolor}
149 \LWR@loadafter{xfrac}

```

16 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.

In the document preamble, create a `warpprint` environment, and place inside it any of the following packages which are required and which are labeled as “Print: OK to Load in a `warpprint` environment”. Those packages which are labeled as “Print: Pre-Loaded” need not be placed into the document preamble.

for HTML & PRINT: 150 `\begin{warppall}`

See: <http://tex.stackexchange.com/a/47579>.

Detects X_YTeX and Lua^ATeX:

```

151 \RequirePackage{iftex}
152 \newif\ifxetexorluatex
153 \ifXeTeX
154     \xetexorluatextrue
155 \else

```

```

156 \ifLuaTeX
157     \xetexorluatextrue
158 \else
159     \xetexorluatexfalse
160 \fi
161 \fi

162 \end{warpall}

```

for HTML output: 163 \begin{warpHTML}

```

164 \ifxetexorluatex
165 % ^^A \usepackage[no-math]{fontspec}

```

The monospaced font is used for HTML tags, so turn off its TeX ligatures and common ligatures:

```

166 \defaultfontfeatures[\rmfamily]{Ligatures={NoCommon,TeX}}
167 \defaultfontfeatures[\sffamily]{Ligatures={NoCommon,TeX}}
168 \defaultfontfeatures[\ttfamily]{Ligatures=NoCommon}
169 \else

```

pdf_lat_ex only: Only pre-loaded if pdf_lat_ex is being used.

Pkg microtype

ligatures Older browsers don't display ligatures. Turn off letter ligatures, keeping L^AT_EX dash and quote ligatures, which may fail on older browsers but at least won't corrupt written words.

```

170 \RequirePackage {microtype}
171
172 \microtypesetup{
173 protrusion=false,
174 expansion=false,
175 tracking=false,
176 kerning=false,
177 spacing=false}
178
179 \DisableLigatures[f,q,t,T,Q]{encoding = *,family = *}

180 \fi

181 \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.

- Will also use a scriptsize font.
- Also uses extra space at the margin to avoid HTML tag overflow off the page.
- Will also force a new page before environments.

for HTML output: 182 \begin{warpHTML}
 183 \RequirePackage[paperheight=190in,paperwidth=20in,%
 184 left=7in,right=7in,%
 185 top=1in,bottom=1in,%
 186]{geometry}
 187 \end{warpHTML}

for HTML & PRINT: 188 \begin{warpall}

Pkg **xparse**

L^AT_EX3 command argument parsing

189 \RequirePackage{xparse}

190 \end{warpall}

for HTML output: 191 \begin{warpHTML}

Pkg **expl3**

L^AT_EX3 programming

192 \RequirePackage{expl3}

Pkg **getttitlestring**

Used to emulate \nameref.

193 \RequirePackage{getttitlestring}

Pkg **everyhook**

everyhook is used to patch paragraph handling.

194 \RequirePackage{everyhook}

195 \end{warpHTML}

for HTML & PRINT: 196 \begin{warpall}

Pkg **fancyvrb**

Used for Verbatim, verse.

```
197 \RequirePackage{fancyvrb}
```

```
198 \end{warpall}
```

for HTML output:

```
199 \begin{warpHTML}
```

Pkg **xifthen**

```
200 \RequirePackage{xifthen}
```

Pkg **xstring**

```
201 \RequirePackage{xstring}
```

Pkg **makeidx**

```
202 \RequirePackage{makeidx}
203 \makeindex
```

Pkg **calc**

```
204 \RequirePackage{calc}
```

Pkg **newfloat**

```
205 \RequirePackage{newfloat}
```

Pkg **caption**

```
206 \RequirePackage{caption}
```

Pkg **enumitem**

enumitem is patched to support `\newlist` with HTML.

```
207 \RequirePackage{enumitem}
208 \setlist[itemize]{leftmargin=0em}
209 \setlist[enumerate]{leftmargin=0em}
210 \setlist[description]{leftmargin=0em}
```

Pkg **pagenote**

Used to convert footnotes into pagenotes.

```
211 \RequirePackage[continuous]{pagenote}
212 \makepagenote
```

```

213 \let\LWR@origmakepagenote\makepagenote
214 \let\LWR@origprintnotes\printnotes
215 \let\LWR@origpagenote\pagenote
216 \end{warpHTML}

```

for HTML & PRINT: 217 \begin{warpall}

Pkg **titling**

Used for \maketitle and the title page. See section 42.

```

218 \RequirePackage{titling}

219 \end{warpall}

```

for HTML output: 220 \begin{warpHTML}

Pkg **zref**

Used for cross-references.

```

221 \RequirePackage{zref}

```

Pkg **amsmath**

Equation numbers are placed to the left for HTML.

newtxmath automatically loads amsmath, so the options leqno and fleqn are passed beforehand to be picked up both here and by newtxmath if it is used.

```

222 \PassOptionsToPackage{leqno,fleqn}{amsmath}
223 \RequirePackage{amsmath}

```

Pkg **environ**

Used to encapsulate math environments for re-use in HTML ALT text.

```

224 \RequirePackage{environ}

```

Pkg **titleps**

Used to place an HTML comment into the footer of a page below the footnotes. This comment is used for lateximage environments, including math.

The nopatches option prevents titleps from trying to patch sectioning commands.

\pagestyle and \thispagestyle are nullified for HTML output.

```

225 \RequirePackage[nopatches]{titleps}

```

`\pagestyle` $\{\langle style \rangle\}$

```
226 \let\LWR@origpagestyle\pagestyle
227 \renewcommand*\pagestyle[1]{}
```

`\thispagestyle` $\{\langle style \rangle\}$

```
228 \let\LWR@origthispagestyle\thispagestyle
229 \renewcommand*\thispagestyle[1]{}
```

`\pagenumbering` $\{\langle commands \rangle\}$

```
230 \let\LWR@origpagenumbering\pagenumbering
231 \renewcommand*\pagenumbering[1]{}
```

Pkg **xfrac**

Patched for HTML use. See section 137.

```
232 \RequirePackage{xfrac}
```

Used to convert lengths for image width/height options.

```
233 \RequirePackage{printlen}
```

```
234 \end{warpHTML}
```

17 Loading Packages

for HTML output: 235 `\begin{warpHTML}`

Remember the original `\RequirePackage`:

```
236 \let\LWR@origRequirePackage\RequirePackage
```

`\LWR@requirepackagenames` Stores the list of required package names.

```
237 \newcommand*\LWR@requirepackagenames{}
```

`\LWR@findword` $[\langle 1: separator \rangle] \{\langle 2: list \rangle\} \{\langle 3: index \rangle\} [\langle 4: destination \rangle]$

Note that argument 4 is passed directly to `\StrBetween`.

```

238 \newcommand*\LWR@findword[3][,]{%
239     \StrBetween[#3,\numexpr#3+1]{#1#2#1}{#1}{#1}%
240 }

```

`\LWR@lookforpackagename` $\langle index \rangle$ If this is a package name, re-direct it to the `lwarp` version by renaming it `lwarp-` followed by the original name.

```

241 \newcommand*\LWR@lookforpackagename[1]{

```

Find the n 'th package name from the list:

```

242 \LWR@findword{\LWR@requirepackagenames}{#1}[\LWR@strresult]

```

See if the package name was found:

```

243 \IfStrEq{\LWR@strresult}{%
244 {}% no filename
245 {% yes filename

```

If found, and if an `lwarp`-equivalent name exists, use `lwarp-` instead.

```

246 \IfFileExists{lwarp-\LWR@strresult.sty}
247 {% latex_html_ file found
248 \StrSubstitute
249 {\LWR@requirepackagenames}
250 {\LWR@strresult}
251 {lwarp-\LWR@strresult}[\LWR@requirepackagenames]
252 }
253 {}% no latex_html_* file
254 }% yes filename
255 }

```

`\RequirePackage` [$\langle 1: options \rangle$] [$\langle 2: package names \rangle$] [$\langle 3: version \rangle$]

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.

```

256 \RenewDocumentCommand{\RequirePackage}{o m o}{%

```

Redirect up to nine names:

```

257 \renewcommand*\LWR@requirepackagenames{#2}
258 \LWR@lookforpackagename{1}
259 \LWR@lookforpackagename{2}
260 \LWR@lookforpackagename{3}
261 \LWR@lookforpackagename{4}
262 \LWR@lookforpackagename{5}

```

```

263 \LWR@lookforpackagename{6}
264 \LWR@lookforpackagename{7}
265 \LWR@lookforpackagename{8}
266 \LWR@lookforpackagename{9}

```

\RequirePackage depending on the options and version:

```

267 \IfValueTF{#1}
268 {% options given
269 \IfValueTF{#3}% version given?
270 {\LWR@origRequirePackage{#1}{\LWR@requirepackagenames}{#3}}
271 {\LWR@origRequirePackage{#1}{\LWR@requirepackagenames}}
272 }
273 {% no options given
274 \IfValueTF{#3}% version given?
275 {\LWR@origRequirePackage{\LWR@requirepackagenames}{#3}}
276 {\LWR@origRequirePackage{\LWR@requirepackagenames}}
277 }
278 }
279 \let\usepackage\RequirePackage

```

\LWR@ProvidesPackagePass {<pkgname>} [<version>]

Provides a new package which passes its options to the original.

```

280 \NewDocumentCommand{\LWR@ProvidesPackagePass}{m o}{
281 \PackageInfo{lwarp}{Using the lwarp version of package ‘#1’, including options,}%
282 \IfValueTF{#2}
283 {\ProvidesPackage{lwarp-#1}[#2]}
284 {\ProvidesPackage{lwarp-#1}}
285 \DeclareOption*{\PassOptionsToPackage{\CurrentOption}{#1}}
286 \ProcessOptions\relax
287
288 \IfValueTF{#2}
289 {\LWR@origRequirePackage{#1}[#2]}
290 {\LWR@origRequirePackage{#1}}
291 }

```

\LWR@ProvidesPackageDrop {<pkgname>} [<version>]

Provides a new package which drops/discards its options.

```

292 \NewDocumentCommand{\LWR@ProvidesPackageDrop}{m o}{
293 \PackageInfo{lwarp}{Using the lwarp version of package ‘#1’, discarding options,}%
294 \IfValueTF{#2}
295 {\ProvidesPackage{lwarp-#1}[#2]}
296 {\ProvidesPackage{lwarp-#1}}
297 \DeclareOption*{}
298 \ProcessOptions\relax

```

```
299 }
```

```
300 \end{warpHTML}
```

18 Copying a file

for HTML output: 301 \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.

```
302 \newcommand*{\LWR@copyfile}[2]{%
303 \newwrite\copyfile % open the file to write to
304 \immediate\openout\copyfile=#2
305 \newread\file % open the file to read from
306 \openin\file=#1
307 \begingroup\endlinechar=-1
308 \makeatletter
309 \loop\unless\ifeof\file
310 \read\file to\fileline % Read one line and store it into \fileline
311 % \fileline\par % print the content into the pdf
312 % print the content:
313 \immediate\write\copyfile{\unexpanded\expandafter{\fileline}}%
314 \repeat
315 \closeout\copyfile
316 \endgroup
317 }

318 \end{warpHTML}
```

19 Debugging messages

Bool LWR@tracinglwarp True if tracing is turned on.

```
319 \newbool{LWR@tracinglwarp}
```

\tracinglwarp Turns on the debug tracing messages.

```
320 \newcommand{\tracinglwarp}{\booltrue{LWR@tracinglwarp}}
```

`\LWR@traceinfo` $\{\langle text \rangle\}$ If tracing is turned on, writes the text to the `.log` file.

```

321 \newcommand{\LWR@traceinfo}[1]{%
322 \ifbool{LWR@tracinglwarp}%
323 {\PackageInfo{lwarp}{#1 : }}%
324 {}%
325 }

```

20 Remembering original formatting macros

for HTML output: 326 `\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.

```

327 \let\LWR@origtextit\textit
328 \let\LWR@origtextbf\textbf
329 \let\LWR@origtexttt\texttt
330 \let\LWR@origtextsc\textsc
331 \let\LWR@origtextsf\textsf
332 \let\LWR@origtextrm\textrm
333 \let\LWR@origbfseries\bfseries
334 \let\LWR@origrmfamily\rmfamily
335 \let\LWR@origttfamily\ttfamily
336 \let\LWR@orignormalfont\normalfont
337
338 \let\LWR@origraggedright\raggedright
339 \let\LWR@origonecolumn\onecolumn
340
341 \let\LWR@origtextsuperscript\textsuperscript
342 \let\LWR@origtextsubscript\textsubscript
343
344 \let\LWR@origscriptsize\scriptsize
345
346 \let\LWR@orignewpage\newpage
347
348 \let\LWR@origminipage\minipage
349 \let\LWR@origendminipage\endminipage
350
351 \let\LWR@orignewline\newline
352
353 \let\LWR@origitem\item
354
355 \let\LWR@origpar\par
356

```

```

357
358 \let\LWR@origfootnote\footnote
359 \let\LWR@orig@mpfootnotetext\@mpfootnotetext
360
361 \let\LWR@origclearpage\clearpage
362 \let\clearpage\relax
363 \let\cleardoublepage\relax

364 \end{warpHTML}

```

21 Operating-System portability

lwarp tries to detect which operating system is being used.

Prog MS-Windows Prog Windows \warpOSwindows for HTML & PRINT:	If MS-WINDOWS is not correctly detected, use the command <code>\warpOSwindows</code> in the document preamble after <code>lwarp</code> is loaded. This modifies the operating-system path separator used by <code>lwarp</code> . 365 \begin{warpall}
--	---

21.1 Common portability code

Bool usingOSwindows	Set if <code>\warpOSwindows</code> . 366 \newbool{usingOSwindows} 367 \boolfalse{usingOSwindows}
-----------------------	--

21.2 Unix, Linux, and Mac OS

\OSPathSymbol	Symbol used to separate directories in a path. 368 \newcommand*{\OSPathSymbol}{/}
---------------	--

21.3 MS-Windows

For MS-Windows:

\warpOSwindows	Set defaults for the MS-Windows operating system. <code>lwarp</code> attempts to auto-detect the operating system, so <code>\warpOSwindows</code> may not be necessary.
----------------	---


```

369 \newcommand*{\warpOSwindows}
370 {
371 \booltrue{usingOSwindows}
372 \renewcommand*{\OSPathSymbol}{\@backslashchar}
373 }

```

Test for windows during compile. The user may also specify `\warpOSwindows` later in case this test fails.

```

374 \ifwindows
375 \warpOSwindows
376 \fi

377 \end{warpall}

```

22 Stacks

for HTML output: 378 \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 (unnested) 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.

22.1 Assigning depths

initial depths for empty stack entries:

```
379 \newcommand*{\LWR@depthnone}{-5}
```

all sectioning depths are deeper than `LWR@depthfinished`:

```

380 \newcommand*{\LWR@depthfinished}{-4}
381 \newcommand*{\LWR@depthpart}{-1}
382 \newcommand*{\LWR@depthchapter}{0}
383 \newcommand*{\LWR@depthsection}{1}

```

```

384 \newcommand*{\LWR@depthsubsection}{2}
385 \newcommand*{\LWR@depthsubsubsection}{3}
386 \newcommand*{\LWR@depthparagraph}{4}
387 \newcommand*{\LWR@depthsubparagraph}{5}

```

used by `\itemize`, `\enumerate`, `\description`:

```

388 \newcommand*{\LWR@depthlist}{6}

```

used by `\item`:

```

389 \newcommand*{\LWR@depthlistitem}{7}

```

22.2 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.

```

390 \newcommand*{\LWR@closeone}{}% top of the stack
391 \newcommand*{\LWR@closetwo}{}
392 \newcommand*{\LWR@closethree}{}
393 \newcommand*{\LWR@closefour}{}
394 \newcommand*{\LWR@closefive}{}
395 \newcommand*{\LWR@closesix}{}
396 \newcommand*{\LWR@closeseven}{}
397 \newcommand*{\LWR@closeeight}{}
398 \newcommand*{\LWR@closenine}{}
399 \newcommand*{\LWR@closeten}{}
400 \newcommand*{\LWR@closeeleven}{}
401 \newcommand*{\LWR@closetwelve}{}

```

22.3 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}
```

```
402 \newcommand*{\LWR@closedepthone}{\LWR@depthnone}% top of the stack
403 \newcommand*{\LWR@closedepthtwo}{\LWR@depthnone}
404 \newcommand*{\LWR@closedepththree}{\LWR@depthnone}
405 \newcommand*{\LWR@closedepthfour}{\LWR@depthnone}
406 \newcommand*{\LWR@closedepthfive}{\LWR@depthnone}
407 \newcommand*{\LWR@closedepthsix}{\LWR@depthnone}
408 \newcommand*{\LWR@closedepthseven}{\LWR@depthnone}
409 \newcommand*{\LWR@closedeptheight}{\LWR@depthnone}
410 \newcommand*{\LWR@closedepthnine}{\LWR@depthnone}
411 \newcommand*{\LWR@closedephten}{\LWR@depthnone}
412 \newcommand*{\LWR@closedeptheleven}{\LWR@depthnone}
413 \newcommand*{\LWR@closedephtwelve}{\LWR@depthnone}
```

22.4 Pushing and popping the stack

`\pushclose` $\{\langle action \rangle\} \{\langle depth \rangle\}$

Pushes one return action and its LaTeX depth onto the stacks.

```
414 \NewDocumentCommand{\pushclose}{m m}
415 {
416 \let\LWR@closetwelve\LWR@closeeleven
417 \let\LWR@closeeleven\LWR@closeten
418 \let\LWR@closeten\LWR@closenine
419 \let\LWR@closenine\LWR@closeeeight
420 \let\LWR@closeeeight\LWR@closeeseven
421 \let\LWR@closeeseven\LWR@closesix
422 \let\LWR@closesix\LWR@closefive
423 \let\LWR@closefive\LWR@closefour
424 \let\LWR@closefour\LWR@closethree
425 \let\LWR@closethree\LWR@closetwo
426 \let\LWR@closetwo\LWR@closeone
427 \let\LWR@closeone#1
428 \let\LWR@closedephtwelve\LWR@closedeptheleven
429 \let\LWR@closedeptheleven\LWR@closedephten
430 \let\LWR@closedephten\LWR@closedepthnine
```

```

431 \let\LWR@closedepthnine\LWR@closedeptheight
432 \let\LWR@closedeptheight\LWR@closedepthseven
433 \let\LWR@closedepthseven\LWR@closedepthsix
434 \let\LWR@closedepthsix\LWR@closedepthfive
435 \let\LWR@closedepthfive\LWR@closedepthfour
436 \let\LWR@closedepthfour\LWR@closedepththree
437 \let\LWR@closedepththree\LWR@closedepthtwo
438 \let\LWR@closedepthtwo\LWR@closedepthone
439 \let\LWR@closedepthone#2
440 }

```

`\popclose` Pops one action and its depth off the stacks.

```

441 \newcommand*{\popclose}
442 {
443 \let\LWR@closeone\LWR@closetwo
444 \let\LWR@closetwo\LWR@closethree
445 \let\LWR@closethree\LWR@closefour
446 \let\LWR@closefour\LWR@closefive
447 \let\LWR@closefive\LWR@closesix
448 \let\LWR@closesix\LWR@closeseven
449 \let\LWR@closeseven\LWR@closeeight
450 \let\LWR@closeeight\LWR@closenine
451 \let\LWR@closenine\LWR@closeten
452 \let\LWR@closeten\LWR@closeeleven
453 \let\LWR@closeeleven\LWR@closetwelve
454 \let\LWR@closedepthone\LWR@closedepthtwo
455 \let\LWR@closedepthtwo\LWR@closedepththree
456 \let\LWR@closedepththree\LWR@closedepthfour
457 \let\LWR@closedepthfour\LWR@closedepthfive
458 \let\LWR@closedepthfive\LWR@closedepthsix
459 \let\LWR@closedepthsix\LWR@closedepthseven
460 \let\LWR@closedepthseven\LWR@closedeptheight
461 \let\LWR@closedeptheight\LWR@closedepthnine
462 \let\LWR@closedepthnine\LWR@closedepthten
463 \let\LWR@closedepthten\LWR@closedeptheleven
464 \let\LWR@closedeptheleven\LWR@closedepthtwelve
465 }

466 \end{warpHTML}

```

23 Data arrays

These macros are similar to the `arrayjobx` package, except that `\LWR@setexpararray`'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}{\relax}
```

for HTML output: 467 \begin{warpHTML}

```
\LWR@setexparray {\langle name \rangle} {\langle index \rangle} {\langle contents \rangle}
```

```
468 \NewDocumentCommand{\LWR@setexparray}{m m m}{%
469 \expandafter\edef\csname #1#2\endcsname{\expandonce#3}%
470 }
```

```
\LWR@getexparray {\langle name \rangle} {\langle index \rangle}
```

```
471 \newcommand*{\LWR@getexparray}[2]{\csuse{#1#2}}
```

```
472 \end{warpHTML}
```

24 HTML entities

for HTML output: 473 \begin{warpHTML}

HTML entites and HTML Unicode entities:

```
474 \let\LWR@origampersand\&
```

```
\HTMLentity {\langle entitytag \rangle}
```

```
475 \newcommand*{\HTMLentity}[1]{\LWR@origampersand#1;}
```

```
\HTMLunicode {\langle hex_unicode \rangle}
```

```
476 \newcommand*{\HTMLunicode}[1]{\HTMLentity{\#x#1}}
```

```
\&
```

```
477 \renewcommand*{\&}{\HTMLentity{amp}}
```

```
\textless
\textgreater
```

```

478 \let\LWR@origtextless\textless
479 \renewcommand*{\textless}{\HTMLentity{lt}}
480
481 \let\LWR@origtextgreater\textgreater
482 \renewcommand*{\textgreater}{\HTMLentity{gt}}

483 \end{warpHTML}

```

25 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: 484 `\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.

```
485 \providecommand*{\BaseJobname}{\jobname}
```

`\HTMLFileName` The prefix for all generated HTML files other than the home page, defaulting to empty. See section 5.7.

```
486 \providecommand*{\HTMLFileName}{}
```

`\HomeHTMLFileName` The filename of the home page, defaulting to the `\BaseJobname`. See section 5.7.

```
487 \providecommand*{\HomeHTMLFileName}{\BaseJobname}
```

`\SetHTMLFileNumber` `{\langle number \rangle}`

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.

```

488 \newcommand*{\SetHTMLFileNumber}[1]{%
489 \setcounter{LWR@htmlfilenumber}{#1}%
490 }

```

Bool FileSectionNames Selects how to create HTML file names.

Defaults to use section names in the filenames.

```
491 \newbool{FileSectionNames}
492 \booltrue{FileSectionNames}

493 \end{warpall}
```

for HTML output: 494 \begin{warpHTML}

Ctr LWR@htmlfilenumber Records the number of each HTML file as it is being created. Number 0 is the home page.

```
495 \newcounter{LWR@htmlfilenumber}
496 \setcounter{LWR@htmlfilenumber}{0}
```

\LWR@htmlsectionfilename *{(htmlfilenumber or name)}*

Prints the filename for a given section: \HTMLFileName{}filenumber/name.html

```
497 \newcommand*{\LWR@htmlsectionfilename}[1]{%
498 \LWR@traceinfo{LWR@htmlsectionfilename A}%
```

Section 0 or empty is given the home filename. The filename must be detokenized for underscores.

```
499 \LWR@traceinfo{about to assign temp}%
500 \edef\LWR@tempone{#1}%
501 \LWR@traceinfo{about to compare with ??}%
502 \ifthenelse{\equal{\LWR@tempone}{??}}{%
503 {%
504 \LWR@traceinfo{found ??}%
505 }{%
506 \LWR@traceinfo{not found ??}%
507 }%
508 \LWR@traceinfo{about to compare with zero or empty}%
509 \ifthenelse{%
510 \equal{\LWR@tempone}{0}}{%
511 \OR \equal{\LWR@tempone}{}}{%
512 \OR \equal{\LWR@tempone}{??}}{%
513 }%
514 {%
515 \LWR@traceinfo{LWR@htmlsectionfilename B \HomeHTMLFileName.html}%
516 \HomeHTMLFileName.html%
517 }%
```

For a L^AT_EX section named “Index” or “index” without a prefix, create a filename with a leading underscore to avoid colliding with the HTML filename `index.html`:

```

518 {%
519 \LWR@traceinfo{\LWR@htmlsectionfilename C \LWR@tempone}%
520 \ifthenelse{%
521 \equal{\HTMLFileName}{ } \AND \equal{\LWR@tempone}{Index} \OR \equal{\LWR@tempone}{index}%
522 }%
523 {%
524 \LWR@traceinfo{prefixing the index name with an underscore.}%
525 \_#1.html}%

```

Otherwise, create a filename with the chosen prefix:

```

526 {\HTMLFileName#1.html}%
527 }%
528 \LWR@traceinfo{\LWR@htmlsectionfilename Z}%
529 }

```

`\LWR@htmlrefsectionfilename` `{\label{}}`

Prints the filename for the given label

```

530 \newcommand*{\LWR@htmlrefsectionfilename}[1]{%
531 \LWR@traceinfo{\LWR@htmlrefsectionfilename A: '#1!}%
532 \LWR@htmlsectionfilename{\LWR@htmlfileref{#1}}%
533 \LWR@traceinfo{\LWR@htmlrefsectionfilename B}%
534 }

535 \end{warpHTML}

```

26 Homepage link

for HTML output: 536 `\begin{warpHTML}`

`\LinkHome` `\LinkHome` may be used wherever you wish to place a link back to the homepage. The filename must be detokenized for underscores.

```

537 \newcommand*{\LinkHome}{%
538 \LWR@subhyperrefclass{%
539 \HomeHTMLFileName.html}%
540 {Home}{linkhome}%
541 }

```


`\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.

```
542 \newcommand*{\LWR@topnavigation}{
543 \LWR@html elementclassline{nav}{topnavigation}{\LinkHome}
544 }
```

`\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.

```
545 \newcommand*{\LWR@botnavigation}{
546 \LWR@html elementclassline{nav}{botnavigation}{\LinkHome}
547 }
```

```
548 \end{warpHTML}
```

27 \PrintStack diagnostic tool



Diagnostics tool: Prints the LaTeX nesting depth values for the stack levels. Must have `\LWR@startpars` active while printing the stack, so `\PrintStack` may be called from anywhere in the normal text flow.

for HTML output: 549 `\begin{warpHTML}`

`\PrintStack` Prints the closedepth stack.

```
550 \newcommand*{\PrintStack}{
551 \LWR@startpars
552 \LWR@closedepthone{} \LWR@closedepthtwo{} \LWR@closedepththree{}
553 \LWR@closedepthfour{} \LWR@closedepthfive{} \LWR@closedepthsix{}
554 \LWR@closedepthseven{} \LWR@closedeptheight{} \LWR@closedepthnine{}
555 \LWR@closedephten{} \LWR@closedeptheleven{} \LWR@closedephtwelve{}
556 }
```

```
557 \end{warpHTML}
```

28 Closing stack levels

for HTML output: 558 `\begin{warpHTML}`

Close one nested level:

```

559 \newcommand*{\LWR@closeoneprevious}{%
560
561 \LWR@closeone{
562
563 \popclose{
564 }

```

`\LWR@closeprevious` `{\depth}` Close everything up to the given depth:

```

565 \newcommand*{\LWR@closeprevious}[1]{

    Close any pending paragraph:

566 \LWR@stoppars

    Close anything nested deeper than the desired depth:

567 \whileof{\not\(\LWR@closedepthone<#1\)}{\LWR@closeoneprevious}
568 }

569 \end{warpHTML}

```

29 HTML tags, spans, divs, elements

for HTML output: 570 \begin{warpHTML}

29.1 Mapping L^AT_EX Sections to HTML Sections

```

571 \newcommand*{\LWR@tagpart}{h2}
572 \newcommand*{\LWR@tagpartend}{/h2}
573 \newcommand*{\LWR@tagchapter}{h3}
574 \newcommand*{\LWR@tagchapterend}{/h3}
575 \newcommand*{\LWR@tagsection}{h4}
576 \newcommand*{\LWR@tagsectionend}{/h4}
577 \newcommand*{\LWR@tagsubsection}{h5}
578 \newcommand*{\LWR@tagsubsectionend}{/h5}
579 \newcommand*{\LWR@tagsubsubsection}{h6}
580 \newcommand*{\LWR@tagsubsubsectionend}{/h6}
581 \newcommand*{\LWR@tagparagraph}{span class="paragraph">{}}
582 \newcommand*{\LWR@tagparagraphend}{/span}
583 \newcommand*{\LWR@tagsubparagraph}{span class="subparagraph">{}}
584 \newcommand*{\LWR@tagsubparagraphend}{/span}
585
586 \newcommand*{\LWR@tagregularparagraph}{p}

```

29.2 HTML tags

`\LWR@htmltagc` $\{\langle tag \rangle\}$ Break ligatures in HTML tags.

`\protect` is in case the tag appears in TOC, LOF, LOT.

```
587 \newcommand*\LWR@htmltagc}[1]{%
588 {%
589 \LWR@origttfamily%
590 % \protect\LWR@origtexttt{%
591 % \protect\LWR@origtextbf{%
592 \LWR@origtextless#1\LWR@origtextgreater%
593 % }%
594 % }%
595 }%
596 }
```

Env `LWR@nestspan` Disable minipage, `\parbox` 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 `/span` or an extra `<p>` may appear.

```
597 \newenvironment*LWR@nestspan%
598 {%
599 \addtocounter{LWR@spandepth}{1}%
600 \RenewDocumentEnvironment{minipage}{0{t} o 0{t} m}{-}{-}%
601 }%
602 {\addtocounter{LWR@spandepth}{-1}}
```

`\LWR@htmlspan` $\{\langle tag \rangle\} \{\langle text \rangle\}$

⚠ `\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`.

```
603 \NewDocumentCommand{\LWR@htmlspan}{m +m}{%
604 \LWR@ensuredoingapar%
605 \LWR@htmltagc{#1}%
606 \begin{LWR@nestspan}%
607 #2%
608 \LWR@htmltagc{/#1}%
609 \end{LWR@nestspan}%
610 }
```

`\LWR@htmlspanclass` $\{\langle class \rangle\} [\langle style \rangle] \{\langle text \rangle\}$

```

611 \NewDocumentCommand{\LWR@htmlspanclass}{m o +m}{%
612 \LWR@ensuredoingapar%
613 \LWR@subhtml elementclass{span}{#1}{#2}%
614 \begin{LWR@nestspan}%
615 #3%
616 \LWR@htmltagc{/span}%
617 \end{LWR@nestspan}%
618 }

```

`\LWR@htmltag` `{\langle tag \rangle}`

print an HTML tag: `<tag>`

```

619 \newcommand*{\LWR@htmltagb}[1]{%
620 \LWR@htmltagc{#1}%
621 \endgroup%
622 }
623
624 \newcommand*{\LWR@htmltag}{%
625 \begingroup\catcode'\_ =12
626 \LWR@htmltagb%
627 }

```

29.3 Block tags and comments

In the following, `\origtexttt` breaks ligatures, which may not be used for HTML codes:

`\LWR@htmlopencomment`
`\LWR@htmlclosecomment`

```

628 \newcommand*{\LWR@htmlopencomment}{%
629 % \LWR@origtexttt{\LWR@origtextbf{\LWR@origtextless{!}{-}{-}}}%
630 \begingroup\LWR@origttfamily\LWR@origtextless{!}{-}{-}\endgroup%
631 }
632
633 \newcommand*{\LWR@htmlclosecomment}{%
634 % \LWR@origtexttt{\LWR@origtextbf{{-}{-}\LWR@origtextgreater{}}}%
635 \begingroup\LWR@origttfamily{-}{-}\LWR@origtextgreater{}\endgroup%
636 }

```

`\LWR@htmlcomment` `{\langle comment \rangle}`

```

637 \newcommand{\LWR@htmlcomment}[1]{%
638 \LWR@htmlopencomment}%
639 \LWR@origtextrm{#1}%
640 \LWR@htmlclosecomment}

```

`\LWR@htmlblockcomment` $\{\langle comment \rangle\}$

```

641 \newcommand{\LWR@htmlblockcommentb}[1]
642 {\LWR@stoppars\LWR@htmlcomment{#1}\LWR@startpars\endgroup}
643
644 \newcommand{\LWR@htmlblockcomment}
645 {%
646 \begingroup\catcode'\_ =12%
647 \LWR@htmlblockcommentb%
648 }
```

`\LWR@htmlblocktag` $\{\langle tag \rangle\}$ print a stand-alone HTML tag

```

649 \newcommand*\LWR@htmlblocktag}[1]{%
650 \LWR@stoppars%
651 \LWR@htmltag{#1}%
652 \LWR@startpars%
653 }
```

`\LWR@htmlblocktagcomment` $\{\langle tag \rangle\} \{\langle HTML comment \rangle\}$

```

654 \NewDocumentCommand{\LWR@htmlblocktagcomment}{m +m}{%
655 \LWR@stoppars%
656 \LWR@htmltag{#1}\LWR@htmlcomment{#2}\LWR@orignewline%
657 \LWR@startpars%
658 }
```

29.4 Div class and element class

`\LWR@subhtml elementclass` $\{\langle element \rangle\} \{\langle class \rangle\} [\langle style \rangle]$

Factored and reused in several places.

```

659 \NewDocumentCommand{\LWR@subhtml elementclass}{m m o}{%
660 \IfValueTF{#3}%
661 {% option
662 \ifthenelse{\equal{#3}{}}{%
663 {\LWR@htmltag{#1 class="#2"}}% empty option
664 {\LWR@htmltag{#1 class="#2" style="#3"}}% non-empty option
665 }% option
666 {\LWR@htmltag{#1 class="#2"}}% no option
667 }
```

`\LWR@html elementclass` $\{\langle element \rangle\} \{\langle class \rangle\} [\langle style \rangle]$

```

668 \NewDocumentCommand{\LWR@htmlelementclass}{m m o}{%
669 \LWR@stoppars%
670 \LWR@subhtmlelementclass{#1}{#2}[#3]%
671 \LWR@startpars%
672 }

```

`\LWR@htmlelementclassend` $\{\langle element \rangle\} \{\langle class \rangle\}$

```

673 \newcommand*{\LWR@htmlelementclassend}[2]{%
674 \LWR@stoppars%
675 \LWR@htmltag{/#1}%
676 \LWR@htmlcomment{End of #1 ‘‘#2’’}%
677 \LWR@startpars%
678 }

```

`\LWR@htmldivclass` $\{\langle class \rangle\} [\langle style \rangle]$

```

679 \NewDocumentCommand{\LWR@htmldivclass}{m o}{%
680 \LWR@htmlelementclass{div}{#1}[#2]%
681 }

```

`\LWR@htmldivclassend` $\{\langle class \rangle\}$

```

682 \newcommand*{\LWR@htmldivclassend}[1]{%
683 \LWR@htmlelementclassend{div}{#1}%
684 }

```

29.5 Single-line elements

A single-line element, without a paragraph tag for the line of text:

`\LWR@htmlelementclassline` $\{\langle element \rangle\} \{\langle class \rangle\} [\langle style \rangle] \{\langle text \rangle\}$

```

685 \NewDocumentCommand{\LWR@htmlelementclassline}{m m o +m}{%
686 \LWR@stoppars
687 \LWR@subhtmlelementclass{#1}{#2}[#3]%
688 #4%
689 \LWR@htmltag{/#1}
690 \LWR@startpars
691 }

```

29.6 HTML5 semantic elements

`\LWR@htmlelement` $\{\langle element \rangle\}$

```
692 \newcommand*\LWR@htmlelement}[1]{%
693 \LWR@htmlblocktag{#1}
694 }
```

`\LWR@htmlelementend` $\{\langle element \rangle\}$

```
695 \newcommand*\LWR@htmlelementend}[1]{%
696 \LWR@stoppars
697 \LWR@htmltag{/#1}
698 \LWR@startpars
699 }
700
701 \end{warpHTML}
```

29.7 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.

For other direct-formatting commands, see section [62](#).

`Env` `BlockClass` $\{\langle class \rangle\} [\langle style \rangle]$ High-level interface for div classes.

Ex: `\begin{BlockClass}{class} text \end{BlockClass}`

for HTML output:

```
702 \begin{warpHTML}
703 \NewDocumentEnvironment{BlockClass}{m o}
704 {
705 \LWR@htmldivclass{#1}[#2]
706 }
707 {
708 \LWR@htmldivclassend{#1}
709 }
710 \end{warpHTML}
```

for PRINT output:

```
711 \begin{warpprint}
712 \NewDocumentEnvironment{BlockClass}{m o}{\}{\}
713 \end{warpprint}
```

`\BlockClassSingle` $\{\langle class \rangle\} \{\langle text \rangle\}$ A single-line div, without a paragraph tag for the line of text.

for HTML output:

```

714 \begin{warpHTML}
715 \newcommand{\BlockClassSingle}[2]{%
716 \LWR@html@element@classline{div}{#1}{#2}%
717 }
718 \end{warpHTML}

```

for PRINT output:

```

719 \begin{warpprint}
720 \newcommand{\BlockClassSingle}[2]{#2}
721 \end{warpprint}

```

`\InlineClass` `{\langle class \rangle} [\langle style \rangle] {\langle text \rangle}` High-level interface for inline span classes.

for HTML output:

```

722 \begin{warpHTML}
723 \NewDocumentCommand{\InlineClass}{m o m}{%
724 \LWR@html@spanclass{#1}{#2}{#3}%
725 }
726 \end{warpHTML}

```

for PRINT output:

```

727 \begin{warpprint}
728 \NewDocumentCommand{\InlineClass}{m o m}{#3}
729 \end{warpprint}

```

29.8 Closing HTML tags

for HTML output:

```

730 \begin{warpHTML}

```

Sections H1, H2, etc. do not need a closing HTML tag, but we add a comment for readability:

```

731 \newcommand*{\LWR@printclosepart}
732   {\LWR@htmlcomment{Closing part}}
733 \newcommand*{\LWR@printclosechapter}
734   {\LWR@htmlcomment{Closing chapter}}
735 \newcommand*{\LWR@printclosesection}
736   {\LWR@htmlcomment{Closing section}}
737 \newcommand*{\LWR@printclosesubsection}
738   {\LWR@htmlcomment{Closing subsection}}
739 \newcommand*{\LWR@printclosesubsubsection}
740   {\LWR@htmlcomment{Closing subsubsection}}
741 \newcommand*{\LWR@printcloseparagraph}
742   {\LWR@htmlcomment{Closing paragraph}}
743 \newcommand*{\LWR@printclosesubparagraph}
744   {\LWR@htmlcomment{Closing subparagraph}}

```

Lists require closing HTML tags:


```

745 \newcommand*{\LWR@printcloselistitem}
746     {\LWR@htmltag{/li}}
747 \newcommand*{\LWR@printclosedescitem}
748     {\LWR@htmltag{/dd}}
749 \newcommand*{\LWR@printcloseitemize}
750     {\LWR@htmltag{/ul}}
751 \newcommand*{\LWR@printcloseenumerate}
752     {\LWR@htmltag{/ol}}
753 \newcommand*{\LWR@printclosedescription}
754     {\LWR@htmltag{/dl}}

755 \end{warpHTML}

```

30 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 31 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: 756 `\begin{warpHTML}`

Ctr `LWR@spandepth` Do not create paragraph tags inside of an HTML span.

```

757 \newcounter{LWR@spandepth}
758 \setcounter{LWR@spandepth}{0}

```

Bool `LWR@doingstartpars` Tells whether paragraphs may be generated.

```

759 \newbool{LWR@doingstartpars}
760 \boolfalse{LWR@doingstartpars}

```

Bool `LWR@doingapar` Tells whether have actually generated and are currently processing paragraph text.

```

761 \newbool{LWR@doingapar}
762 \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:

```

763 \newcommand*{\LWR@ensuredoingapar}{%
764 \ifbool{\LWR@doingstartpars}%
765 {\global\booltrue{\LWR@doingapar}}%
766 {}%
767 }

```

\LWR@openparagraph

```

768 \newcommand*{\LWR@openparagraph}
769 {%

```

See if paragraph handling is enabled:

```

770 \ifbool{\LWR@doingstartpars}%
771 {% handling pars

```

See if have already started a `lateximage` or a `span`. If so, do not generate nested paragraph tags.

```

772 \ifthenelse{%
773 \cnttest{\value{\LWR@lateximagedepth}}{>}{0} \OR%
774 \cnttest{\value{\LWR@spandepth}}{>}{0}%
775 }{% nested par tags?

```

If so: Do nothing if already started a `lateximage` page. Cannot nest a `lateximage`. Also do nothing if already inside a `span`. Do not nest paragraph tags inside a `span`.

```

776 {}% no nested par tags

```

Else: No `lateximage` or `span` has been started yet, so it's OK to generate paragraph tags.

```

777 {% yes nest par tags
778 \LWR@htmltagc{\LWR@tagregularparagraph}%

```

Manually indent item list labels to avoid left margin intrusion:

L^AT_EX default list environments use `\@itemdepth` and `\@enumdepth`, but `lwarp` uses the `enumitem` package, which uses `\@listdepth`.

See if are nested inside an item list:

```

779 \ifnumcomp{\@listdepth}{>}{0}%
780 {%

```

If so, leave some horizontal room in the L^AT_EX PDF output for list labels:

```

781 \LWR@orighspace{1in}%
782 }{}%

```

Now have started a paragraph.

```
783 \global\booltrue{LWR@doingapar}%
```

At the end of each paragraph, generate closing tag and do regular /par stuff. (Attempting to use the everyhook cr hook for \LWR@closeparagraph does not work well.)

```
784 \let\par\LWR@closeparagraph%
785 }% end of yes nest par tags
786 }% end of handling pars
787 {}% not handling pars
788 }
```

\LWR@closeparagraph

```
789 \newcommand*{\LWR@closeparagraph}
790 {%
```

See if paragraph handling is enabled:

```
791 \ifbool{LWR@doingapar}%
```

If currently in paragraph mode:

```
792 {% handling pars
```

See if already started a lateximage or a span:

```
793 \ifthenelse{%
794 \cnttest{\value{LWR@lateximagedepth}}{>}{0} \OR%
795 \cnttest{\value{LWR@spandepth}}{>}{0}%
796 }%
```

Do nothing if already started a lateximage or a span, but add a parbreak if in a span but not a lateximage.

```
797 {% no nested par tags
798 \ifthenelse{%
799 \cnttest{\value{LWR@spandepth}}{>}{0}%
800 \AND%
801 \cnttest{\value{LWR@lateximagedepth}}{=}{0}%
802 }%
803 {%
804 \ifbool{LWR@intabularmetadata}{\unskip\LWR@htmltagc{br /}}%
805 }%
806 {}%
807 }% no nested par tags
```

If have not already started a `lateximage` or a `span`:

```
808 {% yes nest par tags
```

Print a closing tag:

```
809 \unskip%
810 \LWR@htmltagc{/LWR@tagregularparagraph}%
```

No longer doing a paragraph:

```
811 \global\boolfalse{LWR@doingapar}%
812 % Disable the special \env{minipage} \& \cs{hspace} interaction
813 % until a new minipage is found:
814 %   \begin{macrocode}
815 \global\boolfalse{LWR@minipagethispar}%
816 }% end of yes nest par tags
817 }% end of handling pars
```

Add a parbreak if in a span, but not in a table outside a row:

```
818 {% not handling pars
819 \ifthenelse{\cnttest{\value{LWR@spandepth}}{>}{0}}%
820 {\ifbool{LWR@intabularmetadata}{\unskip\LWR@htmltagc{br /}}}%
821 {}%
822 }% not handling pars
```

Finish with regular paragraph processing

```
823 \LWR@origpar%
824 }
```

```
825 \end{warpHTML}
```

31 Paragraph start/stop handling

These commands allow/disallow the generation of HTML paragraph tags.

Section 30 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: 826 \begin{warpHTML}

`\LWR@startpars` Begin handling HTML paragraphs. This allows an HTML paragraph to start, but one has not yet begun.

```
827 \newcommand*{\LWR@startpars}%  
828 {%
```

See if currently handling HTML paragraphs:

```
829 \ifbool{LWR@doingstartpars}%
```

If already in paragraph mode, do nothing.

```
830 {}%
```

If not currently in paragraph mode:

```
831 {%
```

At the start of each paragraph, generate an opening tag:

```
832 \PushPreHook{par}{\LWR@openparagraph}%
```

At the end of each paragraph, generate closing tag and do regular `/par` actions:

```
833 \let\par\LWR@closeparagraph  
834  
835 }% an intentionally blank line
```

Are now handling paragraphs, but have not yet actually started one:

```
836 \global\setbool{LWR@doingstartpars}{true}%
```

No `<par>` tag yet to undo:

```
837 \global\boolfalse{LWR@doingapar}%  
838 }
```

`\LWR@stoppars` Stop handling HTML paragraphs. Any currently open HTML paragraph is closed, and no more will be opened.

```
839 \newcommand*{\LWR@stoppars}%  
840 {%
```

See if currently handling HTML paragraphs:

```
841 \ifbool{LWR@doingapar}%
```

if currently in an HTML paragraph:

```
842 {%
```

Print a closing tag:

```
843 \unskip%
```

```
844 \LWR@htmltagc{/LWR@tagregularparagraph}%
```

No longer have an open HTML paragraph:

```
845 \global\boolfalse{LWR@doingapar}%
```

Disable the special `minipage` & `\hspace` interaction until a new minipage is found:

```
846 \global\boolfalse{LWR@minipagethispar}
```

```
847
```

```
848 }% an intentionally blank line
```

If was not in an HTML paragraph:

```
849 {}%
```

See if currently allowing HTML paragraphs:

```
850 \ifbool{LWR@doingstartpars}%
```

If so: clear the `par` hook to no longer catch paragraphs:

```
851 {%
```

```
852 \ClearPreHook{par}%
```

```
853 }%
```

Else: do nothing

```
854 {}%
```

no longer in paragraph mode

```
855 \global\setbool{LWR@doingstartpars}{false}%
```

no `<p>` tag to undo:

```
856 \global\boolfalse{LWR@doingapar}%
```

```
857 }
```

```
858 \end{warpHTML}
```

32 Page headers and footers

for HTML & PRINT: 859 \begin{warpall}

In the following, catcode is manually changes back and forth without groups, since new macros are being defined which must not be contained within the groups.

```
860 \newcommand{\LWR@firstpagetop}{ } % for the home page alone
861 \newcommand{\LWR@pagetop}{ } % for all other pages
862 \newcommand{\LWR@pagebottom}{ }
863
864 \newcommand{\LWR@setfirstpagetopb}[1]{%
865 \renewcommand{\LWR@firstpagetop}{#1}
866 \catcode'\_ =8
867 }
```

\SetFirstPageTop {*{text and logos}*}

```
868 \newcommand{\SetFirstPageTop}{%
869 \catcode'\_ =12
870 \LWR@setfirstpagetopb
871 }

872 \newcommand{\LWR@setpagetopb}[1]{%
873 \renewcommand{\LWR@pagetop}{#1}
874 \catcode'\_ =8
875 }
```

\SetPageTop {*{text and logos}*}

```
876 \newcommand{\SetPageTop}{%
877 \catcode'\_ =12
878 \LWR@setpagetopb
879 }

880 \newcommand{\LWR@setpagebottomb}[1]{%
881 \renewcommand{\LWR@pagebottom}{#1}
882 \catcode'\_ =8
883 }
```

\SetPageBottom {*{text and logos}*}

```
884 \newcommand{\SetPageBottom}{%
885 \catcode'\_ =12
886 \LWR@setpagebottomb
887 }
```

```
888 \end{warpall}
```

33 CSS

for HTML output: 889 \begin{warpHTML}

\LWR@currentcss The CSS filename to use. This may be changed mid-document using **\NewCSS**, allowing different CSS files to be used for different sections of the document.

```
890 \newcommand*{\LWR@currentcss}{lwarp.css}
```

\NewCSS $\{ \langle new-css-filename.css \rangle \}$

Assigns the CSS file to be used by the following HTML pages.

```
891 \newcommand*{\LWR@newcssb}[1]{%
892 \renewcommand*{\LWR@currentcss}{#1}
893 \catcode'\_ =8
894 }
895
896 \newcommand*{\NewCSS}{
897 \catcode'\_ =12
898 \LWR@newcssb
899 }
900 \end{warpHTML}
```

for PRINT output: 901 \begin{warpprint}
902 \newcommand*{\NewCSS}[1]{}
903 \end{warpprint}

34 HTML meta description

for HTML output: 904 \begin{warpHTML}

\LWR@currentHTMLdescription The HTML meta description to use.

This is placed inside an HTML meta tag at the start of each file. This may be changed mid-document using **\NewHTMLdescription**, allowing different HTML descriptions to be used for different sections of the document.

Do not use double quotes, and do not exceed 150 characters.


```
905 \newcommand{\LWR@currentHTMLdescription}{}
```

```
\NewHTMLdescription {⟨New HTML meta description.⟩}
```

Assigns the HTML file's description meta tag

```
906 \newcommand{\NewHTMLdescription}[1]{%
907 \renewcommand{\LWR@currentHTMLdescription}{#1}
908 }
909
910 \end{warpHTML}
```

```
for PRINT output: 911 \begin{warpprint}
912 \newcommand{\NewHTMLdescription}[1]{%
913 \end{warpprint}
```

35 Footnotes

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.

35.1 Regular page footnotes

In L^AT_EX 2_ε printed documents, footnotes are placed at the bottom of the printed page. For HTML, footnotes will be replaced by page notes using the `pagenote` package. Footnotes will then appear at the bottom of the HTML page.

See section 35.4 for the implementation.

35.2 Minipage footnotes

See section 61.2 for minipage footnotes.

35.3 Titlepage thanks

See section 42.6 for titlepage footnotes.

35.4 Regular page footnote implementation

for HTML output: 914 `\begin{warpHTML}`

Delayed in case the user's preamble loaded and adjusted pagenote:

915 `\AtEndPreamble{`

`\notedivision` Prints the footnote heading at the end of the page.

916 `\renewcommand*{\notedivision}`

917 `{\BlockClassSingle{footnoteheader}{}}`

To print the word "Notes:" at the top of the footnotes:

`\renewcommand*{\notedivision}| \`
`{\BlockClassSingle{footnoteheader}{Notes:}}`

`\pagenotesubhead` `{\langle num \rangle} {\langle title \rangle}`

Don't print page note headings in HTML page notes.

918 `\renewcommand{\pagenotesubhead}[2]{}`

`\footnote` `[\langle id \rangle] {\langle text \rangle}` Footnotes now become page notes.

919 `\let\footnote\LWR@origpagenote`

`\notenuminnotes` `{\langle number \rangle}`

Sets the page notes to use superscripts to match standard classes.

920 `\renewcommand{\notenuminnotes}[1]{%`

921 `#1 }`

`\noteentry` `{\langle 1: note number \rangle} {\langle 2: id \rangle} {\langle 3: text \rangle} {\langle 4: pagenum \rangle}`

922 `\let\LWR@orignoteentry\noteentry`

923 `\renewcommand{\noteentry}[4]{%`

`\@currentlabel` A label may be used inside a note, so the proper `\@currentlabel` must be set
`\cref@currentlabel`

inside a group. Likewise for `cleveref`'s `\cref@currentlabel`.

```
924 \begingroup%
925 \renewcommand*{\@currentlabel}{#1}%
926 \renewcommand*{\cref@currentlabel}{[pagenote] [#1] [] {#1}}%
```

Re-use `pageref`'s code, with an extra `endgroup`:

```
927 \LWR@originoteentry{#1}{#2}{#3}{#4}%
928 \endgroup%
929 }
```

`\LWR@printpendingnotes` Prints the page notes at the end of the section.

```
930 \newcommand*{\LWR@printpendingnotes}{
```

If there are footnotes to print, open a new `div` and print the notes.

```
931 \ifthenelse{\cnttest{\value{pagenote}}{>}{0}}%
932 {
933 \begin{BlockClass}{footnotes}
```

Print any pending endnotes, allowing new endnotes to accumulate.

```
934 \LWR@origprintnotes*
```

Start over with new page notes.

```
935 \setcounter{pagenote}{0}
936 \end{BlockClass}
937 }
938 {}
939 }
```

```
940 }% \AtEndPreamble
```

```
941 \end{warpHTML}
```

36 Marginpars

for HTML output: 942 \begin{warpHTML}

```
\marginpar [⟨left⟩] {⟨right⟩}
```

```

943 \renewcommand{\marginpar}[2] [] {%
944 \LWR@htmlspanclass{marginpar}{#2}%
945 }

946 \end{warpHTML}

```

37 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: 947 \begin{warpall}

Ctr FileDepth $\{\langle section\ depth \rangle\}$ determines how deeply to break into new HTML files, similar to `tocdepth`. The default of -5 produces one large HTML file.

```

948 \newcounter{FileDepth}
949 \setcounter{FileDepth}{-5}

```

Bool CombineHigherDepths Combile higher-level sections together into one file?

```

950 \newbool{CombineHigherDepths}
951 \booltrue{CombineHigherDepths}

```

```

952 \end{warpall}

```

for HTML output: 953 \begin{warpHTML}

\LWR@thisfilename The currently-active filename or number.

```

954 \newcommand*{\LWR@thisfilename}{ }

```

\LWR@thisnewfilename The filename being sanitized.

```

955 \newcommand*{\LWR@thisnewfilename}{ }

```

\LWR@filenamenoblanks $\{\langle filename \rangle\}$

Convert blanks into dashes, removes short words, store result in \LWR@thisfilename.



Be sure that this does not result in filename collisions! Use the optional TOC caption entry parameter for formatting. Remember to `\protect` L^AT_EX commands which appear in section names and TOC captions.

```
956 \newcommand*{\LWR@filenamnoblanks}[1]{%
957 \begingroup
```

Locally temporarily disable direct-formatting commands, not used in filenames:

```
958 \renewcommand*{\HTMLUnicode}[1]{
959 \renewcommand*{\HTMLentity}[1]{##1}
960 \renewcommand*{\LWR@htmltagc}[1]{
961 \DeclareExpandableDocumentCommand{\InlineClass}{m o m}{##3}
```

Ampersand becomes “and”, which is a short word and is then removed from the filename.

```
962 \renewcommand*{\&}{and}
963 \renewcommand{\textit}[1]{##1}
964 \renewcommand{\textsc}[1]{##1}
965 \renewcommand{\textsl}[1]{##1}
966 \renewcommand{\textbf}[1]{##1}
967 \renewcommand{\texttt}[1]{##1}
968 \renewcommand{\textsf}[1]{##1}
969 \renewcommand{\textrm}[1]{##1}
970 \renewcommand{\textsuperscript}[1]{##1}
971 \renewcommand{\textsubscript}[1]{##1}
```

Replaces common symbols and short words with hyphens:

```
972 \edef\LWR@thisnewfilename{#1}
973 \fullexpandarg
```

Convert spaces into hyphens:

```
974 \StrSubstitute{\LWR@thisnewfilename}{ }{-}[\LWR@thisnewfilename]
```

Convert punctuation into hyphens:

```
975 \StrSubstitute{\LWR@thisnewfilename}{,}{-}[\LWR@thisnewfilename]
976 \StrSubstitute{\LWR@thisnewfilename}{'}{-}[\LWR@thisnewfilename]
977 \StrSubstitute{\LWR@thisnewfilename}%
978 {\LWR@origampersand}{-}[\LWR@thisnewfilename]
979 \StrSubstitute{\LWR@thisnewfilename}{+}{-}[\LWR@thisnewfilename]
980 \StrSubstitute{\LWR@thisnewfilename}{,}{-}[\LWR@thisnewfilename]
981 \StrSubstitute{\LWR@thisnewfilename}{/}{-}[\LWR@thisnewfilename]
982 \StrSubstitute{\LWR@thisnewfilename}{:}{-}[\LWR@thisnewfilename]
983 \StrSubstitute{\LWR@thisnewfilename}{;}{-}[\LWR@thisnewfilename]
```

```

984 \StrSubstitute{\LWR@thisnewfilename}{=}{-}[\LWR@thisnewfilename]
985 \StrSubstitute{\LWR@thisnewfilename}{?}{-}[\LWR@thisnewfilename]
986 \StrSubstitute{\LWR@thisnewfilename}{@}{-}[\LWR@thisnewfilename]
987 \StrSubstitute{\LWR@thisnewfilename}{"}{-}[\LWR@thisnewfilename]
988 \StrSubstitute{\LWR@thisnewfilename}%
989 {\textless}{-}[\LWR@thisnewfilename]
990 \StrSubstitute{\LWR@thisnewfilename}%
991 {\textgreater}{-}[\LWR@thisnewfilename]
992 \StrSubstitute{\LWR@thisnewfilename}{\#}{-}[\LWR@thisnewfilename]
993 \StrSubstitute{\LWR@thisnewfilename}{\%}{-}[\LWR@thisnewfilename]
994 \StrSubstitute{\LWR@thisnewfilename}{\{}{-}[\LWR@thisnewfilename]
995 \StrSubstitute{\LWR@thisnewfilename}{\}}{-}[\LWR@thisnewfilename]
996 \StrSubstitute{\LWR@thisnewfilename}{|}{-}[\LWR@thisnewfilename]
997 \StrSubstitute{\LWR@thisnewfilename}%
998 {\textbackslash}{-}[\LWR@thisnewfilename]
999 \StrSubstitute{\LWR@thisnewfilename}{^}{-}[\LWR@thisnewfilename]
1000 \StrSubstitute{\LWR@thisnewfilename}{~}{-}[\LWR@thisnewfilename]
1001 %      "~{" for babel
1002 \StrSubstitute{\LWR@thisnewfilename}{[}{-}[\LWR@thisnewfilename]
1003 \StrSubstitute{\LWR@thisnewfilename}{]}{-}[\LWR@thisnewfilename]
1004 \StrSubstitute{\LWR@thisnewfilename}{'}{-}[\LWR@thisnewfilename]

```

Convert short words:

```

1005 \StrSubstitute{\LWR@thisnewfilename}{-s-}{-}[\LWR@thisnewfilename]
1006 \StrSubstitute{\LWR@thisnewfilename}{-S-}{-}[\LWR@thisnewfilename]
1007 \StrSubstitute{\LWR@thisnewfilename}{-a-}{-}[\LWR@thisnewfilename]
1008 \StrSubstitute{\LWR@thisnewfilename}{-A-}{-}[\LWR@thisnewfilename]
1009 \StrSubstitute{\LWR@thisnewfilename}{-an-}{-}[\LWR@thisnewfilename]
1010 \StrSubstitute{\LWR@thisnewfilename}{-AN-}{-}[\LWR@thisnewfilename]
1011 \StrSubstitute{\LWR@thisnewfilename}{-to-}{-}[\LWR@thisnewfilename]
1012 \StrSubstitute{\LWR@thisnewfilename}{-TO-}{-}[\LWR@thisnewfilename]
1013 \StrSubstitute{\LWR@thisnewfilename}{-by-}{-}[\LWR@thisnewfilename]
1014 \StrSubstitute{\LWR@thisnewfilename}{-BY-}{-}[\LWR@thisnewfilename]
1015 \StrSubstitute{\LWR@thisnewfilename}{-of-}{-}[\LWR@thisnewfilename]
1016 \StrSubstitute{\LWR@thisnewfilename}{-OF-}{-}[\LWR@thisnewfilename]
1017 \StrSubstitute{\LWR@thisnewfilename}{-and-}{-}[\LWR@thisnewfilename]
1018 \StrSubstitute{\LWR@thisnewfilename}{-AND-}{-}[\LWR@thisnewfilename]
1019 \StrSubstitute{\LWR@thisnewfilename}{-for-}{-}[\LWR@thisnewfilename]
1020 \StrSubstitute{\LWR@thisnewfilename}{-FOR-}{-}[\LWR@thisnewfilename]
1021 \StrSubstitute{\LWR@thisnewfilename}{-the-}{-}[\LWR@thisnewfilename]
1022 \StrSubstitute{\LWR@thisnewfilename}{-THE-}{-}[\LWR@thisnewfilename]

```

Convert multiple hyphens:

```

1023 \StrSubstitute{\LWR@thisnewfilename}{----}{-}[\LWR@thisnewfilename]
1024 \StrSubstitute{\LWR@thisnewfilename}{---}{-}[\LWR@thisnewfilename]
1025 \StrSubstitute{\LWR@thisnewfilename}{--}{-}[\LWR@thisnewfilename]
1026 \StrSubstitute{\LWR@thisnewfilename}{-}{-}[\LWR@thisnewfilename]
1027 \StrSubstitute{\LWR@thisnewfilename}{-}{-}[\LWR@thisnewfilename]

```

```

1028 %      emdash
1029 \StrSubstitute{\LWR@thisnewfilename}{-}{-}[\LWR@thisnewfilename]
1030 %      endash
1031 \global\let\LWR@thisfilename\LWR@thisnewfilename% return a global result
1032 \endgroup
1033 }

```

`\LWR@newhtmlfile` $\{ \langle section\ name \rangle \}$

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.

```

1034 \newcommand*{\LWR@newhtmlfile}[1]{

```

At the bottom of the ending file:

```

1035 \LWR@html-elementclassend{section}{textbody}
1036
1037 \LWR@printpendingnotes
1038
1039 \LWR@html-element{footer}
1040
1041 \LWR@pagebottom
1042
1043 \LWR@html-elementend{footer}

```

No bottom navigation if are finishing the home page: Presumably has a table-of-contents printed.

```

1044 \ifnumcomp{\value{\LWR@htmlfilenumber}}{>}{0}{\LWR@botnavigation}{}

```

End of this HTML file:

```

1045 \LWR@stoppars
1046 \LWR@htmltag{/body}\LWR@orignewline
1047 \LWR@htmltag{/html}\LWR@orignewline
1048
1049 \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.

```

1050 \ifbool{FileSectionNames}%
1051 {\LWR@filenamenoblanks{#1}}
1052 {\renewcommand*{\LWR@thisfilename}{\the\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.

```
1053 \LWR@htmlblockcomment{%
1054 \LWR@origtextttt{|Start file|}%
1055 \LWR@htmlsectionfilename{\LWR@thisfilename}|}%
1056 }
```

At the top of the starting file:

```
1057 \LWR@stoppars
1058
1059 \LWR@filestart{ -- #1}% there is an Emdash in front of the #1
1060
1061 \LWR@topnavigation
1062
1063 \LWR@html element{header}
1064
1065 \LWR@pagetop
1066
1067 \LWR@html elementend{header}
1068
1069 \ifcsvoid{thetitle}{ }\{\LWR@printthetitle}
1070
1071 \LWR@sidetoc
1072
1073 \LWR@html elementclass{section}{textbody}
1074
1075 \LWR@stoppars
1076
1077 \setcounter{\LWR@latestautopage}{\value{page}}
1078 }

1079 \end{warpHTML}
```

38 Sectioning

Sectioning and cross-references have been emulated from scratch, rather than try to patch several layers of existing L^AT_EX code and packages. Formatting is handled by CSS, so the emulated code has much less work to do than the print versions.

Unicode 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




pdf_lat_ex is actually producing a symbol over or under a character, resulting in pdf_tot_ext picking up the accent symbol separately.

X_qLa_TE_X and LuaLa_TE_X directly support accented section and file names.

for HTML output: 1080 \begin{warpHTML}

38.1 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.

```
1081 \newbool{LWR@mainmatter}
1082 \DeclareDocumentCommand{\mainmatter}{}{%
1083 \booltrue{LWR@mainmatter}%
1084 }
```

\frontmatter Declare the front matter section of the document, using arabic numbering for the internal numbering. Does not reset the page number.

```
1085 \DeclareDocumentCommand{\frontmatter}{}{%
1086 \boolfalse{LWR@mainmatter}%
1087 }
```

\backmatter Declare the back matter section of the document. Does not reset the page number.

```
1088 \DeclareDocumentCommand{\backmatter}{}{%
1089 \boolfalse{LWR@mainmatter}
1090 }
```

38.2 Sectioning support macros

\LWR@sectionnumber $\{ \langle section\ type \rangle \}$

Typeset a section number and its trailing space with CSS formatting:

```
1091 \newcommand*{\LWR@sectionnumber}[1]{%
1092 \InlineClass{sectionnumber}{#1} %
1093 }
```


autosec A tag used by the TOC and index.

\LWR@createautosec $\{ \langle section\ type \rangle \}$

Create an autosection tag.

```
1094 \newcommand*{\LWR@createautosec}[1]{%
1095 \LWR@htmltag{#1 id="autosec-\thepage"}{}}%
1096 }
```


\LWR@pushoneclose $\{\langle depth \rangle\}$ $\{\langle printclose \rangle\}$ 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.

```
1097 \NewDocumentCommand{\LWR@pushoneclose}{m m}{\pushclose{#2}{#1}}
```

\LWR@startnewdepth $\{\langle depth \rangle\}$ $\{\langle printclose \rangle\}$

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.

```
1098 \NewDocumentCommand{\LWR@startnewdepth}{m m}{%
```

Close any stacked sections up to this new one.

```
1099 \LWR@closeprevious{#1}%
```

Push a new section depth:

```
1100 \LWR@pushoneclose{#1}{#2}%
1101 }
```

Ctrl 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.

```
1102 \newcounter{LWR@prevFileDepth}
1103 \setcounter{LWR@prevFileDepth}{\LWR@depthsubparagraph}
```

\LWR@section * [$\langle TOC name \rangle$] $\{\langle name \rangle\}$ $\{\langle sectiontype \rangle\}$

The common actions for the high-level sectioning commands.

```
1104 \DeclareDocumentCommand{\LWR@section}{m m m m}{%
1105 \LWR@traceinfo{LWR@section}%
1106 \LWR@stoppars%
```

Cancel special `minipage` horizontal space interaction:

```
1107 \global\boolfalse{LWR@minipagethispar}%
```

Generate a new LaTeX page so that TOC and index page number points to the section:

```
1108 \LWR@orignewpage%
1109
```

Start a new HTML file if not starred, and is a shallow sectioning depth:

```
1110 \LWR@traceinfo{LWR@section: testing about to start a new HTML file}%
1111 \IfBooleanTF{#1}{\% not starred
1112 \ifthenelse{%
1113 \cnttest{\csuse{LWR@depth#4}}{<=}{\value{FileDepth}}}%
1114 \AND%
1115 \(%
1116 \NOT\boolean{CombineHigherDepths}\OR%
1117 \cnttest{\csuse{LWR@depth#4}}{<=}{\value{LWR@prevFileDepth}}}%
1118 \)%
1119 }%
```

If so: start a new HTML file:

```
1120 {% new file
1121 \LWR@traceinfo{LWR@section: new HTML file}%
```

See if there was an optional TOC name entry:

```
1122 \IfNoValueTF{#2}%
```

If no optional entry

```
1123 {\LWR@newhtmlfile{#3}}%
```

If yes an optional entry

```
1124 {\LWR@newhtmlfile{#2}}%
1125 }% new file
```

Else: No new HTML file:

```
1126 {}% not new file
1127 }% not starred
```

Remember this section's name for `\nameref`:

```

1128 \LWR@traceinfo{LWR@section: about to LWR@setlatestname}%
1129 \IfValueTF{#2}{\LWR@setlatestname{#2}}{\LWR@setlatestname{#3}}%

```

Print an opening comment with the level and the name; ex: “section” “Introduction”

```

1130
1131 \LWR@htmlcomment{Opening #4 ‘‘#3’’{}}
1132

```

For inline sections paragraph and subparagraph, start a new paragraph now:

```

1133 \ifthenelse{%
1134 \cnttest{\csuse{LWR@depth#4}}{>=}{\LWR@depthparagraph}%
1135 }%
1136 {\LWR@startpars}
1137 {}

```

Create the opening tag with an autosec:

```

1138 \LWR@createautosec{\csuse{LWR@tag#4}}%

```

If not starred, step counter and add to TOC:

```

1139 \IfBooleanTF{#1}%
1140 {}% starred
1141 {% not starred

```

Only add a numbered TOC entry if section number is not too deep:

```

1142 \ifthenelse{%
1143 \cnttest{\csuse{LWR@depth#4}}{<=}{\value{secnumdepth}}%
1144 }%
1145 {% if secnumdepth

```

If in the main matter, step the counter and add the TOC entry. For `article` class, `lwarp` assumes that all is `mainmatter`.

```

1146 \LWR@traceinfo{LWR@section: about to test main matter}%
1147 \ifbool{LWR@mainmatter}%
1148 {%
1149 \LWR@traceinfo{LWR@section: yes mainmatter}%
1150 \refstepcounter{#4}%

```

Add main matter numbered TOC entry with the TOC name or the regular name:

```

1151 \LWR@traceinfo{LWR@section: about to addcontentsline}%
1152 \addcontentsline{toc}{#4}%
1153 {\protect\LWR@sectionnumber{\csuse{the#4}}}%
1154 \IfValueTF{#2}{#2}{#3}}%

```

```

1155 \LWR@traceinfo{LWR@section: finished addcontentsline}%
1156 }% end of if main matter

```

If not main matter, add unnumbered TOC name or regular name:

```

1157 {% not main matter
1158 \LWR@traceinfo{LWR@section: no main matter}%
1159 \addcontentsline{toc}{#4}{\IfValueTF{#2}{#2}{#3}}%
1160 }% end of not main matter
1161 }% end of secnumdepth

```

Deeper than secnumdepth, so add an unnumbered TOC entry:

```

1162 {%
1163 \addcontentsline{toc}{#4}{\IfValueTF{#2}{#2}{#3}}%
1164 }%

```

For part, print the section type:

```

1165 \ifbool{LWR@mainmatter}%
1166 {%
1167 \ifthenelse{%
1168 \(\cnttest{\csuse{LWR@depth#4}}{<=}}%
1169 {\value{secnumdepth}}\)\ AND
1170 \(\cnttest{\csuse{LWR@depth#4}}{<=}{\LWR@depthpart}\)
1171 }%
1172 {\csuse{#4name}~{}}%
1173 {}%

```

Print the section number:

```

1174 \LWR@traceinfo{LWR@section: about to print section number}%
1175 \ifthenelse{%
1176 \cnttest{\csuse{LWR@depth#4}}{<=}{\value{secnumdepth}}%
1177 }%
1178 {\protect\LWR@sectionnumber{\csuse{the#4}}}%
1179 {}%
1180 \LWR@traceinfo{LWR@section: finished print section number}%
1181 }{}%
1182 }% end of not starred

```

Print the section name:

```

1183 #3

```

close the heading tag, such as /H2

```

1184 \LWR@htmltag{\csuse{LWR@tag#4end}}%

```

Generate a L^AT_EX label:

```
1185 \label{autopage-\thepage}%
```

Start paragraph handing unless is an inline paragraph or subparagraph:

```
1186 \ifthenelse{%
1187 \cinttest{\csuse{LWR@depth#4}}{<}{\LWR@depthparagraph}}%
1188 {\LWR@startpars}%
1189 {}%
```

If not starred, remember the previous depth to possibly trigger a new HTML page.

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.

```
1190 \IfBooleanTF{#1}{}{% not starred
1191 \setcounter{LWR@prevFileDepth}{\csuse{LWR@depth#4}}%
1192 }% not starred
1193 \LWR@traceinfo{LWR@section: done}%
1194 }
```

38.3 \section and friends

`\part` * [*TOC name*] {*name*}

```
1195 \@ifundefined{chapter}
1196 {}
1197 {%
1198 \DeclareDocumentCommand{\part}{s o m}{%
1199 \LWR@stoppars%
1200
1201 \LWR@startnewdepth{\LWR@depthpart}{\LWR@printclosepart}%
1202
1203 \LWR@section{#1}{#2}{#3}{part}%
1204 }
1205 }
```

`\chapter` * [*TOC name*] {*name*}

```
1206 \@ifundefined{chapter}
1207 {}
1208 {%
```

```

1209 \DeclareDocumentCommand{\chapter}{s o m}{%
1210 \LWR@traceinfo{chapter #3}%
1211 \LWR@stoppars%
1212 \LWR@startnewdepth{\LWR@depthchapter}{\LWR@printclosechapter}%
1213
1214 \LWR@traceinfo{chapter: about to LWR@section}%
1215 \LWR@section{#1}{#2}{#3}{chapter}%
1216 \LWR@traceinfo{chapter: done}%
1217 }
1218 }

```

`\section` * [*TOC name*] {*name*}

```

1219 \DeclareDocumentCommand{\section}{s o m}{%
1220 \LWR@stoppars%
1221
1222 \LWR@startnewdepth{\LWR@depthsection}{\LWR@printclosesection}%
1223
1224 \LWR@section{#1}{#2}{#3}{section}%
1225 }

```

`\subsection` * [*TOC name*] {*name*}

```

1226 \DeclareDocumentCommand{\subsection}{s o m}{%
1227 \LWR@stoppars%
1228
1229 \LWR@startnewdepth{\LWR@depthsubsection}{\LWR@printclosesubsection}%
1230
1231 \LWR@section{#1}{#2}{#3}{subsection}%
1232 }

```

`\subsubsection` * [*TOC name*] {*name*}

```

1233 \DeclareDocumentCommand{\subsubsection}{s o m}{%
1234 \LWR@stoppars%
1235
1236 \LWR@startnewdepth{\LWR@depthsubsubsection}%
1237 {\LWR@printclosesubsubsection}%
1238
1239 \LWR@section{#1}{#2}{#3}{subsubsection}%
1240 }

```

`\paragraph` * [*TOC name*] {*name*}

```

1241 \DeclareDocumentCommand{\paragraph}{s o m}{%
1242 \LWR@stoppars%
1243

```

```

1244 \LWR@startnewdepth{\LWR@depthparagraph}{\LWR@printcloseparagraph}%
1245
1246 \LWR@section{#1}{#2}{#3}{paragraph}%
1247 }

```

`\subparagraph` * [*TOC name*] {*name*}

```

1248 \DeclareDocumentCommand{\subparagraph}{s o m}{%
1249 \LWR@stoppars%
1250
1251 \LWR@startnewdepth{\LWR@depthsubparagraph}{\LWR@printclosesubparagraph}%
1252
1253 \LWR@section{#1}{#2}{#3}{subparagraph}%
1254 }

1255 \end{warpHTML}

```

39 Starting a new file

for HTML output: 1256 \begin{warpHTML}

`\MetaLanguage` Default language for the HTML lang tag.

```
1257 \newcommand*{\MetaLanguage}{en-US}
```

`\LWR@filestart` {*title__suffix*}

Creates the opening HTML tags.

```
1258 \newcommand*{\LWR@filestart}[1]{
```

Locally temporarily disable direct-formatting commands:

```

1259 \begingroup
1260 \renewcommand{\textit}[1]{##1}% not used in filenames
1261 \renewcommand{\textsc}[1]{##1}
1262 \renewcommand{\textsl}[1]{##1}
1263 \renewcommand{\textbf}[1]{##1}
1264 \renewcommand{\texttt}[1]{##1}
1265 \renewcommand{\textsf}[1]{##1}
1266 \renewcommand{\textrm}[1]{##1}
1267 \renewcommand{\textsuperscript}[1]{##1}
1268 \renewcommand{\textsubscript}[1]{##1}
1269 \renewcommand*{\HTMLUnicode}[1]{

```



```

1270 \renewcommand*{\HTMLentity}[1]{}
1271 \RenewDocumentCommand{\LWR@htmlspanclass}{m o +m}{##3}
1272 \DeclareExpandableDocumentCommand{\InlineClass}{m o m}{##3}

```

Create the page's HTML header:

```
1273 \LWR@htmltag{!DOCTYPE html}\LWR@orignewline
```

The language is user-adjustable:

```
1274 \LWR@htmltag{html lang="\MetaLanguage"{}}\LWR@orignewline
```

Start of the meta data:

```
1275 \LWR@htmltag{head}\LWR@orignewline
```

Charset is fixed at UTF-8:

```
1276 \LWR@htmltag{meta charset="UTF-8" /}\LWR@orignewline
```

lwarp is the generator:

```

1277 \LWR@htmltag{meta name="generator" content="LaTeX lwarp package" /}%
1278     \LWR@orignewline

```

If there is a description, add it now:

```

1279 \ifdefempty{\LWR@currentHTMLdescription}{-}{-}{%
1280 \LWR@htmltag{%
1281 meta name="description" content="\LWR@currentHTMLdescription" /}%
1282     \LWR@orignewline
1283 }%

```

Mobile-friendly viewport:

```

1284 \LWR@htmltag{meta name="viewport" %
1285 content="width=device-width, initial-scale=1.0" /}%
1286     \LWR@orignewline

```

IE patch:

```

1287 \LWR@htmltag{!{-}{-}[if lt IE 9]}\LWR@orignewline
1288 \LWR@htmltag{%
1289 script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"{}}%
1290 \LWR@htmltag{/script}\LWR@orignewline
1291 \LWR@htmltag{![endif]{-}{-}}\LWR@orignewline

```

The page's title:

```

1292 \ifcvoid{thetitle}{}{%
1293 \LWR@htmltag{title}\thetitle#1\LWR@htmltag{/title}\LWR@orignewline%
1294 }%

```

The page's stylesheet:

```

1295 \LWR@htmltag{%
1296 link rel="stylesheet" type="text/css" href="\LWR@currentcss" /}%
1297 \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.

```

1298 \ifbool{mathjax}%
1299 {%
1300 \boolfalse{LWR@verbtags}
1301 \VerbatimInput{lwarp_mathjax.txt}%
1302 \booltrue{LWR@verbtags}
1303 \LWR@stoppars
1304 }% end of mathjax
1305 {%

```

End of the header:

```

1306 \LWR@htmltag{/head}\LWR@orignewline

```

Start of the body:

```

1307 \LWR@htmltag{body}\LWR@orignewline
1308 \endgroup
1309 }

```

```

1310 \end{warpHTML}

```

40 Starting HTML output

for HTML output: 1311 \begin{warpHTML}

\LWR@LwarpStart Executed at the beginning of the entire document.

```

1312 \newcommand*{\LWR@LwarpStart}
1313 {%

```

Expand and detokenize `\HomeHTMLFileName` and `\HTMLFileName`:

```
1314 \edef\LWR@strresult{\HomeHTMLFileName}
1315 \edef\HomeHTMLFileName{\detokenize\expandafter{\LWR@strresult}}
1316 \edef\LWR@strresult{\HTMLFileName}
1317 \edef\HTMLFileName{\detokenize\expandafter{\LWR@strresult}}
```

Force onecolumn:

```
1318 \LWR@origonecolumn%
```

Reduce chance of line overflow in verbatim environments:

```
1319 \LWR@origscriptsize%
```

In PDF output, don't allow line breaks to interfere with HTML tags:

```
1320 \LWR@origraggedright%
1321 \let\\\LWR@endoffline%
```

Spread the lines for `pdftotext` to read them well:

```
1322 \linespread{1.3}%
```

For `pdftotext` to reliably identify paragraph splits:

```
1323 \setlength{\parindent}{0pt}
1324 \setlength{\parskip}{2ex}
```

For the `lateximages` record file:

```
1325 \immediate\openout\LWR@file=lateximages.txt
```

Removes space after the caption in the HTML:

```
1326 \setlength{\belowcaptionskip}{-3ex}
```

Redefine the plain page style to be empty when used by index pages:

```
1327 \renewcommand{\ps@plain}{}%
```

```
\centering Not used in the HTML environment:
\raggedleft
\raggedright 1328 \renewcommand*{\centering}{}
1329 \renewcommand*{\raggedleft}{}
1330 \renewcommand*{\raggedright}{}%
```

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:

```
1331 \let\LWR@origtabular\tabular
1332 \let\LWR@origendtabular\endtabular
1333 \let\tabular\LWR@tabular
1334 \let\endtabular\endLWR@tabular
```

Float captions:

```
1335 \let\LWR@origcaption\caption
```

Labels: `\ltx@label` is used in `amsmath` environments and is also patched by [Label in HTML](#) `cleveref`.

```
1336 \let\LWR@origltx@label\ltx@label
1337 \let\ltx@label\LWR@htmlmathlabel
```

Logos:

```
1338 \let\TeX\LWR@TeX
1339 \let\LaTeX\LWR@LaTeX
1340 \let\LuaTeX\LWR@LuaTeX
1341 \let\LuaLaTeX\LWR@LuaLaTeX
1342 \let\XeTeX\LWR@XeTeX
1343 \let\XeLaTeX\LWR@XeLaTeX
1344 \let\ConTeXt\LWR@ConTeXt
```

Graphics:

```
1345 \let\textcolor\LWR@textcolor
1346 \let\pagecolor\LWR@pagecolor
1347 \let\colorbox\LWR@colorbox
1348 \let\fcolorbox\LWR@fcolorbox
1349 \let\rotatebox\LWR@rotatebox
1350 \let\scalebox\LWR@scalebox
1351 \let\reflectbox\LWR@reflectbox
```

Not yet started any paragraph handling:

```
1352 \global\boolfalse{LWR@doingapar}
1353 \global\boolfalse{LWR@doingstartpars}
```

Start a new HTML file and a header:

```
1354 \LWR@filestart{}
1355 \LWR@htmltag{header}\LWR@orignewline
1356 \LWR@startpars
1357 \LWR@firstpagetop
1358 \LWR@stoppars
```

```

1359 \LWR@htmltag{/header}\LWR@orignewline
1360 \LWR@htmltag{section class="textbody">{}}
1361 \LWR@origpagestyle{empty}

```

Document and page settings:

```

1362 \mainmatter
1363 \LWR@origpagenumbering{arabic}

```

Set default titlepage thanks footnote marks. See section 42.6.

```

1364 \if@titlepage
1365   \thanksmarkseries{arabic}
1366 \else
1367   \thanksmarkseries{fnsymbol}
1368 \fi

```

Initial default patch for fancyvrb:

```

1369 \fvset{frame=none}%

```

The ampersand is redefined active, and acts depending on whether it is inside a tabular.

```

1370 \catcode'\&=\active

```

Allow HTML paragraphs to begin:

```

1371 \LWR@startpars
1372 }

```

```

1373 \end{warpHTML}

```

41 Ending HTML output

for HTML output: 1374 \begin{warpHTML}

`\LWR@requesttoc` $\{\langle boolean \rangle\}$ $\{\langle suffix \rangle\}$ Requests that a toc, lof, or lot be generated.

```

1375 \newcommand*\LWR@requesttoc[2]{%
1376 \ifbool{#1}
1377 {
1378 \expandafter\newwrite\csuse{tf@#2}
1379 \immediate\openout \csuse{tf@#2} \jobname.#2\relax
1380 }{}
1381 }

```

`\LWR@LwarpEnd` Final stop of all HTML output:

```
1382 \newcommand*{\LWR@LwarpEnd}
1383 {
1384 \LWR@stoppars
1385 \LWR@closeprevious{\LWR@depthfinished}
```

At the bottom of the ending file:

Close the textbody:

```
1386 \LWR@htmlelementclassend{section}{textbody}
```

Print any pending footnotes:

```
1387 \LWR@printpendingnotes
```

Create the footer:

```
1388 \LWR@htmllement{footer}
1389
1390 \LWR@pagebottom
1391
1392 \LWR@htmllementend{footer}
```

No bottom navigation if are finishing the home page:
Presumably has a table-of-contents printed.

```
1393 \ifnumcomp{\value{\LWR@htmlfilenumber}}{>}{0}{\LWR@botnavigation}{}
```

```
1394 \LWR@stoppars% final stop of all paragraphs
```

Finish the HTML file:

```
1395 \LWR@htmltag{/body}\LWR@orignewline
1396 \LWR@htmltag{/html}\LWR@orignewline
```

Seems to be required sometimes:

```
1397 \LWR@orignewpage
```

For `lateximage` commands:

```
1398 \immediate\closeout\LWR@file
1399 }
```

```
1400 \end{warpHTML}
```

42 Titles and the titling package

Supports and extends the titling package.

Additional functions include `\published` and `\subtitle`, and the `\author` command has an additional `\affiliation` command to provide an affiliation and other additional information for each author in the title page. The affiliation information is removed when using `\theauthor` in the main text.

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.

`\printtitle`, `\printauthor`, etc., are provided for use inside the `titlepage` or `titlingpage` environments, and these retain the `\thanks` and `\affiliation`.

Several additional hooks are provided in addition to titling:

<code>\maketitlehookaa</code>	<code>\maketitlehookaa</code> : Between “published” and the title.
<code>\maketitlehookaaa</code>	<code>\maketitlehookaaa</code> : Between the title and the subtitle.
<code>\prepublished</code>	<code>\prepublished</code> : Before the “published” field.
<code>\postpublished</code>	<code>\postpublished</code> : After the “published” field.
<code>\presubtitle</code>	<code>\presubtitle</code> : Before the subtitle.
<code>\postsubtitle</code>	<code>\postsubtitle</code> : After the subtitle.
<code>\printthanks</code>	<code>\printthanks</code> has been added to force the printing of thanks inside a <code>titlingpage</code> environment when <code>\maketitle</code> is not used.



No footnotes!

Inside a `\titlepage` or `\titlingpage` environment, use `\thanks` for footnotes, do not use `\footnote`.

At the end of the `titlingpage` environment, footnote marks are forced to reset to zero.

Inside a `titlingpage` environment with the `article` document class, thanks marks will be `fnsymbol` instead of `arabic`. `arabic` is usually used when inside `titlepage` environments where the title page is on its own page, but is not automatically used inside a `titlingpage` environment.

To force the thanks marks to be `arabic`:

```
\begin{titlingpage}
\thanksmarkseries{arabic}
...
```

42.1 Setting the title, etc.

The following provide setting commands for both HTML and print outputs.

<pre>\published \title \subtitle \author \date</pre>	<pre>\@title, \@subtitle, \@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 table, which becomes multiple single-column tables if multiples authors are included.</pre>
<pre>\printpublished \printtitle \printsubtitle \printauthor \printdate</pre>	<pre>\printtitle, \printsubtitle, etc. are user-level macros intended to be used in titlepage and titlingpage environments in cases where \maketitle is not desired. These commands preserve the \thanks, etc., and should not be used in the main text. The author is printed inside a single-column table, which becomes multiple single-column tables if multiples authors are included.</pre>
<pre>\thepublished \thetitle \thesubtitle \theauthor \thedate</pre>	<pre>\thetitle, \thesubtitle, \theauthor, etc. are user-level sanitized versions which have 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:</pre>
<pre>\SetPageBottom</pre>	<pre>{\text}</pre>

```
\SetPageBottom{
\begin{center}\textcopyright~2016 \theauthor\end{center}
}
```

<pre>\author \and</pre>	<pre>{\author}} While using \maketitle, the author is treated as a single-column table and the \and feature finishes the current table then starts a new one for the next author. Each author thus is placed into its own table, and an affiliation may be placed on its own line such as</pre>
---------------------------	---

```
\author{Name \\ Affiliation \and Second Name \\ Second Affiliation}
```

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.

A solution, provide here, is to define a macro `\affiliation` which during `\maketitle` starts a new table row and adds the affiliation, but after `\maketitle` is finished `\affiliation` is re-defined to throw away its argument, thus printing only the author names when `\author` is later used inline.

```
\affiliation {<text>}
```

Adds the affiliation to the author for use in `\maketitle`. Nullified when later used for inline use of `\theauthor`.

```
for HTML output: 1401 \begin{warpHTML}
                  1402 \newrobustcmd{\affiliation}[1]{\ \InlineClass{affiliation}{#1}}
                  1403 \end{warpHTML}
```

```
for PRINT output: 1404 \begin{warpprint}
                  1405 \newrobustcmd{\affiliation}[1]{\ \textsc{\small#1}}
                  1406 \end{warpprint}
```

The following are based on the original titling code:

```
for HTML & PRINT: 1407 \begin{warpall}
```

```
\author {<text>}
```

Redefined to nullify `\affiliation`, etc. before printing the authors inline.

`\@author` retains the entire author with its `\thanks`, while `\theauthor` will have `\thanks` removed and `\and` simplified.

```
1408 \renewcommand{\author}[1]{%
1409 \gdef\@author{#1}
1410 \begingroup
1411   \renewcommand{\thanks}[1]{ }
1412   \renewcommand{\and}{\unskip, }
1413   \renewcommand{\thanksmark}[1]{ }
1414   \renewcommand{\thanksgap}[1]{ }
1415   \renewcommand{\affiliation}[1]{ }
1416   \protected@xdef\theauthor{#1}
1417 \endgroup}
```

```
\published {<text>}
```

```
1418 \newcommand{\published}[1]{%
1419 \gdef\@published{#1}
```

```

1420 \begingroup
1421   \renewcommand{\thanks}[1]{%
1422     \renewcommand{\thanksmark}[1]{%
1423       \renewcommand{\thanksgap}[1]{%
1424         \protected@xdef\thepublished{#1}
1425       }
1426     }
1427   \newcommand{\@published}{%
1428     \newcommand{\thepublished}{%

\subtitle {<text>}

1429 \newcommand{\subtitle}[1]{%
1430   \gdef\@subtitle{#1}
1431   \begingroup
1432     \renewcommand{\thanks}[1]{%
1433       \renewcommand{\thanksmark}[1]{%
1434         \renewcommand{\thanksgap}[1]{%
1435           \protected@xdef\thesubtitle{#1}
1436         }
1437       }
1438     \newcommand{\@subtitle}{%
1439       \newcommand{\thesubtitle}{%

1440 \end{warpall}

```

42.2 Changes to HTML titlepage and titlingpage

for HTML output: 1441 \begin{warpHTML}

Env **titlepage** Sets up a titlepage div with a L^AT_EX PDF minipage inside.

```

1442 \renewenvironment*{titlepage}
1443   {\BlockClass{titlepage}\LWR@subminipage}
1444   {\LWR@endsubminipage\endBlockClass}

```

Env **titlingpage**

```

1445 \renewenvironment*{titlingpage}
1446 {%

```

Start an HTML titlepage div:

```

1447 \begin{titlepage}

```

Prepare for a custom version of `\maketitle` inside the `titlingpage`:

```
1448 \LWR@maketitlesetup
1449 \let\maketitle\LWR@titlingmaketitle
1450 }
1451 {
```

At the end of the environment, end the HTML titlepage div:

```
1452 \end{titlepage}
```

Reset the footnote counter:

```
1453 \@bscontmark
1454 }
```

```
1455 \end{warpHTML}
```

for HTML & PRINT: 1456 `\begin{warpall}`

`\printthanks` Forces the `\thanks` to be printed.

This is necessary in a `titlingpage` environment when `\maketitle` was not used.

```
1457 \newcommand*{\printthanks}{\@thanks}
```

Env `titlingpage` At the end of the `titlingpage` for both print and HTML, reset footnote markers to zero.

```
1458 \AtEndEnvironment{titlingpage}{\@bscontmark}
```

```
1459 \end{warpall}
```

42.3 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: 1460 `\begin{warpHTML}`

Patch the pre/post title/author/date to add HTML tags, then initialize:

```
1461 \newcommand{\prepublished}[1]{%
1462 \def\@bspublished{\BlockClass{published}#1}%
1463 }
1464
```

```
1465 \newcommand{\postpublished}[1]{%
1466 \def\@bspostpublished{#1\endBlockClass}%
1467 }
1468
1469 \renewcommand{\pretitle}[1]{%
1470 \def\@bspretitle{#1\LWR@stoppars\LWR@htmltag{h1}}}%
1471 }
1472
1473 \renewcommand{\posttitle}[1]{%
1474 \def\@bsposttitle{\LWR@htmltag{/h1}\LWR@startpars#1}%
1475 }
1476
1477 \newcommand{\presubtitle}[1]{%
1478 \def\@bspresubtitle{\BlockClass{subtitle}#1}%
1479 }
1480
1481 \newcommand{\postsubtitle}[1]{%
1482 \def\@bspostsubtitle{#1\endBlockClass}%
1483 }
1484
1485 \renewcommand{\preauthor}[1]{%
1486 \def\@bspreauthor{\BlockClass{author}#1}%
1487 }
1488
1489 \renewcommand{\postauthor}[1]{%
1490 \def\@bspostauthor{#1\endBlockClass}%
1491 }
1492
1493 \renewcommand{\predate}[1]{%
1494 \def\@bspredate{#1\BlockClass{titledate}}}%
1495 }
1496
1497 \renewcommand{\postdate}[1]{%
1498 \def\@bspostdate{\endBlockClass#1}%
1499 }
1500
1501 \prepublished{\begin{center}}
1502 \postpublished{\par\end{center}}
1503
1504 \pretitle{\begin{center}}
1505 \posttitle{\par\end{center}}
1506
1507 \presubtitle{\begin{center}}
1508 \postsubtitle{\par\end{center}}
1509
1510 \preauthor{\begin{center}}%
1511 \begin{tabular}[t]{c}%
1512 }
1513 \postauthor{\end{tabular}\par\end{center}}
1514
```

```

1515 \predatex{\begin{center}}
1516 \postdatex{\par\end{center}}

```

\printpublished

```

1517 \newcommand*\printpublished{
1518 \ifthenelse{\equal{\thepublished}{}}
1519 {}
1520 {
1521 \begin{BlockClass}{published}
1522 \@published
1523 \end{BlockClass}
1524 }
1525 }

```

\printtitle

```

1526 \newcommand*\printtitle
1527 {
1528 \LWR@stoppars
1529 \LWR@htmltag{h1}%
1530 \@title%
1531 \LWR@htmltag{/h1}
1532 \LWR@startpars
1533 }

```

\LWR@printthetitle A private version which prints the title without footnotes, used to title each HTML page.

```

1534 \newcommand*\LWR@printthetitle
1535 {
1536 \LWR@stoppars
1537 \LWR@htmltag{h1}%
1538 \thetitle%
1539 \LWR@htmltag{/h1}
1540 \LWR@startpars
1541 }

```

\printsubtitle

```

1542 \newcommand*\printsubtitle{
1543 \ifthenelse{\equal{\thesubtitle}{}}
1544 {}
1545 {
1546 \begin{BlockClass}{subtitle}
1547 \@subtitle
1548 \end{BlockClass}

```

```
1549 }
1550 }
```

`\printauthor`

```
1551 \newcommand*{\printauthor}{
1552 \begin{BlockClass}{author}
1553 \begin{tabular}{c}\@author\end{tabular}
1554 \end{BlockClass}
1555 }
```

`\printdate`

```
1556 \newcommand*{\printdate}{%
1557 \begin{BlockClass}{titledate}
1558 \@date
1559 \end{BlockClass}
1560 }
```

```
1561 \end{warpHTML}
```

42.4 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: 1562 `\begin{warpprint}`

`\printpublished`

```
1563 \newcommand*{\printpublished}{\Large\scshape\@published}
```

`\printtitle`

```
1564 \newcommand*{\printtitle}{\Huge\@title}
```

`\printsubtitle`

```
1565 \newcommand*{\printsubtitle}{\Large\itshape\@subtitle\bigskip}
```

`\printauthor`

```
1566 \newcommand*{\printauthor}
1567 {\large\begin{tabular}{t}{c}\@author\end{tabular}}
```

\printdate

```
1568 \newcommand*{\printdate}{\small\textit{\@date}}
```

42.5 \maketitle for print output

\maketitle From the titling package, patched to add the publisher and subtitle.

```
1569 \providecommand{\maketitle}{}
1570 \if@titlepage
1571   \renewcommand{\maketitle}{\begin{titlepage}%
1572     \let\footnotesize\small
1573     \let\footnoterule\relax
1574     \let \footnote \thanks
1575     \@bsmarkseries
1576     \def\@makefnmark{\rlap{\@textsuperscript{%
1577       \normalfont\@bsthanksheadpre \tamark \@bsthanksheadpost}}}%
1578       \long\def\@makefntext##1{\makethanksmark ##1}
1579     \null\vfil
1580     \vskip 60\p@
1581     \vspace*{\droptitle}
1582     \maketitlehooka
1583     \ifcseempty{@published}
1584   {}
1585   {\@bsprepublished \@published \@bspostpublished}\maketitlehookaa}
1586   {\@bsprettitle \@title \@bsposttitle}
1587   \ifcseempty{@subtitle}
1588 {}
1589 {\maketitlehookaaa{\@bspresubtitle \@subtitle \@bspostsubtitle}}
1590   \maketitlehookb
1591   {\@bspreadauthor \@author \@bspostauthor}
1592   \maketitlehookc
1593   {\@bspredate \@date \@bspostdate}
1594   \maketitlehookd
1595   \par
1596   \@thanks
1597   \vfil\null
1598   \end{titlepage}%
1599   \@bscontmark % \setcounter{footnote}{0}%
1600   %% \bsmtitleempty
1601 } % end titlepage defs
1602 \else
1603 \renewcommand{\maketitle}{\par
1604   \begingroup
1605   \@bsmarkseries
1606   \def\@makefnmark{\rlap{\@textsuperscript{%
1607     \normalfont\@bsthanksheadpre \tamark \@bsthanksheadpost}}}%
1608     \long\def\@makefntext##1{\makethanksmark ##1}
1609   \null\vfil
1610   \vskip 60\p@
1611   \vspace*{\droptitle}
1612   \maketitlehooka
1613   \ifcseempty{@published}
1614 {}
1615 {\@bsprepublished \@published \@bspostpublished}\maketitlehookaa}
1616   {\@bsprettitle \@title \@bsposttitle}
1617   \ifcseempty{@subtitle}
1618 {}
1619 {\maketitlehookaaa{\@bspresubtitle \@subtitle \@bspostsubtitle}}
1620   \maketitlehookb
1621   {\@bspreadauthor \@author \@bspostauthor}
1622   \maketitlehookc
1623   {\@bspredate \@date \@bspostdate}
1624   \maketitlehookd
1625   \par
1626   \@thanks
1627   \vfil\null
1628   \end{titlepage}%
1629   \@bscontmark % \setcounter{footnote}{0}%
1630   %% \bsmtitleempty
1631 } % end titlepage defs
1632 \fi
```

```

1608     \long\def\@makefntext##1{\makethanksmark ##1}
1609     \if@twocolumn
1610         \ifnum \col@number=\@ne
1611             \@maketitle
1612         \else
1613             \twocolumn[\@maketitle]%
1614         \fi
1615     \else
1616         \newpage
1617         \global\@topnum\z@
1618         \@maketitle
1619     \fi
1620     \thispagestyle{plain}\@thanks
1621 \endgroup
1622 \bscontmark % \setcounter{footnote}{0}%
1623 %%% \bsmttitleempty
1624 } % end non-titlepage
1625
1626 \def\@maketitle{%
1627     \newpage
1628     \null
1629     \vskip 2em%
1630     \vspace*{\droptitle}
1631     \maketitlehooka
1632     \ifcsempy{@published}
1633 {}
1634 {\@bsprepublished \@published \@bspostpublished}\maketitlehookaa}
1635     {\@bspretitle \@title \@bsposttitle}
1636     \ifcsempy{@subtitle}
1637 {}
1638 {\maketitlehookaaa{\@bspresubtitle \@subtitle \@bspostsubtitle}}
1639     \maketitlehookb
1640     {\@bspreadauthor \@author \@bspostauthor}
1641     \maketitlehookc
1642     {\@bspredate \@date \@bspostdate}
1643     \maketitlehookd
1644     \par
1645     \vskip 1.5em}
1646 \fi
1647
1648 \providecommand{\maketitlehookaa}{}
1649
1650 \providecommand{\maketitlehookaaa}{}
1651
1652 \newcommand{\prepublished}[1]{%
1653 \def\@bsprepublished{#1}%
1654 }
1655
1656 \newcommand{\postpublished}[1]{%
1657 \def\@bspostpublished{#1}%

```



```

1658 }
1659
1660 \newcommand{\presubtitle}[1]{%
1661 \def\@bspresubtitle{#1}%
1662 }

```

`\presubtitle` Hook after printing the subtitle.

```

1663 \newcommand{\postsubtitle}[1]{%
1664 \def\@bspostsubtitle{#1}%
1665 }

```

Initial settings:

```

1666 \if@titlepage
1667 \prepublished{
1668 \vspace*{-\baselineskip}\vspace*{-\medskipamount}\vspace*{-2em}
1669 \begin{center}}
1670 \postpublished{\par\end{center}\vskip 2em}
1671
1672 \presubtitle{\unskip\begin{center}\unskip}
1673 \postsubtitle{\par\end{center}\vskip 2em}
1674 \else
1675 \prepublished{\begin{center}}
1676 \postpublished{\par\end{center}\vskip 0.5em}
1677
1678 \presubtitle{\begin{center}\unskip}
1679 \postsubtitle{\par\end{center}\vskip 0.5em}
1680 \fi
1681 \end{warpprint}

```

42.6 \maketitle for HTML output

An HTML div of class `titlepage` is created, inside of which a L^AT_EX PDF minipage is generated (without HTML tags), allowing the `\thanks` footnotes to be generated immediately at the end of the title page during HTML output. This is desirable when a large table of contents immediately follows the title.

`\thanks` are a form of footnotes used in the title page. See section 35 for other kinds of footnotes.

See `\thanksmarkseries{series}`, below, to set the style of the footnote marks.

for HTML output: 1682 `\begin{warppHTML}`

`\LWR@maketitlesetup` Patches `\thanks` macros to use L^AT_EX minipage footnotes.

```
1683 \newcommand*{\LWR@maketitlesetup}{%
```

Select which kind of footnote marks to use:

```
1684 \@bsmarkseries
```

```
1685 \@mpbsmarkseries
```

Redefine the footnote mark:

```
1686 \def\@makefnmark{\textsuperscript{\thefootnote}}%
```

```
\thefootnote ⇒ \nameuse{arabic}{footnote}, or
\thefootnote ⇒ \nameuse{fnsymbol}{footnote}
```

Redefine the footnote text:

```
1687 \long\def\@makefntext##1{%
```

Make the footnote mark and some extra horizontal space for the tags:

```
1688 \makethanksmark \LWR@origspace{1in}
```

```
\makethanksmark ⇒ \thanksfootmark ⇒ \tmark ⇒
\@thefnmark ⇒ \itshape a (or similar)
```

Print the text and a closing paragraph tag:

```
1689 ##1\LWR@htmltagc{/LWR@tagregularparagraph}%
```

```
1690 }%
```

```
1691 }
```

`\@fnsymbol` $\{\langle counter \rangle\}$

Re-defined to use an HTML entity for the double vertical bar symbol. The original definition used `\|` which was not being found by `pdftotext`.

```
1692 \def\@fnsymbol#1{\ensuremath{\ifcase#1\or *\or \dagger\or \ddagger\or
```

```
1693 \mathsection\or \mathparagraph\or \text{\HTMLUnicode{2016}}\or
```

```
1694 **\or \dagger\dagger \or \ddagger\ddagger \else\@ctrerr\fi}}
```

`\maketitle` Creates an HTML titlepage div and typesets the title, etc.

Code from the titling package is adapted, simplified, and modified for HTML output.

```
1695 \renewcommand*{\maketitle}{%
```

An HTML titlepage div is used for all classes.

```
1696 \begin{titlepage}
```

Set up special patches:

```
1697 \LWR@maketitlesetup
```

Typeset the title, etc:

```
1698 \@maketitle
```

Immediately generate any \thanks footnotes:

```
1699 \@thanks
```

Close the HTML titlepage div:

```
1700 \end{titlepage}
```

Reset the footnote counter:

```
1701 \@bscontmark
```

```
1702 }
```

\@maketitle Typesets the title, etc. for HTML:

```
1703 \DeclareDocumentCommand{\@maketitle}{-}{%
1704 \maketitlehooka
1705 \ifcempty{@published}
1706 {}
1707 {\@bsprepublished \@published \@bspostpublished}\maketitlehookaa}
1708 {\@bsprettitle \@title \@bsposttitle}
1709 \ifcempty{@subtitle}
1710 {}
1711 {\maketitlehookaaa{\@bspresubtitle \@subtitle \@bspostsubtitle}}
1712 \maketitlehookb
1713 {\@bspreauthor \@author \@bspostauthor}
1714 \maketitlehookc
1715 {\@bspredate \@date \@bspostdate}
1716 \maketitlehookd
1717 }
```

```
1718 \providecommand{\maketitlehookaa}{}
1719 \providecommand{\maketitlehookaaa}{}
1720 \providecommand{\maketitlehookb}{}
1721 \providecommand{\maketitlehookc}{}
1722 \providecommand{\maketitlehookd}{}
1723 }
```

\LWR@titlingmaketitle \maketitle for use inside an HTML titlingpage environment.

```
1720 \newcommand*{\LWR@titlingmaketitle}{%
```

Typeset the title, etc:

```
1721 \@maketitle
```

Immediately generate any \thanks footnotes:

```
1722 \@thanks
```

```
1723 }
```

```
\thanksmarkseries {<series>}
```

Sets the type of footnote marks used by \thanks, where type is ‘arabic’, ‘roman’, ‘fnsymbol’, etc. Modified to use the L^AT_EX PDF minipage which is included with the title page.

```
1724 \let\LWR@origthanksmarkseries\thanksmarkseries
```

```
1725 \renewcommand{\thanksmarkseries}[1]{%
```

```
1726 \def\@mpbsmarkseries{%
```

```
1727 \renewcommand*{\thempfootnote}{\@nameuse{#1}{mpfootnote}}}
```

```
1728 \LWR@origthanksmarkseries{#1}
```

```
1729 }
```

```
1730 \end{wrapHTML}
```

43 Abstract

The following code replaces the L^AT_EX default, and will itself be replaced later if the **abstract** package is loaded.

for HTML output: 1731 \begin{wrapHTML}

\abstractname User-redefinable title for the abstract.

Also over-written by the **babel** package.

```
1732 \providecommand*{\abstractname}{Abstract}
```

Env **abstract**

```
1733 \DeclareDocumentEnvironment{abstract}{}%
```

```
1734 {
```

```
1735 \BlockClass{abstract}
```

```

1736 \BlockClassSingle{abstracttitle}{\abstractname}
1737 }
1738 {
1739 \endBlockClass
1740 }

1741 \end{warpHTML}

```

44 Quote and verse

44.1 Citations and attributions

`\attribution` for use inside quote, quotation, verse:

ex: `\attribution{author name} --- \citetitle{book name}`

for HTML output:

```

1742 \begin{warpHTML}
1743 \newcommand{\attribution}[1]{%
1744 \InlineClass{attribution}{--\,#1}}% emdash
1745 \end{warpHTML}

```

for PRINT output:

```

1746 \begin{warpprint}
1747 \newcommand{\attribution}[1]{\textsc{--\,#1}}
1748 \end{warpprint}

```

`\citetitle` for use inside quote, quotation, verse:

for HTML output:

```

1749 \begin{warpHTML}
1750 \newcommand{\citetitle}[1]{%
1751 \InlineClass{citetitle}{--\,#1}}% emdash
1752 \end{warpHTML}

```

for PRINT output:

```

1753 \begin{warpprint}
1754 \newcommand{\citetitle}[1]{\textsl{---\,#1}}
1755 \end{warpprint}

```

44.2 Quotes, quotations

for HTML output:

```

1756 \begin{warpHTML}

```

Env quote

```

1757 \renewenvironment*{quote}
1758 {\LWR@htmlblocktag{blockquote}}
1759 {\LWR@htmlblocktag{/blockquote}}
1760
1761 \renewenvironment*{quotation}
1762 {\LWR@htmlblocktag{blockquotation}}
1763 {\LWR@htmlblocktag{/blockquotation}}

1764 \end{warpHTML}

```

44.3 Verse

`\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}

```

<p>Len <code>\leftskip</code></p> <p>Len <code>\leftmargini</code></p> <p>Len <code>\TMLvleftskip</code></p> <p>Len <code>\TMLleftmargini</code></p>	<p>These lengths are used by <code>verse</code> and <code>memoir</code> to control the left margin, and they may already be set by the user for print output. New lengths <code>\HTMLvleftskip</code> and <code>\HTMLleftmargini</code> are provided to control the margins in HTML output. These new lengths may be set by the user before any <code>verse</code> environment, and persist until they are manually changed again. One reason to change <code>\HTMLleftmargini</code> is if there is a wide <code>\flagverse</code> in use, such as the word “Chorus”, in which case the value of <code>\HTMLleftmargini</code> should be set to a wide enough length to contain “Chorus”. The default is wide enough for a stanza number.</p>
--	--

Horizontal spacing relies on `pdftotext`’s ability to discern the `-layout` 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.

for HTML & PRINT: 1765 `\begin{warpall}`

The following lengths 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 `\TMLvleftskip` Sets `\vleftskip` inside a `verse` environment in HTML.

```

1766 \newlength{\HTMLvleftskip}

```

```
1767 \setlength{\HTMLvleftskip}{1em}
```

Len `\TMLleftmargini` Sets `\leftmargini` inside a verse environment in HTML.

```
1768 \newlength{\HTMLleftmargini}
1769 \setlength{\HTMLleftmargini}{4.5em}

1770 \end{warpall}
```

45 Verbatim

for HTML output: 1771 \begin{warpHTML}

Env `verbatim`

```
1772 \AfterEndPreamble{
1773 \AtBeginEnvironment{verbatim}{\LWR@atbeginverbatim{verbatim}\unskip\vspace*{-\baselineskip}}
1774 \AfterEndEnvironment{verbatim}{\unskip\vspace*{-\baselineskip}\LWR@afterendverbatim}
1775 }

1776 \end{warpHTML}
```

46 Fancyvrb

for HTML & PRINT: 1777 \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.

```
1778 \newlength{\VerbatimHTMLWidth}
1779 \setlength{\VerbatimHTMLWidth}{4in}
1780 \end{warpall}
```

for HTML output: 1781 \begin{warpHTML}

Bool `LWR@verbtags` Used to temporarily turn off verbatim tags while doing `VerbatimInput` in the HTML head.

```
1782 \newbool{LWR@verbtags}
1783 \booltrue{LWR@verbtags}
```

For `\VerbatimFootnotes`:

```
1784 \renewcommand{\VerbatimFootnotes}{
1785 \PackageError{lwarp}
1786 {Verbatim footnotes are not yet supported by lwarp.}
1787 {This may be improved when lwarp uses LaTeX footnotes instead of pagenotes.}
1788 }
```

`\LWR@atbeginverbatim` `{\class}`

Encloses a verbatim environment with the given CSS class.

```
1789 \newcommand*{\LWR@atbeginverbatim}[1]
1790 {%
```

Avoid excessive space between lines:

```
1791 \setlength{\parskip}{0ex}%
```

Stop generating HTML paragraph tags:

```
1792 \LWR@stoppars%
```

Create a new `pre` of the given class:

```
1793 \ifbool{\LWR@verbtags}{\LWR@htmltag{pre class="#1"}}{}%
```

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.

```
1794 \LWR@origttfamily%
```

Do not produce HTML tags for `\hspace` inside a verse `par`. Restore plain L^AT_EX `\hspace` functionality:

```
1795 \let\hspace\LWR@orighspace%
1796 }
```

`\LWR@afterendverbatim` Finishes enclosing a verbatim environment.

```
1797 \newcommand*{\LWR@afterendverbatim}{%
```

Remove excess vertical space at the end of the `pre`:

```
1798 \unskip%
```

At the end of the environment, close the `pre`:


```

1799 \ifbool{LWR@verbtags}{\noindent\LWR@htmltag{/pre}
1800
1801 }{}%

```

Resume regular paragraph handling:

```

1802 \LWR@startpars%
1803 }

```

`\LWR@Verbatimclass` Holds the class of the following verbatim.

```

1804 \newcommand*{\LWR@Verbatimclass}{fancyvrb}

```

Env `VerbatimClass` `{(class)}` [*Verbatim options*]

Creates a `Verbatim` enclosed in a DIV of the given class.

```

1805 \NewDocumentEnvironment{VerbatimClass}{m 0{}}
1806 {%
1807 \renewcommand*{\LWR@Verbatimclass}{#1}%
1808 \LWR@origVerbatim[#2]%
1809 }
1810 {\endVerbatim}

```

After the preamble is loaded, after any patches to `Verbatim`:

```

1811 \AfterEndPreamble{

```

Remember the original definition of `Verbatim`:

```

1812 \let\LWR@origVerbatim\Verbatim

```

Env `Verbatim` Patched to place the environment in a `fancyvrb` div, and the label in a `fancyvrblabel` div. Also corrects the left margin for line numbers. Also uses `VerbatimHTMLWidth` to control placement of line numbers on the right. Aligning the right margin requires knowing the width.

```

1813 \renewcommand*{\Verbatim}{%
1814 \renewcommand*{\LWR@Verbatimclass}{fancyvrb}%
1815 \LWR@origVerbatim%
1816 }

```

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.

```

1817 \newcommand*{\LWR@fvstartnone}{%
1818 \LWR@traceinfo{fvstartnone}%
1819 \ifbool{LWR@verbtags}{\hbox to\z@{\LWR@htmltagc{div class="\LWR@Verbatimclass"}}}{}%
1820 \hbox to\z@{\LWR@atbeginverbatim{verbatim}}}%
1821 }
1822
1823 \newcommand*{\LWR@fvendnone}{%
1824 \LWR@traceinfo{fvendnone}%
1825 \hbox to\z@{\LWR@afterendverbatim}%
1826 \ifbool{LWR@verbtags}{\hbox to\z@{\LWR@htmltagc{/div}}}{}%
1827 }
1828
1829 \newcommand*{\LWR@fvstartsingle}{%
1830 \LWR@traceinfo{fvstartsingle}%
1831 \LWR@fvstartnone%
1832 \FV@BeginListFrame@Single%
1833 }
1834
1835 \newcommand*{\LWR@fvendsingle}{%
1836 \LWR@traceinfo{fvendsingle}%
1837 \FV@endListFrame@Single%
1838 \LWR@fvendnone%
1839 }
1840
1841 \newcommand*{\LWR@fvstartline}{%
1842 \LWR@traceinfo{fvstartline}%
1843 \LWR@fvstartnone%
1844 \FV@BeginListFrame@Lines%
1845 }
1846
1847 \newcommand*{\LWR@fvendline}{%
1848 \LWR@traceinfo{fvendline}%
1849 \FV@endListFrame@Lines%
1850 \LWR@fvendnone%
1851 }

```

The following patches select the start/left/right/end behaviors depending on **frame**.
Original code is from the fancyvrb package.

```

1852 \def\FV@Frame@none{%
1853 \let\FV@BeginListFrame\LWR@fvstartnone%
1854 \let\FV@LeftListFrame\relax%
1855 \let\FV@RightListFrame\relax%
1856 \let\FV@endListFrame\LWR@fvendnone%
1857
1858 \def\FV@Frame@single{%
1859 \let\FV@BeginListFrame\LWR@fvstartsingle%
1860 \let\FV@LeftListFrame\FV@LeftListFrame@Single%
1861 \let\FV@RightListFrame\FV@RightListFrame@Single%

```

```

1862 \let\FV@EndListFrame\LWR@fvendsingle}
1863
1864 \def\FV@Frame@lines{%
1865 \let\FV@BeginListFrame\LWR@fvstartline%
1866 \let\FV@LeftListFrame\relax%
1867 \let\FV@RightListFrame\relax%
1868 \let\FV@EndListFrame\LWR@fvendline}
1869
1870 \def\FV@Frame@topline{%
1871 \let\FV@BeginListFrame\LWR@fvstartline%
1872 \let\FV@LeftListFrame\relax%
1873 \let\FV@RightListFrame\relax%
1874 \let\FV@EndListFrame\LWR@fvendnone}
1875
1876 \def\FV@Frame@bottomline{%
1877 \let\FV@BeginListFrame\LWR@fvstartnone%
1878 \let\FV@LeftListFrame\relax%
1879 \let\FV@RightListFrame\relax%
1880 \let\FV@EndListFrame\LWR@fvendline}
1881
1882 \def\FV@Frame@leftline{%
1883 % To define the \FV@FrameFillLine macro (from \FV@BeginListFrame)
1884 \ifx\FancyVerbFillColor\relax%
1885 \let\FV@FrameFillLine\relax%
1886 \else%
1887 \@tempdima\FV@FrameRule\relax%
1888 \multiply\@tempdima-\tw@%
1889 \edef\FV@FrameFillLine{%
1890 {\noexpand\FancyVerbFillColor{\vrule\@width\number\@tempdima sp}}%
1891 \kern-\number\@tempdima sp}}%
1892 \fi%
1893 \let\FV@BeginListFrame\LWR@fvstartnone%
1894 \let\FV@LeftListFrame\FV@LeftListFrame@Single%
1895 \let\FV@RightListFrame\relax%
1896 \let\FV@EndListFrame\LWR@fvendnone}

```

Adds the optional label to the top and bottom edges. Original code is from the `fancyvrb` package.

```

1897 \def\FV@SingleFrameLine#1{%
1898 \hbox to\z@{%
1899 % \kern\leftmargin
1900 \ifnum#1=\z@\relax
1901 \let\FV@Label\FV@LabelBegin
1902 \else
1903 \let\FV@Label\FV@LabelEnd
1904 \fi
1905 \ifx\FV@Label\relax
1906 % \FancyVerbRuleColor{\vrule \@width\linewidth \@height\FV@FrameRule}%

```

```

1907     \else
1908         \ifnum#1=\z@
1909 %           \setbox\z@\hbox{\strut\enspace\FV@LabelBegin\enspace\strut}%
1910           \ifx\FV@LabelPositionTopLine\relax
1911 \else
1912     \LWR@htmltagc{div class="fancyvrblabel"}
1913 \LWR@origtextrm{\FV@LabelBegin}% \textrm preserves emdash
1914 \LWR@htmltagc{/div}
1915 \fi
1916     \else
1917 %           \setbox\z@\hbox{\strut\enspace\FV@LabelEnd\enspace\strut}%
1918           \ifx\FV@LabelPositionBottomLine\relax
1919 \else
1920     \LWR@htmltagc{div class="fancyvrblabel"}
1921 \LWR@origtextrm{\FV@LabelEnd}
1922 \LWR@htmltagc{/div}
1923 \fi
1924     \fi
1925
1926     \fi
1927     \hss
1928 }
1929 }

```

Processes each line, adding optional line numbers. Original code is from the fancyvrb package.

```

1930 \def\FV@ListProcessLine#1{%
1931     \hbox to \hsize{%
1932 %         \kern\leftmargin
1933         \hbox to \VerbatimHTMLWidth {%
1934             \ifcvoid\FV@LeftListNumber}{-}{\kern 2.5em}%
1935 \FV@LeftListNumber%
1936 %         \FV@LeftListFrame
1937         \FancyVerbFormatLine{#1}%
1938         \hss%
1939 %         \FV@RightListFrame
1940         \FV@RightListNumber%
1941 }%
1942     \hss% required to avoid underfull hboxes
1943 }
1944 }

```

Env BVerbatim

```

1945 \AtBeginEnvironment{BVerbatim}
1946 {
1947 \LWR@atbeginverbatim{bverbatim}
1948

```

```

1949 }
1950
1951 \AfterEndEnvironment{BVerbatim}
1952 {
1953 \leavevmode\par\vspace{-\baselineskip}
1954 \LWR@afterendverbatim
1955 }

```

Env **LVerbatim** No changes required.

End of the modifications to make at the end of the preamble:

```

1956 } % \AfterEndPreamble

```

\UseVerbatim $\{\langle text \rangle\}$

No changes required.

```

1957 \end{warpHTML}

```

47 Theorems

\newtheorem $\{\langle text \rangle\}$ [$\langle counter \rangle$] -or- [$\langle oldname \rangle$] $\{\langle text \rangle\}$

A few minor changes are made to supply HTML tags.

- The entire theorem is placed into a div of class **theorem**.
- 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: 1958 \begin{warpHTML}

\@begintheorem $\{\langle name \rangle\}$ $\{\langle number \rangle\}$

```

1959 \renewcommand{\@begintheorem}[2]{%
1960 \LWR@htmldivclass{theorem}
1961 \InlineClass{theoremlabel}{#1\ #2\ }
1962 \LWR@htmldivclass{theoremcontents}
1963 }

```

```

\@opargbegintheorem {\langle name \rangle} {\langle number \rangle} {\langle oparg \rangle}

1964 \renewcommand{\@opargbegintheorem}[3]{%
1965 \BlockClass{theorem}
1966 \InlineClass{theoremlabel}{#1\ #2\ (#3)\ }
1967 \BlockClass{theoremcontents}
1968 }

\@endtheorem


1969 \renewcommand*\@endtheorem{%
1970 \endBlockClass% theoremcontents
1971 \endBlockClass% theorem
1972 }

1973 \end{warpHTML}

```

48 Lists

If using `babel` with French, use

 **French** `\frenchbsetup{StandardLists=true}` to preserve the special HTML and `enumitem` list handling.

enumitem `enumitem` is pre-loaded during HTML output. Many of the spacing options are rendered irrelevant by `pdftotext` and HTML. Numbering, labels, and `\newlist` function correctly.

48.1 Itemize

for HTML output: 1974 `\begin{warpHTML}`

```
1975 \let\LWR@origitem\item
```

```
\LWR@itemizeitem [\langle label \rangle]
```

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.

```

1976 \newcommand*\LWR@itemizeitem{%
1977 \LWR@stoppars%
1978 \LWR@startnewdepth{\LWR@depthlistitem}{\LWR@printcloselistitem{}}%

```

```

1979 \LWR@htmltag{li}%
1980 \LWR@startpars%
1981 \LWR@origitem%
1982 }

```

To have a blank item, use `\mbox{}`. 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}
...

```

Env **itemize** [*enumitem options*]

```

1983 \AtBeginEnvironment{itemize}{\LWR@itemizestart}
1984
1985 \newcommand*{\LWR@itemizestart}{%
1986 \LWR@stoppars%
1987 \LWR@pushoneclose{\LWR@depthlist}{\LWR@printcloseitemize{}}%
1988 \LWR@htmltag{ul style="list-style-type:none">{}}%
1989 \LWR@startpars%
1990 \let\item\LWR@itemizeitem%
1991 }
1992
1993 \AtEndEnvironment{itemize}{\LWR@itemizeend}
1994
1995 \newcommand*{\LWR@itemizeend}{%
1996 \LWR@stoppars%
1997 \LWR@closeprevious{\LWR@depthlistitem}%
1998 \LWR@closeoneprevious{}%
1999 \LWR@startpars%
2000 }

```

48.2 Enumerate

An HTML unordered list is used with customized L^AT_EX-generated labels.

Env **enumerate** [*enumitem options*]

```

2001 \AtBeginEnvironment{enumerate}{\LWR@enumeratestart}
2002
2003 \newcommand*{\LWR@enumeratestart}{%

```

```

2004 \LWR@stoppars%
2005 \LWR@pushoneclose{\LWR@depthlist}{\LWR@printcloseitemize{}}%
2006 \LWR@htmltag{ul style="list-style-type:none">{}}%
2007 \LWR@startpars%
2008 \let\item\LWR@itemizeitem%
2009 }
2010
2011
2012 \AtEndEnvironment{enumerate}{\LWR@enumerateend}
2013
2014 \newcommand*{\LWR@enumerateend}{%
2015 \LWR@stoppars%
2016 \LWR@closeprevious{\LWR@depthlistitem}%
2017 \LWR@closeoneprevious{}}%
2018 \LWR@startpars%
2019 }

```

48.3 Description

`\LWR@descitem` [*label*] Handles an `\item` inside a description.

```

2020 \newcommand*{\LWR@descitem}[1][]%
2021 {%
2022 \LWR@stoppars%
2023 \LWR@setlatestname{#1}%
2024 \LWR@startnewdepth{\LWR@depthlistitem}{\LWR@printclosedescitem{}}%
2025 \LWR@origitem[]%

```

Be sure the label doesn't print to the left of the rest of the file:

```

2026 \LWR@origspace{1in}
2027 \LWR@htmltag{dt}#1\LWR@htmltag{/dt}%
2028 \LWR@orignewline%
2029 \LWR@htmltag{dd}%
2030 \LWR@startpars%
2031 }

```

Env `description` [*enumitem options*]

```

2032 \AtBeginEnvironment{description}{\LWR@descriptionstart}
2033
2034 \newcommand*{\LWR@descriptionstart}{%
2035 \LWR@stoppars%
2036 \LWR@pushoneclose{\LWR@depthlist}{\LWR@printclosedescription{}}%
2037 \LWR@htmltag{dl}%
2038 \LWR@startpars%

```



```

2039 \let\item\LWR@descitem%
2040 }
2041
2042 \AtEndEnvironment{description}{\LWR@descriptionend}
2043
2044 \newcommand*{\LWR@descriptionend}{%
2045 \LWR@stoppars%
2046 \LWR@closeprevious{\LWR@depthlistitem}%
2047 \LWR@closeoneprevious}%
2048 \LWR@startpars%
2049 }

```

`\newlist` $\{\langle name \rangle\} \{\langle type \rangle\} \{\langle maxdepth \rangle\}$

`\renewlist` $\{\langle name \rangle\} \{\langle type \rangle\} \{\langle maxdepth \rangle\}$

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.

```

2050 \let\LWR@orignewlist\newlist
2051
2052 \renewcommand*{\newlist}[3]{%
2053 \LWR@orignewlist{#1}{#2}{#3}%
2054 \AtBeginEnvironment{#1}{\csuse{\LWR@#2start}}%
2055 \AtEndEnvironment{#1}{\csuse{\LWR@#2end}}%
2056 }

```

2057 \end{warpHTML}

49 Tabular

This is arguably the most complicated part of the entire package. Numerous tricks are employed to handle the syntax which is involved.

Limitations:

column types

- Vertical rules are not yet supported.
- `*` in a column specification is not used (so far). Repeat the column type the correct number of times.
- Only one each of `@`, `!`, `>`, and `<` may be used at each column, and they are used in that order.
- `\newcolumnntype` is ignored; unknown column types are set to 1.

⚠ `\multirow &`
`\multicolumn`

⚠ `\multirow`

`\multirow` with rules

rule at last row

⚠ paragraphs

`\cmidrule` width, trim

`longtable` headings

⚠ `\warpprintonly`

⚠ `S` columns

- `tabularx` ignores the width, but `X` columns do produce paragraph columns or multicolumns.
- `Multirow` and `multicolumn` cannot be used at the same time. (No rectangular holes wider than one column or taller than one row.)
- 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.
- If a `multirow` reaches to the bottom of a table, and `\bottomrule` does not go over to that edge, try adding a line of empty cells below the `\bottomrule`. This may be a browser bug.
- If a `\midrule` is desired after the last row, an additional row of blank cells must be used.
- Multiple paragraphs in one cell of a `p`, `b`, `m` column must have `\newline` between paragraphs.
- `\cmidrule` does not support width or trim options due to CSS limitations.
- For `longtable`, place headings and footings which do not apply to HTML inside `\warpprintonly{}`.
- For `\toprule` and `\bottomrule`, when combined with a `warpprint` or `warppHTML` 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 relevant to HTML output.
- 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 \\}`
`\warppHTMLonly{1 & 2 & \multirow{2}{2cm}{Text} & 3 \\}`

49.1 Token lookahead

Used by `\LWR@futurenonospacelet` to look at the next token.

for HTML output: 2058 `\begin{warppHTML}`

`\LWR@mynexttoken`

```
2059 \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`

```
2060 \def\LWR@futurenonspacelet#1{\def\LWR@cs{#1}%
2061 \afterassignment\LWR@fnsllone\let\nexttoken= }
2062 \def\LWR@fnsllone{\expandafter\futurelet\LWR@cs\LWR@fnslltwo}
2063 \def\LWR@fnslltwo{%
2064 \expandafter\ifx\LWR@cs\@sptoken\let\next=\@BTfnsllthree%
2065 \else\let\next=\nexttoken\fi\next}
2066 \def\@BTfnsllthree{\afterassignment\LWR@fnsllone\let\next= }
```

`\LWR@getmynexttoken` Looks ahead and copies the next token into `\LWR@mynexttoken`.

```
2067 \newcommand*{\LWR@getmynexttoken}{%
2068 % nothing must follow this next line
2069 \LWR@futurenonspacelet\LWR@mynexttoken\LWR@tabledatacolumnntag
2070 }
```

49.2 Booleans

Bool `LWR@startedrow` True if should print a row tag before this column.

```
2071 \newbool{LWR@startedrow}
2072 \boolfalse{LWR@startedrow}
```

Bool `LWR@doinghline` True if the next row will have an hline above it.

```
2073 \newbool{LWR@doinghline}
2074 \boolfalse{LWR@doinghline}
```

Bool `LWR@doingtbrule` True if the next row will have a top/bottom rule above it.

```
2075 \newbool{LWR@doingtbrule}
2076 \boolfalse{LWR@doingtbrule}
```

Bool `LWR@tableparcell` True if are handling a paragraph inside a table cell, so must close the paragraph

tag before moving on.

```
2077 \newbool{LWR@tableparcell}
```

Bool LWR@skippingmrowcell True if are doing an empty multi-row cell, and thus there is no data tag to close.

```
2078 \newbool{LWR@skippingmrowcell}
```

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.

```
2079 \newbool{LWR@intabularmetadata}
```

```
2080 \boolfalse{LWR@intabularmetadata}
```

49.3 Handling & and !

For technical discussion regarding problems redefining \&, See:

[http://tex.stackexchange.com/questions/11638/
where-do-i-find-futurelets-nasty-behaviour-documented/11860#11860](http://tex.stackexchange.com/questions/11638/where-do-i-find-futurelets-nasty-behaviour-documented/11860#11860)

\LWR@closetabledatacell If LWR@skippingmrowcell then there is no data tag to close. Otherwise, close any paragraphs, then close the data tag.

```
2081 \newcommand*{\LWR@closetabledatacell}{%
2082 \global\booltrue{LWR@intabularmetadata}%
2083 \ifbool{LWR@exitingtabular}{}%
2084 {% not exiting tabular
2085 \ifbool{LWR@skippingmrowcell}{}%
2086 {% not skippingmrowcell
```

Insert any < then any @ and ! column contents:

```
2087 \unskip%
2088 \LWR@getexpparray{LWR@colafterspec}{\theLWR@tablecolspos}%
2089 \LWR@getexpparray{LWR@colatspec}{\theLWR@tablecolspos}%
2090 \LWR@getexpparray{LWR@colbangspec}{\theLWR@tablecolspos}%
```

Close paragraphs:

```
2091 \ifbool{LWR@tableparcell}{\LWR@stoppars}{}%
2092 \global\boolfalse{LWR@tableparcell}%
```

Close the table data cell:

```
2093 \unskip\LWR@htmltag{/td}\LWR@orignewline%
2094 }% not skipping mrowcell
```

```

2095 }% not exiting tabular
2096 \global\boolfalse{LWR@skippingmrowcell}%
2097 }

```

LWR@tabulardepth tracks whether & is being used inside a `tabular`.

```

2098 \newcounter{LWR@tabulardepth}
2099 \setcounter{LWR@tabulardepth}{0}
2100

```

When not used inside a `tabular`, & performs its original function as recorded here (with catcode 4).

```

2101 \def\LWR@origampmacro{&}

```

See below for why the group is used.

```

2102 \begingroup

```

& 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.

The `\catcode` allows the & character to be redefined.

```

2103 \catcode'\&=\active
2104
2105 \gdef&{%
2106 \ifthenelse{\cnttest{\value{LWR@tabulardepth}}{>}{0}}{%
2107 {%

```

If not skipping a multirow cell, close the current data cell.

```

2108 \unskip%
2109 \LWR@closetabledatacell%

```

Move to the next column.

```

2110 \addtocounter{LWR@tablecolspos}{1}%

```

Look at the next token to decide multi or single column data tag.

```

2111 \LWR@getmynexttoken%
2112 }%

```

If not inside a `tabular`, performs the original action:

```

2113 {\LWR@origampmacro}%
2114 }
2115 \endgroup

```

Outside the group, & is left its original catcode for now.

tikz package seems to require & be left alone until after tikz has been loaded.

\LWR@lwarpStart finally makes & active at the beginning of the HTML conversion.

49.4 Handling \\

Inside tabular, \\ is redefined to \LWR@tabularendofline

Throws away options \\[dim] or *

\LWR@tabularendofline

```

2116 \NewDocumentCommand{\LWR@tabularendofline}{s o}
2117 {%
2118 \LWR@closetabledatacell%

```

Finish the previous row:

```

2119 \LWR@htmltag{/tr}\LWR@orignewline
2120 \global\booltrue{\LWR@intabularmetadata}

```

Not yet started a table row:

```

2121 \global\boolfalse{\LWR@startedrow}

```

Additional setup:

```

2122 \global\boolfalse{\LWR@doinghline}%
2123 \global\boolfalse{\LWR@doingtbrule}%
2124 \LWR@clearmidrules%

```

Start at first column:

```

2125 \setcounter{\LWR@tablecolspos}{1}

```

Look at the next token to decide between single column data tag or a special case:

```

2126 \LWR@getmynexttoken%
2127 }

```

49.5 Variables

```

2128 \newcommand*{\LWR@colsresult}{}%temp storage for column format results
2129 \newcommand*{\LWR@pposition}{%
2130 \newcommand*{\LWR@pleft}{%
2131 \newcommand*{\LWR@pright}{%

```

\LWR@tablecolspec Holds the parsed column specification, of total width **LWR@tabletotalcols**.
Will contain a string such as `llrrccpc`, exactly one letter per column, without `@`, `>`, `<`, or the vertical pipe.

```

2132 \newcommand*{\LWR@tablecolspec}{%

```

\LWR@strresult Holds the result of **Str** functions.

```

2133 \newcommand*{\LWR@strresult}{%

```

\LWR@origcolspec Holds the original column specs given to **tabular**.

```

2134 \newcommand*{\LWR@origcolspec}{%

```

Ctr LWR@tablecolswidth Holds the width of the table specification.
(This is not the total # columns.)

```

2135 \newcounter{LWR@tablecolswidth}

```

Ctr LWR@tablecolspos Where are currently looking into the table column specification.

```

2136 \newcounter{LWR@tablecolspos}

```

Ctr LWR@tabletotalcols Holds the final number of table columns.

```

2137 \newcounter{LWR@tabletotalcols}

```

Ctr LWR@tabletotalcolsnext Holds the next column while parsing. Is one more than **LWR@tabletotalcols**.

```

2138 \newcounter{LWR@tabletotalcolsnext}

```

LWR@colatspec A data array of specifications for `@` columns. The leftmost's index is **leftedge**, the others are counter values. See section 23.

LWR@colbangspec A data array of specifications for `!` columns. The leftmost's index is **leftedge**, the others are counter values. See section 23.

LWR@colbeforespec A data array of specifications for `>` columns.

LWR@colafterspec A data array of specifications for `<` columns.

49.6 Parsing @, >, <, ! columns

`\LWR@parseatcolumn` Handles @{text} columns.

```
2139 \newcommand*{\LWR@parseatcolumn}{%
```

Move to the next token after the '@':

```
2140 \LWR@traceinfo{at column}%
2141 \addtocounter{LWR@tablecolspos}{1}%
```

Read the next token into `\LWR@strresult`, expanding once:

```
2142 \LWR@traceinfo{about to read the next token:}%
2143 \expandarg%
2144 \StrChar{\LWR@origcolspec}{\theLWR@tablecolspos}[\LWR@strresult]
2145 \fullexpandarg%
```

Store the result into a data array, expanding once out of `\LWR@strresult`:

```
2146 \LWR@traceinfo{have now read the next token}%
2147 \ifthenelse{\cnttest{\value{LWR@tabletotalcols}}=0}{
2148 {% left edge of the table:
2149 \LWR@traceinfo{at the left edge}%
2150 \LWR@setexparray{LWR@colatspec}{leftedge}{\LWR@strresult}%
2151 }%
2152 {% not at the left edge:
2153 \LWR@traceinfo{not at the left edge}%
2154 \LWR@setexparray{LWR@colatspec}{\theLWR@tabletotalcols}{\LWR@strresult}%
2155 \LWR@traceinfo{at \theLWR@tabletotalcols: %
2156 \LWR@getexparray{LWR@colatspec}{\theLWR@tabletotalcols}}!}%
2157 \let\LWR@strresult\relax%
2158 \booltrue{LWR@validtablecol}%
2159 }%
2160 }
```

`\LWR@parsebangcolumn`

```
2161 \newcommand*{\LWR@parsebangcolumn}{%
```

Move to the next token after the '!':

```
2162 \LWR@traceinfo{bang column}%
2163 \addtocounter{LWR@tablecolspos}{1}%
```

Read the next token into `\LWR@strresult`, expanding once:


```

2164 \LWR@traceinfo{about to read the next token:}%
2165 \expandarg%
2166 \StrChar{\LWR@origcolspec}{\theLWR@tablecolspos}[\LWR@strresult]
2167 \fullexpandarg%

```

Store the result into a data array, expanding once out of \LWR@strresult:

```

2168 \LWR@traceinfo{have now read the next token}%
2169 \ifthenelse{\cnttest{\value{LWR@tabletotalcols}}=0}{
2170 {% left edge of the table:
2171 \LWR@traceinfo{at the left edge}%
2172 \LWR@setexparray{LWR@colbangspec}{leftedge}{\LWR@strresult}%
2173 }%
2174 {% not at the left edge:
2175 \LWR@traceinfo{not at the left edge}%
2176 \LWR@setexparray{LWR@colbangspec}{\theLWR@tabletotalcols}{\LWR@strresult}%
2177 \LWR@traceinfo{bang \theLWR@tabletotalcols: \LWR@colbangspec(\theLWR@tabletotalcols)!}%
2178 }%
2179 \let\LWR@strresult\relax%
2180 \booltrue{LWR@validtablecol}%
2181 }

```

\LWR@parsebeforecolumn Handles >{text} columns.

```

2182 \newcommand*{\LWR@parsebeforecolumn}{%

```

Move to the next token after the '>':

```

2183 \addtocounter{LWR@tablecolspos}{1}%

```

Read the next token, expanding once into \LWR@strresult:

```

2184 \expandarg%
2185 \StrChar{\LWR@origcolspec}{\theLWR@tablecolspos}[\LWR@strresult]%
2186 \fullexpandarg%

```

Store the result into a data array, expanding once out of \LWR@strresult:

```

2187 \LWR@setexparray{LWR@colbeforespec}{\theLWR@tabletotalcolsnext}{\LWR@strresult}%
2188 \let\LWR@strresult\relax%
2189 \booltrue{LWR@validtablecol}%
2190 }

```

\LWR@parseaftercolumn Handles <{text} columns.

```

2191 \newcommand*{\LWR@parseaftercolumn}{%

```

Move to the next token after the '<':

```
2192 \addtocounter{LWR@tablecolspos}{1}%
```

Read the next token, expanding once into \LWR@strresult:

```
2193 % \StrChar{#1}{\theLWR@tablecolspos}[\LWR@strresult]
2194 \expandarg%
2195 \StrChar{\LWR@origcolspec}{\theLWR@tablecolspos}[\LWR@strresult]%
2196 \fullexpandarg%
```

Store the result into a data array, expanding once out of \LWR@strresult:

```
2197 \LWR@setexparray{LWR@colafterspec}{\theLWR@tabletotalcols}{\LWR@strresult}%
2198 \let\LWR@strresult\relax%
2199 \booltrue{LWR@validtablecol}%
2200 }
```

\LWR@parseskipcolumn Handles columns to skip, such as the vertical bar.

```
2201 \newcommand*{\LWR@parseskipcolumn}{%
2202 \booltrue{LWR@validtablecol}%
2203 }
```

49.7 Parsing 'l', 'c', or 'r' columns

\LWR@parsenormalcolumn $\{\langle thiscolumn \rangle\}$

Add to the accumulated column specs, advance counters, and pre-clear another column of at, before, and after specs.

```
2204 \newcommand*{\LWR@parsenormalcolumn}[1]{%
2205 \appto\LWR@tablecolspec{#1}%
2206 \addtocounter{LWR@tabletotalcols}{1}%
2207 \addtocounter{LWR@tabletotalcolsnext}{1}%
2208 \LWR@setexparray{LWR@colatspec}{\theLWR@tabletotalcolsnext}{\relax}%
2209 \LWR@setexparray{LWR@colbangspec}{\theLWR@tabletotalcolsnext}{\relax}%
2210 \LWR@setexparray{LWR@colbeforespec}{\theLWR@tabletotalcolsnext}{\relax}%
2211 \LWR@setexparray{LWR@colafterspec}{\theLWR@tabletotalcolsnext}{\relax}%
2212 \booltrue{LWR@validtablecol}%
2213 }
```

49.8 Parsing ‘p’, ‘m’, or ‘b’ columns

`\LWR@parsepcolumn` $\{ \langle thiscolumn \rangle \}$ The width will be ignored.

```
2214 \newcommand*\LWR@parsepcolumn}[1]{%
```

Converts to the given column type.

```
2215 \LWR@parsenormalcolumn{#1}%
```

skips the following width

```
2216 \addtocounter{LWR@tablecolspos}{1}%
```

```
2217 }
```

49.9 Parsing ‘D’ columns

From the dcolumn package.

`\LWR@parseDcolumn` $\{ \langle thiscolumn \rangle \}$ The three parameters will be ignored.

```
2218 \newcommand*\LWR@parseDcolumn}[1]{%
```

Converts to the given column type.

```
2219 \LWR@parsenormalcolumn{#1}%
```

Skips the following three parameters.

```
2220 \addtocounter{LWR@tablecolspos}{3}%
```

```
2221 }
```

49.10 Parsing the column specifications



HTML CSS cannot exactly match the L^AT_EX concept of a baseline for a table row. Table 6 shows the L^AT_EX 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 7 for details.

Table 7 describes how each kind of column is converted to HTML.

Bool `LWR@validtablecol` True if found a valid table column type.

```
2222 \newbool{LWR@validtablecol}
```

Table 6: Tabular baseline

l	p	m	b	r
			bot	
		mid	bot	
l	par	mid	bot	r
	par	mid		
	par			

Table 7: 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 6, \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'. From the `siunitx` package.
- D:** Converted to 'c'. From the `dcolumn` package.
- @, !, >, <:** One each, in that order.
- Unknown:** Converted to 'l'.
- \newcolumn:** Currently treated as unknown.
-

`\LWR@parsetablecols` $\{\langle colspecs \rangle\}$

Scans the column specification left to right.

Builds `\LWR@tablecolspec` with the final specification, one column per entry. The number of final columns is stored in `LWR@tabletotalcols`.

```
2223 \newcommand*{\LWR@parsetablecols}[1]{%
2224 \LWR@traceinfo{\LWR@parsetablecols started}%
```

Remember the original supplied column spec:

```
2225 \renewcommand*{\LWR@origcolspec}{#1}%
```

Clear the parsed resulting column spec:

```
2226 \renewcommand*{\LWR@tablecolspec}{}%
```

Total number of columns found so far. Also pre-initialize the first several columns of specs:

```
2227 \setcounter{LWR@tabletotalcols}{0}%
2228 \setcounter{LWR@tabletotalcolsnext}{1}%
2229 \LWR@setexparray{\LWR@colatspec}{leftedge}{\relax}%
2230 \LWR@setexparray{\LWR@colatspec}{1}{\relax}%
2231 \LWR@setexparray{\LWR@colatspec}{2}{\relax}%
2232 \LWR@setexparray{\LWR@colatspec}{3}{\relax}%
2233 \LWR@setexparray{\LWR@colbangspec}{leftedge}{\relax}%
2234 \LWR@setexparray{\LWR@colbangspec}{1}{\relax}%
2235 \LWR@setexparray{\LWR@colbangspec}{2}{\relax}%
2236 \LWR@setexparray{\LWR@colbangspec}{3}{\relax}%
2237 \LWR@setexparray{\LWR@colbeforespec}{1}{\relax}%
2238 \LWR@setexparray{\LWR@colbeforespec}{2}{\relax}%
2239 \LWR@setexparray{\LWR@colbeforespec}{3}{\relax}%
2240 \LWR@setexparray{\LWR@colafterspec}{1}{\relax}%
2241 \LWR@setexparray{\LWR@colafterspec}{2}{\relax}%
2242 \LWR@setexparray{\LWR@colafterspec}{3}{\relax}%
```

Starting at the first column specification:

```
2243 \setcounter{LWR@tablecolspos}{1}%
```

Place the colspecs string length into `\LWR@strresult`, and remember the number of characters in the column specification:

```
2244 \LWR@traceinfo{about to StrLen}%
2245 \noexpandarg%
2246 \StrLen{#1}[\LWR@strresult]%
2247 \fullexpandarg%
```

```
2248 \LWR@traceinfo{finished StrLen}%
2249 \setcounter{LWR@tablecolswidth}{\LWR@strresult}%
```

Scan through the column specifications:

```
2250 \whileof{\not\value{LWR@tablecolspos}>\value{LWR@tablecolswidth}}{%
```

Place the next single-character column type into \LWR@strresult:

```
2251 \noexpandarg%
2252 \StrChar{#1}{\theLWR@tablecolspos}[\LWR@strresult]%
2253 \fullexpandarg%
```

Not yet found a valid column type

```
2254 \boolfalse{LWR@validtablecol}%
```

⚠ Note that the parameter for a p{spec} column is a token list which will NOT match l,c,r,p.

```
2255 \IfStrEq{\LWR@strresult}{l}{\LWR@parsenormalcolumn{l}}{%
2256 \IfStrEq{\LWR@strresult}{c}{\LWR@parsenormalcolumn{c}}{%
2257 \IfStrEq{\LWR@strresult}{r}{\LWR@parsenormalcolumn{r}}{%
2258 \IfStrEq{\LWR@strresult}{S}{\LWR@parsenormalcolumn{r}}{%
2259 \IfStrEq{\LWR@strresult}{\detokenize{@}}{\LWR@parseatcolumn}{}%
2260 \IfStrEq{\LWR@strresult}{!}{\LWR@parsebangcolumn}{}%
2261 \IfStrEq{\LWR@strresult}{>}{\LWR@parsebeforecolumn}{}%
2262 \IfStrEq{\LWR@strresult}{<}{\LWR@parseaftercolumn}{}%
2263 \IfStrEq{\LWR@strresult}{|}{\LWR@parseskipcolumn}{}%
2264 \IfStrEq{\LWR@strresult}{p}{\LWR@parsepcolumn{p}}{%
2265 \IfStrEq{\LWR@strresult}{m}{\LWR@parsepcolumn{m}}{%
2266 \IfStrEq{\LWR@strresult}{b}{\LWR@parsepcolumn{b}}{%
```

From the dcolumn package:

```
2267 \IfStrEq{\LWR@strresult}{D}{\LWR@parseDcolumn{c}}{%
```

From the tabularx package. X column has no parameter, but will be given paragraph tags.

```
2268 \IfStrEq{\LWR@strresult}{X}{\LWR@parsenormalcolumn{X}}{%
```

Many people define centered versions “P”, “M”, and “B”:
`\newcolumntype{P}[1]{>\centering\arraybackslashp{#1}}`

```
2269 \IfStrEq{\LWR@strresult}{P}{\LWR@parsepcolumn{P}}{%
```

```

2270 \IfStrEq{\LWR@strresult}{M}{\LWR@parsepcolumn{M}}{}%
2271 \IfStrEq{\LWR@strresult}{B}{\LWR@parsepcolumn{B}}{}%

```

If this column was an invalid column type, convert it to a p column:

```

2272 \ifbool{\LWR@validtablecol}{}{}%
2273 \LWR@parsenormalcolumn{1}%
2274 }%
2275 \addtocounter{\LWR@tablecolspos}{1}%
2276 }%
2277 }%

```

49.11 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.

```

2278 \newcommand*{\LWR@maybenewtablerow}
2279 {%
2280 \ifbool{\LWR@startedrow}%
2281 {}% started the row
2282 {}% not started the row

```

Remember that now have started the row:

```

2283 \global\booltrue{\LWR@startedrow}%

```

Create the row tag, with a class if necessary.

```

2284 \global\booltrue{\LWR@intabularmetadata}%
2285 \ifbool{\LWR@doinghline}%
2286 {\LWR@htmltag{tr class="hline"{} }\LWR@orignewline}%
2287 {}% not doing hline
2288 \ifbool{\LWR@doingtbrule}%
2289 {\LWR@htmltag{tr class="tbrule"{} }\LWR@orignewline}%
2290 {\LWR@htmltag{tr} \LWR@orignewline}%
2291 }% end of not doing hline
2292 }% end of not started the row
2293 }

```

49.12 Data opening tag

`\LWR@tabledatasinglecolumnntag` Print a table data opening tag with style for alignment

```

2294 \newcommand*{\LWR@tabledatasinglecolumnntag}%
2295 {%
2296 \LWR@maybenewtablerow%

```

If have found the end of tabular command, do not create the next data cell:

```

2297 \ifbool{\LWR@exitingtabular}{}%
2298 {% not exiting tabular

```

Fetch the current column's alignment character into \LWR@strresult:

```

2299 \StrChar{\LWR@tablecolspec}{\the\LWR@tablecolspos}[\LWR@strresult]%

```

print the start of a new table data cell:

```

2300 \LWR@htmltag{td class="td%

```

append this column's spec:

```

2301 \LWR@strresult%

```

If this column has a cmidrule, add “rule” to the end of the HTML class tag:

```

2302 \ifthenelse{\equal{\LWR@getexparray{\LWR@midrules}{\the\LWR@tablecolspos}}{Y}}{\rule}{}%
2303 "{}}%

```

If this is a p, m, b, or X column, allow paragraphs:

```

2304 \ifthenelse{%
2305 \equal{\LWR@strresult}{p}\OR%
2306 \equal{\LWR@strresult}{m}\OR%
2307 \equal{\LWR@strresult}{b}\OR%
2308 \equal{\LWR@strresult}{P}\OR%
2309 \equal{\LWR@strresult}{M}\OR%
2310 \equal{\LWR@strresult}{B}\OR%
2311 \equal{\LWR@strresult}{X}%
2312 }%
2313 {% allow pars
2314 \LWR@startpars%
2315 \global\booltrue{\LWR@tableparcell}%
2316 }% allow pars
2317 {}% no pars

```

Print the @ and ! contents before first column, and then the > contents:

```

2318 \ifthenelse{\cnttest{\value{\LWR@tablecolspos}}=1}%
2319 {%
2320 \LWR@getexparray{\LWR@colatspec}{leftedge}%
2321 \LWR@getexparray{\LWR@colbangspec}{leftedge}%

```



```

2322 }% left edge
2323 {}% not left edge
2324 \LWR@getexparray{LWR@colbeforespec}{\theLWR@tablecolspos}%
2325 \global\boolfalse{LWR@intabularmetadata}%
2326 }% not exiting tabular
2327 }%

```

49.13 Midrules

LWR@midrules LWR@midrules is a data array (section 23) of columns containing Y if a midrule should be created for each column.

Ctrl LWR@midrulecounter Indexes across the LWR@midrules data array.

```
2328 \newcounter{LWR@midrulecounter}
```

\LWR@clearmidrules Start new midrules. Called at beginning of tabular and also at \.

Clears all LWR@midrules markers for this line.

```

2329 \newcommand*{\LWR@clearmidrules}
2330 {%
2331 \setcounter{LWR@midrulecounter}{1}%
2332 \whiledo{%
2333 \cnttest{\value{LWR@midrulecounter}}{<=}{\value{LWR@tablecolwidth}}%
2334 }%
2335 {%
2336 \LWR@setexparray{LWR@midrules}{\theLWR@midrulecounter}{\relax}%
2337 \addtocounter{LWR@midrulecounter}{1}%
2338 }%
2339 }

```

\LWR@subcmidrule [*width*] [*trim*] [*leftcolumn*] [*rightcolumn*]

Marks LWR@midrules data array elements to be “Y” from left to right columns.

```

2340 \newcommand*{\LWR@subcmidrule}[4]{%
2341 \setcounter{LWR@midrulecounter}{#3}%
2342 \whiledo{\cnttest{\value{LWR@midrulecounter}}{<=}{#4}}%
2343 {%
2344 \LWR@setexparray{LWR@midrules}{\theLWR@midrulecounter}{Y}%
2345 \addtocounter{LWR@midrulecounter}{1}%
2346 }% end of the whiledo
2347 }

```

\LWR@docmidrule [*width*] [*trim*] [*leftcolumn-rightcolumn*]

Marks LWR@midrules array elements to be “Y” from left to right columns.

```
2348 \NewDocumentCommand{\LWR@docmidrule}{o d() >{\SplitArgument{1}{-}}m}%
2349 {\LWR@subcmidrule{#1}{#2}#3}
```

49.14 Multicolumns

49.14.1 Parsing multicolumns

```
2350 \newcounter{LWR@tablemulticolwidth}
2351 \newcounter{LWR@tablemulticolspos}
```

`\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.

```
2352 \newcommand*{\LWR@printmccoltype}[1]{%
2353 \LWR@traceinfo{lw@printmccoltype -#1-}%
```

Get one token of the column spec:

```
2354 \StrChar{#1}{\theLWR@tablemulticolspos}[\LWR@strresult]%
```

Add to the HTML tag depending on which column type is found:

```
2355 \IfStrEq{\LWR@strresult}{l}{l}{}%
2356 \IfStrEq{\LWR@strresult}{c}{c}{}%
2357 \IfStrEq{\LWR@strresult}{r}{r}{}%
2358 \IfStrEq{\LWR@strresult}{p}{p}{}%
2359 \IfStrEq{\LWR@strresult}{m}{m}{}%
2360 \IfStrEq{\LWR@strresult}{b}{b}{}%
2361 \IfStrEq{\LWR@strresult}{P}{P}{}%
2362 \IfStrEq{\LWR@strresult}{M}{M}{}%
2363 \IfStrEq{\LWR@strresult}{B}{B}{}%
2364 \IfStrEq{\LWR@strresult}{S}{r}{}%
2365 \IfStrEq{\LWR@strresult}{X}{p}{}%
2366 \LWR@traceinfo{lw@printmccoltype done}%
2367 }
```

`\LWR@multicolpartext` Print the data with paragraph tags:

```
2368 \newcommand*{\LWR@multicolpartext}{%
2369 \LWR@startpars%
2370 \LWR@multicoltext%
2371 \LWR@stoppars%
2372 }
```

`\LWR@multicolother` $\{\langle colspec \rangle\}$ For @, >, <, print the next token without paragraph tags:

```
2373 \newcommand*{\LWR@multicolother}[1]{%
2374 \addtocounter{\LWR@tablemulticolspos}{1}%
2375 \StrChar{#1}{\the\LWR@tablemulticolspos}[\LWR@strresult]%
2376 \LWR@strresult%
```

A valid column data type was found:

```
2377 \booltrue{\LWR@validtablecol}%
2378 }
```

`\LWR@multicolskip` Nothing to print for this column type.

```
2379 \newcommand*{\LWR@multicolskip}{%
```

A valid column data type was found:

```
2380 \booltrue{\LWR@validtablecol}%
2381 }
```

`\LWR@printmccoldata` $\{\langle colspec \rangle\}$ Print the data for any valid column type found.

```
2382 \newcommand*{\LWR@printmccoldata}[1]{%
2383 \LWR@traceinfo{\LWR@printmccoldata -#1}%
```

Not yet found a valid column type:

```
2384 \boolfalse{\LWR@validtablecol}%
```

Get one token of the column spec:

```
2385 \StrChar{#1}{\the\LWR@tablemulticolspos}[\LWR@strresult]%
```

Print the text depending on which column type is found. Also handles @, >, < as it comes to them.

```
2386 \IfStrEq{\LWR@strresult}{l}{\LWR@multicoltext}{}%
2387 \IfStrEq{\LWR@strresult}{c}{\LWR@multicoltext}{}%
2388 \IfStrEq{\LWR@strresult}{r}{\LWR@multicoltext}{}%
2389 \IfStrEq{\LWR@strresult}{D}{}%
2390 \addtocounter{\LWR@tablemulticolspos}{3}% skip parameters
2391 \LWR@multicoltext%
2392 }{}%
2393 \IfStrEq{\LWR@strresult}{p}{\LWR@multicolparttext}{}%
2394 \IfStrEq{\LWR@strresult}{m}{\LWR@multicolparttext}{}%
2395 \IfStrEq{\LWR@strresult}{b}{\LWR@multicolparttext}{}%
```

```

2396 \IfStrEq{\LWR@strresult}{P}{\LWR@multicolpartext}{}%
2397 \IfStrEq{\LWR@strresult}{M}{\LWR@multicolpartext}{}%
2398 \IfStrEq{\LWR@strresult}{B}{\LWR@multicolpartext}{}%
2399 \IfStrEq{\LWR@strresult}{S}{\LWR@multicolpartext}{}%
2400 \IfStrEq{\LWR@strresult}{X}{\LWR@multicolpartext}{}%
2401 \IfStrEq{\LWR@strresult}{|}{\LWR@multicolskip}{}%
2402 \IfStrEq{\LWR@strresult}{\detokenize{@}}{\LWR@multicolother{#1}}{%
2403 \IfStrEq{\LWR@strresult}{\detokenize{!}}{\LWR@multicolother{#1}}{%
2404 \IfStrEq{\LWR@strresult}{\detokenize{>}}{\LWR@multicolother{#1}}{%
2405 \IfStrEq{\LWR@strresult}{\detokenize{<}}{\LWR@multicolother{#1}}{%

```

If an invalid column type:

```

2406 \ifbool{LWR@validtablecol}{\LWR@multicoltext}%

```

Tracing:

```

2407 \LWR@traceinfo{lwr@printmccoldata done}%
2408 }

```

`\parsemulticolumnalignment` $\{ \langle 1: \textit{colspec} \rangle \} \{ \langle 2: \textit{printresults} \rangle \}$

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.

```

2409 \newcommand*{\LWR@parsemulticolumnalignment}[2]{%
2410 \setcounter{LWR@tablemulticolspos}{1}%
2411 \StrLen{#1}[\LWR@strresult]%
2412 \setcounter{LWR@tablemulticolswidth}{\LWR@strresult}%

```

Scan across the tokens in the column spec:

```

2413 \whiledo{%
2414 \not\value{LWR@tablemulticolspos}>\value{LWR@tablemulticolswidth}%
2415 }%
2416 {%

```

Execute the assigned print function for each token in the column spec:

```

2417 #2{#1}%

```

Move to the next token in the column spec:

```

2418 \addtocounter{LWR@tablemulticolspos}{1}%
2419 }%
2420 }

```

49.14.2 High-level multicolumn interface

`\LWR@domulticolumn` $\{\langle 1: numcols \rangle\} \{\langle 2: colspec \rangle\} \{\langle 3: text \rangle\}$

```
2421 \newcommand{\LWR@multicoltext}{}
2422
2423 \NewDocumentCommand{\LWR@domulticolumn}{m m +m}{%
2424 \LWR@traceinfo{lw@domulticolumn -#1- -#2-}%
```

Remember the text to be inserted, and remember that a valid column type was found:

```
2425 \renewcommand{\LWR@multicoltext}{%
2426 #3%
2427 \booltrue{\LWR@validtablecol}%
2428 }%
```

Row processing:

```
2429 \LWR@maybe newtable row%
```

Begin the opening table data tag:

```
2430 \LWR@htmltag{td colspan="#1"
2431 class="td%
```

Print the column type:

```
2432 \LWR@parsemulticolumnalignment{#2}{\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”.

```
2433 \ifthenelse{\equal{\LWR@gettexpparray{\LWR@midrules}{\the\LWR@tablecolspos}}{Y}}{rule}{}%
```

Close the class tag’s opening quote:

```
2434 "%
2435 }% end of the opening table data tag
2436 \global\boolfalse{\LWR@intabularmetadata}%
2437 \LWR@parsemulticolumnalignment{#2}{\LWR@printmccoldata}%
2438 }
```

49.14.3 Longtable captions

`Bool` `LWR@starredlongtable` Per the caption package, step the counter if `longtable*`.

```
2439 \newbool{LWR@starredlongtable}
2440 \boolfalse{LWR@starredlongtable}
```

Per the caption package. User-redefinable float type.

```
2441 \providecommand*{\LTcapttype}{table}
```

```
\LWR@longtabledatacaptiontag * [(\toc entry)] {\caption}
```

```
2442 \NewDocumentCommand{\LWR@longtabledatacaptiontag}{s o +m}
2443 {%
```

Remember the latest name for \nameref:

```
2444 \IfValueTF{#2}{% optional given?
2445 \ifthenelse{\equal{#2}{}}{% optional empty?
2446 {\LWR@setlatestname{#3}}% empty
2447 {\LWR@setlatestname{#2}}% given and non-empty
2448 }% optional given
2449 {\LWR@setlatestname{#3}}% no optional
```

create a multicolumn across all the columns

```
2450 \LWR@domulticolumn{\theLWR@tabletotalcols}{P}{% \LWR@domulticolumn
2451 % \IfBooleanTF{#1}% star?
2452 % {\IfValueTF{#2}{\LWR@origcaption*{#2}{#3}}{\LWR@origcaption*{#3}}}
2453 % {\IfValueTF{#2}{\LWR@origcaption{#2}{#3}}{\LWR@origcaption{#3}}}
2454 \IfBooleanTF{#1}% star?
```

Star version, show a caption but do not make a LOT entry:

```
2455 {% yes star
2456 \LWR@htmlblocktag{figcaption}%
2457 #3%
2458 \LWR@htmlblocktag{/figcaption}%
2459 }%
2460 {% No star:
```

Not the star version:

Don't step the counter if \caption[] {A caption.}

```
2461 \ifbool{LWR@starredlongtable}%
2462 {%
2463 \ifthenelse{\equal{#2}{}}{% TOC entry
2464 }%
2465 {%
2466 \refstepcounter{\LTcapttype}%
```

```

2467 \protected@edef\@currentlabel{%
2468 \csuse{p@\LTcapttype}\csuse{the\LTcapttype}}%
2469 }%
2470 }{}%

```

Create an HTML caption. Afterwards, maybe make a LOT entry.

```

2471 \LWR@htmlblocktag{figcaption}%
2472 \csuse{fnum@\LTcapttype}\CaptionSeparator#3%
2473 \LWR@htmlblocktag{/figcaption}%

```

See if an optional caption was given:

```

2474 \ifthenelse{\equal{#2}{}}% TOC entry empty

```

if the optional caption was given, but empty, do not form a TOC entry

```

2475 {}%

```

If the optional caption was given, but might only be []:

```

2476 {% TOC entry not empty
2477 \IfNoValueTF{#2}% No TOC entry?

```

The optional caption is []:

```

2478 {% No TOC entry
2479 \addcontentsline%
2480 {\csuse{ext@\LTcapttype}}%
2481 {\LTcapttype}%
2482 {%
2483 \protect\numberline%
2484 {\csuse{p@\LTcapttype}\csuse{the\LTcapttype}}%
2485 {\ignorespaces #3\protect\relax}%
2486 }%
2487 }% end of No TOC entry

```

The optional caption has text enclosed:

```

2488 {% yes TOC entry
2489 \addcontentsline%
2490 {\csuse{ext@\LTcapttype}}%
2491 {\LTcapttype}%
2492 {%
2493 \protect\numberline%
2494 {\csuse{p@\LTcapttype}\csuse{the\LTcapttype}}%
2495 {\ignorespaces #2\protect\relax}%
2496 }%
2497 }% end of yes TOC entry

```

```

2498 }% end of TOC entry not empty
2499 }% end of no star
2500 }% end of \LWR@domulticolumn
2501
2502 \addtocounter{LWR@tablecolspos}{\theLWR@tabletotalcols}
2503 \addtocounter{LWR@tablecolspos}{-1}
2504
2505 }

```

49.14.4 \tabledatamulticolumntag

`\LWR@tabledatamulticolumntag` $\{\langle numcols \rangle\}$ $\{\langle alignment \rangle\}$ $\{\langle text \rangle\}$

```

2506 \NewDocumentCommand{\LWR@tabledatamulticolumntag}{m m +m}%
2507 {%
2508 \LWR@domulticolumn{#1}{#2}{#3}%
2509 \addtocounter{LWR@tablecolspos}{#1}%
2510 \addtocounter{LWR@tablecolspos}{-1}%
2511 }

```

49.15 Multirow

Pkg `multirow`

`\LWR@tabledatamultirowtag` $\{\langle numrows \rangle\}$ $[\langle bigstruts \rangle]$ $\{\langle width \rangle\}$ $[\langle fixup \rangle]$ $\{\langle text \rangle\}$

```

2512 \NewDocumentCommand{\LWR@tabledatamultirowtag}{m o m o m}%
2513 {%
2514 \LWR@maybenewtablerow%

```

Print the start of a new table data cell:

```

2515 \LWR@htmltag{td rowspan="#1" class="td%

```

Append this column's spec:

```

2516 \StrChar{\LWR@tablecolspec}{\theLWR@tablecolspos}%

```

If this column has a `cmidrule`, add “rule” to the end of the HTML class tag:

```

2517 \ifthenelse{\equal{\LWR@getexparray{LWR@midrules}{\theLWR@tablecolspos}}{Y}}{rule}{}%
2518 "{}}

```

While printing the text, redefine `\` to generate a new line


```

2519 \begingroup \let\\\LWR@endofline #5 \endgroup
2520 \LWR@stoppars%
2521 \global\boolfalse{\LWR@intabularmetadata}%
2522 }%

```

49.16 Utility macros inside a table

```

2523 \newcommand*{\LWR@donothing}{}
2524 \newcommand*{\LWR@domidrule}{\booltrue{\LWR@doinghline}}
2525 \newcommand*{\LWR@dotbrule}{\booltrue{\LWR@doingtbrule}}

```

49.17 Checking for a new table cell

`\LWR@tabledatacolumnntag` Open a new HTML table cell unless the next token is for a macro which does not create data, such as `\hline`, `\toprule`, etc:

```

2526 \newbool{\LWR@exitingtabular}
2527 \newcommand*{\LWR@tabledatacolumnntag}%
2528 {%

```

`\show\LWR@mynexttoken` to see what tokens to look for

If not any of the below, start a new table cell:

```

2529 \let\mynext\LWR@tabledatasinglecolumnntag%

```

If exiting the tabular:

```

2530 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\end}}{%
2531 {\booltrue{\LWR@exitingtabular}}}%

```

`longtable` can have a caption in a cell

```

2532 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\caption}}{%
2533 {\let\mynext\LWR@donothing}}%

```

Look for other things which would not start a table cell:

```

2534 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\multicolumn}}{%
2535 {\let\mynext\LWR@donothing}}%
2536 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\multirow}}{%
2537 {\let\mynext\LWR@donothing}}%

```

if come to an `\mrowcell`, this is a cell to be skipped over

```

2538 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\mrowcell}}{%
2539 {\let\mynext\LWR@donothing}{}}%
2540 %
2541 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\hline}}{%
2542 {\let\mynext\LWR@donothing}{}}%
2543 %
2544 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\toprule}}{%
2545 {%
2546 \let\mynext\LWR@donothing}{}}%
2547 %
2548 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\midrule}}{%
2549 {\let\mynext\LWR@donothing}{}}%
2550 %
2551 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\cmidrule}}{%
2552 {\let\mynext\LWR@donothing}{}}%
2553 %
2554 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\cline}}{%
2555 {\let\mynext\LWR@donothing}{}}%
2556 %
2557 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\bottomrule}}{%
2558 {\let\mynext\LWR@donothing}{}}%
2559 %
2560 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\warpprintonly}}{%
2561 {\let\mynext\LWR@donothing}{}}%
2562 %
2563 \ifthenelse{\isequivalentto{\LWR@mynexttoken}{\warpHTMLonly}}{%
2564 {\let\mynext\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:


```

2565 \mynext%
2566 }

2567 \end{warpHTML}

```

49.18 `\mrowcell`

`\mrowcell` The user must insert `\mrowcell` into any multirow cells which must be skipped.
 This command has no action during print output.

for HTML & PRINT: 2568 `\begin{warpall}`
 2569 `\newcommand*{\mrowcell}{}%`
 2570 `\end{warpall}`

49.19 New `\tabular` definition

for HTML output: 2571 `\begin{warpHTML}`

Env `LWR@tabular` [$\langle\textit{vertposition}\rangle$] [$\langle\textit{colspecs}\rangle$]

The new tabular environment will be `\let` in `\LWR@LwarpStart`, since `siunitx` might redefine `tabular` in the user's document.

```
2572 \newenvironment*{LWR@tabular}[2] []
2573 {%
2574 \LWR@traceinfo{tabular started}%
2575 \begingroup%
2576 \addtocounter{LWR@tabulardepth}{1}%
```

Not yet started a table row:

```
2577 \global\boolfalse{LWR@startedrow}%
```

Not yet doing an hline:

```
2578 \global\boolfalse{LWR@doinghline}%
```

Not yet doing a top/bottom rule:

```
2579 \global\boolfalse{LWR@doingtbrule}%
```

Have not yet found the end of tabular command:

```
2580 \boolfalse{LWR@exitingtabular}%
```

Create the `table` tag:

```
2581 \global\booltrue{LWR@intabularmetadata}%
2582 \LWR@htmlblocktag{table}%
```

Parse the table columns:

```
2583 \LWR@parsetablecols{#2}%
```

Table col spec is: `\LWR@tablecolspec` which is a string of `llccrr`, etc.

Do not place the table inside a paragraph:

```
2584 \LWR@stoppars%
```

Track column `#` for setting text-align:

```
2585 \setcounter{LWR@tablecolspos}{1}%
```

Start looking for midrules:

```
2586 \LWR@clearmidrules%
```

\\ becomes a macro to end the table row:

```
2587 \let\\LWR@tabularendofline%
```

The following may appear before a data cell is created, so after doing their actions, we look ahead with `\LWR@getmynexttoken` to see if the next token might create a new data cell:

```
2588 \renewcommand*{\hline}{\LWR@domidrule\LWR@getmynexttoken}%
2589 \newcommand*{\midrule}{\LWR@domidrule\LWR@getmynexttoken}%
2590 \NewDocumentCommand{\cmidrule}{o d() m}%
2591 {\LWR@docmidrule{##1} (##2){##3}\LWR@getmynexttoken}%
2592 \RenewDocumentCommand{\cline}{m}%
2593 {\LWR@docmidrule{##1}\LWR@getmynexttoken}%
2594 \newcommand*{\toprule}{\LWR@dotbrule\LWR@getmynexttoken}%
2595 \newcommand*{\bottomrule}{\LWR@dotbrule\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`.

```
2596 \let\multicolumn\LWR@tabledatamulticolumntag%
2597 \let\multirow\LWR@tabledatamultirowtag%
2598 \renewcommand*{\mrowcell}{\global\booltrue\LWR@skippingmrowcell}}%
2599 \let\caption\LWR@longtabledatacaptiontag%

```

Reset for new processing:

```
2600 \global\boolfalse\LWR@tableparcell}%
2601 \global\boolfalse\LWR@skippingmrowcell}%

```

Look ahead for a possible table data cell:

```
2602 \LWR@getmynexttoken%
2603 }%
```

Ending the environment:

```
2604 {%
2605 \LWR@closetabledatacell%
2606 \LWR@htmlblocktag{/tr}%
2607 \LWR@htmlblocktag{/table}%
2608 \global\boolfalse\LWR@intabularmetadata}%

```

```

2609 \addtocounter{LWR@tabulardepth}{-1}%
2610 \endgroup%
2611 }

2612 \end{warpHTML}

```

49.20 Array

Pkg `array`

`array` is also automatically loaded by `siunitx`.

50 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 lateximage depth and number for each label.

Table 8 shows the data structures related to cross-referencing.

for HTML output: 2613 \begin{warpHTML}

50.1 Setup

`\@currentlabelname` To remember the most recently defined section name, description, or caption, for `\nameref`.

```
2614 \newcommand*{\@currentlabelname}{}

```

`\LWR@stripperperiod` `{\langle text \rangle} [(\langle . \rangle)]`

Removes a trailing period.

```
2615 \def\LWR@stripperperiod#1.\ltx@empty#2\@nil{#1}%

```

`\LWR@setlatestname` `{\langle object name \rangle}`

Removes `\label`, strips any final period, and remembers the result.

```
2616 \newcommand*{\LWR@setlatestname}[1]{%

```

Table 8: Cross-referencing data structures

Original L^AT_EX:	(print and HTML)
\refstepcounter: Steps the counter 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 50.3), plus \slabel data (section 50.2): zLWR@name: The section name for this label. zLWR@htmlfilenumber: The filenumber or name for this label. zLWR@lateximagedepth: The lateximagedepth for this label. zLWR@lateximagenumber: The lateximagenumber for this label.	
\nameref: Emulated from hyperref for lwarp. See section 50.4.	
\ref and \nameref: Adds HTML tags. See section 50.4.	
Added by amsmath:	(print and HTML)
\label: Execution is delayed until the math environment is completed.	
\ltx@label: L ^A T _E X \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 35.4 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 59.	
\label inside math: See section 54.4.1.	
Footnotes: See \noteentry in section 35.4.	

Remove `\label` and other commands from the name, the strip any final period.
See `zref-titleref` and `getttitlestring`.

```
2617 \GetTitleStringExpand{#1}%
2618 \edef\@currentlabelname{\detokenize\expandafter{\GetTitleStringResult}}%
2619 \edef\@currentlabelname{%
2620 \expandafter\LWR@stripperperiod\@currentlabelname%
2621 \ltx@empty.\ltx@empty\@nil%
2622 }%
2623 }
```

50.2 Zref setup

See:

[http://tex.stackexchange.com/questions/57194/
extract-section-number-from-equation-reference](http://tex.stackexchange.com/questions/57194/extract-section-number-from-equation-reference)

Create a new property list called `special`:

```
2624 \zref@newlist{special}
```

Define a new property which has the name of the most recently declared section:

```
2625 \zref@newprop{zLWR@name}{\@currentlabelname}
```

Define a new property which has either a filename or a file number:

```
2626 \zref@newprop{zLWR@htmlfilenumber}{%
2627 \ifbool{FileSectionNames}{\LWR@thisfilename}{\theLWR@htmlfilenumber}%
2628 }%
```

Additional properties for `lateximages`:

```
2629 \zref@newprop{zLWR@lateximagedepth}{\arabic{LWR@lateximagedepth}}
2630 \zref@newprop{zLWR@lateximagenumber}{\arabic{LWR@lateximagenumber}}
```

`zLWR@htmlfilenumber` property holds the file number or name

Add a `LWR@htmlfilenumber` property, and `lateximage` properties to `special`:

```
2631 \zref@addprop{special}{zLWR@name}
2632 \zref@addprop{special}{zLWR@htmlfilenumber}
2633 \zref@addprop{special}{zLWR@lateximagedepth}
2634 \zref@addprop{special}{zLWR@lateximagenumber}
```

Returns the selected field:

```
2635 \newcommand*{\LWR@spref}[2]{%
2636 \zref@extractdefault{#1}{#2}{??}}
```

`\LWR@nameref` $\{\langle label \rangle\}$ Returns the section name for this label:

```
2637 \newcommand*{\LWR@nameref}[1]{%
2638 \LWR@spref{#1}{z\LWR@name}%
2639 }
```

`\LWR@htmlfileref` $\{\langle label \rangle\}$ Returns the file number for this label:

```
2640 \newcommand*{\LWR@htmlfileref}[1]{%
2641 % DO NOT USE \LWR@traceinfo HERE! Will be expanded.
2642 \LWR@spref{#1}{z\LWR@htmlfilenumber}%
2643 }
```

`\LWR@lateximagedepthref` $\{\langle label \rangle\}$ Returns the lateximagedepth for this label:

```
2644 \newcommand*{\LWR@lateximagedepthref}[1]{%
2645 \LWR@spref{#1}{z\LWR@lateximagedepth}%
2646 }
```

`\LWR@lateximagenumberref` $\{\langle label \rangle\}$ Returns the lateximagenumber for this label:

```
2647 \newcommand*{\LWR@lateximagenumberref}[1]{%
2648 \LWR@spref{#1}{z\LWR@lateximagenumber}%
2649 }
```

`\LWR@splabel` $\{\langle label \rangle\}$ Sanitize the name and then creates the label:

```
2650 \newcommand*{\LWR@splabel}[1]{%
2651 \LWR@setlatestname{\@currentlabelname}%
2652 \zref@labelbylist{#1}{special}}
```

50.3 Labels

`\LWR@subsublabel` $\{\langle label \rangle\}$ Creates an HTML id tag.

```
2653 \newcommand*{\LWR@subsublabel}[1]{%
```

Create an HTML id tag unless are inside a lateximage, since it would appear in the image:


```

2654 \ifthenelse{\cnttest{\value{LWR@lateximagedepth}}{>}{0}}%
2655 {}%
2656 {% not lateximage

```

If not doing a lateximage, create an HTML ID tag: (To be factored...)

```

2657 \ifbool{LWR@doingstartpars}%
2658 {% pars allowed
2659 \ifbool{LWR@doingapar}
2660 {% par started
2661 \LWR@htmltag{a id="#1"{}}\LWR@htmltag{/a}%
2662 }% par started
2663 {% par not started
2664 \LWR@stoppars%
2665 \LWR@htmltag{a id="#1"{}}\LWR@htmltag{/a}%
2666 \LWR@startpars%
2667 }% par not started
2668 }% pars allowed
2669 {% pars not allowed
2670 \LWR@htmltag{a id="#1"{}}\LWR@htmltag{/a}%
2671 }% pars not allowed
2672 }% not lateximage
2673 }

```

`\LWR@newlabel` $\{\langle label \rangle\}$

`\label` during HTML output when not in math mode, removing extra spaces around the label, as done by regular L^AT_EX `\label`.

`cleveref` later encases this to add its own cross-referencing.

```

2674 \newcommand*{\LWR@newlabel}[1]{%
2675 \LWR@traceinfo{LWR@newlabel: !#1!}%
2676 % \@bsphack%

```

Create a traditional LaTeX label, as modified by `cleveref`:

```

2677 \LWR@origlabel{#1}%

```

Create a special label which holds the section number, `LWR@htmlfilenumber`, `LWR@lateximagedepth`, and `LWR@lateximagenumber`:

```

2678 \LWR@traceinfo{LWR@newlabel: filesectionnames is \ifbool{FileSectionNames}{true}{false}}%
2679 \LWR@traceinfo{LWR@newlabel: LWR@thisfilename is !\LWR@thisfilename!}%
2680 \LWR@traceinfo{LWR@newlabel: LWR@htmlfilenumber is \theLWR@htmlfilenumber}%
2681 \LWR@splabel{#1}%
2682 \LWR@subsublabel{#1}%
2683 % \@esphack%
2684 \LWR@traceinfo{LWR@newlabel: done}%

```

2685 }

50.4 References

`\LWR@startref {<label>}` (Common code for `\ref` and `\nameref`.)

Open an HTML tag reference to a filename, # character, and a label.

```
2686 \newcommand*{\LWR@startref}[1]
2687 {%
2688 \edef\LWR@lhref{\LWR@lateximagedepthref{#1}}
2689 \LWR@traceinfo{\LWR@startref A: !#1!}%
```

Create the filename part of the link:

```
2690 \LWR@htmltag{a href="%
2691 \LWR@traceinfo{\LWR@startref B}%
2692 \LWR@htmlrefsectionfilename{#1}%
2693 \LWR@traceinfo{\LWR@startref C}%
2694 \#%
```

Create the destination id:

See if `LWR@lateximagedepth` is unknown:

```
2695 \LWR@traceinfo{\LWR@startref D: !#1!}%
2696 \ifthenelse{\equal{\LWR@lhref}{??}}%
```

“??” if `LWR@lateximagedepth` is unknown, so create a link with an unknown destination:

```
2697 {%
2698 \LWR@traceinfo{\LWR@startref D0: ??}
2699 ??}%
```

If `LWR@lateximagedepth` is known. Use a `lateximage` if the depth is greater than zero, or a regular link otherwise:

```
2700 {%
2701 \LWR@traceinfo{\LWR@startref D1: \LWR@lhref}%
2702 \ifthenelse{\cnttest{\LWR@lhref}{>}{0}}%
2703 {%
2704 \LWR@traceinfo{\LWR@startref D2: \LWR@lhref}%
2705 lateximage\LWR@lateximagenumberref{#1}%
2706 }%
2707 {%
```

```

2708 \LWR@traceinfo{\LWR@startref D3}%
2709 #1%
2710 }%
2711 }%
2712 \LWR@traceinfo{\LWR@startref E}%

```

Closing quote:

```

2713 "{}}%
2714 \LWR@traceinfo{\LWR@startref F}%
2715 }

```

`\LWR@subnewref` $\{\langle label \rangle\}$ $\{\langle label \text{ or } sub@label \rangle\}$

Factored for the `subfig` package. Uses the original label for the hyper-reference, but prints its own text, such as “1(b)”.

```

2716 \NewDocumentCommand{\LWR@subnewref}{m m}{%
2717 \LWR@traceinfo{\LWR@subnewref #1 #2}%
2718 \LWR@startref{#1}%
2719 \LWR@origref{#2}%
2720 \LWR@htmltag{/a}%
2721 }

```

`\ref` * $\{\langle label \rangle\}$ `\ref` is `\let` to `\LWR@newref`

`\LWR@newref` * $\{\langle label \rangle\}$ Create an internal document reference link, or without a link if starred per `hyperref`.

```

2722 \NewDocumentCommand{\LWR@newref}{s m}{%
2723 \LWR@traceinfo{\LWR@newref #2}%
2724 \IfBooleanTF{#1}%
2725 {\LWR@origref{#2}}%
2726 {\LWR@subnewref{#2}{#2}}%
2727 }

```

`\pagerefPageFor` Text for starred page references.

```

2728 \newcommand*{\pagerefPageFor}{see }

```

`\pageref` * $\{\langle label \rangle\}$ Create an internal document reference, or just the unlinked number if starred, per `hyperref`.

```

2729 \NewDocumentCommand{\LWR@newpageref}{s m}{%
2730 \IfBooleanTF{#1}%
2731 {\(\pagerefPageFor\LWR@origref{#2})}%

```

```
2732 {(\cpageref{#2})}%
2733 }
```

`\nameref` $\{\langle label \rangle\}$

```
2734 \newcommand*{\nameref}[1]{%
2735 \LWR@traceinfo{nameref A}%
2736 \LWR@startref{#1}%
2737 \LWR@traceinfo{nameref B}%
2738 \LWR@nameref{#1}%
2739 \LWR@traceinfo{nameref C}%
2740 \LWR@htmltag{/a}%
2741 \LWR@traceinfo{nameref D}%
2742 }
```

`\Nameref` $\{\langle label \rangle\}$ In print, adds the page number. In HTML, does not.

```
2743 \let\Nameref\nameref
```

50.5 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.



Any reference to `\usepackage{hyperref}` must be placed inside a `warpprint` environment.

```
2744 % DO NOT TELL OTHER PACKAGES TO ASSUME HYPERREF:
2745 % \EmulatesPackage{hyperref}[2015/08/01]% Disabled. Do not do this.
```

Create a link with a text name:

`\LWR@subhyperref` $\{\langle URL \rangle\} \{\langle text \rangle\}$

```
2746 \NewDocumentCommand{\LWR@subhyperref}{m +m}{%
2747 \LWR@htmltag{a href="#1" target="_{blank}"\LWR@orignewline}#2\LWR@htmltag{/a}%
2748 \LWR@ensuredoingapar%
2749 }
```

`\LWR@subhyperrefclass` $\{\langle URL \rangle\}$ $\{\langle text \rangle\}$ $\{\langle htmlclass \rangle\}$

```
2750 \NewDocumentCommand{\LWR@subhyperrefclass}{m +m m}{%
2751 \LWR@htmltag{a href="#1"
2752 class="#3"\LWR@orignewline)#2\LWR@htmltag{/a}%
2753 \LWR@ensuredoingapar%
2754 }
```

`\href` $[\langle options \rangle]$ $\{\langle URL \rangle\}$ $\{\langle text \rangle\}$

Create a link with accompanying text:

```
2755 \NewDocumentCommand{\LWR@hrefb}{0{} m +m}{%
2756 \LWR@subhyperref{#2}{#3}%
2757 \endgroup%
2758 \LWR@ensuredoingapar%
2759 }
2760
2761 \newcommand{\href}{%
2762 \LWR@ensuredoingapar%
2763 \begingroup%
2764 \catcode'\_ =12
2765 \LWR@hrefb%
2766 }
```

`\nolinkurl` $\{\langle URL \rangle\}$

Print the name of the link without creating the link:

```
2767 \newcommand*{\LWR@nolinkurlb}[1]{#1\endgroup\LWR@ensuredoingapar}
2768
2769 \newcommand{\nolinkurl}{%
2770 \LWR@ensuredoingapar%
2771 \begingroup\catcode'\_ =12
2772 \LWR@nolinkurlb%
2773 }
```

`\url` $\{\langle URL \rangle\}$

Create a link whose text name is the address of the link:

```
2774 \newcommand*{\LWR@urlb}[1]{%
2775 \href{#1}{#1}%
2776 \endgroup%
2777 \LWR@ensuredoingapar%
2778 }
2779
2780 \newcommand{\url}{%
2781 \LWR@urlb{#1}%
2782 }
```

```
2781 \LWR@ensuredoingapar%
2782 \begingroup\catcode'\_ =12
2783 \LWR@urlb%
2784 }
```

`\LWR@subinlineimage` [*<alttag>*] [*<class>*] [*<filename>*] [*<extension>*] [*<style>*]

```
2785 \newcommand*\LWR@subinlineimage}[5][]{%
2786 \ifthenelse{\equal{#1}{}}{%
2787 {\LWR@htmltag{img src="#3.#4" alt="#3" style="#5" class="#2"{}{}}%
2788 {\LWR@htmltag{img src="#3.#4" alt="#1" style="#5" class="#2"{}{}}%
2789 }

2790 \end{warpHTML}
```

Table 9: 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 L^AT_EX 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><name>` “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.

51 Floats

Floats are supported, although partially through emulation.

Table 9 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”.

51.1 Float captions

for HTML output: 2791 \begin{warpHTML}

\LWR@floatbegin {<type>} [<placement>]

Begins a \newfloat environment.

```
2792 \NewDocumentCommand{\LWR@floatbegin}{m o}{%
2793 \LWR@stoppars
```

There is a new float, so increment the unique float counter:

```
2794 \addtocounter{LWR@thisfloat}{1}%
2795 \booltrue{LWR@freezethisfloat}%
```

```
2796 \begingroup
```

Settings while inside the environment:

```
2797 \LWR@origraggedright
```

Open an HTML figure tag:

```
2798 \LWR@htmltag{figure id="autofloat-\arabic{LWR@thisfloat}" class="#1"}
```

```
2799 \renewcommand*{\@capttype}{#1}
2800 \caption@settype{#1}
2801 \LWR@startpars
2802 }
```

\@float Support packages which create floats directly.
 \@dblfloat

```
2803 \let\@float\LWR@floatbegin
2804 \let\@dblfloat\LWR@floatbegin
```

\LWR@floatend Ends a \newfloat environment.

```
2805 \newcommand*{\LWR@floatend}{%
2806 \LWR@stoppars%
2807 \LWR@htmllementend{figure}%
2808 \endgroup%
2809 \boolfalse{LWR@freezethisfloat}%
2810 \LWR@startpars%
2811 }
```


`\end@float` Support packages which create floats directly.
`\end@dblfloat`

```
2812 \let\end@float\LWR@floatend
2813 \let\end@dblfloat\LWR@floatend
```

Ctr `LWR@thisfloat` A sequential counter for all floats. This is used to identify the float then reference it from the List of Figures and List of Tables.

```
2814 \newcounter{LWR@thisfloat}
```

Bool `LWR@freezethisfloat` Prevents multiple increments of `\LWR@thisfloat` inside a float.

```
2815 \newbool{LWR@freezethisfloat}
2816 \boolfalse{LWR@freezethisfloat}
```

`\LWR@maybeinthisfloat`

```
2817 \newcommand*{\LWR@maybeinthisfloat}{%
2818 \ifbool{LWR@freezethisfloat}{\addtocounter{LWR@thisfloat}{1}}%
2819 }
```

`\@capttype` Remembers which float type is in use.

```
2820 \newcommand*{\@capttype}{}
```

51.1.1 Caption inside a float environment

`\CaptionSeparator` How to separate the float number and the caption text.

```
2821 \AtBeginDocument{\providecommand*\CaptionSeparator{::~}}
```

`\@makecaption` $\{\langle name \text{ and } num \rangle\} \{\langle text \rangle\}$

Prints the float type and number, the caption separator, and the caption text.

```
2822 \AtBeginDocument{\renewcommand{\@makecaption}[2]{\#1\CaptionSeparator\#2}}
```

51.1.2 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 `autofloat` 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 `autofloat` IDs at the start of the float itself in the HTML file. The `autopage` and `autofloat` 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@nextautofloat` Tracks autofloat for floats. Tracks autopage for floats.

Ctr `LWR@nextautopage` These are updated per float as the `.lof` file is read.

```
2823 \newcounter{LWR@nextautofloat}
2824 \newcounter{LWR@nextautopage}
```

`\LWRsetnextfloat` $\{\langle autopage \rangle\} \{\langle autofloat \rangle\}$

This is written to the `.lof` file just before each float's usual entry. The `autopage` and `autofloat` are remembered for `\l@figure` to use when creating the HTML links.

```
2825 \newcommand*{\LWRsetnextfloat}[2]{%
2826 \setcounter{LWR@nextautopage}{#1}%
2827 \setcounter{LWR@nextautofloat}{#2}%
2828 }
```

Ctr `LWR@latestautopage` Updated each time a new HTML file is begun. `\LWRsetnextfloat` is written with this and the `autofloat` by the modified `\addcontentsline` just before each float's entry.

```
2829 \newcounter{LWR@latestautopage}% updated each new HTML file
2830 \setcounter{LWR@latestautopage}{1}
```

```
2831 \let\LWR@origcaption@begin\caption@begin
2832 \let\LWR@origcaption@end\caption@end
2833 \let\LWR@orig@@par\@@par
```

`\LWR@caption@begin` Low-level patches to create HTML tags for captions.

```
2834 \newcommand{\LWR@caption@begin}
2835 {
2836 \LWR@traceinfo{LWR@caption@begin}%
```

Keep `par` and `minipage` changes local:

```
2837 \begingroup%
```

The `caption` code was not allowing the closing `par` tag:

```
2838 \renewcommand{\@@par}{\LWR@closeparagraph\LWR@orig@@par}%
```

No need for a `minipage` or `\parbox` inside the caption:

```
2839 \RenewDocumentEnvironment{minipage}{O{t} o O{t} m}{-}{-}%
2840 \RenewDocumentCommand{\parbox}{O{t} o O{t} m +m}{##5}%
```

Enclose the original caption code inside an HTML tag:

```
2841 \LWR@htmlblocktag{figcaption}%
2842 \LWR@origcaption@begin%
2843 }
```

`\LWR@caption@end` Low-level patches to create HTML tags for captions.

```
2844 \newcommand{\LWR@caption@end}
2845 {%
2846 \LWR@origcaption@end%
```

Subcaptions were being over-written by the closing HTML tag:

```
2847 \vspace*{\baselineskip}%
```

Closing tag:

```
2848 \LWR@htmlblocktag{/figcaption}%
2849 \endgroup%
2850 % \leavevmode% avoid bad space factor (0) error
2851 \LWR@traceinfo{\LWR@caption@end: done}%
2852 }
```

`\caption@begin` Low-level patches to create HTML tags for captions.

`\caption@end`

```
2853 \AtBeginDocument{
2854 \let\caption@begin\LWR@caption@begin
2855 \let\caption@end\LWR@caption@end
2856 }
```

`\captionlistentry` Tracks the float number for this caption used outside a float. Patched to create an HTML anchor.

```
2857 \let\LWR@origcaptionlistentry\captionlistentry
2858
2859 \renewcommand*{\captionlistentry}{%
2860 \LWR@maybeinthisfloat%
2861 \LWR@ensuredoingapar%
2862 \LWR@htmltag{a id="autofloat-\arabic{\LWR@thisfloat}"}{\LWR@htmltag{/a}%
2863 \LWR@origcaptionlistentry%
2864 }
```

```

2865
2866 \def\LWR@LTcaptionlistentry{%
2867 \LWR@ensuredoingapar%
2868 \LWR@htmltag{a id="autofloat-\arabic{LWR@thisfloat}"{}}\LWR@htmltag{/a}%
2869 \bgroup
2870 \@ifstar{\egroup\LWR@LT@captionlistentry}% gobble *
2871 {\egroup\LWR@LT@captionlistentry}}%
2872 \def\LWR@LT@captionlistentry#1{%
2873 \caption@listentry\@firstoftwo[\LTcapttype]{#1}}%

```

`\addcontentsline` Patched to write the autopage and autofloat before each float's entry. No changes if writing .toc.

```

2874 \let\LWR@origaddcontentsline\addcontentsline
2875
2876 \renewcommand*{\addcontentsline}[3]{%
2877 \ifthenelse{\equal{#1}{toc}}{ }{%
2878 \addtocontents{\@nameuse{ext@#2}}{%
2879 \protect\LWR@setnextfloat%
2880 {\arabic{LWR@latestautopage}}%
2881 {\arabic{LWR@thisfloat}}%
2882 }%
2883 }%
2884 \LWR@origaddcontentsline{#1}{#2}{#3}%
2885 }

```

`\captionof` Patched to track the float number since this is used outside a float, and also create an HTML anchor for the virtual float.

```

2886 \AtBeginDocument{
2887 \let\LWR@origcaptionof\captionof
2888
2889 \renewcommand*{\captionof}{%
2890 \LWR@maybeinthisfloat%
2891 \LWR@stoppars
2892 \LWR@htmltag{a id="autofloat-\arabic{LWR@thisfloat}"{}}\LWR@htmltag{/a}%
2893 \LWR@origcaptionof%
2894 }
2895 }

2896 \end{warpHTML}

```

52 Table of Contents, LOF, LOT

This section controls the generation of the TOC, LOF, 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 L^AT_EX infrastructure is used for TOC, along with some patches to generate HTML output.

for HTML output: 2897 `\begin{warpHTML}`

52.1 Reading and printing the TOC

`\LWR@myshorttoc` `{\{toc/lof/lot\}}`

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 L^AT_EX, the file is not reset after being read, since the TOC may be referred to again in each HTML page, and is used for the sideTOC.

```
2898 \newcommand*{\LWR@myshorttoc}[1]{
2899 \LWR@ensuredoingapar
```

Only if the file exists:

```
2900 \IfFileExists{\jobname.#1}{
```



Make `@` a regular letter. Many of the commands in the file will have `@` characters in them, so `@` must be made a regular letter.



disabled

For `pdflatex`, also change to `latin1` encoding. When reading back a file with accented characters, the encoding change seems to be required, rather than leaving it `utf8`.

```
2901 \begingroup
2902 % \ifxetexorluatex%
2903 % \else
2904 % \inputencoding{latin1}% currently disabled
2905 % \fi
2906 \makeatletter
```

Read in the TOC file:

```
2907 \@input{\jobname.#1}
```

```

2908 % \makeatother
2909 \endgroup
2910 }%
2911 {}%
2912 }

```

```
\LWR@subtableofcontents {\<toc/lof/lot>} {\<sectionstarname>}
```

Places a TOC/LOF/LOT at the current position.

```
2913 \NewDocumentCommand{\LWR@subtableofcontents}{m m}{%
```

Closes previous levels:

```

2914 \@ifundefined{chapter}
2915 {\LWR@closeprevious{\LWR@depthsection}}
2916 {\LWR@closeprevious{\LWR@depthchapter}}

```

Prints any pending footnotes so that they appear above the potentially large TOC:

```
2917 \LWR@printpendingnotes
```

Place the list into its own chapter (if defined) or section:

```
2918 \@ifundefined{chapter}{\section*{#2}}{\chapter*{#2}}
```

Create a new HTML nav containing the TOC/LOF/LOT:

```
2919 \LWR@htmlclass{nav}{#1}
```

Create the actual list:

```
2920 \LWR@myshorttoc{#1}
```

Close the nav:

```

2921 \LWR@htmlclassend{nav}{#1}
2922 }

```

Patch \@starttoc to encapsulate the TOC inside HTML tags:

```

2923 \let\LWR@orig@starttoc\starttoc
2924
2925 \renewcommand{\starttoc}[1]{
2926 \LWR@htmlclass{nav}{#1}
2927 \LWR@orig@starttoc{#1}
2928 \LWR@htmlclassend{nav}{#1}
2929 }

```

Patch `\tableofcontents`, etc. to print footnotes first. `newfloat` uses `\listoffigures` for all future float types.

```
2930 \let\LWR@origtableofcontents\tableofcontents
2931 \let\LWR@origlistoffigures\listoffigures
2932 \let\LWR@origlistoftables\listoftables
2933 \renewcommand*{\tableofcontents}{%
```

Copy the `.toc` file to `.sidetoc` for printing the sidetoc. The original `.toc` file is renewed when `\tableofcontents` is finished.

```
2934 \LWR@copyfile{\jobname.toc}{\jobname.sidetoc}%
2935 \LWR@printpendingnotes%
2936 \LWR@origtableofcontents%
2937 }
2938 \renewcommand*{\listoffigures}{\LWR@printpendingnotes\LWR@origlistoffigures}
2939 \renewcommand*{\listoftables}{\LWR@printpendingnotes\LWR@origlistoftables}
```

52.2 High-level TOC commands

`\listof` $\{\langle type \rangle\} \{\langle title \rangle\}$

Emulate the `\listof` command from the `float` package (section 85). Used to create lists of custom float types. Also used to redefine the standard L^AT_EX `\listoffigures` and `\listoftables` commands.

```
2940 \NewDocumentCommand{\listof}{m +m}{%
2941 \LWR@subtableofcontents{\@nameuse{ext@#1}}{#2}
2942 \expandafter\newwrite\csname tf@\csname ext@#1\endcsname\endcsname
2943 \immediate\openout \csname tf@\csname ext@#1\endcsname\endcsname
2944 \jobname.\csuse{ext@#1}\relax
2945 }
```

52.3 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.

2946 `\end{warpHTML}`

for HTML & PRINT: 2947 `\begin{warpall}`

Ctrl SideTOCDepth Controls how deep the side-TOC gets. Use a standard L^AT_EX section level similar to `tocdepth`.

2948 `\newcounter{SideTOCDepth}`

2949 `\setcounter{SideTOCDepth}{1}`

`\sidetocname` Holds the default name for the sidetoc.

2950 `\newcommand{\sidetocname}{Contents}`

2951 `\end{warpall}`

for HTML output: 2952 `\begin{warpHTML}`

`\LWR@sidetoc` Creates the actual side-TOC.

2953 `\newcommand*{\LWR@sidetoc}{`

2954 `\LWR@stoppars`

2955

The entire sideTOC is placed into a `nav` of class `sidetoc`.

2956 `\LWR@htmlclass{nav}{sidetoc}`

2957

2958 `\setcounter{tocdepth}{\value{SideTOCDepth}}`

2959

The title is placed into a `div` of class `sidetoctitle`, and may contain paragraphs.

2960 `\begin{BlockClass}{sidetoctitle}`

2961 `\sidetocname`

2962 `\end{BlockClass}`

The table of contents is placed into a div of class `sidetoccontents`.

```
2963 \begin{BlockClass}{sidetoccontents}
2964 \LinkHome
2965
2966 \LWR@myshorttoc{sidetoc}
2967 \end{BlockClass}
2968 \LWR@html@elementclassend{nav}{sidetoc}
2969 }
```

52.4 Low-level TOC line formatting

`\numberline` $\{\langle number \rangle\}$

(Called from each line in the `.aux`, `.lof` files.)

Record this section number for further use:

```
2970 \renewcommand*\numberline[1]{%
2971 \LWR@sectionnumber{#1}%
2972 }
```

`\hypertoc` $\{\langle 1: depth \rangle\} \{\langle 2: type \rangle\} \{\langle 3: name \rangle\} \{\langle 4: page \rangle\}$

Called by `\l@section`, etc. to create a hyperlink to a section.

The autopage label is always created just after the section.

#1 is depth

#2 is `section`, `subsection`, etc.

#3 the text of the caption

#4 page number

```
2973 \NewDocumentCommand{\hypertoc}{m m +m m}{%
```

Respond to `tocdepth`:

```
2974 \ifthenelse{\cnttest{#1}{<=}{\value{tocdepth}}}{%
2975 \LWR@startpars%
```

Create an HTML link to `filename#autosec-(page)`, with text of the caption, of the given HTML class.

```

2976 \LWR@subhyperrefclass{%
2977 \LWR@htmlrefsectionfilename{autopage-#4}\#autosec-#4}{#3}{toc#2}%
2978 \LWR@stoppars%
2979 }
2980 {}
2981 }

```

Ctrl **lofdepth** TOC depth for figures.

```

2982 \newcounter{lofdepth}
2983 \setcounter{lofdepth}{1}

```

Ctrl **lotdepth** TOC depth for tables.

```

2984 \newcounter{lotdepth}
2985 \setcounter{lotdepth}{1}

```

`\hypertocfloat` $\{\langle 1: \textit{depth} \rangle\} \{\langle 2: \textit{type} \rangle\} \{\langle 3: \textit{caption} \rangle\} \{\langle 4: \textit{page} \rangle\}$

#1 is depth

#2 is figure, table, etc.

#3 is lof, lot, of the parent.

#4 the text of the caption

#5 page number

```

2986 \newcommand{\hypertocfloat}[5]{%
2987 \LWR@startpars

```

If some float-creation package has not yet defined the float type's `lofdepth` counter, etc, define it here:

```

2988 \@ifundefined{c@#3depth}{%
2989 \newcounter{#3depth}%
2990 \setcounter{#3depth}{1}%
2991 }{}%

```

Respond to `lofdepth`, etc.:

```

2992 \LWR@traceinfo{hypertocfloat depth is #1 #3depth is \arabic{#3depth}}%
2993 \ifthenelse{\cnttest{#1}{<=}}{\arabic{#3depth}}{%
2994 \LWR@startpars%

```

Create an HTML link to filename#autofloat-(float number), with text of the caption, of the given HTML class.

```

2995 \LWR@subhyperrefclass{%
2996 \LWR@htmlrefsectionfilename{autopage-\arabic{LWR@nextautopage}}%
2997 \#autofloat-\arabic{LWR@nextautofloat}}%
2998 {#4}{toc#2}%
2999 \LWR@stoppars%
3000 }{}%
3001 }

```

Automatically called by \contentsline:

```

3002 \renewcommand{\l@part}[2]{\hypertoc{-1}{part}{#1}{#2}}
3003 \DeclareDocumentCommand{\l@chapter}{m m}
3004 {\hypertoc{0}{chapter}{#1}{#2}}
3005 \renewcommand{\l@section}[2]{\hypertoc{1}{section}{#1}{#2}}
3006 \renewcommand{\l@subsection}[2]{\hypertoc{2}{subsection}{#1}{#2}}
3007 \renewcommand{\l@subsubsection}[2]
3008 {\hypertoc{3}{subsubsection}{#1}{#2}}
3009 \renewcommand{\l@paragraph}[2]{\hypertoc{4}{paragraph}{#1}{#2}}
3010 \renewcommand{\l@subparagraph}[2]{\hypertoc{5}{subparagraph}{#1}{#2}}
3011 \renewcommand{\l@figure}[2]{\hypertocfloat{1}{figure}{lof}{#1}{#2}}
3012 \renewcommand{\l@table}[2]{\hypertocfloat{1}{table}{lot}{#1}{#2}}
3013 \end{warpHTML}

```

53 Index

See:

[http://tex.stackexchange.com/questions/187038/
how-to-mention-section-number-in-index-created-by-imakeidx](http://tex.stackexchange.com/questions/187038/how-to-mention-section-number-in-index-created-by-imakeidx)

for HTML output: 3014 \begin{warpHTML}

\LWR@indexsection Controls whether the index will be in a section or a chapter, depending on the documentclass.

```

3015 \@ifundefined{chapter}
3016 {\newcommand*\LWR@indexsection{\section{\indexname}}}
3017 {\newcommand*\LWR@indexsection{\chapter{\indexname}}}

```

\printindex

```

3018 \let\LWR@origprintindex\printindex
3019
3020 \renewcommand*{\printindex}
3021 {
3022 \LWR@indexsection
3023 \LWR@startpars
3024 \LWR@origprintindex
3025 }

```

Env **theindex**

```

3026 \renewenvironment*{theindex}{%
3027 \let\item\LWR@indexitem%
3028 \let\subitem\LWR@indexsubitem%
3029 \let\subsubitem\LWR@indexsubsubitem%
3030 }{}

```

\LWR@indexitem

```

3031 \newcommand{\LWR@indexitem}{
3032
3033 \InlineClass{indexitem}{}
3034 }

```

\LWR@indexitem

```

3035 \newcommand{\LWR@indexsubitem}{
3036
3037 \InlineClass{indexsubitem}{}
3038 }

```

\LWR@indexitem

```

3039 \newcommand{\LWR@indexsubsubitem}{
3040
3041 \InlineClass{indexsubsubitem}{}
3042 }

```

\hyperindexref $\{\langle autosecnumber \rangle\}$

\hyperindexref{web address} is inserted into *.ind by the xindy style file
lwarp_html.xdy

```

3043 \newcommand*{\hyperindexref}[1]{
3044 \LWR@htmltag{a href="%

```

Create an HTML reference to the autosection:

```
3045 \LWR@htmlrefsectionfilename{autopage-#1}\#autosec-#1"{}%}
```

Add the section number and section name, then close the tag:

```
3046 \LWR@origref{autopage-#1}\enskip\LWR@nameref{autopage-#1}%
3047 \LWR@htmltag{/a}%
3048 }
```

```
3049 \end{warpHTML}
```

for PRINT output: A null command for print mode, in case `hyperref` was not used:

```
3050 \begin{warpprint}
3051 \newcommand{\hyperindexref}[1]{#1}
3052 \end{warpprint}
```

54 Math

Math may be rendered as SVG graphics or using the MATHJAX JavaScript display engine.

SVG math option For SVG math, math is rendered as usual by \LaTeX into the initial PDF file using the current font⁷, 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 tag carries the \LaTeX code which generated the math, allowing copy/paste of the \LaTeX math expression into other documents.

SVG image font size 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*, for ex:
`\renewcommand{\LateximageFontSizeName}{large}`

SVG files As currently implemented, each instance of math creates a new SVG file. In text with many references to math variables, this can result in a large number of files with duplicate content. In the future, some method of content-based naming and checksumming may be used to remove the need for duplicate files.

SVG inline Another approach would be to in-line the SVG files directly into the HTML. This avoids having a large number of files and potentially speeds loading the images, but dis-allows the possibility of sharing one file among many instances without user intervention.

⁷See section 137 regarding fonts and fractions.

PNG files Others 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 also larger as well.

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.

MathJax math option The popular MathJax alternative (mathjax.org) may be used to display math.

Prog **MathJax**

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.

MathJax limitations Limitations when using MathJax include:

Prog **MathJax**

chapter numbers

- In document classes which have chapters, `\tagged` equations have the chapter number prepended in HTML output, unlike \LaTeX . `\tag*` equations (correctly) do not. This may be improved with future versions of the MathJax support script.

<https://groups.google.com/forum/#!topic/mathjax-users/jUtewUcE2bY>

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 `Tikz` 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.

<https://github.com/mathjax/MathJax-third-party-extensions/tree/master/siunitx>

 **siunitx inside an equation**

L^AT_EX macros

- MathJax does not automatically support custom L^AT_EX macros, but they may be set up by the user.

custom MathJax macros

As an example of using custom L^AT_EX macros with MathJax, place the following at the start of the document, after `\begin{document}`:

```
\begin{warpHTML} % Only for HTML output,
\ifbool{mathjax} % and only for MathJax output:
{
  \(\ % New macros for MathJax are placed inside a math expression:
  \newcommand{\expval}[1]{\langle#1\rangle}
  \newcommand{\abs}[1]{\lvert#1\rvert}
  \)
}{}
\end{warpHTML}
```

for HTML output: 3053 `\begin{warpHTML}`

`\$` Plain dollar signs appearing in the HTML output may be interpreted by MathJax to be math shifts. For a plain text dollar `\$`, print it inside a span to avoid it being interpreted by MathJax.

```
3054 \let\LWR@origtextdollar\$
3055
3056 \renewcommand*{\$}{\%
3057 \LWR@htmltagc{span}%
3058 \LWR@origtextdollar%
3059 \LWR@htmltagc{/span}%
3060 }
```

Ctr `LWR@externalfilecnt` Counter for the external files which are generated and then referenced from the HTML:

```
3061 \newcounter{LWR@externalfilecnt}
```

54.1 Inline and display math

```
3062 \let\LWR@origdollar=$
3063 \let\secondorigdollar=$% balance for editor syntax highlighting

3064 \let\LWR@origopenparen\(  
3065 \let\LWR@origcloseparen\)
```

`$` Redefine the dollar sign to place math inside a `lateximage`, or use MathJax:
`$$`

```

3066 \begingroup
3067 \catcode'\$=\active%
3068 \protected\def$\{@ifnextchar$\LWR@doubledollar\LWR@singledollar}%

```

`\LWR@doubledollar` Redefine the double dollar sign to place math inside a `lateximage`, or use MathJax:

```

3069 \gdef\LWR@doubledollar$#1$$#{
3070 \ifbool{mathjax}%

```

For MathJax, print the math between `\[` and `\]`:

```

3071 {\textbackslash[\LWR@HTMLsanitize{#1}\textbackslash]}

```

For SVG, print the math inside a `lateximage`, with an ALT tag of the \LaTeX code:

```

3072 {% not mathjax
3073
3074 \begin{lateximage}%
3075 [\textbackslash{[] \LWR@HTMLsanitize{#1} \textbackslash{[]}]%
3076 \LWR@origdollar\LWR@origdollar#1\LWR@origdollar\LWR@origdollar%
3077 \end{lateximage}
3078
3079 }
3080 }%

```

`\LWR@singledollar` Redefine the single dollar sign to place math inside a `lateximage`, or use MathJax:

```

3081 \gdef\LWR@singledollar#1${%
3082 \ifbool{mathjax}%

```

For MathJax, print the math between `\(` and `\)`:

```

3083 {\textbackslash(\LWR@HTMLsanitize{#1}\textbackslash)}

```

For SVG, print the math inside a `lateximage`, with an ALT tag of the \LaTeX code:

```

3084 {% not mathjax
3085 \begin{lateximage}%
3086 [\textbackslash{( \LWR@HTMLsanitize{#1} \textbackslash{)}}%
3087 \LWR@origdollar#1\LWR@origdollar%
3088 \end{lateximage}%
3089 }%
3090 }%

```

`\(` Redefine to the above dollar macros.

`\)`

```

3091 \gdef\(#1\){$#1$}
3092 \gdef\[#1\]{$$#1$$}

```



```
3093
3094 \endgroup
```

Remove the old `math` and `displaymath` environments:

```
3095 \let\math\relax
3096 \let\endmath\relax
3097 \let\displaymath\relax
3098 \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`.

```
3099 \NewEnviron{math}{\expandafter\(\BODY\)}
```

Env **displaymath** Set math mode then typeset the body of what was between the begin/end. See the `environ` package for `\BODY`.

```
3100 \NewEnviron{displaymath}{\expandafter\[\BODY\]\@ignoretrue}
```

When the document begins, the dollar sign must be made active to trigger the new math macros:

```
3101 \AtBeginDocument{\catcode'\$=\active}
```

54.2 MathJax support

Ctr **LWR@nextequation** Used to add one to compute the next equation number.

```
3102 \newcounter{LWR@nextequation}
```

\LWR@syncmathjax Sets the MathJax equation format and number for the following equations.

These MathJax commands are printed inside “\($\)$ ” characters. They are printed to HTML output, not interpreted by \LaTeX .

```
3103 \newcommand*{\LWR@syncmathjax}{%
```

If using chapters, place the chapter number in front of the equation. Otherwise, use the simple equation number.

```
3104 \ifcsdef{thechapter}{
3105 \BlockClassSingle{hidden}{
3106 \textbackslash(
```

```

3107 \textbackslash{}seteqsection \{\thechapter\}
3108 \textbackslash)
3109 }
3110 }
3111 {}% not using chapters
3112

```

MathJax doesn't allow setting the equation number to 1:

```

3113 \ifthenelse{\cnttest{\value{equation}}>0}
3114 {

```

Tell MathJax that the next set of equations begins with the current L^AT_EX equation number, plus one.

```

3115 \setcounter{LWR@nextequation}{\value{equation}}
3116 \addtocounter{LWR@nextequation}{1}

```

Place the MathJax command inside “\(>” and “\)>” characters, to be printed to HTML, not interpreted by L^AT_EX.

```

3117 \BlockClassSingle{hidden}{
3118 \textbackslash(
3119 \textbackslash{}seteqnumber \{\arabic{LWR@nextequation}\}
3120 \textbackslash)>
3121 }
3122 {}% not eq > 1
3123 }

```

LWR@restoremathlatexformatting While producing math, use regular L^AT_EX formatting instead of HTML tags.

```

3124 \newcommand*{\LWR@restoremathlatexformatting}{%
3125 \let\hspace\LWR@origspace%
3126 \let\rule\LWR@origrule%
3127 \let\,\LWR@origcomma% disable HTML short unbreakable space
3128 \let\textit\LWR@origtextit%
3129 \let\textbf\LWR@origtextbf%
3130 \let\texttt\LWR@origtexttt%
3131 \let\textsc\LWR@origtextsc%
3132 \let\textsf\LWR@origtextsf%
3133 \let\textrm\LWR@origtextrm%
3134 \renewcommand*{\thefootnote}{\fnsymbol{footnote}}}%
3135 \let\textsuperscript\LWR@origtextsuperscript%
3136 \let\textsubscript\LWR@origtextsubscript%
3137 \let~\LWR@origtilde%
3138 \let\enskip\LWR@origenskip%
3139 \let\quad\LWR@origquad%
3140 \let\qquad\LWR@origqquad%
3141 }

```

`\LWR@hidelatexequation` $\{\langle environment \rangle\} \{\langle contents \rangle\}$

Creates the L^AT_EX version of the equation inside an HTML comment.

```
3142 \NewDocumentCommand{\LWR@hidelatexequation}{m +m}{%
```

Stop HTML paragraph handling and open an HTML comment:

```
3143 \LWR@stoppars
3144 \LWR@htmlopencomment
3145
```

Start the L^AT_EX math environment inside the HTML comment:

```
3146 \begingroup
3147 \csuse{\LWR@orig#1}
```

While in the math environment, restore various commands to their L^AT_EX meanings.

```
3148 \LWR@restoremathlatexformatting
```

See `\LWR@htmlmathlabel` in section 54.4.1.

Print the contents of the equation:

```
3149 #2
```

End the L^AT_EX math environment inside the HTML comment:

```
3150 \csuse{\LWR@origend#1}
3151 \endgroup
3152
```

Close the HTML comment and resume HTML paragraph handling:

```
3153 \LWR@htmlclosecomment
3154 \LWR@startpars
3155 }
```

`\LWR@addmathjax` $\{\langle environment \rangle\} \{\langle contents \rangle\}$

Given the name of a math environment and its contents, create a MathJax instance. The contents are printed to HTML output, not interpreted by L^AT_EX.

```
3156 \NewDocumentCommand{\LWR@addmathjax}{m +m}{%
3157
```

Enclose the MathJax environment inside printed “\(" and “\)” characters.

```
3158 \textbackslash{}begin\{#1\}
```

Print the contents, sanitizing for HTML special characters.

```
3159 \LWR@HTMLsanitizeexpand{\detokenize\expandafter{#2}}
```

Close the MathJax environment:

```
3160 \textbackslash{}end\{#1\}
```

```
3161
```

```
3162 }
```

54.3 Equation environment

Remember existing `equation` environment:

```
3163 \let\LWR@origequation\equation
```

```
3164 \let\LWR@origendequation\endequation
```

Remove existing `equation` environment:

```
3165 \let\equation\relax
```

```
3166 \let\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`.

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 `\labels`. The contents are also printed to the HTML output for processing by the MathJax script.

```
3167 \NewEnviron{equation}{%
```

```
3168
```

```
3169 \ifbool{mathjax}
```

MathJax output:

```
3170 {
```

Print commands to synchronize MathJax's equation number and format to the current \LaTeX chapter/section and equation number:

```
3171 \LWR@syncmathjax
```

Print the \LaTeX math inside an HTML comment:

```
3172 \LWR@hidelatexequation{equation}{\BODY}
3173 }
```

SVG output: Create the `lateximage` along with an HTML ALT tag having an equation number, the \LaTeX equation environment commands, and the contents of the environment's `\BODY`.

```
3174 {% not mathjax
```

Begin the `lateximage` with an ALT tag containing the math source:

```
3175 \begin{lateximage}[(\theequation) \textbackslash{begin\{equation\}}]%
3176 \LWR@HTMLsanitizeexpand{\detokenize\expandafter\BODY}}}%
3177 \textbackslash{end\{equation\}}}% alt tag
```

Create the actual \LaTeX -formatted equation inside the `lateximage` using the contents of the environment.

```
3178 \LWR@origequation
3179 \BODY% contents collected by NewEnviron
3180 \LWR@origendequation
3181 \end{lateximage}%
3182 }
3183
```

After the environment, if MathJax, print the math to the HTML output for MathJax processing:

```
3184 }[\ifbool{mathjax}{\LWR@addmathjax{equation}{\BODY}}{}}]
```

54.4 AMS Math environments

54.4.1 Support macros

Bool `LWR@amsmultline` True if processing a multiline environment.

To compensate for multiline-specific code, `LWR@amsmultline` is used to add extra horizontal space in `\LWR@htmlmathlabel` if is used in an `amsmath` environment which is not a multiline environment and not an equation.

```
3185 \newbool{LWR@amsmultline}
3186 \boolfalse{LWR@amsmultline}
```

`\LWR@htmlmathlabel` $\{\langle label \rangle\}$

`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`.

```
3187 \newcommand*\LWR@htmlmathlabel}[1]{%
3188 \LWR@traceinfo{\LWR@htmlmathlabel #1}%
3189 \ifbool{mathjax}{%
```

The combined \LaTeX & HTML label is printed in a `\text` field:

```
3190 \text{
```

Shift the label over to the right side of the environment to avoid over-printing the math:

```
3191 \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.)

```
3192 \LWR@htmlclosecomment%
3193 \LWR@origltx@label{#1}%
3194 \LWR@htmlopencomment%
3195 }% text
3196 }% mathjax
3197 {%
3198 \LWR@origltx@label{#1}%
3199 }%
3200 }
```

`\LWR@beginhideamsmath` Starts hiding \LaTeX math inside an HTML comment.

```
3201 \newcommand*\LWR@beginhideamsmath){
3202 \LWR@stoppars
3203
3204 \LWR@htmlopencomment
3205
3206 \begingroup
3207 \LWR@restoremathlatexformatting
3208 }
```

`\LWR@endhideamsmath` Ends hiding \LaTeX math inside an HTML comment.

```

3209 \newcommand*{\LWR@endhideamsmath}{
3210 \endgroup
3211
3212 \LWR@htmlclosecomment
3213
3214 \LWR@startpars
3215 }

```

54.4.2 Environment patches

The following `amsmath` environments already collect their contents in `\@envbody` for further processing.

For SVG math: Each environment is encapsulated inside a `lateximage` environment, along with a special `LWRAMSMATHBODY` argument telling `lateximage` to use as the HTML ALT tag the environment's contents which were automatically captured by the $\mathscr{A}\mathscr{M}\mathscr{S}$ environment.

For MathJax: Each environment is syched with L^AT_EX's equation numbers, typeset with L^AT_EX inside an HTML comment, then printed to HTML output for MathJax to process.

Env `multline`

```

3216 \BeforeBeginEnvironment{multline}{
3217 \ifbool{mathjax}
3218 {
3219 \LWR@syncmathjax
3220 \booltrue{LWR@amsmultline}
3221 \LWR@beginhideamsmath
3222 }
3223 {
3224 \lateximage[LWRAMSMATHBODY]
3225 }
3226 }
3227
3228 \AfterEndEnvironment{multline}{
3229
3230 \ifbool{mathjax}
3231 {
3232 \LWR@endhideamsmath
3233 \boolfalse{LWR@amsmultline}
3234 \LWR@addmathjax{multline}{\the\@envbody}
3235 }
3236 {\endlateximage}
3237
3238 }

```

Env **multline***

```

3239 \BeforeBeginEnvironment{multline*}{
3240 \ifbool{mathjax}
3241 {
3242 \LWR@syncmathjax
3243 \booltrue{LWR@amsmultline}
3244 \LWR@beginhideamsmath
3245 }
3246 {
3247 \lateximage[LWR@SMATHBODY]
3248 }
3249 }
3250
3251 \AfterEndEnvironment{multline*}{
3252
3253 \ifbool{mathjax}
3254 {
3255 \LWR@endhideamsmath
3256 \boolfalse{LWR@amsmultline}
3257 \LWR@addmathjax{multline*}{\the\@envbody}
3258 }
3259 {\endlateximage}
3260
3261 }
3262

```

Env **gather**

```

3263 \BeforeBeginEnvironment{gather}{
3264 \ifbool{mathjax}
3265 {
3266 \LWR@syncmathjax
3267 \boolfalse{LWR@amsmultline}
3268 \LWR@beginhideamsmath
3269 }
3270 {
3271 \lateximage[LWR@SMATHBODY]
3272 }
3273 }
3274
3275 \AfterEndEnvironment{gather}{
3276
3277 \ifbool{mathjax}
3278 {
3279 \LWR@endhideamsmath
3280 \LWR@addmathjax{gather}{\the\@envbody}
3281 }
3282 {\endlateximage}

```



```
3283
3284 }
```

Env **gather***

```
3285 \BeforeBeginEnvironment{gather*}{
3286 \ifbool{mathjax}
3287 {
3288 \LWR@syncmathjax
3289 \boolfalse{LWR@amsmultline}
3290 \LWR@beginhideamsmath
3291 }
3292 {
3293 \lateximage[LWRAMSMATHBODY]
3294 }
3295 }
3296
3297 \AfterEndEnvironment{gather*}{
3298
3299 \ifbool{mathjax}
3300 {
3301 \LWR@endhideamsmath
3302 \LWR@addmathjax{gather*}{\the\@envbody}
3303 }
3304 {\endlateximage}
3305
3306 }
```

Env **align**

```
3307 \BeforeBeginEnvironment{align}{
3308 \ifbool{mathjax}
3309 {
3310 \LWR@syncmathjax
3311 \boolfalse{LWR@amsmultline}
3312 \LWR@beginhideamsmath
3313 }
3314 {
3315 \lateximage[LWRAMSMATHBODY]
3316 }
3317 }
3318
3319 \AfterEndEnvironment{align}{
3320
3321 \ifbool{mathjax}
3322 {
3323 \LWR@endhideamsmath
3324 \LWR@addmathjax{align}{\the\@envbody}
3325 }
```

```

3326 {\endlateximage}
3327
3328 }

```

Env **align***

```

3329 \BeforeBeginEnvironment{align*}{
3330 \ifbool{mathjax}
3331 {
3332 \LWR@syncmathjax
3333 \boolfalse{LWR@amsmultline}
3334 \LWR@beginhideamsmath
3335 }
3336 {
3337 \lateximage[LWR@SMATHBODY]
3338 }
3339 }
3340
3341 \AfterEndEnvironment{align*}{
3342
3343 \ifbool{mathjax}
3344 {
3345 \LWR@endhideamsmath
3346 \LWR@addmathjax{align*}{\the\@envbody}
3347 }
3348 {\endlateximage}
3349
3350 }

```

Env **flalign**

```

3351 \BeforeBeginEnvironment{flalign}{
3352 \ifbool{mathjax}
3353 {
3354 \LWR@syncmathjax
3355 \boolfalse{LWR@amsmultline}
3356 \LWR@beginhideamsmath
3357 }
3358 {
3359 \lateximage[LWR@SMATHBODY]
3360 }
3361 }
3362
3363 \AfterEndEnvironment{flalign}{
3364
3365 \ifbool{mathjax}
3366 {
3367 \LWR@endhideamsmath
3368 \LWR@addmathjax{flalign}{\the\@envbody}

```

```

3369 }
3370 {\endlateximage}
3371
3372 }

```

Env `flalign*`

```

3373 \BeforeBeginEnvironment{flalign*}{
3374 \ifbool{mathjax}
3375 {
3376 \LWR@syncmathjax
3377 \boolfalse{LWR@amsmultline}
3378 \LWR@beginhideamsmath
3379 }
3380 {
3381 \lateximage[LWR@SMATHBODY]
3382 }
3383 }
3384
3385 \AfterEndEnvironment{flalign*}{
3386
3387 \ifbool{mathjax}
3388 {
3389 \LWR@endhideamsmath
3390 \LWR@addmathjax{flalign*}{\the\@envbody}
3391 }
3392 {\endlateximage}
3393
3394 }

3395 \end{warpHTML}

```

55 Lateximages

A `\lateximage` is typeset on its own PDF page inside an HTML comment starting on the preceeding page and ending 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.

Since the `\lateximage` is placed onto its own PDF page, which `pdftotext` will read and try to convert to text, an HTML open comment is placed onto the bottom of the current page, but it must appear below any footnotes on the current page, so a special page style (`LWR@commentfooterstyle`) is used.

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.

SVG image font size 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*, for ex:
`\renewcommand{\LateximageFontSizeName}{large}`

for HTML output: `3396 \begin{warpHTML}`

`LWR@commentfooterstyle`

```
3397 \newpagestyle{LWR@commentfooterstyle}{
3398 \sethead{}{}{}
3399 \setfoot{\LWR@htmlopencomment}{}{}
3400 }
```

`Ctr LWR@lateximagenumber` Sequence the images.

```
3401 \newcounter{LWR@lateximagenumber}
3402 \setcounter{LWR@lateximagenumber}{0}
```

`Ctr LWR@lateximagedepth` Do not create `\lateximage` inside of `\lateximage`.

```
3403 \newcounter{LWR@lateximagedepth}
3404 \setcounter{LWR@lateximagedepth}{0}
```

Declare the `\LWR@file` for writing to generate file `lateximages.txt`:

```
3405 \ifcsdef{\LWR@file}{}{\newwrite{\LWR@file}}
```

A few utility macros to write special characters:

```
3406 \edef\LWR@hashmark{\string#} % for use in \write
3407 \edef\LWR@percent{\@percentchar} % for use in \write
```

`Ctr LWR@nextpage` Used to count ahead to the next page:

```
3408 \newcounter{LWR@nextpage}

3409 \end{warpHTML}
```

for HTML & PRINT: `3410 \begin{warpall}`

`\LateximageFontSizeName` Declares how large to write text in the `\lateximage`. The `.svg` file text size should blend well with the surrounding HTML text size.

Do not include the leading backslash in the name.

```
3411 \newcommand*{\LateximageFontSizeName}{large}
```

```
3412 \end{warpall}
```

for HTML output: 3413 \begin{warpHTML}

```
\LWR@HTMLsanitize {\langle text \rangle}
```

Math expressions are converted to `lateximages`, 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...

```
3414 \newcommand{\LWR@HTMLsanitize}[1]{%
3415 \protect\StrSubstitute{\detokenize{#1}}{%
3416 {\detokenize{&}}}%
3417 {\detokenize{&}}[\LWR@strresult]%
3418 \protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}{%
3419 {\detokenize{<}}}%
3420 {\detokenize{<}}[\LWR@strresult]%
3421 [\LWR@strresult]%
3422 \protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}{%
3423 {\detokenize{>}}}%
3424 {\detokenize{>}}[\LWR@strresult]%
3425 [\LWR@strresult]%
3426 \protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}{%
3427 {\detokenize{##}}}%
3428 {\detokenize{##}}[\LWR@strresult]%
3429 [\LWR@strresult]%
3430 \LWR@strresult%
3431 }
```

```
\LWR@HTMLsanitizeexpand {\langle text \rangle}
```

This version expands the argument before sanitizing it.

```
3432 \newcommand{\LWR@HTMLsanitizeexpand}[1]{%
3433 \protect\StrSubstitute{\detokenize\expandafter{#1}}{%
3434 {\detokenize{&}}}%
3435 {\detokenize{&}}[\LWR@strresult]%
3436 [\LWR@strresult]%
3437 \protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}{%
3438 {\detokenize{<}}}%
3439 {\detokenize{<}}[\LWR@strresult]%
3440 [\LWR@strresult]%
3441 \protect\StrSubstitute{\detokenize\expandafter{\LWR@strresult}}{%
3442 {\detokenize{>}}}%
3443 {\detokenize{>}}[\LWR@strresult]%
3444 [\LWR@strresult]%
3445 }
```

```

3445 \LWR@strresult%
3446 }

```

Env `lateximage` [*alttag*]

```

3447 \NewDocumentEnvironment{lateximage}{0{image}}{%
3448 \ifthenelse{\cnttest{\value{LWR@lateximagedepth}}{>}{0}}%

```

If nesting inside an already-existing lateximage, simply record one more level:

```

3449 {%
3450 \addtocounter{LWR@lateximagedepth}{1}%
3451 }%

```

Otherwise, this is the outer-most lateximage:

```

3452 {% start of outer-most lateximage

```

Starting a new lateximage:

```

3453 \addtocounter{LWR@lateximagenumber}{1}%

```

While inside a lateximage, do not use mathjax:

```

3454 \boolfalse{mathjax}

```

Be sure that are doing a paragraph:

```

3455 \LWR@ensuredoingapar%

```

Next file:

```

3456 \addtocounter{LWR@externalfilecnt}{1}%

```

Figure out what the next page number will be:

```

3457 \setcounter{LWR@nextpage}{\thepage}%
3458 \addtocounter{LWR@nextpage}{1}%

```

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:

```

3459 \LWR@htmltag{span id="lateximage\arabic{LWR@lateximagenumber}" %
3460 class="lateximagesource"{} } \LWR@orignewline

```

Write instructions to the `lateximages.txt` file:

```

3461 \immediate\write\LWR@file{|\theLWR@nextpage|\theLWR@externalfilecnt|}%

```

Place an open comment tag at the bottom of page; footnotes will be above this tag. This will hide any traces of the lateximage PDF page which were picked up by pdftotext.

```
3462 \LWR@origthispagestyle{\LWR@commentfooterstyle}%
3463 \addtocounter{\LWR@lateximagedepth}{1}%
```

Start the new PDF page:

```
3464 \LWR@orignewpage%
```

Typeset the image in a “standard” width page and font size:

```
3465 \LWR@origminipage{6in}%
3466 \csuse{\LWR@orig\LateximageFontSizeName}%
```

Temporarily restore formatting to its PDF definitions: Do not produce HTML tags for \hspace, etc. inside a lateximage.

```
3467 \let\hspace\LWR@origspace%
3468 \let\rule\LWR@origrule%
3469 \let\,\LWR@origcomma% disable HTML short unbreakable space
3470 \let\textit\LWR@origtextit%
3471 \let\textbf\LWR@origtextbf%
3472 \let\texttt\LWR@origtexttt%
3473 \let\textsc\LWR@origtextsc%
3474 \let\textsf\LWR@origtextsf%
3475 \let\textrm\LWR@origtextrm%
3476 \renewcommand*{\thefootnote}{\fnsymbol{footnote}}%
3477 \let\textsuperscript\LWR@origtextsuperscript%
3478 \let\textsubscript\LWR@origtextsubscript%
3479 \let~\LWR@origtilde%
3480 \let\enskip\LWR@origenskip%
3481 \let\quad\LWR@origquad%
3482 \let\qquad\LWR@origqquad%
3483 \let\tabular\LWR@origtabular%
3484 \let\endtabular\LWR@origendtabular%
3485 \let\newline\LWR@orignewline%
3486 }% end of outer-most lateximage
3487 }% end of \begin{lateximage}
3488 {% start of \end{lateximage}
3489 \ifthenelse{\cnttest{\value{\LWR@lateximagedepth}}{>}{1}}%
```

If nesting inside an already-existing lateximage, simply record one more level:

```
3490 {%
3491 \addtocounter{\LWR@lateximagedepth}{-1}%
3492 }%
```

if this is the outer-most lateximage:

```
3493 {% end of outer-most lateximage
```

Finish the lateximage minipage and start a new PDF page:

```
3494 \LWR@origendminipage%
3495 \LWR@orignewpage%
3496 \LWR@origscriptsize%
```

Close the HTML comment which encapsulated any traces of the lateximage picked up by `pdftotext`:

```
3497 \LWR@htmlclosecomment{}\LWR@orignewline%
```

Create a link to the lateximage, allowing its natural height:

If the alt tag is given as “LWRAMSMATHBODY”, then use the text collected by the `amsmath` `multline`, `gather`, or `align` environments.

```
3498 \ifthenelse{\equal{#1}{LWRAMSMATHBODY}}{%
3499 {%
3500 \LWR@subinlineimage[%
3501 \LWR@HTMLsanitizeexpand{\detokenize\expandafter{\the\@envbody}}}%
3502 ]%
3503 {lateximage}%
3504 {lateximages\OSPathSymbol{}lateximage-\theLWR@externalfilecnt}%
3505 {svg}%
3506 {}%
3507 }%
3508 {%
3509 \LWR@subinlineimage[#1]{lateximage}%
3510 {lateximages\OSPathSymbol{}lateximage-\theLWR@externalfilecnt}{svg}{}%
3511 }%
3512 % \LWR@orignewline% Removed to prevent extra space.
```

Be sure that are doing a paragraph:

```
3513 \LWR@ensuredoingapar%
```

Close the HTML span which has the `pdftotext` comment and also the link to the `.svg` image:

```
3514 \LWR@htmltag{/span}%
3515 \LWR@htmlcomment{End of lateximage}%
3516 % \LWR@orignewline% Removed to prevent extra space.
```

Undo one lateximage level:


```

3517 \addtocounter{LWR@lateximagedepth}{-1}%
3518 }% end of outer-most lateximage
3519 }%
3520 \end{warpHTML}

```

for PRINT output:

```

3521 \begin{warpprint}
3522 \newenvironment{lateximage}[1][\begin{group}\end{group}]
3523 \end{warpprint}

```

56 center, flushleft, flushright

for HTML output:

```

3524 \begin{warpHTML}

```

Env **center** Replace center functionality with CSS tags:

```

3525 \renewenvironment*{center}
3526 {\BlockClass{center}}
3527 {\endBlockClass}

```

Env **flushright**

```

3528 \renewenvironment*{flushright}
3529 {\BlockClass{flushright}}
3530 {\endBlockClass}

```

Env **flushleft**

```

3531 \renewenvironment*{flushleft}
3532 {\BlockClass{flushleft}}
3533 {\endBlockClass}

```

```

3534 \end{warpHTML}

```

57 Siunitx

Pkg **siunitx**



per-mode

Do not use `per-mode=fraction`, which cannot be seen by the final `pdftotext` conversion.

for HTML output:

```

3535 \begin{warpHTML}

```

Options for siunitx:

```

3536 \PassOptionsToPackage{
3537 detect-mode=true,
3538 per-mode=symbol,% fraction is not seen by pdftotext
3539 text-celsius = {\HTMLentity{deg}C},
3540 text-degree = {\HTMLentity{deg}},
3541 }{siunitx}

3542 \end{warpHTML}

```

58 Graphics

Pkg **graphics**


Pkg **graphicx**

\graphicspath `\graphicspath` only works for a single directory; all graphics must be in this directory.


units 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`. Using 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.

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.

 **image file types** For `\includegraphics` the user should provide both `.pdf` and `.svg` images, but always refer to `.pdf` images in the document source. All `\includegraphics` references to `.pdf` will automatically be changed to `.svg` for HTML output, and will be left as `.pdf` for print output. Images may also be `.jpg` and `.png`, and will be used as-is for either 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 L^AT_EX, so expect some ugly results for scaling and rotating.

for HTML output: 3543 `\begin{warpHTML}`

58.1 `\graphicspath`

`\graphicspath` $\{\langle path \rangle\}$

```
3544 \newcommand*\thisgraphicspath{{}}
3545 \renewcommand*\graphicspath[1]{\renewcommand*\thisgraphicspath{#1}}
```

`\DeclareGraphicsExtensions` $\{\langle list \rangle\}$

`\DeclareGraphicsRule` $\{\langle \rangle\} \{\langle \rangle\} \{\langle \rangle\} \{\langle \rangle\}$

```
3546 \renewcommand*\DeclareGraphicsExtensions[1]{ }
3547 \renewcommand*\DeclareGraphicsRule[4]{ }
```

58.2 Length conversions and graphics options



whitespace

A scaled image in L^AT_EX 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.

```
3548 \renewcommand*\unitspace{ }
```

Used to store the user’s selected dimensions and HTML class.

The class defaults to “inlineimage” unless changed by a `class=xyx` option.

```
3549 \newlength{\LWR@igwidth}
3550 \newlength{\LWR@igheight}
3551 \newcommand*\LWR@igwidthstyle{ }
3552 \newcommand*\LWR@igheightstyle{ }
3553 \newcommand*\LWR@igorigin{ }
3554 \newcommand*\LWR@igangle{ }
3555 \newcommand*\LWR@igxscale{1}
3556 \newcommand*\LWR@igyscale{1}
3557 \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:

```
3558 \define@key{igraph}{width}{%
3559 \setlength{\LWR@igwidth}{#1}%
3560 \ifthenelse{\lengthtest{\LWR@igwidth > 0pt}}{ }{ }
3561 }
```

Default to use the converted fixed length given:

```
3562 \uselengthunit{PT}%
3563 \renewcommand*{\LWR@igwidthstyle}{width:\rndprintlength{\LWR@igwidth}}%
```

If ex or em dimensions were given, use those instead:

```
3564 \IfEndWith{#1}{ex}%
3565 {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes ex
3566 {}% not ex
3567 \IfEndWith{#1}{em}%
3568 {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes em
3569 {}% not em
3570 \IfEndWith{#1}{\}%
3571 {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes percent
3572 {}% not percent
3573 \IfEndWith{#1}{px}%
3574 {\renewcommand*{\LWR@igwidthstyle}{width:#1}}% yes px
3575 {}% not px
3576 }{}% end of length > Opt
3577 }
```

If an optional height was given, set an HTML style:

```
3578 \define@key{igraph}{height}{%
3579 \setlength{\LWR@igheight}{#1}%
3580 \ifthenelse{\lengthtest{\LWR@igheight > Opt}}%
3581 {%
```

Default to use the converted fixed length given:

```
3582 \uselengthunit{PT}%
3583 \renewcommand*{\LWR@igheightstyle}{%
3584 height:\rndprintlength{\LWR@igheight} %
3585 }%
```

If ex or em dimensions were given, use those instead:

```
3586 \IfEndWith{#1}{ex}%
3587 {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes ex
3588 {}% not ex
3589 \IfEndWith{#1}{em}%
3590 {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes em
3591 {}% not em
3592 \IfEndWith{#1}{\}%
3593 {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes percent
3594 {}% not percent
3595 \IfEndWith{#1}{px}%
3596 {\renewcommand*{\LWR@igheightstyle}{height:#1}}% yes px
```

```

3597 {}% not px
3598 {}% end of length > 0pt
3599 }

```

Handle origin key:

```

3600 \define@key{igraph}{origin}{%
3601 \renewcommand*{\LWR@igorigin}{#1}%
3602 }

```

Handle angle key:

```

3603 \define@key{igraph}{angle}{\renewcommand*{\LWR@igangle}{#1}}

```

Handle class key:

```

3604 \define@key{igraph}{class}{\renewcommand*{\LWR@igclass}{#1}}
3605

```

It appears that `graphicx` does not have separate keys for `xscale` and `yscale`. `scale` adjusts both at the same time.

```

3606 \define@key{igraph}{scale}{%
3607 \renewcommand*{\LWR@igxscale}{#1}%
3608 \renewcommand*{\LWR@igyscale}{#1}}

```

Numerous ignored keys:

```

3609 \define@key{igraph}{bb}{}
3610 \define@key{igraph}{bblly}{}
3611 \define@key{igraph}{bbllx}{}
3612 \define@key{igraph}{bburx}{}
3613 \define@key{igraph}{bbury}{}
3614 \define@key{igraph}{natwidth}{}
3615 \define@key{igraph}{natheight}{}
3616 \define@key{igraph}{hiresbb}{}
3617 \define@key{igraph}{viewport}{}
3618 \define@key{igraph}{trim}{}
3619 \define@key{igraph}{totalheight}{}
3620 \define@key{igraph}{keepaspectratio}{}
3621 \define@key{igraph}{clip}{}
3622 \define@key{igraph}{draft}{}
3623 \define@key{igraph}{type}{}
3624 \define@key{igraph}{ext}{}
3625 \define@key{igraph}{read}{}
3626 \define@key{igraph}{command}{}

```

`\LWR@rotstyle` $\{\langle prefix \rangle\} \{\langle degrees \rangle\}$

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.

```
3627 \newcommand*{\LWR@rotstyle}[2]{%
3628   #1transform:rotate(-#2deg);
3629 }
```

\LWR@scalestyle $\{\langle prefix \rangle\} \{\langle xscale \rangle\} \{\langle yscale \rangle\}$

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.

```
3630 \newcommand*{\LWR@scalestyle}[3]{%
3631   #1transform:scale(#2,#3);
3632 }
```

58.3 \includegraphics

Bool **LWR@infloatrow** Used to compute `\linewidth`.

```
3633 \newbool{LWR@infloatrow}
3634 \boolfalse{LWR@infloatrow}

3635 \newcommand*{\LWR@imageextension}{}
3636 \newcommand*{\LWR@expgraphicsfilename}{}

```

\LWR@includegraphicsb $[\langle options \rangle] \{\langle filename \rangle\}$

```
3637
3638 \newcommand*{\LWR@includegraphicsb}[2] []
3639 {%

```

Start the image tag on a new line, allow PDF output word wrap:

```
3640 \LWR@origtilde \LWR@orignewline%
```

Temporarily compute `\linewidth`, `\textwidth`, `\textheight` arguments with a 6x9 inch size until the next `\endgroup`.

```
3641 \ifthenelse{\cnttest{\value{LWR@minipagedepth}}{=}{0}}{%
3642 \ifbool{LWR@infloatrow}%

```

```

3643 {}
3644 {% not in a minipage or a floatrow:
3645 \setlength{\linewidth}{6in}%
3646 \setlength{\textwidth}{6in}%
3647 \setlength{\textheight}{9in}%
3648 }%
3649 }{}%
```

See if can find the image by adding an extension:

Preference is `svgz`, then `svg`, `gif`, `png`, and `jpg`.

`\detokenize\expandafter` allows underscore characters in filenames.

```

3650 \edef\LWR@expgraphicsfilename{#2}
3651 \renewcommand*\LWR@imageextension{}{}%
3652 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.jpg}%
3653 {\renewcommand*\LWR@imageextension}{.jpg}}{}%
3654 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.JPG}%
3655 {\renewcommand*\LWR@imageextension}{.JPG}}{}%
3656 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.png}%
3657 {\renewcommand*\LWR@imageextension}{.png}}{}%
3658 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.PNG}%
3659 {\renewcommand*\LWR@imageextension}{.PNG}}{}%
3660 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.gif}%
3661 {\renewcommand*\LWR@imageextension}{.gif}}{}%
3662 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.GIF}%
3663 {\renewcommand*\LWR@imageextension}{.GIF}}{}%
3664 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.svg}%
3665 {\renewcommand*\LWR@imageextension}{.svg}}{}%
3666 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.SVG}%
3667 {\renewcommand*\LWR@imageextension}{.SVG}}{}%
3668 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.svgz}%
3669 {\renewcommand*\LWR@imageextension}{.svgz}}{}%
3670 \IfFileExists{\detokenize\expandafter\thisgraphicspath\LWR@expgraphicsfilename.SVGZ}%
3671 {\renewcommand*\LWR@imageextension}{.SVGZ}}{}%
```

Convert a PDF extension to SVG, leave the result in `\LWR@strresult`:

Must also `\detokenize .pdf` and `.svg` comparison strings.

```

3672 \StrSubstitute{\detokenize\expandafter\LWR@expgraphicsfilename}%
3673 {\detokenize{.pdf}}{\detokenize{.svg}}[\LWR@strresult]%
3674 %
3675 \StrSubstitute{\LWR@strresult}%
3676 {\detokenize{.PDF}}{\detokenize{.SVG}}[\LWR@strresult]%
```

For correct em sizing during the width and height conversions:

```

3677 \large%
```

Reset some defaults, possibly will be changed below if options were given:

```

3678 \setlength{\LWR@igwidth}{Opt}%
3679 \setlength{\LWR@igheight}{Opt}%
3680 \renewcommand*\LWR@igwidthstyle{}%
3681 \renewcommand*\LWR@igheightstyle{}%
3682 \renewcommand*\LWR@igorigin{}%
3683 \renewcommand*\LWR@igangle{}%
3684 \renewcommand*\LWR@igxscale{1}%
3685 \renewcommand*\LWR@igyscale{1}%
3686 \renewcommand*\LWR@igclass{inlineimage}%

```

Options are in #1

```

3687 \setkeys{igraph}{#1}%

```

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.

```

3688 \href{\thisgraphicspath\LWR@strresult\LWR@imageextension}%
3689 {% start of href
3690 \LWR@htmltag{% start of image tags
3691 img src="\thisgraphicspath\LWR@strresult\LWR@imageextension" \LWR@orignewline
3692 \LWR@origtilde{} alt="\LWR@strresult" \LWR@orignewline

```

Only include a style tag if a width, height, angle, or scale was given:

```

3693 \ifthenelse{
3694 \NOT\equal{\LWR@igwidthstyle}{} \OR
3695 \NOT\equal{\LWR@igheightstyle}{} \OR
3696 \NOT\equal{\LWR@igorigin}{} \OR
3697 \NOT\equal{\LWR@igangle}{} \OR
3698 \NOT\equal{\LWR@igxscale}{1} \OR
3699 \NOT\equal{\LWR@igyscale}{1}
3700 }%
3701 {\LWR@origtilde{} style="%
3702 \ifthenelse{\NOT\equal{\LWR@igwidthstyle}{}}%
3703 {\LWR@igwidthstyle;}{}%
3704 \ifthenelse{\NOT\equal{\LWR@igheightstyle}{}}%
3705 {\LWR@igheightstyle;}{}%
3706 \ifthenelse{\NOT\equal{\LWR@igorigin}{}}%
3707 {\LWR@origtilde{} transform-origin: \LWR@originnames{\LWR@igorigin}; \LWR@orignewline}{}%
3708 \ifthenelse{\NOT\equal{\LWR@igangle}{}}%
3709 {%
3710 \LWR@rotstyle{-ms-}{\LWR@igangle}%
3711 \LWR@rotstyle{-webkit-}{\LWR@igangle}%

```



```

3712 \LWR@rotstyle{}\LWR@igangle%
3713 }{}%
3714 \ifthenelse{\NOT\equal{\LWR@igxscale}{1}\OR%
3715 \NOT\equal{\LWR@igyscale}{1}}%
3716 {\LWR@scalestyle{-ms-}\LWR@igxscale}\LWR@igyscale}%
3717 \LWR@scalestyle{-webkit-}\LWR@igxscale}\LWR@igyscale}%
3718 \LWR@scalestyle{}\LWR@igxscale}\LWR@igyscale}}{}%
3719 " \LWR@orignewline}{}%

```

Set the class:

```

3720 \LWR@origtilde{} class="\LWR@igclass" \LWR@orignewline%
3721 }% end of image tags
3722 }% end of href
3723 \endgroup

```

Return to small-sized output:

```

3724 \LWR@origscriptsize
3725 }

```

`\includegraphics` [*(key=val)*] {*(filename)*}

Handles width and height, converted to fixed width and heights.

Converts any .pdf references to .svg for HTML

The user should always refer to .pdf in the document source.

```

3726 \renewcommand*\includegraphics{
3727 {%

```

This graphic should trigger an HTML paragraph even if alone, so ensure that are doing paragraph handling:

```

3728 \LWR@ensuredoingapar%
3729 \begin{group}%
3730 \LWR@includegraphicsb%
3731 }

```

```

3732 \end{warpHTML}

```

for PRINT output: For print output, accept and then discard the new class key:

```

3733 \begin{warpprint}
3734 \define@key{Gin}{class}{}
3735 \end{warpprint}

```

58.4 \rotatebox, \scalebox, \reflectbox

for HTML output: 3736 \begin{warpHTML}

\LWR@rotboxorigin Holds the origin key letters.

```
3737 \newcommand*\LWR@rotboxorigin{}
```

\LWR@originname {\langle letter \rangle}

Given one L^AT_EX origin key value, translate into an HTML origin word:

```
3738 \newcommand*\LWR@originname[1]{%
3739 \ifthenelse{\equal{#1}{t}}{top}{}%
3740 \ifthenelse{\equal{#1}{b}}{bottom}{}%
3741 \ifthenelse{\equal{#1}{c}}{center}{}%
3742 \ifthenelse{\equal{#1}{l}}{left}{}%
3743 \ifthenelse{\equal{#1}{r}}{right}{}%
3744 }
```

\LWR@originnames {\langle letters \rangle}

Given one- or two-letter L^AT_EX origin key values, translate into HTML origin words:

```
3745 \newcommand*\LWR@originnames[1]{%
3746 \StrChar{#1}{1}[\LWR@strresult]%
3747 \LWR@originname{\LWR@strresult}%
3748 \StrChar{#1}{2}[\LWR@strresult]%
3749 \LWR@originname{\LWR@strresult}%
3750 }
```

Handle the origin key for \rotatebox:

```
3751 \define@key{krotbox}{origin}{%
3752 \renewcommand*\LWR@rotboxorigin{#1}%
3753 }
```

These keys are ignored:

```
3754 \define@key{krotbox}{x}{}
3755 \define@key{krotbox}{y}{}
3756 \define@key{krotbox}{units}{}

```

\rotatebox [*\langle keyval list \rangle*] {\langle angle \rangle} {\langle text \rangle}

Will `\let\rotatebox\LWR@rotatebox` at `\LWR@LwarpStart`, in case `\rotatebox` was over-written by a later package load.

```
3757 \NewDocumentCommand{\LWR@rotatebox}{0}{ m +m}{%
```

Reset the origin to “none-given”:

```
3758 \renewcommand*{\LWR@rotboxorigin}{}
```

Process the optional keys, which may set `\LWR@rotateboxorigin`:

```
3759 \setkeys{krotbox}{#1}%
```

Select `inline-block` so that HTML will transform this span:

```
3760 \LWR@htmltagc{span style="display: inline-block;
```

If an origin was given, translate and print the origin information:

```
3761 \ifthenelse{\NOT\equal{\LWR@rotboxorigin}{}}{%
3762 {transform-origin: \LWR@originnames{\LWR@rotboxorigin};\LWR@origtilde}{}}%
```

Print the rotation information:

```
3763 \LWR@rotstyle{-ms-}{#2} %
3764 \LWR@rotstyle{-webkit-}{#2} %
3765 \LWR@rotstyle}{#2} %
3766 "{}\LWR@orignewline%
```

Print the text to be rotated:

```
3767 \begin{LWR@nestspan}%
3768 #3%
```

Close the span:

```
3769 \LWR@htmltagc{/span}%
3770 \end{LWR@nestspan}%
3771 }
```

`\scalebox` $\{\langle h-scale \rangle\} [\langle v-scale \rangle] \{\langle text \rangle\}$

Will `\let\scalebox\LWR@scalebox` at `\LWR@LwarpStart`, in case `\scalebox` was over-written by a later package load.

```
3772 \NewDocumentCommand{\LWR@scalebox}{m o m}{%
```

Select `inline-block` so that HTML will transform this span:

```
3773 \LWR@htmltagc{span style="display: inline-block; %
```

Print the scaling information:

```
3774 \LWR@scalestyle{-ms-}{#1}{\IfNoValueTF{#2}{#1}{#2}} %
3775 \LWR@scalestyle{-webkit-}{#1}{\IfNoValueTF{#2}{#1}{#2}} %
3776 \LWR@scalestyle{}{#1}{\IfNoValueTF{#2}{#1}{#2}} %
3777 "{}}%
```

Print the text to be scaled:

```
3778 \begin{LWR@nestspan}%
3779 #3%
```

Close the span:

```
3780 \LWR@htmltagc{/span}%
3781 \end{LWR@nestspan}%
3782 }
```

`\reflectbox` $\{\langle text \rangle\}$

Will `\let\reflectbox\LWR@reflectbox` at `\LWR@LwarpStart`, in case `\reflectbox` was over-written by a later package load.

```
3783 \newcommand{\LWR@reflectbox}[1]{\LWR@scalebox{-1}[1]{#1}}
3784 \end{warpHTML}
```

58.5 Null functions

These functions are not supported by `lwarp`'s HTML conversion.

for HTML output: 3785 `\begin{warpHTML}`

`\resizebox` $\{\langle h-length \rangle\} \{\langle v-length \rangle\} \{\langle text \rangle\}$

Simply prints its text argument.

```
3786 \renewcommand{\resizebox}[3]{#3}
3787 \end{warpHTML}
```

59 Cleverref

Pkg `cleveref` `cleveref` package is used as-is with minor patches.

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 8 on 190 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: 3788 `\begin{warptHTML}`

`\AtEndPreamble` forces `cleveref` to be loaded last:

```
3789 \AtEndPreamble{
3790 \RequirePackage{cleveref}
3791 \crefname{pagenote}{note}{notes}
3792 }
```

The following patches are applied after `cleveref` has loaded, and after `\AtBeginDocument`:

```
3793 \AfterEndPreamble{
```

```
\@@setcref {<kindofref>} {<label>}
```

```
3794 \renewcommand*{\@@setcref}[2]{#1{\ref{#2}}{}}{}}
```

```
\@@setcrefrange {<text>} {<label>} {<label>}
```

```
3795 \renewcommand{\@@setcrefrange}[3]{%
3796 #1{\ref{#2}}{\ref{#3}}{}}{}}{}}
```

`\cpagerefFor` Redefinable word between “page(s)” and the page numbers.

```
3797 \newcommand*{\cpagerefFor}{for}
```

`\@@setcpageref {<typeofref>} {<label>}`, where `typeofref` is “page” or “pages”

```
3798 \renewcommand*{\@@setcpageref}[2]{%
3799 #1{\cpagerefFor\ \cref{#2}}{}{}}%
3800 }

3801 \renewcommand{\@@setpagerefrange}[3]{%
3802 #1{\cpagerefFor\ \cref{#2}}{\cref{#3}}{}{}{}}
3803 }% AfterEndPreamble
```

Remember and patch some label-related definitions. These will be further encased and patched by other packages later.

```
3804 \let\LWR@origlabel\label
3805 \let\label\LWR@newlabel
3806 \let\LWR@origref\ref
3807 \let\ref\LWR@newref% \end{ syntax highlighting
3808 \let\LWR@origpageref\pageref
3809 \let\pageref\LWR@newpageref
3810
3811
3812
3813 \end{warpHTML}
```

60 Picture

Env `picture` The `picture` environment is enclosed inside a `\lateximage`.

for HTML output: 3814 `\begin{warpHTML}`



Env `picture`

```
3815 \BeforeBeginEnvironment{picture}{\lateximage}
3816
3817 \AfterEndEnvironment{picture}{\endlateximage}

3818 \end{warpHTML}
```

61 Boxes and Minipages

A CSS flexbox is used for minipages and parboxes, allowing external and internal vertical positioning.

- placement** Minipages and parboxes will be placed side-by-side in HTML unless you place a `\newline` between them.
-  **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`.
- 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 `<div>` cannot appear inside a ``. While in a ``, minipages and parboxes are ignored. 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` tag, 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 L^AT_EX PDF output they do not. Use a `flushleft` or similar environment in the child minipage to force a text alignment.
- for HTML output:** 3819 `\begin{warpHTML}`

61.1 Counters and lengths

Ctr `LWR@minipagedepth` Used to only reset the line width at the outermost minipage.

```
3820 \newcounter{LWR@minipagedepth}
3821 \setcounter{LWR@minipagedepth}{0}
```

Len `\WR@minipagewidth` Used to convert the width into printable units.

```
3822 \newlength{\LWR@minipagewidth}
```

Len `\WR@minipageheight` Used to convert the height into printable units.

```
3823 \newlength{\LWR@minipageheight}
```

Remember the original definitions:

```
3824 \let\LWR@origminipage\minipage
3825 \let\LWR@origendminipage\endminipage
```

61.2 Footnote handling

Also see section 35 for other forms of footnotes.

`\LWR@nullrule` [*raise*] {*width*} {*height*}

Used to cancel the footnotesep rule during HTML output. This rule was causing occasional end paragraph tags to be inserted for some (so far) undetermined reason, as well as adding purposeless code to the HTML output.

```
3826 \NewDocumentCommand{\LWR@nullrule}{o m m}{}
```

`\LWR@makefntext` {*text*}

Adds a paragraph closing tag to the end of each footnote.

```
3827 \newcommand{\LWR@makefntext}[1]{%
3828 \begingroup%
3829 \let\rule\LWR@nullrule%
3830 \textsuperscript{\@thefnmark} #1%
3831 \endgroup%
3832 \LWR@htmltagc{/\LWR@tagregularparagraph}%
3833 }
```

`\LWR@makefnmark` Creates an HTML superscript footnote mark:

```
3834 \newcommand*{\LWR@makefnmark}{\textsuperscript{\@thefnmark}}
```

61.3 Minipage handling

`\LWR@endminipage` Used to close a minipage.

Copied the L^AT_EX definition and modified to create a `mpfootnotes` div class:

```
3835 \def\LWR@endminipage{%
3836   \par
3837   \unskip
3838   \ifvoid\@mpfootins\else
```



```

3839      \vskip\skip\@mpfootins
3840      \normalcolor
3841 \LWR@htmldivclass{mpfootnotes}
3842      \unvbox\@mpfootins
3843 \LWR@htmldivclassend{mpfootnotes}
3844      \fi
3845      \@minipagefalse
3846 \color@endgroup
3847 \egroup
3848 \expandafter\@iiiparbox\@mpargs{\unvbox\@tempboxa}}

```

`\LWR@subminipage` Used to create a PDF minipage without creating an HTML minipage. This allows footnotes to appear at the bottom of the minipage instead of the bottom of the HTML page.

```

3849 \newcommand*{\LWR@subminipage}{%
3850 \LWR@stoppars
3851 \LWR@origminipage{6in}

```

`\raggedright` cancels hyphenation, which will be done by HTML instead.

```

3852 \LWR@origraggedright%

```

Minipage footnotes appear the bottom of the minipage.

```

3853 \let\footnote\LWR@origfootnote%
3854 \let\@makefnmark\LWR@makefnmark%
3855 \let\@makefnmark\LWR@makefnmark%

```

Resume paragraph tag handling for the contents of the minipage:

```

3856 \LWR@startpars%
3857 }

```

`\LWR@endsubminipage` Closes the subminipage.

```

3858 \newcommand*{\LWR@endsubminipage}{%
3859 \LWR@stoppars%
3860 \LWR@endminipage% The following empty line is required:
3861
3862 }

```

Bool `LWR@minipagefullwidth` Should the next minipage have no HTML width?

```

3863 \newbool{LWR@minipagefullwidth}
3864 \boolfalse{LWR@minipagefullwidth}

```

`\minipagefullwidth` Requests that the next minipage have no `width` tag in HTML:

for HTML output: 3865 `\newcommand*{\minipagefullwidth}{\booltrue{LWR@minipagefullwidth}}`
 3866 `\end{warpHTML}`

for PRINT output: 3867 `\begin{warpprint}`
 3868 `\newcommand*{\minipagefullwidth}{}%`
 3869 `\end{warpprint}`

for HTML output: 3870 `\begin{warpHTML}`

Bool `LWR@minipagethispar` Has a minipage been seen this paragraph? If true, prevents paragraph tags around horizontal space between minipages.

3871 `\newbool{LWR@minipagethispar}`
 3872 `\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.

3873 `\RenewDocumentEnvironment{minipage}{0{t} o 0{t} m}`
 3874 {%

Pre-compute the given width and height:

Reset the text area if are starting the outer-most minipage:

3875 `\LWR@traceinfo{starting minipage of width #4}%`
 3876 `\uselengthunit{in}%`
 3877 `\setlength{\LWR@minipagewidth}{#4}%`
 3878 `\ifthenelse{\cnttest{\value{LWR@minipagedepth}}{=}{0}}{0}{1}%`
 3879 `\addtolength{\LWR@minipagewidth}{3em}% room for frames`
 3880 `\setlength{\linewidth}{6in}%`
 3881 `\setlength{\textwidth}{6in}%`
 3882 `\setlength{\textheight}{9in}%`
 3883 `}{}%`
 3884 `\LWR@traceinfo{computed width is \rndprintlength{\LWR@minipagewidth}}`
 3885 `\addtocounter{LWR@minipagedepth}{1}%`
 3886 `\setlength{\LWR@minipageheight}{\textheight}% default unless specified`
 3887 `\IfValueTF{#2}{\setlength{\LWR@minipageheight}{#2}}{}%`

L^AT_EX wants to start a paragraph for the new minipage, then start a paragraph again for the contents of the minipage, so cancel the paragraph tag handling until the minipage has begun.

```
3888 \LWR@stoppars%
```

Create the <div> tag with optional alignment style:

```
3889 \LWR@traceinfo{minipage: creating div class}%
3890 \LWR@htmltag{div class="minipage" style="%
3891 \ifthenelse{\equal{#1}{t}}{vertical-align: bottom ; }{}%
3892 \ifthenelse{\equal{#1}{c}}{vertical-align: middle ; }{}%
3893 \ifthenelse{\equal{#1}{b}}{vertical-align: top ; }{}%
3894 \ifthenelse{\equal{#3}{t}}{justify-content: flex-start ; }{}%
3895 \ifthenelse{\equal{#3}{c}}{justify-content: center ; }{}%
3896 \ifthenelse{\equal{#3}{b}}{justify-content: flex-end ; }{}%
3897 \ifthenelse{\equal{#3}{s}}{justify-content: space-between ; }{}%
```

Print the width and optional height styles:

```
3898 \LWR@traceinfo{minipage: about to print the width of \rndprintlength{\LWR@minipagewidth}}%
3899 \uselengthunit{PT}%
3900 \ifbool{\LWR@minipagefullwidth}%
3901 {\boolfalse{\LWR@minipagefullwidth}}%
3902 {%
3903 \ifthenelse{\lengthtest{#4}=\linewidth}%
3904 {%
3905 {width:\rndprintlength{\LWR@minipagewidth} ; }%
3906 }%
3907 \LWR@traceinfo{minipage: about to print the height}%
3908 \IfValueTF{#2}{height:\rndprintlength{\LWR@minipageheight} ; }{}%
3909 "}%
```

Finish with an empty line to start L^AT_EX minipage processing on a new line. Use a large minipage area to avoid the unnecessary wrapping of tags.

```
3910
3911 \LWR@origminipage{6in}% The preceding empty line is required.
```

Set the user-accessible minipage and text width and height values inside the minipage. These do not affect the actual size of the large minipage created by `\LWR@origminipage` above, but are used by any reference to `\linewidth`, etc. inside the PDF minipage being created here.

```
3912 \setlength{\linewidth}{#4}% the original width
3913 \setlength{\textwidth}{6in}%
3914 \setlength{\textheight}{9in}%
```

`\raggedright` cancels hyphenation, which will be done by HTML instead.

```
3915 \LWR@origraggedright%
3916 \let\footnote\LWR@origfootnote%
3917 \let\@makefnmark\LWR@makefnmark%
3918 \let\@makefnmark\LWR@makefnmark%
```

Resume paragraph tag handling for the contents of the minipage:

```
3919 \LWR@startpars%
3920 \LWR@traceinfo{minipage: finished starting the minipage}%
3921 }
```

End the environment with L^AT_EX processing and closing tag:

```
3922 {%
3923 \LWR@stoppars%
3924 \LWR@endminipage% The following empty line is required:
3925
3926 \LWR@htmldivclassend{minipage}%
3927 \vspace{1\baselineskip}% required for subcaption
3928 \addtocounter{LWR@minipagedepth}{-1}%
3929 \LWR@startpars%
```

Prevent paragraph tags around horizontal white space until the start of the next paragraph:

```
3930 \global\booltrue{LWR@minipagethispar}%
3931 }
```

61.4 Parbox, makebox, framebox, fbox, raisebox

`\parbox` [*⟨pos⟩*] [*⟨height⟩*] [*⟨inner-pos⟩*] {*⟨width⟩*} {*⟨text⟩*}

A parbox uses the minipage code:

```
3932 \RenewDocumentCommand{\parbox}{O{t} o O{t} m +m}
3933 {
3934 \LWR@traceinfo{parbox of width #4}%
3935 \begin{minipage}[#1][#2][#3]{#4}
3936 #5
3937 \end{minipage}
3938 }
```

`\makebox` [*⟨width⟩*] [*⟨pos⟩*] {*⟨text⟩*}

Width and position are ignored.

```
3939 \RenewDocumentCommand{\makebox}{o o m}{%
3940 \mbox{#3}
3941 }
```

`\framebox` [*<width>*] [*<pos>*] {*<text>*}

Width and position are ignored.

```
3942 \RenewDocumentCommand{\framebox}{o o m}{%
3943 \fbox{#3}
3944 }
```

`\fbox` {*<text>*}

```
3945 \let\LWR@origfbox\fbox
3946 %
3947 \renewcommand*\fbox}[1]{%
3948 \InlineClass[framebox]{#1}%
3949 }
```

`\raisebox` {*<raiselen>*} [*<height>*] [*<depth>*] {*<text>*}

```
3950 \RenewDocumentCommand{\raisebox}{m o o m}{%
3951 #4%
3952 }

3953 \end{wrapHTML}
```

62 Direct formatting

`\textbf`, etc. are supported, but `\bfseries`, etc. are not yet supported.

For high-level block and inline custom CSS classes, see section [29.7](#).

for HTML output: 3954 `\begin{wrapHTML}`

`\emph` {*<text>*}

```
3955 \renewcommand{\emph}[1]{\LWR@htmlspan{em}{#1}}
```

`\textmd` {*<text>*}

```
3956 \renewcommand{\textmd}[1]{\LWR@htmlspan{textmd}{#1}}
```

```
\textbf  {\langle text\rangle}

3957 \renewcommand{\textbf}[1]{\LWR@htmlspan{b}{#1}}

\textrm  {\langle text\rangle}

3958 \renewcommand{\textrm}[1]{\InlineClass{textrm}{#1}}

\textsf  {\langle text\rangle}

3959 \renewcommand{\textsf}[1]{\InlineClass{textsf}{#1}}

\texttt  {\langle text\rangle}

3960 \renewcommand{\texttt}[1]{\LWR@htmlspan{kbd}{#1}}

\textup  {\langle text\rangle}

3961 \renewcommand{\textup}[1]{\LWR@htmlspan{textup}{#1}}

\textit  {\langle text\rangle}

3962 \renewcommand{\textit}[1]{\LWR@htmlspan{i}{#1}}

\textsc  {\langle text\rangle}

3963 \renewcommand{\textsc}[1]{\InlineClass{textsc}{#1}}

\textnormal  {\langle text\rangle}

3964 \renewcommand{\textnormal}[1]{\textmd{\textrm{\textup{#1}}}}

\mdseries

3965 \renewcommand*{\mdseries}{\}

\bfseries

3966 \renewcommand*{\bfseries}{\}

\rmfamily

3967 \renewcommand*{\rmfamily}{\}
```

`\sffamily`

3968 `\renewcommand*\sffamily{}`

`\ttfamily`

3969 `\renewcommand*\ttfamily{}`

`\upshape`

3970 `\renewcommand*\upshape{}`

`\itshape`

3971 `\renewcommand*\itshape{}`

`\scshape`

3972 `\renewcommand*\scshape{}`

`\scshape`

3973 `\renewcommand*\normalfont{}`

`\sp` $\langle text \rangle$

For siunitx. Must work in math mode.

3974 `\renewcommand{\sp}[1]{\text{^{#1}}}`

`\sb` $\langle text \rangle$

For siunitx. Must work in math mode.

3975 `\renewcommand{\sb}[1]{\text{_{#1}}}`

`\textsuperscript` $\langle text \rangle$

3976 `\renewcommand{\textsuperscript}[1]{\LWR@htmlspan{sup}{#1}}`

`\textsubscript` $\langle text \rangle$

3977 `\renewcommand{\textsubscript}[1]{\LWR@htmlspan{sub}{#1}}`

`\up` $\{\langle text \rangle\}$ Prints superscript.

This is `\let` at the beginning of the document in case some other package has changed the definition.

```
3978 \AtBeginDocument{\let\up\textsuperscript}
```

`\fup` $\{\langle text \rangle\}$ Prints superscript.

Supports `fmtcount` package.

This is `\let` at the beginning of the document in case some other package has changed the definition.

```
3979 \AtBeginDocument{\let\fup\textsuperscript}
```

`\hfill`

```
3980 \renewcommand*{\hfill}{\quad}
```

`\hrulefill`

```
3981 \renewcommand*{\hrulefill}{\rule{1in}{1pt}}
```

`\dotfill`

```
3982 \renewcommand*{\dotfill}{\dots}
```

```
3983 \end{warpHTML}
```

63 Skips, spaces, font sizes

for HTML output: 3984 `\begin{warpHTML}`

`\`, must be redefined after `\RequirePackage{printlen}`

```
3985 \let\LWR@origcomma\,
3986 \let\LWR@origtilde~
3987 \let\LWR@origenskip\enskip
3988 \let\LWR@origquad\quad
3989 \let\LWR@origqqquad\qqquad
3990 \let\LWR@orighspace\hspace
3991 \let\LWR@origrule\rule
```


Direct-formatting space commands become HTML entities:

```
3992 \renewcommand*{\,}{\HTMLUnicode{202f}} % HTML thin non-breakable space
3993 \renewcommand*{~}{\HTMLentity{nbsp}}
3994 \renewcommand*{\textellipsis}{\HTMLUnicode{2026}}
```

Direct-formatting font sizes are ignored:

```
3995 \let\LWR@orignormalsize\normalsize
3996 \let\LWR@origsmall\small
3997 \let\LWR@origfootnotesize\footnotesize
3998 \let\LWR@origscriptsize\scriptsize
3999 \let\LWR@origtiny\tiny
4000 \let\LWR@origlarge\large
4001 \let\LWR@origLarge\Large
4002 \let\LWR@origLARGE\LARGE
4003 \let\LWR@orighuge\huge
4004 \let\LWR@origHuge\Huge
4005 \renewcommand*{\normalsize}{}
4006 \renewcommand*{\small}{}
4007 \renewcommand*{\footnotesize}{}
4008 \renewcommand*{\scriptsize}{}
4009 \renewcommand*{\tiny}{}
4010 \renewcommand*{\large}{}
4011 \renewcommand*{\Large}{}
4012 \renewcommand*{\LARGE}{}
4013 \renewcommand*{\huge}{}
4014 \renewcommand*{\Huge}{}
4015
4016 \renewcommand*{\onecolumn}{}
4017
4018 \renewcommand{\twocolumn}[1][{}]{
4019
4020 #1
4021
4022 }
```

`\newline` Uses HTML `
` tag

```
4023 \newcommand*{\LWR@newlinebr}{\unskip\LWR@htmltag{br /}\LWR@orignewline}%
4024 \let\newline\LWR@newlinebr
```

`\\` Redefined to `\LWR@endoffline` or `\LWR@tabularendoffline`.

`\LWR@endoffline` * [*len*]

`\\` is assigned to `\LWR@endoffline` at `\LWR@LwarpStart`.

Inside `tabular`, `\\` is temporarily changed to `\LWR@tabularendofline`.

```
4025 \NewDocumentCommand{\LWR@endofline}{s o}
4026 {%
4027 \newline%
4028 }
```

`\LWR@minipagestartpars` Minipages are often placed side-by-side inside figures, with a bit of horizontal space to separate them. Since HTML does not allow a `div` 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, `lwrap` 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. `lwrap` 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.

`\hspace` 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. `lwrap` 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.

`\enskip`

`\quad`

`\qquad`

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.

```
4029 \newcommand*{\LWR@minipagestartpars}{%
4030 \ifbool{LWR@minipagethispar}%
4031 {%
4032 \LWR@startpars%
4033 }{}%
4034 }
```

`\LWR@minipagestoppars` Placed just after `\hspace`, `\quad`, or `\qquad`'s HTML output.

```
4035 \newcommand*{\LWR@minipagestoppars}{%
4036 \ifbool{LWR@minipagethispar}%
4037 {%
4038 \LWR@stoppars%
4039 }{}%
4040 }
```

`\quad` Handles special minipage & horizontal space interactions.

```
4041 \renewcommand*{\quad}{%
4042 \LWR@minipagestoppars%
4043 \HTMLUnicode{2001}%
```

```
4044 \LWR@minipagestartpars%
4045 }
```

`\qqquad` Handles special minipage & horizontal space interactions.

```
4046 \renewcommand*{\qqquad}{\quad\quad}
```

`\enskip` Handles special minipage & horizontal space interactions.

```
4047 \renewcommand*{\enskip}{%
4048 \LWR@minipagestoppars%
4049 \HTMLUnicode{2000}%
4050 \LWR@minipagestartpars%
4051 }
```

Len `\WR@tempwidth` Used to compute span width, height, raise for `\hspace` and `\rule`:

```
Len \WR@tempheight
Len \WR@tempraise
4052 \newlength{\LWR@tempwidth}
4053 \newlength{\LWR@tempheight}
4054 \newlength{\LWR@tempraise}
```

`\LWR@hspace` * $\langle length \rangle$

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 `\qqquad`.

```
4055 \NewDocumentCommand{\LWR@hspace}{s m}{%
4056 \setlength{\LWR@tempwidth}{#2}%
```

If `\fill`, change to `\qqquad`:

```
4057 \ifnum\gluestretchorder\LWR@tempwidth>0%
4058 \setlength{\LWR@tempwidth}{2em}%
4059 \fi%
```

Only if the width is not zero:

```
4060 \ifthenelse{\dimtest{\LWR@tempwidth}{=}{0pt}}{}{%
```

If had a minipage this paragraph, try to inline the white space without generating paragraph tags:

```
4061 \LWR@minipagestoppars%
```

Support the HTML thin wrappable space:

```
4062 \ifthenelse{\dimtest{\LWR@tempwidth}{=}{.16667em}}
4063 {%
4064 \HTMLunicode{2009}% thin breakable space
4065 }%
```

Print the span with the converted width. Not rounded.

```
4066 {%
4067 \uselengthunit{PT}%
4068 \LWR@htmltagc{%
4069 span style="width:\printlength{\LWR@tempwidth}; display:inline-block;"%
4070 }%
4071 \LWR@htmltagc{/span}%
4072 }%
```

If had a minipage this paragraph, try to inline the white space without generating paragraph tags:

```
4073 \LWR@minipagestartpars%
4074 }%
4075 }
```

`\hspace` * $\langle length \rangle$

Handles special minipage & horizontal space interactions.

```
4076 \let\hspace\LWR@hspace
```

`\linebreak` [$\langle num \rangle$] Inserts an HTML br tag.

```
4077 \renewcommand*{\linebreak}[1] [] {\newline}
```

`\nolinebreak` [$\langle num \rangle$]

```
4078 \renewcommand*{\nolinebreak}[1] [] {}
```

`\pagebreak` [$\langle num \rangle$] Starts a new paragraph.

```
4079 \renewcommand*{\pagebreak}[1] [] {
4080
4081 }
```

`\nopagebreak` [$\langle num \rangle$]

```
4082 \renewcommand*{\nopagebreak}[1] [] {}
```

`\enlargethispage * {\len}`

```
4083 \RenewDocumentCommand{\enlargethispage}{s m}{}
```

`\LWR@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.

```
4084 \NewDocumentCommand{\LWR@rule}{o m m}{%
```

The width is copied into a temporary L^AT_EX length, from which comparisons and conversions may be made:

```
4085 \setlength{\LWR@tempwidth}{#2}%
```

If it's zero-width then skip the entire rule:

```
4086 \ifthenelse{\lengthtest{\LWR@tempwidth=0pt}}{
```

```
4087 {}% zero- width
```

```
4088 {% non-zero width
```

If it's non-zero width, set a minimal thickness so that it more reliably shows in the browser:

```
4089 \ifthenelse{\lengthtest{\LWR@tempwidth>0pt}\AND%
```

```
4090 \lengthtest{\LWR@tempwidth<1pt}}{%
```

```
4091 {\setlength{\LWR@tempwidth}{1pt}}{}%
```

Likewise with height:

```
4092 \setlength{\LWR@tempheight}{#3}%
```

```
4093 \ifthenelse{\lengthtest{\LWR@tempheight>0pt}\AND%
```

```
4094 \lengthtest{\LWR@tempheight<1pt}}{%
```

```
4095 {\setlength{\LWR@tempheight}{1pt}}{}%
```

If had a minipage this paragraph, try to inline the rule without generating paragraph tags:

```
4096 \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 L^AT_EX code.

```
4097 \uselengthunit{PT}%
```

```

4098 \LWR@htmltagc{%
4099 span
4100 style=" %

```

The background color is used to draw the filled rule. The color may be changed by `\textcolor`.

```

4101 background:\LWR@currenttextcolor; %

```

The width and height are printed, converted to PT:

```

4102 width:\printlength{\LWR@tempwidth}; %
4103 height:\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.

```

4104 \IfValueTF{#1}%
4105 {%
4106 \setlength{\LWR@tempraise}{Opt-#1}%
4107 \setlength{\LWR@tempraise}{\LWR@tempraise*2}%
4108 \LWR@orignewline%
4109 -ms-transform: translate(0pt,\printlength{\LWR@tempraise}); %
4110 \LWR@orignewline%
4111 -webkit-transform: translate(0pt,\printlength{\LWR@tempraise}); %
4112 \LWR@orignewline%
4113 transform: translate(0pt,\printlength{\LWR@tempraise}); %
4114 \LWR@orignewline%
4115 }{}%

```

Display inline-block to place the span inline with the text:

```

4116 display:inline-block; "%
4117 }%
4118 \LWR@htmltagc{/span}%

```

If had a minipage this paragraph, try to inline the white space without generating paragraph tags:

```

4119 \LWR@minipagestartpars%
4120 }% non-zero width
4121 }

```

`\rule` [$\langle raise \rangle$] [$\langle width \rangle$] [$\langle height \rangle$]

Handles special minipage & horizontal space interactions.

```
4122 \let\rule\LWR@rule
```

```
4123 \end{warpHTML}
```

64 \phantomsection

for HTML output: 4124 \begin{warpHTML}

`\phantomsection` Emulate the hyperref `\phantomsection` command, often used to insert the bibliography into table of contents:

```
4125 \newcommand*\phantomsection{\section*{}}
```

```
4126 \end{warpHTML}
```

65 \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>

65.1 HTML logos

for HTML output: 4127 \begin{warpHTML}

`\TeX` $\mathrm{T}_{\mathrm{E}}\mathrm{X}$

`latexlogo` is a CSS class used to properly typeset the E and A in $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ and friends.

`latexlogofont` is a CSS class used to select the font for the rest of the logo in $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$, Lua $\mathrm{T}_{\mathrm{E}}\mathrm{X}$, Con $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ t, etc.

```

4128 \newcommand*{\LWR@TeX}
4129 {\InlineClass{latexlogofont}%
4130 {\InlineClass{latexlogo}{T\textsubscript{e}X}}}
```

`\LaTeX` \LaTeX , $\text{\LaTeX} 2_{\epsilon}$
`\LaTeXe`

```

4131 \newcommand*{\LWR@LaTeX}
4132 {\InlineClass{latexlogofont}%
4133 {\InlineClass{latexlogo}%
4134 {L\textsuperscript{a}T\textsubscript{e}X}}}
```

4135

```

4136 \renewcommand*{\LaTeXe}
4137 {\LaTeX\InlineClass{latexlogofont}%
4138 {\,2\textsubscript{\textit{\HTMLUnicode{3B5}}}}}
```

`\LuaTeX` \LuaTeX , \Lua\LaTeX
`\LuaLaTeX`

```

4139 \newcommand*{\LWR@LuaTeX}{\InlineClass{latexlogofont}{Lua}\TeX}
4140 \newcommand*{\LWR@LuaLaTeX}{\InlineClass{latexlogofont}{Lua}\LaTeX}
```

`\XeTeX` \XeTeX , \Xe\LaTeX
`\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 \Xe\LaTeX and spaces \LaTeX appropriately.

```

4141 \newcommand*{\Xe}
4142 {X\textsubscript{\HTMLUnicode{18e}}}
```

```

4143 \newcommand*{\LWR@XeTeX}{\InlineClass{xetexlogo}{\Xe}\TeX}
4144 \newcommand*{\LWR@XeLaTeX}{\InlineClass{xelatexlogo}{\Xe}\LaTeX}
```

`\ConTeXt` \ConTeXt

```

4145 \newcommand*{\LWR@ConTeXt}
4146 {\InlineClass{latexlogofont}{Con}\TeX{}}%
4147 \InlineClass{latexlogofont}{t}}
```

`\BibTeX` \BibTeX , *MakeIndex*
`\MakeIndex`

```

4148 \providecommand*{\BibTeX}
4149 {\InlineClass{latexlogofont}{B\textsc{ib}}\TeX}
4150
4151 \newcommand*{\MakeIndex}
4152 {\InlineClass{latexlogofont}{\textit{MakeIndex}}}
```


`\AmS` \mathcal{AMS}

`amslogo` is a CSS class used for the \mathcal{AMS} logo.

```
4153 \AtBeginDocument{\DeclareDocumentCommand{\AmS}{}}
4154 {\InlineClass{amslogo}{\textit{A}\textsubscript{M}S}}}
```

`\MiKTeX` $\text{MiK}\text{T}_{\text{E}}\text{X}$

```
4155 \newcommand*{\MiKTeX}{\InlineClass{latexlogofont}{MiK}\TeX}
```

`\LyX` LyX

`lyxlogo` is a CSS class used for the LyX logo.

```
4156 \newcommand*{\LyX}{\InlineClass{lyxlogo}{LyX}}

4157 \end{wrapHTML}
```

65.2 Print logos

for PRINT output:

```
4158 \begin{warpprint}
4159 \newcommand*{\XeTeXrevE}
4160   {\hspace{-.1667em}\raisebox{-.5ex}{\reflectbox{E}}\hspace{-.125em}}
4161 \providecommand*{\XeTeX}{\mbox{X\XeTeXrevE\TeX}}
4162 \providecommand*{\XeLaTeX}{\mbox{X\XeTeXrevE\LaTeX}}
4163 \providecommand*{\AmS}{%
4164   \leavevmode\hbox{$\mathcal{A}\kern-.2em\lower.376ex%
4165   \hbox{$\mathcal{M}$}\kern-.2em\mathcal{S}$}}
4166 \newcommand*{\LyX}{\textsf{LyX}}
4167 \providecommand*{\LuaTeX}{\mbox{Lua\TeX}}
4168 \providecommand*{\LuaLaTeX}{\mbox{Lua\LaTeX}}
4169 \providecommand*{\BibTeX}{\mbox{B\textsc{ib}\TeX}}
4170 \providecommand*{\MakeIndex}{\mbox{\textit{MakeIndex}}}
4171 \providecommand*{\ConTeXt}{\mbox{Con\TeX{t}}}
4172 \providecommand*{\MiKTeX}{\mbox{MiK\TeX}}
4173 \end{warpprint}
```

66 `\AtBeginDocument`, `\AtEndDocument`

for HTML output:

```
4174 \begin{wrapHTML}
```

`\LWR@LwarpStart` Automatically sets up the HTML-related actions for the start and end of the
`\LWR@LwarpEnd` document.

```
4175 \AfterEndPreamble{\LWR@LwarpStart}
```

```
4176 \AtEndDocument{\LWR@LwarpEnd}
```

```
4177 \end{warpHTML}
```

67 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`.

An example `lwarpmk.conf`:

```
opsystem = "Unix"    -- or "Windows"
latexname = "pdflatex" -- or "lualatex" or "xelatex"
sourcename = "projectname" -- your .tex source
homehtmlfilename = "index" -- or "projectname"
htmlfilename = ""    -- or "projectname" if numbered HTML files
```

Defaults unless already over-ridden by the user:

```
4178 \providecommand*\HomeHTMLFileName{\BaseJobname}
4179 \providecommand*\HTMLFileName{}
4180 \providecommand*\UseLatexmk{false}
```

for PRINT output:

```
4181 \begin{warpprint}
4182 \ifcsdef{LWR@file}{\newwrite{LWR@file}}
4183 \immediate\openout\LWR@file=lwarpmk.conf
4184 \ifwindows
4185 \immediate\write\LWR@file{opsystem = "Windows"}
4186 \else
4187 \immediate\write\LWR@file{opsystem = "Unix"}
4188 \fi
4189 \ifPDFTeX
4190 \immediate\write\LWR@file{latexname = "pdflatex"}
4191 \fi
4192 \ifXeTeX
4193 \immediate\write\LWR@file{latexname = "xelatex"}
4194 \fi
4195 \ifLuaTeX
4196 \immediate\write\LWR@file{latexname = "lualatex"}
4197 \fi
4198 \immediate\write\LWR@file{sourcename = "\jobname"}
4199 \immediate\write\LWR@file{%
4200 homehtmlfilename = "\HomeHTMLFileName"%
4201 }
4202 \immediate\write\LWR@file{htmlfilename = "\HTMLFileName"}
4203 \immediate\write\LWR@file{uselatexmk = "\UseLatexmk"}
4204 \immediate\closeout\LWR@file
4205 \end{warpprint}
```

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Package 2

lwarp-newproject.sty

69 lwarp-newproject

Pkg	lwarp-newproject	lwarp-newproject is used to create lwarp-specific system files in a new project.
Opt lwarp-newproject	warpprint	Configuration files are only created if the warpprint option was used. When this is the case, lwarp-newproject knows that <code>\jobname</code> is the source code's filename (as opposed to the <code><project>_html.tex</code> filename).
Opt lwarp-newproject	warpHTML	Does not create configuration files. warpprint or warpHTML are passed to both lwarp and lwarp-newproject by lwarpmk , depending on whether lwarpmk print or lwarpmk html was used.
Opt lwarp-newproject	BaseJobName	<code>BaseJobname=somename</code> sets <code>\BaseJobname</code> to <code>somename</code> , which is used to set <code>\HomeHTMLFileName</code> , which is then written to the <code>lwarpmk.conf</code> and <code><project>.lwarpmkconf</code> configuration files. <code>\BaseJobname</code> is also written to <code><project>_html.tex</code> as an option given for the lwarp and lwarp-newproject packages during the creation of HTML output. <code>\BaseJobname</code> is the <code>\jobname</code> of the printed version, even while compiling the HTML version, where <code>\jobname</code> has <code>_html</code> appended.
Opt lwarp-newproject	lwarpmk	Tells lwarp-newproject to generate a local copy of lwarpmk called <code>lwarpmk.lua</code> . Useful for archiving for future use. This file may be made executable and acts just like lwarpmk .

In the document source:

```

\documentclass{article} % or book, report
...
(font selection, input encoding)
...
\newcommand*{\HomeHTMLFileName}{index}, or {projectname}
\newcommand*{\HTMLFileName}{}
\usepackage{lwarp-newproject}
\usepackage{lwarp}
...
(load other packages, the rest of the preamble)
...
\NewCSS{project.css}
\NewHTMLdescription{Summarize this webpage.}

```

```

...
\begin{document}
...
\end{document}

```

Place `\usepackage{lwarp-newproject}` just before `\usepackage{lwarp}` in the document source. The operating system and \TeX engine will be auto-detected, and a customized `lwarpmk.conf` file will be generated, along with the other support files (`*.css`, `lwarp_html.xdy`, `lwarp_mathjax.txt`). Rename `sample_project.css` to your own custom `projectname.css` and edit it if desired.

After the first compile, `\usepackage{lwarp-newproject}` may be commented out unless the configuration changes. For example, it may be re-enabled to switch between `pdflatex`, `xelatex`, and `lualatex`, in which case a new manual compile (without using `lwarpmk`) will auto-configure and regenerate the files. It may also be left enabled at all times, in which case the configuration files will be regenerated each time. Note that your own `projectname.css` file will not be over-written by the newly regenerated `sample_project.css`.

Discard all options for `lwarp-newproject`:

```

1 \ProvidesPackage{lwarp-newproject}
2
3 \RequirePackage{etoolbox}
4 \RequirePackage{comment}
5 \RequirePackage{fancyvrb}
6 \RequirePackage{ifplatform}% sense op-system platform
7 \RequirePackage{iftex}% sense pdflatex/lualatex/xelatex
8 \RequirePackage{kvoptions}
9 \SetupKeyvalOptions{family=LWRNP,prefix=LWRNP@}

```

Generate config files?

```

10 \newbool{LWRNP@genconf}
11 \boolfalse{LWRNP@genconf}

```

Optionally generate a local copy of `lwarpmk`. Default to no:

```

12 \excludecomment{LWR@createlwarpmk}

```

Process options:

```

13 \DeclareVoidOption{warpprint}{\booltrue{LWRNP@genconf}}
14 \DeclareVoidOption{warpHTML}{\boolfalse{LWRNP@genconf}}
15 \DeclareVoidOption{lwarpmk}{\includecomment{LWR@createlwarpmk}}
16 \DeclareStringOption[\jobname]{BaseJobname}
17

```

```

18 \booltrue{LWRNP@genconf}% warpprint
19
20 \ProcessKeyvalOptions*\relax

```

Assign the `\BaseJobname` if the user hasn't provided one:

```

21 \providecommand*{\BaseJobname}{\LWRNP@BaseJobname}

```

Defaults unless already over-ridden by the user:

```

22 % \ifbool{LWRNP@genconf}{
23 \providecommand*{\HomeHTMLFileName}{\BaseJobname}
24 % }{}
25 \providecommand*{\HTMLFileName}{}
26 \providecommand*{\UseLatexmk}{false}

```

69.1 project_html.tex

File `project_html.tex` Used to allow an HTML version of the document to exist alongside the print version.

Only write `\jobname_html.tex` if generating the print version.

```

27 \ifbool{LWRNP@genconf}{
28 \ifcsdef{LWR@file}{}{\newwrite{\LWR@file}}
29 \immediate\openout\LWR@file=\jobname_html.tex
30 \immediate\write\LWR@file{%
31 \detokenize{\PassOptionsToPackage}%
32 {warpHTML,BaseJobname=\jobname}{lwarp}%
33 }
34 \immediate\write\LWR@file{%
35 \detokenize{\PassOptionsToPackage}%
36 {warpHTML,BaseJobname=\jobname}{lwarp-newproject}%
37 }
38 \immediate\write\LWR@file{%
39 \detokenize{\input}\string{\jobname.tex}\string }%
40 }
41 \immediate\closeout\LWR@file
42 }{}

```

69.2 project.lwarpmkconf

File `project.lwarpmkconf` The configuration file for `lwarpmk`.

```

43 \ifbool{LWRNP@genconf}{
44 \ifcsdef{LWR@file}{}{\newwrite{\LWR@file}}

```

```

45 \immediate\openout\LWR@file=\jobname.lwarpmkconf
46 \ifwindows
47 \immediate\write\LWR@file{opsystem = "Windows"}
48 \else
49 \immediate\write\LWR@file{opsystem = "Unix"}
50 \fi
51 \ifPDFTeX
52 \immediate\write\LWR@file{latexname = "pdflatex"}
53 \fi
54 \ifXeTeX
55 \immediate\write\LWR@file{latexname = "xelatex"}
56 \fi
57 \ifLuaTeX
58 \immediate\write\LWR@file{latexname = "lualatex"}
59 \fi
60 \immediate\write\LWR@file{sourcename = "\jobname"}
61 \immediate\write\LWR@file{%
62 homehtmlfilename = "\HomeHTMLFileName"%
63 }
64 \immediate\write\LWR@file{htmlfilename = "\HTMLFileName"}
65 \immediate\write\LWR@file{uselatemk = "\UseLatexmk"}
66 \immediate\closeout\LWR@file
67 }{}

```

69.3 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.

```

68 \begin{VerbatimOut}{lwarp.css}
69 /*
70  CSS stylesheet for the LaTeX lwarp package
71  Copyright 2016-2017 Brian Dunn -- BD Tech Concepts LLC
72 */
73
74
75 /* a fix for older browsers: */
76 header, section, footer, aside, nav, main,
77  article, figure { display: block; }
78
79
80 A:link {color:#000080 ; text-decoration: none ; }
81 A:visited {color:#800000 ; }
82 A:hover {color:#000080 ; text-decoration: underline ;}
83 A:active {color:#800000 ; }

```



```
84
85 a.tocpart {display: inline-block ; margin-left: 0em ;
86     font-weight: bold ;}
87 a.tocchapter {display: inline-block ; margin-left: 0em ;
88     font-weight: bold ;}
89 a.tocsection {display: inline-block ; margin-left: 1em ;
90     text-indent: -.5em ; font-weight: bold ; }
91 a.tocsubsection {display: inline-block ; margin-left: 2em ;
92     text-indent: -.5em ; }
93 a.tocsubsubsection {display: inline-block ; margin-left: 3em ;
94     text-indent: -.5em ; }
95 a.tocparagraph {display: inline-block ; margin-left: 4em ;
96     text-indent: -.5em ; }
97 a.tocsubparagraph {display: inline-block ; margin-left: 5em ;
98     text-indent: -.5em ; }
99 a.tocfigure {margin-left: 0em}
100 a.tocsubfigure {margin-left: 2em}
101 a.toctable {margin-left: 0em}
102 a.tocsubtable {margin-left: 2em}
103 a.toclstlisting {margin-left: 0em}
104
105
106 body {
107     font-family: "DejaVu Serif", "Bitstream Vera Serif",
108         "Lucida Bright", Georgia, serif;
109     background: #FAF7F4 ;
110     color: black ;
111     margin: 0em ;
112     padding: 0em ;
113     font-size: 100% ;
114     line-height: 1.2 ;
115 }
116
117 p {margin: 1.5ex 0em 1.5ex 0em ;}
118
119 /* Holds a section number to add space between it and the name */
120 span.sectionnumber { margin-right: .6em }
121
122 /* Inserted in front of index lines */
123 span.indexitem {margin-left: 0em}
124 span.indexsubitem {margin-left: 2em}
125 span.indexsubsubitem {margin-left: 4em}
126
127 div.hidden { display: none ; }
128
129 kbd {
130     font-family: "DejaVu Mono", "Bitstream Vera Mono", "Lucida Console",
131         "Nimbus Mono L", "Liberation Mono", "FreeMono", "Andale Mono",
132         "Courier New", monospace;
133     font-size: 100% ;
```

```
134 }
135
136 span.strong { font-weight: bold; }
137
138 span.textmd { font-weight: normal; }
139
140 span.textsc { font-variant: small-caps; }
141
142 span.textup { font-variant: normal; }
143
144 span.textrm {
145     font-family: "DejaVu Serif", "Bitstream Vera Serif",
146     "Lucida Bright", Georgia, serif;
147 }
148
149 span.textsf {
150     font-family: "DejaVu Sans", "Bitstream Vera Sans",
151     Geneva, Verdana, sans-serif ;
152 }
153
154 span.attribution {
155     margin-left: 1em ; font-size: 80% ; font-variant: small-caps;
156 }
157
158 span.citetitle {
159     margin-left: 1em ; font-size: 80% ; font-style: oblique;
160 }
161
162 span.poemtitle {
163     font-size: 120% ; font-weight: bold;
164 }
165
166 blockquote {
167     margin-left: 0px ;
168     margin-right: 0px ;
169 }
170
171 blockquote p {
172     line-height: 1.5;
173     text-align: left ;
174     font-size: .85em ;
175     margin-left: 3em ;
176     margin-right: 3em ;
177 }
178
179 blockquotation {
180     margin-left: 0px ;
181     margin-right: 0px ;
182 }
183
```

```
184 blockquotation p {
185   line-height: 1.5;
186   text-align: left ;
187   font-size: .85em ;
188   margin-left: 3em ;
189 margin-right: 3em ;
190 }
191
192 div.epigraph {
193   line-height: 1.2;
194   text-align: left ;
195   padding: 3ex 1em 0ex 1em ;
196 /*   margin: 3ex auto 3ex auto ; */ /* Epigraph centered */
197   margin: 3ex 1em 3ex auto ; /* Epigraph to the right */
198 /*   margin: 3ex 1em 3ex 1em ; */ /* Epigraph to the left */
199   font-size: .85em ;
200   max-width: 27em ;
201 }
202
203
204
205 div.epigraphsource{
206   text-align:right ;
207   margin-left:auto ;
208 /*   max-width: 50% ; */
209   border-top: 1px solid #A0A0A0 ;
210   padding-bottom: 3ex ;
211   line-height: 1.2;
212 }
213
214 div.epigraph p { padding: .5ex ; margin: 0ex ;}
215 div.epigraphsource p { padding: .5ex 0ex 0ex 0ex ; margin: 0ex ;}
216
217
218
219
220 html body {
221   margin: 0 ;
222   line-height: 1.2;
223 }
224
225
226 body div {
227   margin: 0ex;
228 }
229
230
231 h1, h2, h3, h4, h5, h6, span.paragraph, span.subparagraph
232 {
233   font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
```

```
234         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
235         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
236         "Times New Roman", serif;
237     font-style: normal ;
238     font-weight: bold ;
239     text-align: left ;
240 }
241
242 h1 { /* title of the entire website, used on each page */
243     text-align: center ;
244     font-size: 2.5em ;
245     padding: .4ex 0em 0ex 0em ;
246 }
247 h2 { font-size: 2.25em }
248 h3 { font-size: 2em }
249 h4 { font-size: 1.75em }
250 h5 { font-size: 1.5em }
251 h6 { font-size: 1.25em }
252 span.paragraph {font-size: 1em ; font-variant: normal ;
253     margin-right: 1em ; }
254 span.subparagraph {font-size: 1em ; font-variant: normal ;
255     margin-right: 1em ; }
256
257
258
259 /* Title of the file */
260 h1 {
261     margin: 0ex 0em 0ex 0em ;
262     line-height: 1.3;
263     text-align: center ;
264 }
265
266 /* Part */
267 h2 {
268     margin: 1ex 0em 1ex 0em ;
269     line-height: 1.3;
270     text-align: center ;
271 }
272
273 /* Chapter */
274 h3 {
275     margin: 3ex 0em 1ex 0em ;
276     line-height: 1.3;
277 }
278
279 /* Section */
280 h4 {
281     margin: 3ex 0em 1ex 0em ;
282     line-height: 1.3;
283 }
```

```
284
285 /* Sub-Section */
286 h5 {
287     margin: 3ex 0em 1ex 0em ;
288     line-height: 1.3;
289 }
290
291 /* Sub-Sub-Section */
292 h6 {
293     margin: 3ex 0em 1ex 0em ;
294     line-height: 1.3;
295 }
296
297
298 div.titlepage {
299     text-align: center ;
300 }
301
302 .footnotes {
303     font-size: .85em ;
304     margin: 3ex 1em 0ex 1em ;
305     padding-bottom: 1ex ;
306 }
307
308 .marginpar {
309     width:20%; float:right;
310     text-align:left;
311     margin: 1ex 0.5em 1ex 1em ;
312     padding: 1ex 0.5em 1ex 0.5em ;
313     font-size: 85% ;
314     border-top: 1px solid silver ;
315     border-bottom: 1px solid silver ;
316     overflow-x: auto;
317 }
318
319 .marginpar br { margin-bottom: 2ex ; }
320
321 div.marginblock {
322     width:50%; float:right;
323     text-align:left;
324     margin: 1ex 0.5em 1ex 1em ;
325     padding: 1ex 0.5em 1ex 0.5em ;
326     overflow-x: auto;
327 }
328
329 div.marginblock div.minipage p { font-size: 85%}
330
331 div.marginblock br { margin-bottom: 2ex ; }
332
333
```

```
334 section.textbody div.footnotes{
335     margin: 3ex 0em 0ex 0em ;
336     border-bottom: 2px solid silver ;
337 }
338
339 .footnoteheader {
340     border-top: 2px solid silver ;
341     margin-top: 3ex ;
342     padding-top: 1ex ;
343     font-weight: bold ;
344 }
345
346 .mpfootnotes {
347     text-align: left ;
348     font-size: .85em ;
349     margin: 3ex 0em 3ex 0em ;
350     border-top: 1px solid silver ;
351     border-bottom: 1px solid silver ;
352 /*     padding-top: 1ex ; */
353 }
354
355 /* Remove footnote top border in the title page. */
356 div.titlepage div.mpfootnotes {
357     border-top: none ;
358 }
359
360
361
362 ol {
363     margin: 1ex 1em 1ex 0em;
364     line-height: 1.2;
365 }
366
367 ul, body dir, body menu {
368     margin: 1ex 1em 1ex 0em;
369     line-height: 1.2;
370 }
371
372 li { margin: 0ex 0em 1ex 0em; }
373
374 html {
375     margin: 0;
376     padding: 0;
377 }
378
379 .programlisting {
380     font-family: "DejaVu Mono", "Bitstream Vera Mono", "Lucida Console",
381                 "Nimbus Mono L", "Liberation Mono", "FreeMono", "Andale Mono",
382                 "Courier New", monospace;
383     margin: 1ex 0ex 1ex 0ex ;
```

```
384 padding: .5ex 0pt .5ex 0pt ;
385 overflow-x: auto;
386 }
387
388 section.textbody>pre.programlisting {
389 border-top: 1px solid silver ;
390 border-bottom: 1px solid silver ;
391 }
392
393
394 .inlineprogramlisting {
395 font-family: "DejaVu Mono", "Bitstream Vera Mono", "Lucida Console",
396             "Nimbus Mono L", "Liberation Mono", "FreeMono", "Andale Mono",
397             "Courier New", monospace;
398 overflow-x: auto;
399 }
400
401
402 div.abstract {
403 margin: 2em 5% 2em 5% ;
404 padding: 1ex 1em 1ex 1em ;
405 /* font-weight: bold ; */
406 font-size: 90% ;
407 }
408
409 div.abstract dl {line-height:1.5;}
410 div.abstract dt {color:#304070;}
411
412 div.abstracttitle{
413 font-family: "URW Classico", Optima, "Linux Biolinum O",
414             "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
415             "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
416 font-weight:bold;
417 font-size:1.25em;
418 text-align: center ;
419 }
420
421 span.abstracrunintitle{
422 font-family: "URW Classico", Optima, "Linux Biolinum O",
423             "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
424             "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
425 font-weight:bold;
426 }
427
428
429 .verbatim {
430 overflow-x: auto ;
431 }
432
433 .alltt {
```

```
434     overflow-x: auto ;
435 }
436
437
438 .bverbatim {
439     margin: 1ex Opt 1ex Opt ;
440     padding: .5ex Opt .5ex Opt ;
441     overflow-x: auto ;
442 }
443
444 .lverbatim {
445     margin: 1ex Opt 1ex Opt ;
446     padding: .5ex Opt .5ex Opt ;
447     overflow-x: auto ;
448 }
449
450 .fancyvrb {
451     font-size:.85em ;
452     margin: 3ex Opt 3ex Opt
453 }
454
455 .fancyvrblabel {
456     font-weight:bold;
457     text-align: center ;
458 }
459
460
461 .verse {
462     font-family: "Linux Libertine Mono O", "Lucida Console",
463         "Droid Sans Mono", "DejaVu Mono", "Bitstream Vera Mono",
464         "Liberation Mono", "FreeMono", "Andale Mono",
465         "Nimbus Mono L", "Courier New", monospace;
466     margin-left: 1em ;
467 }
468
469
470 div.singlespace { line-height: 1.2 ; }
471 div.onehalfspace { line-height: 1.5 ; }
472 div.doublespace { line-height: 2 ; }
473
474
475 .theorem {
476     background: #e0e0e0;
477     padding: 1ex ;
478     margin: 1em ;
479     border: 1px solid silver ;
480 }
481
482 .theoremlabel { font-weight: bold ; }
483
```



```
484 .theoremcontents { font-style: italic; margin-left: 1em ; }
485
486
487 /* Minipage environments, vertically aligned to top, center, bottom: */
488 .minipage {
489     /* display: inline-block ; */
490     /* Mini pages which follow each other will be tiled. */
491     margin: .25em .25em .25em .25em;
492     padding: .25em .25em .25em .25em;
493     display: inline-flex;
494     flex-direction: column ;
495     overflow: auto;
496 }
497
498 /* Paragraphs in the flexbox did not collapse their margins. */
499 /* Have not yet researched this. */
500 .minipage p {margin: .75ex 0em .75ex 0em ;}
501
502
503
504 .framebox {
505     margin: 0ex ;
506     padding: 0ex ;
507     border: 1px solid black;
508     border-radius: 0px ;
509     padding: .3ex .2em 0ex .2em ;
510     margin: .1ex ;
511     display: inline-block ;
512 }
513
514
515 .mdframed {
516 /*     padding: 0ex ; */
517 /*     border: 1px solid black; */
518 /*     border-radius: 0px ; */
519     padding: 0ex ;
520     margin: 3ex 5% 3ex 5% ;
521 /*     display: inline-block ; */
522 }
523
524 .mdframed p { padding: 0ex .5em 0ex .5em ; }
525
526 .mdframed dl { padding: 0ex .5em 0ex .5em ; }
527
528 .mdframedtitle {
529     padding: .5em ;
530     display: block ;
531     font-size: 130%
532 }
533
```

```
534 .mdframedsubtitle {
535     padding: 0ex .5em 0ex .5em ;
536     display: block ;
537     font-size: 115% ;
538 }
539
540 .mdframedsubsubtitle {
541     padding: 0ex .5em 0ex .5em ;
542     display: block ;
543 }
544
545 .mdtheorem {
546     padding: 0ex .5em 0ex .5em ;
547     margin: 3ex 5% 3ex 5% ;
548 /*    display: inline-block ; */
549 }
550
551
552
553
554 dl {
555     margin: 1ex 2em 1ex 0em;
556     line-height: 1.3;
557 }
558
559 dl dt {
560     margin-top: 1ex;
561     font-weight: bold;
562 }
563
564 dl dd p { margin-top: 0em; }
565
566
567 nav.toc, nav.lof, nav.lot, nav.lol {
568     font-family: "URW Classico", Optima, "Linux Biolinum O",
569         "DejaVu Sans", "Bitstream Vera Sans",
570         Geneva, Verdana, sans-serif ;
571     margin-bottom: 4ex ;
572 }
573
574 nav.toc p, nav.lof p, nav.lot p, nav.lol p {
575     line-height: 1.2 ;
576     margin-top:.5ex ;
577     margin-bottom:.5ex;
578     font-size: .9em ;
579 }
580
581
582
583 img, img.hyperimage, img.borderimage {
```

```
584     max-width: 600px;
585     border: 1px solid silver;
586     box-shadow: 3px 3px 3px #808080 ;
587     padding: .5% ;
588     margin: .5% ;
589     background: none ;
590 }
591
592 img.inlineimage{
593     padding: 0px ;
594     box-shadow: none ;
595     border: none ;
596     background: none ;
597     margin: 0px ;
598     display: inline-block ;
599     border-radius: 0px ;
600 }
601
602 img.logoimage{
603     max-width: 300px ;
604     box-shadow: 3px 3px 3px #808080 ;
605     border: 1px solid black ;
606     background:none ;
607     padding:0 ;
608     margin:.5ex ;
609     border-radius: 10px ;
610 }
611
612
613 .section {
614 /*
615     To have each section float relative to each other:
616 */
617 /*
618     display: block ;
619     float: left ;
620     position: relative ;
621     background: white ;
622     border: 1px solid silver ;
623     padding: .5em ;
624 */
625     margin: 0ex .5em 0ex .5em ;
626     padding: 0 ;
627 }
628
629
630 figure {
631     margin: 3ex auto 3ex auto ;
632     padding: 1ex 1em 1ex 1em ;
633     overflow-x: auto ;
```

```
634 }
635
636
637 /* To automatically center images in figures: */
638 /*
639 figure img.inlineimage {
640     margin: 0ex auto 0ex auto ;
641     display: block ;
642 }
643 */
644
645 /* To automatically center minipages in figures: */
646 /*
647 figure div.minipage, figure div.minipage div.minipage {
648     margin: 1ex auto 1ex auto ;
649     display: block ;
650 }
651 */
652
653 figure div.minipage p { font-size: 85% ; }
654
655 figure.subfigure, figure.subtable {
656     display: inline-block ; margin: 3ex 1em 3ex 1em ;
657 }
658
659 figcaption .minipage { margin:0 ; padding: 0 }
660
661 div.floatrow { text-align: center; }
662
663 div.floatrow figure { display: inline-block ; margin: 1ex 2% ; }
664
665 div.floatfoot { font-size: .85em ;
666     border-top: 1px solid silver ; line-height: 1.2 ; }
667
668 figcaption , .lstlistingtitle {
669     font-size: .85em ;
670     text-align: center ;
671     font-weight: bold ;
672     margin-top: 1ex ;
673     margin-bottom: 1ex ;
674 }
675
676 figure.subfigure figcaption, figure.subtable figcaption {
677     border-bottom: none ; background: none ;
678 }
679
680 div.nonfloatcaption {
681     margin: 1ex auto 1ex auto ;
682     font-size: .85em ;
683     text-align: center ;
```

```

684     font-weight: bold ;
685 }
686
687 /* For a \RawCaption inside a minipage inside a figure's floatrow: */
688 figure div.floatrow div.minipage figcaption {
689 border: none ;
690 background: none ;
691 }
692
693
694 table {
695     margin: 1ex auto 1ex auto ;
696     border-collapse: collapse ;
697     border-spacing: 0px ;
698     line-height: 1.3 ;
699 }
700
701 tr.hline {border-top: 1px solid silver ; margin-top: 0ex ;
702     margin-bottom: 0ex ; } /* for \hline */
703
704 tr.tbrule {border-top: 1px solid black ; margin-top: 0ex ;
705     margin-bottom: 0ex ; } /* for \toprule, \bottomrule */
706
707 td {padding: 1ex .5em 1ex .5em ;}
708
709 table td.tdl { text-align: left ; vertical-align: middle ; }
710 table td.tdc { text-align: center ; vertical-align: middle ; }
711 table td.tdr { text-align: right ; vertical-align: middle ; }
712 table td.tdp { text-align: left ; vertical-align: bottom ; }
713 table td.tdm { text-align: left ; vertical-align: middle ; }
714 table td.tdb { text-align: left ; vertical-align: top ; }
715 table td.tdP { text-align: center ; vertical-align: bottom ; }
716 table td.tdM { text-align: center ; vertical-align: middle ; }
717 table td.tdB { text-align: center ; vertical-align: top ; }
718 table td.tdlrule { text-align: left ; border-top: 1px solid silver ;
719     vertical-align: middle ; } /* for cmidrule */
720 table td.tdcrule { text-align: center ; border-top: 1px solid silver ;
721     vertical-align: middle ; }
722 table td.tdrrule { text-align: right ; border-top: 1px solid silver ;
723     vertical-align: middle ; }
724 table td.tdprule { text-align: left ; border-top: 1px solid silver ;
725     vertical-align: bottom ; }
726 table td.tdmrule { text-align: left ; border-top: 1px solid silver ;
727     vertical-align: middle ; }
728 table td.tdbrule { text-align: left ; border-top: 1px solid silver ;
729     vertical-align: top ; }
730 table td.tdPrule { text-align: center ; border-top: 1px solid silver ;
731     vertical-align: bottom ; }
732 table td.tdMrule { text-align: center ; border-top: 1px solid silver ;
733     vertical-align: middle ; }

```

```
734 table td.tdBrule { text-align: center ; border-top: 1px solid silver ;
735     vertical-align: top ; }
736
737 /* Margins of paragraphs inside table cells: */
738 td.tdp p , td.tdprule p , td.tdP p , td.tdPrule p { padding-top: 1ex ;
739     padding-bottom: 1ex ; margin: 0ex ; }
740 td.tdm p , td.tmbrule p , td.tdM p , td.tdMrule p { padding-top: 1ex ;
741     padding-bottom: 1ex ; margin: 0ex ; }
742 td.tdb p , td.tdbrule p , td.tdB p , td.tdBrule p { padding-top: 1ex ;
743     padding-bottom: 1ex ; margin: 0ex ; }
744
745 td.tdp , td.tdprule , td.tdP , td.tdPrule
746     { padding: 0ex .5em 0ex .5em ; }
747 td.tdm , td.tdmrule , td.tdM , td.tdMrule
748     { padding: 0ex .5em 0ex .5em ; }
749 td.tdb , td.tdbrule , td.tdB , td.tdBrule
750     { padding: 0ex .5em 0ex .5em ; }
751
752
753 /* table notes: */
754 .tnotes {
755     margin: 0ex 5% 1ex 5% ;
756     padding: 0.5ex 1em 0.5ex 1em;
757     font-size:.85em;
758     text-align: left ;
759 }
760
761 .tnotes dl dt p {margin-bottom:0px;}
762
763 .tnoteitemheader {margin-right: 1em;}
764
765
766
767 /* center, flushleft, flushright environments */
768 div.center{text-align:center;}
769 div.center table {margin-left:auto;margin-right:auto;}
770 div.flushleft{text-align:left;}
771 div.flushleft table {margin-left:0em ; margin-right:auto;}
772 div.flushright{text-align:right;}
773 div.flushright table {margin-left:auto ; margin-right: 0em ;}
774
775
776
777
778 /* program listing callouts: */
779 span.callout {
780     font-family: "DejaVu Sans", "Bitstream Vera Sans",
781         Geneva, Verdana, sans-serif ;
782     border-radius: .5em;
783     background-color:black;
```

```
784     color:white;
785     padding:0px .25em 0px .25em;
786 margin: 0 ;
787     font-weight: bold;
788     font-size:.72em ;
789 }
790
791 div.programlisting pre.verbatim span.callout{
792 font-size: .85em ;
793 }
794
795
796
797
798
799 div.published
800 {
801     text-align: center ;
802     font-variant: normal ;
803     font-style: italic ;
804     font-size: 1em ;
805     margin: 3ex 0em 3ex 0em ;
806 }
807
808 div.subtitle
809 {
810     text-align: center ;
811     font-variant: normal ;
812     font-style: italic ;
813     font-size: 1.25em ;
814     margin: 3ex 0em 3ex 0em ;
815 }
816
817 div.subtitle p { margin: 1ex ; }
818
819 div.author
820 {
821     font-variant: normal ;
822     font-style: normal ;
823     font-size: 1em ;
824     margin: 3ex 0em 3ex 0em ;
825 }
826
827 div.author table {
828     margin: 3ex auto 0ex auto ;
829     background: none ;
830 }
831
832 div.author table tbody tr td { padding: .25ex ; }
833
```

```
834 span.affiliation {font-size: .85em ; font-variant: small-caps; }
835
836 div.titledate {
837     text-align: center ;
838     font-size: .85em ;
839     font-style: italic;
840     margin: 6ex 0em 6ex 0em ;
841 }
842
843
844 nav.topnavigation{
845     text-align: left ;
846     padding: 0.5ex 1em 0.5ex 1em ;
847 /*     margin: 2ex 0em 3ex 0em ; */
848     margin: 0 ;
849     border-bottom: 1px solid silver ;
850     border-top: 1px solid silver ;
851     clear:right ;
852 }
853
854 nav.botnavigation{
855     text-align: left ;
856     padding: 0.5ex 1em 0.5ex 1em ;
857 /*     margin: 3ex 0em 2ex 0em ; */
858     margin: 0 ;
859     border-top: 1px solid silver ;
860     border-bottom: 1px solid silver ;
861     clear:right ;
862 }
863
864
865 header{
866     line-height: 1.2 ;
867     font-size: 1em ;
868 /*     border-bottom: 2px solid silver ; */
869     margin: 0px ;
870     padding: 0ex 1em 0ex 1em ;
871     text-align:center ;
872 }
873
874 header p {margin:0ex;padding:4ex 0em 2ex 0em ;text-align:center;}
875
876
877 footer{
878     font-size: .85em ;
879     line-height: 1.2 ;
880     margin-top: 1ex ;
881     border-top: 2px solid silver ;
882     padding: 2ex 1em 2ex 1em ;
883     clear:right ;
```



```
884     text-align:left ;
885 }
886
887
888 a.linkhome { font-weight:bold ; font-size: 1em ;}
889
890
891 div.lateximagesource { padding: 0px ; margin: 0px ; display: none; }
892
893 img.lateximage{
894     padding: 0px 0px 0px 0px ;
895     box-shadow: none ;
896     border: none ;
897     background: none ;
898     margin: 0px 0px -.15ex 0px ;
899     /* pdfcrop leaves a slight margin, adjust to baseline */
900     max-width: 100% ;
901     border-radius: 0ex ;
902     border: none ;
903 }
904
905
906
907 nav.sidetoc {
908     font-family: "DejaVu Serif", "Bitstream Vera Serif",
909         "Lucida Bright", Georgia, serif;
910     float:right ;
911     width: 20%;
912     border-left: 1px solid silver;
913     border-top: 1px solid silver;
914     border-bottom: 1px solid silver;
915 /*     border-top: 2px solid #808080 ; */
916     background: #FAF7F4 ;
917     padding: 2ex 0em 2ex 1em ;
918     margin: 0ex 0em 2ex 1em ;
919     font-size:.9em ;
920     border-radius: 20px 0px 0px 20px ;
921 }
922
923 div.sidetoccontents {
924 /*     border-top: 1px solid silver ; */
925     overflow-y: auto ;
926     width: 100% ;
927     text-align: left ;
928 }
929
930 nav.sidetoc p {line-height:1.2 ; margin: 1ex .5em 1ex .5em ;
931     text-indent: 0 ; }
932 nav.sidetoc p a {color:black ; font-size: .7em ;}
933 div.sidetoctitle {font-size: 1.2em; font-weight:bold; text-align:center;
```

```
934     border-bottom: 1px solid silver ;    }
935 nav.sidetoc a:hover {text-decoration: underline ; }
936
937
938
939 section.textbody { margin: 0ex 1em 0ex 1em ;}
940
941
942 div.multicolsheading { -webkit-column-span: all;
943     -moz-column-span: all; column-span: all; }
944 div.multicols { -webkit-columns: 3 380px ;
945     -moz-columns: 3 380px ; columns: 3 380px ; }
946 div.multicols p {margin-top: 0ex}
947
948 /* Used to support algorithmicx: */
949 span.floatright { float: right ; }
950
951
952
953 /*
954 For CSS LaTeX and related logos:
955 Based on:
956 http://edward.oconnor.cx/2007/08/tex-poshlet
957 http://nitens.org/taraborelli/texlogo
958 */
959
960 .latexlogofont {
961     font-family: "Linux Libertine O", "Nimbus Roman No 9 L",
962         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
963     font-variant: normal ;
964 }
965
966 .latexlogo {
967     font-family: "Linux Libertine O", "Nimbus Roman No 9 L",
968         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
969     letter-spacing: .03em ;
970     font-size: 1.1em;
971 }
972
973 .latexlogo sup {
974     text-transform: uppercase;
975     letter-spacing: .03em ;
976     font-size: 0.85em;
977     vertical-align: 0.15em;
978     margin-left: -0.36em;
979     margin-right: -0.15em;
980 }
981
982 .latexlogo sub {
983     text-transform: uppercase;
```

```
984 vertical-align: -0.5ex;
985 margin-left: -0.1667em;
986 margin-right: -0.125em;
987 font-size: 1em;
988 }
989
990 .xetexlogo {
991     font-family: "Linux Libertine O", "Nimbus Roman No 9 L",
992         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
993     letter-spacing: .03em ;
994     font-size: 1.1em;
995 }
996
997 /* A smaller gap between Xe and Tex v.s. LaTeX: */
998 .xetexlogo sub {
999     text-transform: uppercase;
1000 vertical-align: -0.5ex;
1001 margin-left: -0.0667em;
1002 margin-right: -0.2em;
1003 font-size: 1em;
1004 letter-spacing: .03em ;
1005 }
1006
1007 /* A large gap between Xe and LaTeX v.s. TeX: */
1008 .xelatexlogo sub {
1009     text-transform: uppercase;
1010 vertical-align: -0.5ex;
1011 margin-left: -0.0667em;
1012 margin-right: -.05em;
1013 font-size: 1em;
1014 letter-spacing: .03em ;
1015 }
1016
1017 .amslogo {
1018     font-family: "TeXGyreChorus", "URW Chancery L",
1019         "Apple Chancery", "ITC Zapf Chancery", "Monotype Corsiva",
1020         "Linux Libertine O", "Nimbus Roman No 9 L", "FreeSerif",
1021         "Hoefler Text", Times, "Times New Roman", serif;
1022     font-style: italic;
1023 }
1024
1025 .lyxlogo {
1026     font-family: "URW Classico", Optima, "Linux Biolinum O",
1027         "DejaVu Sans", "Bitstream Vera Sans", Geneva,
1028     Verdana, sans-serif ;
1029 }
1030
1031
1032
1033
```

```
1034 /* Only display top and bottom navigation if a small screen: */
1035 /* Hide the sidetoc if a small screen: */
1036 nav.topnavigation { display:none; }
1037 nav.botnavigation { display:none; }
1038
1039 @media screen and (max-width: 45em) {
1040 /*     nav.sidetoc {display:none;} */
1041     nav.sidetoc {
1042         float: none ;
1043         width: 100% ;
1044         margin: 5ex 0px 5ex 0px ;
1045         padding: 0 ;
1046         border-radius: 0 ;
1047         border-bottom: 1px solid black ;
1048         border-top: 1px solid black ;
1049         box-shadow: none ;
1050     }
1051 /*     nav.topnavigation { display:block } */
1052     nav.botnavigation { display:block }
1053 }
1054
1055 @media print {
1056     body {
1057         font-family: "Linux Libertine O",
1058         "DejaVu Serif", "Bitstream Vera Serif",
1059         "Liberation Serif", "Nimbus Roman No 9 L",
1060         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
1061     }
1062     nav.sidetoc { display:none; }
1063     nav.topnavigation { display: none; }
1064     nav.botnavigation { display: none; }
1065 }
1066
1067 @media handheld {
1068     nav.sidetoc { display:none; }
1069     nav.topnavigation { display:block }
1070     nav.botnavigation { display:block }
1071 }
1072
1073 @media projection {
1074     nav.sidetoc { display:none; }
1075     nav.topnavigation { display:block }
1076     nav.botnavigation { display:block }
1077 }
1078 \end{VerbatimOut}
1079 % \end{Verbatim}% for syntax highlighting
```

69.4 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.

```

1080 \begin{VerbatimOut}{lwarp_sagebrush.css}
1081 @import url("lwarp.css") ;
1082
1083
1084 A:link {color:#105030 ; text-decoration: none ; }
1085 A:visited {color:#705030 ; text-shadow:1px 1px 2px #a0a0a0;}
1086 A:hover {color:#006000 ; text-decoration: underline ; text-shadow:0px 0px 2px #a0a0a0;}
1087 A:active {color:#00C000 ; text-shadow:1px 1px 2px #a0a0a0;}
1088
1089
1090
1091 h1, h2, h3, h4, h5, h6, span.paragraph, span.subparagraph
1092 {
1093     font-family: "URW Classico", Optima, "Linux Biolinum O",
1094         "Linux Libertine O", "Liberation Serif",
1095         "Nimbus Roman No 9 L", "FreeSerif",
1096         "Hoefler Text", Times, "Times New Roman", serif;
1097     font-variant: small-caps ;
1098     font-weight: normal ;
1099     color: #304070 ;
1100     text-shadow: 2px 2px 3px #808080;
1101 }
1102
1103 h1 { /* title of the entire website, used on each page */
1104     font-variant: small-caps ;
1105     color: #304070 ;
1106     text-shadow: 2px 2px 3px #808080;
1107     background-color: #F7F7F0 ;
1108     background-image: linear-gradient(to bottom, #F7F7F0, #C0C0C4);
1109 }
1110
1111 h1 {
1112     border-bottom: 1px solid #304070;
1113     border-top: 2px solid #304070;
1114 }
1115
1116 h2 {
1117     border-bottom: 1px solid #304070;
1118     border-top: 2px solid #304070;
1119     background-color: #F7F7F0 ;
1120     background-image: linear-gradient(to bottom, #F7F7F0, #DAD0C0);
1121 }

```

```
1122
1123
1124
1125 div.abstract {
1126     background: #f5f5eb ;
1127     background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);
1128
1129     border: 1px solid silver;
1130     border-radius: 1em ;
1131 }
1132
1133 div.abstract dl {line-height:1.5;}
1134 div.abstract dt {color:#304070;}
1135
1136 div.abstracttitle{
1137     font-family: "URW Classico", Optima, "Linux Biolinum O",
1138         "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
1139         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
1140     font-weight:bold;
1141     font-variant: small-caps ;
1142     font-size:1.5em;
1143     border-bottom: 1px solid silver ;
1144     color: #304070 ;
1145     text-align: center ;
1146     text-shadow: 1px 1px 2px #808080;
1147 }
1148
1149 span.abstracrunintitle{
1150     font-family: "URW Classico", Optima, "Linux Biolinum O",
1151         "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
1152         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
1153     font-weight:bold;
1154 }
1155
1156
1157 div.epigraph {
1158     background: #f5f5eb ;
1159     background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);
1160
1161     border: 1px solid silver ;
1162     border-radius: 1ex ;
1163     box-shadow: 3px 3px 3px #808080 ;
1164 }
1165
1166
1167 .example {
1168     background-color: #f5f5eb ;
1169     background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);
1170
1171 }
```

```
1172
1173 div.exampletitle{
1174     font-family: "URW Classico", Optima, "Linux Biolinum O",
1175         "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
1176         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
1177     font-weight:bold;
1178     font-variant: small-caps ;
1179     border-bottom: 1px solid silver ;
1180     color: #304070 ;
1181     text-align: center ;
1182     text-shadow: 1px 1px 2px #808080;
1183 }
1184
1185
1186 .sidebar {
1187     background-color: #f5f5eb ;
1188     background-image: linear-gradient(to bottom, #f5f5eb, #C8C8B8);
1189
1190 }
1191
1192 div.sidebartitle{
1193     font-family: "URW Classico", Optima, "Linux Biolinum O",
1194         "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
1195         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
1196     font-weight:bold;
1197     font-variant: small-caps ;
1198     border-bottom: 1px solid silver ;
1199     color: #304070 ;
1200     text-align: center ;
1201     text-shadow: 1px 1px 2px #808080;
1202 }
1203
1204
1205 .fancyvrblabel {
1206     font-family: "URW Classico", Optima, "Linux Biolinum O",
1207         "Linux Libertine O", "Liberation Serif", "Nimbus Roman No 9 L",
1208         "FreeSerif", "Hoefler Text", Times, "Times New Roman", serif;
1209     font-weight:bold;
1210     font-variant: small-caps ;
1211     font-size: 1.5em ;
1212     color: #304070 ;
1213     text-align: center ;
1214     text-shadow: 1px 1px 2px #808080;
1215 }
1216
1217
1218
1219 .minipage {
1220     background-color: #eeeeee7 ;
1221     border: 1px solid silver ;
```

```
1222 border-radius: 1ex ;
1223 }
1224
1225 figure.figure .minipage, figcaption .minipage { border: none; }
1226
1227 div.marginblock div.minipage { border: none; }
1228
1229 figure , div.marginblock {
1230     background-color: #eeeeee7 ;
1231     border: 1px solid silver ;
1232     border-radius: 1ex ;
1233     box-shadow: 3px 3px 3px #808080 ;
1234 }
1235
1236 figure figure {
1237     border: 1px solid silver ;
1238     margin: 0em ;
1239     box-shadow: none ;
1240 }
1241
1242 /*
1243 figcaption {
1244     border-top: 1px solid silver ;
1245     border-bottom: 1px solid silver ;
1246     background-color: #e8e8e8 ;
1247 }
1248 */
1249
1250
1251 div.table {
1252     box-shadow: 3px 3px 3px #808080 ;
1253 }
1254
1255 /*
1256 .tnotes {
1257     background: #e8e8e8;
1258     border: 1px solid silver;
1259 }
1260 */
1261
1262
1263 nav.topnavigation{
1264     background-color: #b0b8b0 ;
1265     background-image: linear-gradient(to bottom,#e0e0e0,#b0b8b0) ;
1266 }
1267
1268 nav.botnavigation{
1269     background-color: #b0b8b0 ;
1270     background-image: linear-gradient(to top,#e0e0e0,#b0b8b0) ;
1271 }
```



```

1272
1273
1274
1275 header{
1276     background-color: #F7F7F0 ;
1277     background-image: linear-gradient(to top, #F7F7F0, #b0b8b0);
1278 }
1279
1280 footer{
1281     background-color: #F7F7F0 ;
1282     background-image: linear-gradient(to bottom, #F7F7F0, #b0b8b0);
1283 }
1284
1285
1286
1287 nav.sidetoc {
1288     background-color: #F7F7F0 ;
1289     background-image: linear-gradient(to bottom, #F7F7F0, #C0C0C0);
1290     box-shadow: 3px 3px 3px #808080 ;
1291     border-radius: 0px 0px 0px 20px ;
1292 }
1293
1294 div.sidetoc title {color: #304070 ; }
1295 nav.sidetoc a:hover {color:#006000 ; text-decoration: none ; text-shadow:0px 0px 2px #a0a0a0;}
1296
1297
1298 @media screen and (max-width: 45em) {
1299     nav.sidetoc { border-radius: 0 ; }
1300 }
1301
1302
1303 \end{VerbatimOut}
1304 % \end{Verbatim}% for syntax highlighting

```

69.5 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.

```

1305 \begin{VerbatimOut}{lwarp_formal.css}
1306 @import url("lwarp.css") ;
1307
1308
1309
1310 A:link {color:#802020 ; text-decoration:none; }

```

```
1311 A:visited {color:#802020 ; text-shadow:none ;}
1312 A:hover {color:#400000 ; text-shadow:none ;}
1313 A:active {color:#C00000 ; text-shadow:none ;}
1314
1315
1316 body {
1317     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1318         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1319         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1320         "Times New Roman", serif;
1321     background: #fffcf5;
1322 }
1323
1324 span.textrm {
1325     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1326         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1327         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1328         "Times New Roman", serif;
1329 }
1330
1331 span.textsf {
1332     font-family: "DejaVu Sans", "Bitstream Vera Sans",
1333         Geneva, Verdana, sans-serif ;
1334 }
1335
1336
1337
1338 h1, h2, h3, h4, h5, h6, span.paragraph, span.subparagraph
1339 {
1340     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1341         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1342         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1343         "Times New Roman", serif;
1344     color: #800000 ;
1345     text-shadow: none ;
1346 }
1347
1348 h1, h2 {
1349     background-color: #fffcf5 ;
1350     background-image: none ;
1351     border-bottom: 1px solid #808080;
1352     border-top: 2px solid #808080;
1353 }
1354
1355 div.abstracttitle {
1356     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1357         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1358         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1359         "Times New Roman", serif;
1360     color: black ;
```

```
1361     text-shadow: none ;
1362 }
1363
1364 span.abstractrunintitle {
1365     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1366         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1367         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1368         "Times New Roman", serif;
1369     color: black ;
1370     text-shadow: none ;
1371 }
1372
1373 div.abstract { font-size: 100% }
1374
1375 .sidebar {
1376     background: #fffcf5;
1377     background-image: none ;
1378     margin: 2em 5% 2em 5%;
1379     padding: 0.5em 1em;
1380     border: none ;
1381     border-top : 1px solid silver;
1382     border-bottom : 1px solid silver;
1383     font-size: 90% ;
1384 }
1385
1386 div.sidebartitle{
1387     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1388         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1389         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1390         "Times New Roman", serif;
1391     color: #800000 ;
1392     text-shadow: none ;
1393     border: none ;
1394 }
1395
1396 .example {
1397     background: #fffcf5;
1398     background-image: none ;
1399     margin: 2em 5% 2em 5%;
1400     padding: 0.5em 1em;
1401     border: none ;
1402     border-top : 1px solid silver;
1403     border-bottom : 1px solid silver;
1404 }
1405
1406 div.exampletitle{
1407     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1408         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1409         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1410         "Times New Roman", serif;
```

```
1411     color: #800000 ;
1412     text-shadow: none ;
1413     border: none ;
1414 }
1415
1416 div.fancyvrblabel{
1417     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1418         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1419         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1420         "Times New Roman", serif;
1421     color: #800000 ;
1422     text-shadow: none ;
1423     border: none ;
1424 }
1425
1426
1427
1428 .verse {
1429     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1430         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1431         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1432         "Times New Roman", serif;
1433 }
1434
1435
1436 figure {
1437     margin: 3ex 5% 3ex 5% ;
1438     padding: 1ex 1em 1ex 1em ;
1439     background-color: #fffcf5 ;
1440     overflow-x: auto ;
1441     border: none ;
1442 /*     border-top: 1px solid silver; */
1443 /*     border-bottom: 1px solid silver; */
1444 }
1445
1446
1447 figcaption , .lstlisting {
1448     border: none ;
1449 /*     border-top: 1px solid silver ; */
1450 /*     border-bottom: 1px solid silver ; */
1451     background-color: #fffcf5 ;
1452 }
1453
1454 .tnotes {
1455     background: #fffcf5 ;
1456 }
1457
1458 .theorem {
1459     background: none ;
1460 }
```

```
1461
1462 .minipage {
1463     background-color: #fffcf5 ;
1464     border: none ;
1465 }
1466
1467 div.floatrow figure { border: none ; }
1468
1469 figure figure { border: none ; }
1470
1471
1472 nav.toc, nav.lof, nav.lot, nav.lol {
1473     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1474         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1475         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1476         "Times New Roman", serif;
1477 }
1478
1479 nav.sidetoc {
1480     font-family: "Linux Libertine O", "Hoefler Text", "Garamond",
1481         "Bembo", "Janson", "TeX Gyre Pagella", "Palatino",
1482         "Liberation Serif", "Nimbus Roman No 9 L", "FreeSerif", Times,
1483         "Times New Roman", serif;
1484     background-image: linear-gradient(to bottom, #fffcf5, #C0C0C0);
1485     border-radius: 0px 0px 0px 20px ;
1486 }
1487
1488 div.sidetoctitle{
1489     color: #800000 ;
1490 }
1491
1492 header{
1493     background-color: #e0e0e0 ;
1494     background-image: linear-gradient(to top, #fffcf5, #b0b0b0);
1495     text-align:center ;
1496 }
1497
1498 footer{
1499     background-color: #e0e0e0 ;
1500     background-image: linear-gradient(to bottom, #fffcf5, #b0b0b0);
1501     padding: 2ex 1em 2ex 1em ;
1502     clear:right ;
1503     text-align:left ;
1504 }
1505
1506 nav.botnavigation {
1507     background: #dedcd5 ;
1508     border-top: 1px solid black ;
1509 }
1510 \end{VerbatimOut}
```

```
1511 % \end{Verbatim}% for syntax highlighting
```

69.6 sample_project.css

File `sample_project.css` The project-specific CSS file. Use with `\NewCSS`.

If used, this must be present both when compiling the project and also when distributing the HTML files.

```
1512 \begin{VerbatimOut}{sample_project.css}
1513 /* ( --- Start of project.css --- ) */
1514 /* A sample project-specific CSS file for lwarp --- ) */
1515
1516 /* Load default lwarp settings: */
1517 @import url("lwarp.css") ;
1518 /* or lwarp_formal.css, lwarp_sagebrush.css */
1519
1520 /* Project-specific CSS setting follow here. */
1521 /* . . . */
1522
1523 /* ( --- End of project.css --- ) */
1524 \end{VerbatimOut}
1525 % \end{Verbatim}% for syntax highlighting
```

69.7 lwarp_html.xdy

File `lwarp_html.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.

```
1526 \begin{VerbatimOut}{lwarp_html.xdy}
1527 (require "tex/inputenc/latin.xdy")
1528 (merge-rule "\\PS *" "Postscript")
1529 (require "texindy.xdy")
1530 (require "page-ranges.xdy")
1531 (require "book-order.xdy")
1532 (markup-locref :open "\hyperindexref{" :close "{")
1533 \end{VerbatimOut}
1534 % \end{Verbatim}% for syntax highlighting
```

69.8 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.

```

1535 \begin{VerbatimOut}{lwarp_mathjax.txt}
1536 <!-- https://groups.google.com/forum/#!topic/
1537         mathjax-users/jÜteWUcE2bY -->
1538 <script type="text/x-mathjax-config">
1539 MathJax.Hub.Register.StartupHook("TeX AMSmath Ready",function () {
1540     var seteqsectionDefault = {name: "", num: 0};
1541     var seteqsections = {}, seteqsection = seteqsectionDefault;
1542     var TEX = MathJax.InputJax.TeX, PARSE = TEX.Parse;
1543     var AMS = MathJax.Extension["TeX/AMSmath"];
1544     TEX.Definitions.Add({
1545     macros: {
1546         seteqsection: "mySection",
1547         seteqnumber: "mySetEqNumber"
1548     }
1549     });
1550
1551     PARSE.Augment({
1552     mySection: function (name) {
1553         seteqsection.num = AMS.number;
1554         var n = this.GetArgument(name);
1555         if (n === "") {
1556             seteqsection = seteqsectionDefault;
1557         } else {
1558             if (!seteqsections["_"+n])
1559                 seteqsections["_"+n] = {name:n, num:0};
1560             seteqsection = seteqsections["_"+n];
1561         }
1562         AMS.number = seteqsection.num;
1563     },
1564     mySetEqNumber: function (name) {
1565         var n = this.GetArgument(name);
1566         if (!n || !n.match(/^ *[0-9]+ *$/))
1567             n = ""; else n = parseInt(n)-1;
1568         <!-- $ syntax highlighting -->
1569         if (n === "" || n < 1)
1570             TEX.Error
1571                 ("Argument to "+name+" should be a positive integer");
1572         AMS.number = n;
1573     }
1574     });
1575     MathJax.Hub.Config({
1576     TeX: {
1577         equationNumbers: {
1578         formatTag: function (n)
1579             {return "("+(seteqsection.name+"."+n).replace(/\./,"")+"}"},
1580         formatID: function (n) {

```

```

1581         n = (seteqsection.name+'.'+n).replace
1582             (/[:'<>&]/g,"").replace(/\./,"");
1583         return 'mjax-eqn-' + n;
1584     }
1585 }
1586 }
1587 });
1588 });
1589 </script>
1590
1591 <!-- http://docs.mathjax.org/en/latest/options/ThirdParty.html -->
1592 <script type="text/x-mathjax-config">
1593     MathJax.Ajax.config.path["Contrib"] =
1594         "https://cdn.mathjax.org/mathjax/contrib";
1595 </script>
1596
1597 <!-- https://github.com/mathjax/MathJax-third-party-extensions/
1598                                     tree/master/siunitx -->
1599 <script type="text/x-mathjax-config">
1600     MathJax.Hub.Config({
1601         extensions: ["tex2jax.js","[Contrib]/siunitx/siunitx.js"],
1602         jax: ["input/TeX","output/HTML-CSS"],
1603         tex2jax: {inlineMath: [["$","$"],["\\(","\\)"]]},
1604         TeX: {extensions: ["AMSmath.js","AMSsymbols.js", "sinuitx.js"]}
1605     });
1606 </script>
1607
1608 <script type="text/x-mathjax-config">
1609     MathJax.Hub.Config({
1610         TeX: {
1611             equationNumbers: {
1612                 autoNumber: "AMS"
1613             }
1614         }
1615     });
1616 </script>
1617
1618 <script
1619     src="https://cdn.mathjax.org/mathjax/latest/MathJax.js?config=TeX-AMS_HTML-full">
1620 </script>
1621 \end{VerbatimOut}
1622 % \end{Verbatim}% for syntax highlighting

```

69.9 Lwarpmk option

The following is only generated if the `lwarpmk` option was given to `lwarp-newproject`.

```

1623 \begin{LWR@createlwarpmk}

```


File `lwarpmk` Creates a local copy of `lwarpmk`:

```

1624 \begin{VerbatimOut}{lwarpmk.lua}
1625 #!/usr/bin/env texlua
1626
1627 -- Copyright 2016-2017 Brian Dunn
1628
1629 -- Print the usage of the lwarpmk command:
1630
1631 printversion = "v0.24"
1632
1633 function printhelp ()
1634 print ("lwarpmk: Use lwarpmk -h or lwarpmk --help for help.") ;
1635 end
1636
1637 function printusage ()
1638 print ( [[
1639
1640 lwarpmk print [project]: Compile a print version.
1641 lwarpmk printindex [project]: Process the index for the print version.
1642 lwarpmk html [project]: Compile an HTML version.
1643 lwarpmk htmlindex [project]: Process the index for the html version.
1644 lwarpmk again [project]: Touch the source code to trigger recompiles.
1645 lwarpmk limages [project]: Process the "lateximages" created by lwarp.sty.
1646 lwarpmk pdftohtml [project]:
1647     For use with latexmk or a Makefile:
1648     Convert project_html.pdf to project_html.html and
1649     individual HTML files.
1650 lwarpmk clean [project]: Remove project.aux, .toc, .lof, .lot, .idx, .ind, .log
1651 lwarpmk cleanall [project]: Remove auxiliary files and also project.pdf, *.html
1652 lwarpmk -h: Print this help message.
1653 lwarpmk --help: Print this help message.
1654
1655 ]] )
1656 printconf ()
1657 end
1658
1659 -- Print the format of the configuration file lwarpmk.conf:
1660
1661 function printconf ()
1662 print ( [[
1663 An example lwarpmk.conf or <project>.lwarpmkconf project file:
1664 --
1665 opsystem = "Unix"      (or "Windows")
1666 latexname = "pdflatex" (or "lualatex", or "xelatex")
1667 sourcename = "projectname" (the source-code filename w/o .tex)
1668 homehtmlfilename = "index" (or perhaps the project name)
1669 htmlfilename = ""      (or "projectname" - filename prefix)
1670 uselatexmk = "false"   (or "true" to use latexmk to build PDFs)
1671 --

```

```
1672 Filenames must contain only letters, numbers, underscore, or dash.
1673 Values must be in "quotes".
1674
1675 ]] ) ;
1676 end
1677
1678
1679 -- Split one large sourcefile into a number of files,
1680 -- starting with destfile.
1681 -- The file is split at each occurrence of <!--|Start file|newfilename|*
1682
1683 function splitfile (destfile,sourcefile)
1684 print ("lwarpmk: Splitting " .. sourcefile .. " into " .. destfile) ;
1685 io.input(sourcefile)
1686 io.output(destfile)
1687 for line in io.lines() do
1688 i,j,copen,cstart,newfilename = string.find (line,"(.*)|(.*)|(.*|") ;
1689 if ( (i~= nil) and (copen == "<!--") and (cstart == "Start file")) then -- split the file
1690 io.output(newfilename) ;
1691 else -- not a splitpoint
1692 io.write (line .. "\n") ;
1693 end
1694 end -- do
1695 end -- function
1696
1697 -- Incorrect value, so print an error and exit.
1698
1699 function cvalueerror ( line, linenum , cvalue )
1700     print ( linenum .. " : " .. line ) ;
1701     print ("lwarpmk: incorrect variable value \"" .. cvalue .. "\" in lwarpmk.conf.\n" ) ;
1702     printconf () ;
1703     os.exit(1) ;
1704 end
1705
1706 -- Load settings from the project's "lwarpmk.conf" file:
1707
1708 function loadconf ()
1709 -- Default configuration filename:
1710 local conffile = "lwarpmk.conf"
1711 -- Optional configuration filename:
1712 if arg[2] ~= nil then conffile = arg[2]..".lwarpmkconf" end
1713 -- Verify the file exists:
1714 if (lfs.attributes(conffile,"mode")==nil) then -- file not exists
1715 print("lwarpmk: " .. conffile .. " does not exist.")
1716 print("lwarpmk: " .. arg[2] .. " does not appear to be a project name.\n")
1717 printhelp () ;
1718 os.exit(1) -- exit the entire lwarpmk script
1719 else -- file exists
1720 -- Read the file:
1721 print ("lwarpmk: Reading " .. conffile .. ".")
```

```

1722 io.input(conffile) ;
1723 -- Scan each line:
1724 local linenum = 0
1725 for line in io.lines() do -- scan lines
1726 linenum = linenum + 1
1727 i,j,cvarname,cvalue = string.find (line,"([%w-_]*)%s*=%s*\"([%w-_]*)\"") ;
1728 -- Error if incorrect enclosing characters:
1729 if ( i == nil ) then
1730 print ( linenum .. " : " .. line ) ;
1731 print ( "lwarpmk: Incorrect entry in " .. conffile .. ".\n" ) ;
1732 printconf () ;
1733 os.exit(1) ;
1734 end
1735 if ( cvarname == "opssystem" ) then
1736     -- Verify choice of opssystem:
1737     if ( (cvalue == "Unix") or (cvalue == "Windows") ) then
1738         opssystem = cvalue
1739     else
1740         cvalueerror ( line, linenum , cvalue )
1741     end
1742 elseif ( cvarname == "latexname" ) then
1743     -- Verify choice of LaTeX compiler:
1744     if (
1745         (cvalue == "pdflatex") or
1746         (cvalue == "xelatex") or
1747         (cvalue == "lualatex")
1748     ) then
1749         latexname = cvalue
1750     else
1751         cvalueerror ( line, linenum , cvalue )
1752     end
1753 elseif ( cvarname == "sourcename" ) then sourcename = cvalue
1754 elseif ( cvarname == "homehtmlfilename" ) then homehtmlfilename = cvalue
1755 elseif ( cvarname == "htmlfilename" ) then htmlfilename = cvalue
1756 elseif ( cvarname == "uselatexmk" ) then uselatexmk = cvalue
1757 else
1758 print ( linenum .. " : " .. line ) ;
1759 print ( "lwarpmk: Incorrect variable name \" .. cvarname .. "\" in " .. conffile .. ".\n" ) ;
1760 printconf () ;
1761 os.exit(1) ;
1762 end
1763 end -- do scan lines
1764 end -- file exists
1765 -- Select some operating-system commands:
1766 if opssystem=="Unix" then -- For Unix / Linux / Mac OS:
1767 rmname = "rm"
1768 mvname = "mv"
1769 touchnamepre = "touch"
1770 touchnamepost = ""
1771 dirslash = "/"

```

```
1772 opquote= "\'"
1773 elseif opsystem=="Windows" then -- For Windows
1774 rmname = "DEL"
1775 mvname = "MOVE"
1776 touchnamepre = "COPY /b"
1777 touchnamepost = "+,,"
1778 dirsslash = "\\"
1779 opquote= "\""
1780 else print ( "lwarpmk: Select Unix or Windows for opsystem" )
1781 end --- for Windows
1782 end -- loadconf
1783
1784
1785 function refreshdate ()
1786 os.execute(touchnamepre .. " " .. sourcename .. ".tex " .. touchnamepost)
1787 end
1788
1789
1790 -- Scan the LaTeX log file for the phrase "Rerun to get",
1791 -- indicating that the file should be compiled again.
1792 -- Return true if found.
1793
1794 function reruntoget (filesourse)
1795 io.input(filesourse)
1796 for line in io.lines() do
1797 if ( string.find(line,"Rerun to get") ~= nil ) then return true end
1798 end
1799 return false
1800 end
1801
1802 -- Compile one time, return true if should compile again.
1803 -- fsuffix is "" for print, "_html" for HTML output.
1804
1805 function onetime (fsuffix)
1806 print("lwarpmk: Compiling with " .. latexname .. " " .. sourcename..fsuffix)
1807 err = os.execute(
1808 --      "echo " ..
1809      latexname .. " " .. sourcename..fsuffix )
1810 if ( err ~= 0 ) then print ( "lwarpmk: Compile error." ) ; os.exit(1) ; end
1811 return (reruntoget(sourcename .. fsuffix .. ".log") ) ;
1812 end
1813
1814 -- Compile up to five times.
1815 -- fsuffix is "" for print, "_html" for HTML output
1816
1817 function manytimes (fsuffix)
1818 if onetime(fsuffix) == true then
1819 if onetime(fsuffix) == true then
1820 if onetime(fsuffix) == true then
1821 if onetime(fsuffix) == true then
```

```

1822 if onetime(fsuffix) == true then
1823 end end end end
1824 end
1825
1826 -- Exit if the given file does not exist.
1827
1828 function verifyfileexists (filename)
1829 if (lfs.attributes ( filename , "modification" ) == nil ) then
1830 print ( "lwarpmk: " .. filename .. " not found." );
1831 os.exit (1) ;
1832 end
1833 end
1834
1835 -- Convert <project>_html.pdf into HTML files:
1836
1837 function pdftohtml ()
1838     -- Convert to text:
1839     print ("lwarpmk: Converting " .. sourcename .. "_html.pdf to " .. sourcename .. "_html.html")
1840     os.execute("pdftotext -enc UTF-8 -nopgbrk -layout " .. sourcename .. "_html.pdf " .. sou
1841     -- Split the result into individual HTML files:
1842     splitfile (homehtmlfilename .. ".html" , sourcename .. "_html.html")
1843 end
1844
1845 -- Remove auxiliary files:
1846
1847 function removeaux ()
1848     os.execute ( rmname .. " " ..
1849         sourcename .. ".aux " .. sourcename .. "_html.aux " ..
1850         sourcename .. ".toc " .. sourcename .. "_html.toc " ..
1851         sourcename .. ".lof " .. sourcename .. "_html.lof " ..
1852         sourcename .. ".lot " .. sourcename .. "_html.lot " ..
1853         sourcename .. ".idx " .. sourcename .. "_html.idx " ..
1854         sourcename .. ".ind " .. sourcename .. "_html.ind " ..
1855         sourcename .. ".log " .. sourcename .. "_html.log "
1856     )
1857 end
1858
1859
1860
1861 -- Create lateximages based on lateximages.txt:
1862 function createlateximages ()
1863 print ("lwarpmk: Creating lateximages.")
1864 io.input("lateximages.txt")
1865 -- Create the lateximages directory, ignore error if already exists
1866 err = os.execute("mkdir lateximages")
1867 -- Scan lateximages.txt
1868 for line in io.lines() do
1869 -- lwimgpage is the page number in the PDF which has the image
1870 -- lwimgnum is the sequential lateximage number to assign for the image
1871 i,j,lwimgpage,lwimgnum = string.find (line,"|(.*)|(.*)|")

```

```

1872 -- For each entry:
1873 if ( (i~=nil) ) then
1874 -- Separate out the image into its own single-page pdf:
1875 err = os.execute(
1876 "pdfseparate -f " .. lwimgpage .. " -l " ..
1877 lwimgpage .. " " .. sourcename .. "_html.pdf lateximagetemp-%d.pdf")
1878 -- Crop the image:
1879 err = os.execute(
1880 "pdfcrop -- hires lateximagetemp-" .. lwimgpage .. ".pdf lateximage-" .. lwimgnum .. ".pdf")
1881 if ( err ~= 0 ) then print ( "lwarpmk: File error." ) ; os.exit(1) ; end
1882 -- Convert the image to svg:
1883 err = os.execute(
1884 "pdftocairo -svg lateximage-" .. lwimgnum .. ".pdf lateximage-" .. lwimgnum .. ".svg")
1885 if ( err ~= 0 ) then print ( "lwarpmk: File error." ) ; os.exit(1) ; end
1886 -- Move the result into lateximages/:
1887 err = os.execute(
1888 mvname .. " lateximage-" .. lwimgnum .. ".svg lateximages" .. dirslash )
1889 if ( err ~= 0 ) then print ( "lwarpmk: File error." ) ; os.exit(1) ; end
1890 -- Remove the temporary files:
1891 err = os.execute(
1892 rmname .. " lateximage-" .. lwimgnum .. ".pdf lateximagetemp-" .. lwimgpage .. ".pdf")
1893 if ( err ~= 0 ) then print ( "lwarpmk: File error." ) ; os.exit(1) ; end
1894 end
1895 end -- do
1896 end -- function
1897
1898
1899
1900
1901 -- lwarpmk --version :
1902
1903 if (arg[1] == "--version") then
1904 print ( "lwarpmk: " .. printversion )
1905
1906 else -- not -- version
1907
1908 -- print intro:
1909
1910 print ("lwarpmk: " .. printversion .. " Automated make for the LaTeX lwarp package.")
1911
1912 -- lwarpmk print:
1913
1914 if arg[1] == "print" then
1915 loadconf ( )
1916 if ( uselatexmk == "true" ) then
1917     os.execute ( "latexmk -pdf -dvi- -ps- -pdflatex=\" " .. latexname .. " %0 %S\" " .. sourcename
1918     print ("lwarpmk: Done.")
1919 else -- not latexmk
1920     verifyfileexists (sourcename .. ".tex") ;
1921     -- See if up to date:

```

```

1922     if (
1923         ( lfs.attributes ( sourcename .. ".pdf" , "modification" ) == nil ) or
1924         (
1925             lfs.attributes ( sourcename .. ".tex" , "modification" ) >
1926             lfs.attributes ( sourcename .. ".pdf" , "modification" )
1927         )
1928     ) then
1929         -- Recompile if not yet up to date:
1930         manytimes("")
1931         print ("lwarpmk: Done.") ;
1932     else
1933         print ("lwarpmk: " .. sourcename .. ".pdf is up to date.") ;
1934     end
1935 end -- not latexmk
1936
1937 -- lwarp printindex:
1938 -- Compile the index then touch the source
1939 -- to trigger a recompile of the document:
1940
1941 elseif arg[1] == "printindex" then
1942 loadconf ()
1943 print ("lwarpmk: Processing the index.")
1944 os.execute("texindy -M lwarp_html.xdy " .. sourcename .. ".idx")
1945 print ("lwarpmk: Forcing an update of " .. sourcename .. ".tex.")
1946 refreshdate ()
1947 print ("lwarpmk: " .. sourcename .. ".tex is ready to be recompiled.")
1948 print ("lwarpmk: Done.")
1949
1950 -- lwarpmk html:
1951
1952 elseif arg[1] == "html" then
1953 loadconf ()
1954 if ( uselatexmk == "true" ) then
1955     -- The recorder option is required to detect changes in <project>.tex
1956     -- while we are loading <project>_html.tex.
1957     err=os.execute ( "latexmk -pdf -dvi- -ps- -recorder "
1958         .. "-e "
1959         .. opquote .. "$makeindex = q/texindy -M lwarp_html.xdy/" .. opquote
1960         .. " -pdflatex=\" " .. latexname .. " %O %S\" "
1961         .. sourcename .. "_html.tex" ) ;
1962     if ( err ~= 0 ) then print ( "lwarpmk: Compile error." ) ; os.exit(1) ; end
1963     pdftohtml ()
1964     print ("lwarpmk: Done.")
1965 else -- not latexmk
1966     verifyfileexists ( sourcename .. ".tex" ) ;
1967     -- See if exists and is up to date:
1968     if (
1969         ( lfs.attributes ( homehtmlfilename .. ".html" , "modification" ) == nil ) or
1970         (
1971             lfs.attributes ( sourcename .. ".tex" , "modification" ) >

```

```
1972         lfs.attributes ( homehtmlfilename .. ".html" , "modification" )
1973     )
1974 ) then
1975     -- Recompile if not yet up to date:
1976     manytimes("_html")
1977     pdftohtml ()
1978     print ("lwarpmk: Done.")
1979 else
1980     print ("lwarpmk: " .. homehtmlfilename .. ".html is up to date.")
1981 end
1982 end -- not latexmk
1983
1984 elseif arg[1] == "pdftohtml" then
1985     loadconf ()
1986     pdftohtml ()
1987
1988 -- lwarpmk htmlindex:
1989 -- Compile the index then touch the source
1990 -- to trigger a recompile of the document:
1991
1992 elseif arg[1] == "htmlindex" then
1993 loadconf ()
1994 print ("lwarpmk: Processing the index.")
1995 os.execute("texindy -M lwarp_html.xdy " .. sourcename .. "_html.idx")
1996 print ("lwarpmk: Forcing an update of " .. sourcename .. ".tex.")
1997 refreshdate ()
1998 print ("lwarpmk: " .. sourcename .. ".tex is ready to be recompiled.")
1999 print ("lwarpmk: Done.")
2000
2001 -- lwarpmk limages:
2002 -- Scan the lateximages.txt file to create lateximages,
2003 -- then touch the source to trigger a recompile.
2004
2005 elseif arg[1] == "limages" then
2006 loadconf ()
2007 print ("lwarpmk: Processing images.")
2008 createlateximages ()
2009 print ("lwarpmk: Forcing an update of " .. sourcename .. ".tex.")
2010 refreshdate ()
2011 print ("lwarpmk: " .. sourcename .. ".tex is ready to be recompiled.")
2012 print ("lwarpmk: Done.")
2013
2014 -- lwarpmk again:
2015 -- Touch the source to trigger a recompile.
2016
2017 elseif arg[1] == "again" then
2018 loadconf ()
2019 print ("lwarpmk: Forcing an update of " .. sourcename .. ".tex.")
2020 refreshdate ()
2021 print ("lwarpmk: " .. sourcename .. ".tex is ready to be recompiled.")
```



```
2022 print ("lwarpmk: Done.")
2023
2024 -- lwarpmk clean:
2025 -- Remove project.aux, .toc, .lof, .lot, .idx, .ind, .log
2026
2027 elseif arg[1] == "clean" then
2028 loadconf ()
2029 removeaux ()
2030 print ("lwarpmk: Done.")
2031
2032 -- lwarpmk cleanall
2033 -- Remove project.aux, .toc, .lof, .lot, .idx, .ind, .log
2034 --      and also project.pdf, *.html
2035
2036 elseif arg[1] == "cleanall" then
2037 loadconf ()
2038 removeaux ()
2039 os.execute ( rmname .. " " ..
2040      sourcename .. ".pdf " .. sourcename .. "_html.pdf " ..
2041      "*.html"
2042      )
2043 print ("lwarpmk: Done.")
2044
2045 -- lwarpmk with no argument :
2046
2047 elseif (arg[1] == nil) then
2048 printhelp ()
2049
2050 -- lwarpmk -h or lwarpmk --help :
2051
2052 elseif (arg[1] == "-h" ) or (arg[1] == "--help") then
2053 printusage ()
2054
2055 else
2056 print ("lwarpmk: Unknown command \""..arg[1].."\".\n")
2057 printhelp ()
2058 end
2059
2060 end -- not --version
2061 \end{VerbatimOut}
2062 % \end{Verbatim}% for syntax highlighting

2063 \end{LWR@createlwarpmk}
```

Package 3

lwarp-abstract.sty

70 Abstract

Pkg abstract abstract is supported and patched by lwarp.

abstract is supported. 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: Accept all options for lwarp-abstract:

```

1 \LWR@ProvidesPackagePass{abstract}

2 \AtBeginDocument{
3 \BeforeBeginEnvironment{abstract}{\BlockClass{abstract}}
4 \AfterEndEnvironment{abstract}{\endBlockClass}
5 }
6
7 \renewcommand{\@bsrunintitle}{%
8 \hspace*{\abstitlesskip}%
9 {\abstractnamefont%
10 \InlineClass{abstractrunintitle}{\abstractname}%
11 \@bslabeldelim}%
12 }
13
14 \if@titlepage
15 \renewenvironment{abstract}{%
16 % \titlepage
17 \null\vfil
18 \@beginparpenalty\@lowpenalty
19 \if@bsrunin
20 \else
21 \if@bsstyle
22 \abstitlestyle{\BlockClassSingle{abstracttitle}{\abstractname}}
23 \else
24 \ifnumber@bs
25 \num@bs
26 \else
27 \begin{\absnamepos}%
28 \abstractnamefont \BlockClassSingle{abstracttitle}{\abstractname}
29 \endparpenalty\@M
30 \end\absnamepos%
```

```

31 %%          \vspace{\abstitlekip}%
32          \fi
33          \fi
34          \vspace{\abstitlekip}%
35          \fi
36          \put@bsintoc%
37          \begin{@bstr@ctlist}\if@bsrunin\@bsrunintitle\fi\abstracttextfont}%
38          {\par\end{@bstr@ctlist}\vfil\null%\endtitlepage
39 }
40 \else
41   \renewenvironment{abstract}{%
42     \if@bsrunin
43     \else
44       \if@bsstyle
45         \abstitlestyle{\BlockClassSingle{abstracttitle}{\abstractname}}
46       \else
47         \ifnumber@bs
48         \num@bs
49       \else
50 \begin{\absnamepos}%
51 \abstractnamefont\BlockClassSingle{abstracttitle}{\abstractname}%
52 \end\absnamepos%
53 %%          \vspace{\abstitlekip}%
54          \fi
55          \fi
56          \vspace{\abstitlekip}%
57          \fi
58          \put@bsintoc%
59          \begin{@bstr@ctlist}\if@bsrunin\@bsrunintitle\fi\abstracttextfont}%
60          {\par\end{@bstr@ctlist}}
61 \fi
62

```

Package 4

lwarp-afterpage.sty

71 Afterpage

Pkg afterpage Not used.

for **HTML output**: Discard all options for lwarp-afterpage:

```
1 \LWR@ProvidesPackageDrop{afterpage}
```

```
2 \newcommand{\afterpage}[1]{#1}
```

Package 5


lwarp-algorithmicx.sty

72 Algorithmicx

Pkg algorithmicx algorithmicx is supported with minor adjustments.

for HTML output: 1 \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 [132.1](#).

for HTML output: 2 \begin{warpHTML}

```

3 \AtBeginEnvironment{algorithmic}{%
4 %
5 \let\origALG@doentity\ALG@doentity%
6 %
7 \renewcommand*{\ALG@doentity}{%
8 \origALG@doentity%
9 \uselengthunit{PT}%
10 \LWR@htmltagc{%
11 span style="width:\rndprintlength{\ALG@thistlm}; display:inline-block;"%
12 }%
13 \LWR@htmltagc{/span}%
14 }%
15 %
16 \let\origComment\Comment%
17 %
18 \renewcommand{\Comment}[1]{\InlineClass{floatright}{\origComment{#1}}}%
19 }

20 \end{warpHTML}
```

Package 6

lwarp-alltt.sty

73 Alltt

Pkg alltt alltt is patched for use by lwarp.

for HTML output:

```

1 \LWR@ProvidesPackagePass{alltt}

2 \AfterEndPreamble{
3 \AtBeginEnvironment{alltt}{\LWR@atbeginverbatim{alltt}\unskip\vspace*{-\baselineskip}}
4 \AfterEndEnvironment{alltt}{\unskip\vspace*{-\baselineskip}\LWR@afterendverbatim}
5 }
```

Package 7

lwarp-bookmark.sty

74 Bookmark

Pkg bookmark bookmark is emulated during HTML output, and the bookmark package is ignored.

for HTML output: Discard all options for lwarp-bookmark:

```

1 \LWR@ProvidesPackageDrop{bookmark}

2 \newcommand*{\bookmarksetup}[1]{}
3 \newcommand*{\bookmarksetupnext}[1]{}
4 \newcommand*{\bookmark}[2][1]{}
5 \newcommand*{\bookmarkdefinestyle}[2]{}
6 \newcommand*{\bookmarkget}[1]{}
7 \newcommand{\BookmarkAtEnd}[1]{}

```

Package 8

lwarp-booktabs.sty

75 Booktabs

Pkg booktabs booktabs is emulated during HTML output, and the booktabs package is ignored.

for HTML output: 1 \LWR@ProvidesPackageDrop{booktabs}

Booktabs emulation is spread among the tabular code.

Emulated for source compatibility.

```
2 \newcommand*{\addlinespace}[1]{}
3 \newcommand*{\morecmidrules}{}
4 \newcommand*{\specialrule}[3]{}

```

Package 9

lwarp-changepage.sty

76 Changepage

Pkg changepage changepage is ignored.

for HTML output: Discard all options for lwarp-changepage:

```
1 \LWR@ProvidesPackageDrop{changepage}

2 \newif\ifoddpge
3 \DeclareRobustCommand{\checkoddpge}{\oddpagetrue}
4 \DeclareRobustCommand{\changetext}[5]{}
5 \DeclareRobustCommand{\changepage}[9]{}
6 \newenvironment{adjustwidth}[2]{}{}
7 \newenvironment{adjustwidth*}[2]{}{}

```

Package 10

lwarp-dcolumn.sty

77 Dcolumn

Pkg dcolumn dcolumn is emulated during HTML output, and the dcolumn package is ignored.

```
1 \LWR@ProvidesPackageDrop{dcolumn}
```

Package 11

lwarp-draftwatermark.sty

78 Draftwatermark

Pkg draftwatermark draftwatermark is emulated during HTML output, and the draftwatermark package is ignored.

```
for HTML output: 1 \LWR@ProvidesPackageDrop{draftwatermark}

2 \newcommand{\SetWatermarkAngle}[1]{}
3 \newcommand{\SetWatermarkColor}[1]{}
4 \newcommand{\SetWatermarkLightness}[1]{}
5 \newcommand{\SetWatermarkFontSize}[1]{}
6 \newcommand{\SetWatermarkScale}[1]{}
7 \newcommand{\SetWatermarkHorCenter}[1]{}
8 \newcommand{\SetWatermarkVertCenter}[1]{}
9 \newcommand{\SetWatermarkText}[1]{}

```


Package 12

lwarp-enumerate.sty

79 Enumerate

Pkg `enumerate` `enumerate` is ignored. `enumitem` is then modified per the `shortlabels` option.

`enumerate` conflicts with `enumitem` if both are loaded at the same time, but `lwarp` does not actually load `enumerate`. While generating HTML, `lwarp` only loads `enumitem`, and `enumerate` is simulated by `enumitem` using the functionality of the `shortlabels` option.

A problem may occur during print output if `enumitem` is loaded, either manually or by some other package such as `siunitx`. If these are used, `enumerate` will conflict with `enumitem` during print output.

for HTML output: Discard all options for `lwarp-enumerate`:

```

1 \LWR@ProvidesPackageDrop{enumerate}

2 % \DeclareOption{shortlabels}
3 % {
4 \def\enit@shl#1{%
5     \ifnum\enit@type=\tw@
6         \enit@toks{#1}%
7     \else
8         \def\enit@c{#1}%
9         \enit@first#1,\@nil\@nil % Returns enit@toks
10    \fi}
11 % }
```

Package 13

lwarp-epigraph.sty

80 Epigraph

Pkg epigraph epigraph is emulated during HTML output, and the epigraph package is ignored.

```
for HTML output: 1 \LWR@ProvidesPackageDrop{epigraph}

2 \newcommand{\qitem}[2]
3 {
4 \begin{BlockClass}{qitem}
5 #1
6 \begin{BlockClass}{epigraphsource}
7 #2
8 \end{BlockClass}
9 \end{BlockClass}
10 }

11 \newcommand{\epigraph}[2]
12 {
13 \begin{BlockClass}{epigraph}
14 \qitem{#1}{#2}
15 \end{BlockClass}
16 }
17
18 \newenvironment*{epigraphs}
19 {\BlockClass{epigraph}}
20 {\endBlockClass}
```

Use CSS to format epigraphs.

The following are null commands for source compatibility:

```
21 \newlength{\epigraphwidth}
22 \setlength{\epigraphwidth}{.5\linewidth}
23 \newenvironment*{flushepinormal}{}{}
24 \newcommand{\textflush}[1]{flushepinormal}
25 \newcommand{\epigraphflush}[1]{flushright}
26 \newcommand{\sourceflush}[1]{flushright}
27 \newcommand*{\epigraphsize}{\small}
28 \newlength{\epigraphrule}
29 \newlength{\beforeepigraphskip}
30 \newlength{\afterepigraphskip}
31 \newcommand{\epigraphhead}[2][0]{#2}
```

```

32 \newcommand{\dropchapter}[1]{}
33 \newcommand*{\undodrop}{}
34 \newcommand{\cleartoevenpage}[1] [] {}

```

Package 14

lwarp-eso-pic.sty

81 Eso-pic

Pkg eso-pic eso-pic is emulated during HTML output, and the eso-pic package is ignored.

for HTML output:

```

1 \LWR@ProvidesPackageDrop{eso-pic}

2 \newcommand*{\LenToUnit}{}
3 \newcommand{\AtPageUpperLeft}[1]{}
4 \newcommand{\AtPageLowerLeft}[1]{}
5 \newcommand{\AtPageCenter}[1]{}
6 \newcommand{\AtStockLowerLeft}[1]{}
7 \newcommand{\AtStockUpperLeft}[1]{}
8 \newcommand{\AtStockCenter}[1]{}
9 \newcommand{\AtTextUpperLeft}[1]{}
10 \newcommand{\AtTextLowerLeft}[1]{}
11 \newcommand{\AtTextCenter}[1]{}
12 \NewDocumentCommand{\AddToShipoutPictureBG}{s +m}{}
13 \let\AddToShipoutPicture\AddToShipoutPictureBG
14 \NewDocumentCommand{\AddToShipoutPictureFG}{s +m}{}
15 \newcommand*{\ClearShipoutPictureBG}{}
16 \newcommand*{\ClearShipoutPicture}{}
17 \newcommand*{\ClearShipoutPictureFG}{}
18 \newcommand{\gridSetup}[6] [] {}

```

Package 15

lwarp-everypage.sty

82 Everypage

Pkg `everypage` `everypage` is emulated during HTML output, and the `everypage` package is ignored.

for HTML output:

```

1 \LWR@ProvidesPackageDrop{everypage}

2 \newcommand*{\AddEverypageHook}[1]{}
3 \newcommand*{\AddThispageHook}[1]{}

```

Package 16

lwarp-extramarks.sty

83 Extramarks

Pkg `extramarks` `extramarks` is not used.

for HTML output: Discard all options for `lwarp-extramarks`:

```

1 \LWR@ProvidesPackageDrop{extramarks}

2 \newcommand*{\extramarks}[2]{}
3 \newcommand*{\firstleftxmark}{}
4 \newcommand*{\lastleftxmark}{}
5 \newcommand*{\firstrightxmark}{}
6 \newcommand*{\lastrightxmark}{}
7 \newcommand*{\firstxmark}{}
8 \newcommand*{\lastxmark}{}
9 \newcommand*{\topxmark}{}
10 \newcommand*{\topleftxmark}{}
11 \newcommand*{\firstleftmark}{}
12 \newcommand*{\lastrightmark}{}

```

Package 17

lwarp-fancyhdr.sty

84 Fancyhdr

Pkg fancyhdr fancyhdr is nullified.

for HTML output: Discard all options for lwarp-fancyhdr:

```

1 \LWR@ProvidesPackageDrop{fancyhdr}

2 \newcommand*{\fancyhead}[2] [] {}
3 \newcommand*{\fancyfoot}[2] [] {}
4 \newcommand*{\fancyhf}[2] [] {}
5 \newcommand*{\fancypagestyle}[2] {}
6 \newcommand*{\lhead}[1] {}
7 \newcommand*{\chead}[1] {}
8 \newcommand*{\rhead}[1] {}
9 \newcommand*{\lfoot}[1] {}
10 \newcommand*{\cfoot}[1] {}
11 \newcommand*{\rfoot}[1] {}
12 \newcommand*{\headrulewidth}{}
13 \newcommand*{\footrulewidth}{}
14 \newcommand*{\fancyheadoffset}[2] [] {}
15 \newcommand*{\fancyfootoffset}[2] [] {}
16 \newcommand*{\fancyhfoffset}[2] [] {}
17 \newcommand*{\iffloatpage}[2] {#2}
18 \newcommand*{\ifftopfloat}[2] {#2}
19 \newcommand*{\iffbotfloat}[2] {#2}

```

Package 18

lwarp-float.sty

85 Float and \newfloat

`Pkg float` float is emulated during HTML output, and the float package is ignored.

for HTML output: 1 \LWR@ProvidesPackageDrop{float}[2016/03/04]

See section 52.2 for the `\listof` command.

`\newfloat` $\{\langle 1: type \rangle\} \{\langle 2: placement \rangle\} \{\langle 3: ext \rangle\} [\langle 4: within \rangle]$

Emulates the `\newfloat` command from the float package.

“placement” is ignored.

```
2 \NewDocumentCommand{\newfloat}{m m m o}{%
3 \IfValueTF{#4}
4 {
5 \DeclareFloatingEnvironment[fileext=#3,within=#4]{#1}
6 }
7 {\DeclareFloatingEnvironment[fileext=#3]{#1}}
```

`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.

```
8 \cslet{listof#1s}\relax
9 \cslet{listof#1es}\relax
10 }
```

`\floatname` $\{\langle type \rangle\} \{\langle name \rangle\}$

Sets the text name of the float, such as “Figure”.

```
11 \NewDocumentCommand{\floatname}{m +m}{%
12 \SetupFloatingEnvironment{#1}{name=#2}%
13 }
```

`\floatplacement` $\{\langle type \rangle\} \{\langle placement \rangle\}$

Float placement is ignored.

```
14 \newcommand*{\floatplacement}[2]{%
15 \SetupFloatingEnvironment{#1}{placement=#2}%
16 }
```

`\floatstyle` $\{\langle style \rangle\}$

Float styles are ignored.

```
17 \newcommand{\floatstyle}[1]{%
18 }
```

`\restylefloat` $* \{\langle style \rangle\}$

Float styles are ignored.

```
19 \NewDocumentCommand{\restylefloat}{s m}{%
20 }
```

Package 19

lwarp-floatrow.sty

86 Floatrow

Pkg floatrow floatrow is emulated during HTML output, and the floatrow package is ignored.

for HTML output: 1 \LWR@ProvidesPackageDrop{floatrow}

⚠ 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:

```
2 \newbool{LWR@subcaptionloaded}
3
4 \AtBeginDocument{
5 \@ifpackageloaded{subcaption}
6 {\booltrue{LWR@subcaptionloaded}}
7 {\boolfalse{LWR@subcaptionloaded}}
8 }
```

```
\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`.

```

9 \NewDocumentCommand{\floatbox}{o m o o o +m +m}{%
10 \ifbool{LWR@subcaptionloaded}%
11 {% subcaption

```

For `subcaption`:

```

12 \ifbool{LWR@insubfloatrow}%
13 {% subcaption in a subfloatrow

```

`subfigure` and `subtable` environments take width as an argument.

```

14 \IfValueTF{#3}%
15 {\@nameuse{sub#2}{#3}}%
16 {\@nameuse{sub#2}{\linewidth}}%
17 }% subcaption in a subfloatrow
18 {% subcaption not in subfloatrow

```

`figure` and `table` environments do not take a width argument.

```

19 \@nameuse{#2}%
20 }% subcaption not in subfloatrow
21 #6
22
23 #7

```

End the environments:

```

24 \ifbool{LWR@insubfloatrow}%
25 {\@nameuse{endsub#2}}%
26 {\@nameuse{end#2}}%
27 }% subcaption
28 {% assume subfig

```

For `subfig`:

```

29 \ifbool{LWR@insubfloatrow}%
30 {% 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.

```

31 \begingroup
32 \let\caption\@firstofone

```

```

33 \subfloat[#6]{#7}
34 \endgroup
35 }% subfig in a subfloatrow
36 {% subfig package, but not a subfig

```

figure and table are environments:

```

37 \@nameuse{#2}
38 #6
39
40 #7
41 \@nameuse{end#2}
42 }% subfig package, but not a subfig
43 }% assume subfig
44 }

```

Not used:

```

45 \newcommand*{\nocapbeside}{}
46 \newcommand*{\capbeside}{}
47 \newcommand*{\captop}{}
48 \newlength{\FBwidth}
49 \setlength{\FBwidth}{.3\linewidth}
50 \newlength{\FBheight}
51 \setlength{\FBheight}{2in}
52 \newcommand*{\useFCwidth}{}
53 \newcommand{\floatsetup}[2][{}]{
54 \newcommand{\thisfloatsetup}[1]{
55 \newcommand{\clearfloatsetup}[1]{
56 \newcommand*{\killfloatstyle}{}

```

Preamble and default width are ignored.

```

57 \NewDocumentCommand{\newfloatcommand}{m m o o}{%
58 \@namedef{#1}{
59 \floatbox{#2}
60 }
61 }

```

Preamble and default width are ignored.

```

62 \NewDocumentCommand{\renewfloatcommand}{m m o o}{%
63 \@namedef{#1}{%
64 \floatbox{#2}
65 }
66 }

67 \newfloatcommand{ffigbox}{figure}[\nocapbeside] []

```

```
68 \newfloatcommand{ttabbox}{table}[\captop][\FBwidth]
```

```
69 \newfloatcommand{fcapside}{figure}[\capbeside][]
```

The row of floats is placed into a div of class floatrow.

```
70 \newenvironment*{floatrow}[1][2]
71 {
72 \BlockClass{floatrow}
```

While inside the floatrow, divide the \linewidth by the number of floats.

```
73 \booltrue{LWR@infloatrow}
74 \setlength{\linewidth}{6in/#1}
75 }
76 {
77 \boolfalse{LWR@infloatrow}
78 \endBlockClass
79 }
```

Keys for \DeclareNewFloatType:

```
80 \newcommand*{\LWR@frowkeyplacement}{}
81 \newcommand*{\LWR@frowkeyname}{}
82 \newcommand*{\LWR@frowkeyfileext}{}
83 \newcommand*{\LWR@frowkeywithin}{}
84 \newcommand*{\LWR@frowkeycapstyle}{}
85
86 \define@key{frowkeys}{placement}{}%
87 \define@key{frowkeys}{name}{\renewcommand{\LWR@frowkeyname}{#1}}%
88 \define@key{frowkeys}{fileext}{\renewcommand{\LWR@frowkeyfileext}{#1}}%
89 \define@key{frowkeys}{within}{\renewcommand{\LWR@frowkeywithin}{#1}}%
90 \define@key{frowkeys}{relatedcapstyle}{}%
```

Use \listof{type}{Title} to print a list of the floats.

```
91 \newcommand*{\DeclareNewFloatType}[2]{%
```

Reset key values:

```
92 \renewcommand*{\LWR@frowkeyplacement}{}
93 \renewcommand*{\LWR@frowkeyname}{}
94 \renewcommand*{\LWR@frowkeyfileext}{}
95 \renewcommand*{\LWR@frowkeywithin}{}
96 \renewcommand*{\LWR@frowkeycapstyle}{}%
```

Read new key values:

```

97 \LWR@traceinfo{about to setkeys frowkeys}%
98 \setkeys{frowkeys}{#2}%
99 \LWR@traceinfo{finished setkeys frowkeys}%

```

Create a new float with optional [within]:

```

100 \ifthenelse{\equal{\LWR@frowkeywithin}{}}{
101 {
102 \LWR@traceinfo{about to newfloat #1 \LWR@frowkeyplacement\
103 \LWR@frowkeyfileext}%
104 \newfloat{#1}{\LWR@frowkeyplacement}{\LWR@frowkeyfileext}
105 }%
106 {%
107 \LWR@traceinfo{about to newfloat #1\ \LWR@frowkeyplacement\
108 \LWR@frowkeyfileext\ \LWR@frowkeywithin}%
109 \newfloat{#1}{\LWR@frowkeyplacement}%
110 {\LWR@frowkeyfileext}[\LWR@frowkeywithin}%
111 \LWR@traceinfo{finished newfloat #1}
112 }%

```

Rename the float if a name was given:

```

113 \ifthenelse{\equal{\LWR@frowkeyname}{}}{
114 {}
115 {\floatname{#1}{\LWR@frowkeyname}}%
116 }

```

Not used:

```

117 \newcommand{\buildFBBBOX}[2]{}
118 \newcommand*{\CenterFloatBoxes}{}
119 \newcommand*{\TopFloatBoxes}{}
120 \newcommand*{\BottomFloatBoxes}{}
121 \newcommand*{\PlainFloatBoxes}{}
122
123 \newcommand{\capsubrowsettings}{}
124
125 \NewDocumentCommand{\RawFloats}{o o}{}

```

To be used inside a minipage or parbox.

```

126 \newcommand{\RawCaption}[1]{#1}

```

Places additional text inside a float, inside a CSS div of class floatfoot.

```

127 \NewDocumentCommand{\floatfoot}{s +m}{%
128 \begin{BlockClass}{floatfoot}
129 #2
130 \end{BlockClass}

```

```
131 }
```

Used to compute `\linewidth`.

```
132 \newbool{LWR@insubfloatrow}  
133 \boolfalse{LWR@insubfloatrow}
```

```
134 \newenvironment*{subfloatrow}[1][2]  
135 {
```

The row of floats is placed into a `div` of class `floatrow`:

```
136 \BlockClass{floatrow}
```

While inside the `floatrow`, `LWR@insubfloatrow` is set true, which tells `\floatbox` to use `\subfigure` or `\subtable`.

```
137 \begingroup  
138 \booltrue{LWR@insubfloatrow}  
139 }  
140 {  
141 \endgroup  
142 \endBlockClass  
143 \boolfalse{LWR@insubfloatrow}  
144 }
```

Package 20

lwarp-fontenc.sty

87 Fontenc

Pkg fontenc Error if fontenc is loaded after lwarp.

Discard all options for lwarp-fontenc:

for HTML output: 1 \LWR@ProvidesPackageDrop{fontenc}
2 \LWR@loadbefore{fontenc}

Package 21

lwarp-fontspec.sty

88 Fontspec

Pkg fontspec Error if fontspec is loaded after lwarp.

Discard all options for lwarp-fontspec:

for HTML output: 1 \LWR@ProvidesPackageDrop{fontspec}
2 \LWR@loadbefore{fontspec}

Package 22

lwarp-ftnright.sty

89 Ftnright

Pkg `ftnright` `ftnright` is ignored.

for **HTML output:** Discard all options for `lwarp-ftnright`:

```
1 \LWR@ProvidesPackageDrop{ftnright}
```

Package 23

lwarp-geometry.sty

90 Geometry

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`:

```
1 \LWR@ProvidesPackageDrop{geometry}

2 \renewcommand*{\geometry}[1]{}
3 \renewcommand*{\newgeometry}[1]{}
4 \renewcommand*{\restoregeometry}{}
5 \renewcommand*{\savegeometry}[1]{}
6 \renewcommand*{\loadgeometry}[1]{}

```

Package 24

lwarp-graphics.sty

91 Graphics

Pkg graphics graphics is not used. The user is required to use graphicx instead.

for HTML output:

```
1 \PackageError{lwarp-graphics}
2 {The graphics package is not supported by
3 the lwarp package's HTML conversion.
4 Please use graphicx instead. \protect\usepackage{graphicx}}
5 {Graphicx requires a different syntax but is more flexible,
6 and it is emulated by lwarp.}
```

Package 25

lwarp-graphicx.sty

92 Graphicx

Pkg graphicx graphicx is emulated during HTML output, and the graphicx package is ignored.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{graphicx}
```


Package 26

lwarp-hyperref.sty

93 Hyperref

Pkg hyperref hyperref is emulated during HTML output, and the hyperref package is ignored.

for HTML output:

```

1 % \LWR@ProvidesPackageDrop{hyperref}
2 \typeout{Using the lwarp html version of package 'hyperref' -- discarding options.}
3 \typeout{   Are not using ProvidesPackage, so that other packages}
4 \typeout{   do not attempt to patch lwarp's version of 'hyperref'.}
5 % \ProvidesPackage{lwarp-#1-#2}
6 \DeclareOption*{}
7 \ProcessOptions\relax

8 \newcommand*{\hypersetup}[1]{}
9 \newcommand*{\hyperbaseurl}[1]{}

```

Insert an image with alt text:

```

10 \NewDocumentCommand{\LWR@hyperimageb}{m +m}{%
11 \LWR@htmltag{img src="#1" alt="#2" class="hyperimage"{} }%
12 \endgroup%
13 \LWR@ensuredoingapar%
14 }
15
16 \newcommand{\hyperimage}{%
17 \LWR@ensuredoingapar%
18 \begingroup\catcode'\_ =12
19 \LWR@hyperimageb%
20 }

```

Creates an HTML anchor to category.name with the given text.

```

21 \NewDocumentCommand{\hyperdef}{m m +m}{%
22 \LWR@ensuredoingapar%
23 \LWR@subsublabel{#1.#2}%
24 #3%
25 }

```

Creates an HTML link to URL#category.name with the given text.

```

26 \NewDocumentCommand{\LWR@hyperrefb}{m m m +m}{%
27 \LWR@htmltag{a href="#1\LWR@hashmark#2.#3"%

```

```

28 #4%
29 \LWR@htmltag{/a}%
30 \endgroup%
31 }

```

Creates text as an HTML link to the L^AT_EX label.

```

32 \NewDocumentCommand{\LWR@hyperrefc}{0{label} +m}{%
33 \LWR@startref{#1}%
34 #2%
35 \LWR@htmltag{/a}%
36 \endgroup%
37 }

```

```

38 \newcommand{\hyperref}{%
39 \LWR@ensuredoingapar%
40 \begingroup\catcode'\_ =12
41 \@ifnextchar[\LWR@hyperrefc\LWR@hyperrefb%
42 }

```

Creates an anchor to name with the given text.

```

43 \NewDocumentCommand{\hypertarget}{m +m}{%
44 \label{#1}%
45 #2%
46 }

```

Creates a link to the anchor created by `hypertarget`, with the given link text.

```

47 \NewDocumentCommand{\hyperlink}{m +m}{%
48 \hyperref{#1}{#2}%
49 }

```

For HTML, `\cleverref` is used instead.

```

50 \NewDocumentCommand{\autoref}{s m}{%
51 \IfBooleanTF{#1}{\ref{#2}}{\cref{#2}}%
52 }

```

For HTML, `\cleverref` is used instead.

```

53 \NewDocumentCommand{\autopageref}{s m}{%
54 \IfBooleanTF{#1}{\cpageref{#2}}{\cref{#2}}%
55 }

```

```

56 \newcommand{\pdfstringdef}[2]{}

```

```

57 \newcommand{\pdfbookmark}[3][]{ }

```

```
58 \newcommand{\currentpdfbookmark}[2]{}

```

```
59 \newcommand{\subpdfbookmark}[2]{}

```

```
60 \newcommand{\belowpdfbookmark}[2]{}

```

```
61 \newcommand{\texorpdfstring}[2]{#2}

```

From hyperref.

```
62 \def\hypercalcbp#1{%
63 \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
64 }%

```

```
65 \newcommand{\Acrobatmenu}[2]{}

```

```
66 \newcommand*{\TextField}[2][{}]{

```

```
67 \newcommand*{\CheckBox}[2][{}]{

```

```
68 \newcommand{\ChoiceMenu}[3][{}]{

```

```
69 \newcommand*{\PushButton}[2][{}]{

```

```
70 \newcommand*{\Submit}[2][{}]{

```

```
71 \newcommand*{\Reset}[2][{}]{

```

```
72 \newcommand*{\LayoutTextField}[2]{}

```

```
73 \newcommand*{\LayoutChoiceField}[2]{}

```

```
74 \newcommand*{\LayoutCheckField}[2]{}

```

```
75 \newcommand*{\MakeRadioField}[2]{}

```

```
76 \newcommand*{\MakeCheckField}[2]{}

```

```
77 \newcommand*{\MakeTextField}[2]{}

```

```
78 \newcommand*{\MakeChoiceField}[2]{}

```

```
79 \newcommand{\MakeFieldButton}[1]{}

```

Package 27

lwarp-indentfirst.sty

94 Indentfirst

Pkg indentfirst indentfirst is ignored.

Discard all options for lwarp-indentfirst:

for HTML output: 1 \LWR@ProvidesPackageDrop{indentfirst}

Package 28

lwarp-inputenc.sty

95 Inputenc

Pkg inputenc Error if inputenc is loaded after lwarp.

Discard all options for lwarp-inputenc:

for HTML output: 1 \LWR@ProvidesPackageDrop{inputenc}

2 \LWR@loadbefore{inputenc}

Package 29

lwarp-keyfloat.sty

96 Keyfloat

Pkg keyfloat keyfloat is supported with minor adjustments.

for HTML output: 1 \LWR@ProvidesPackagePass{keyfloat}

After keyfloat has loaded:

```

2 \AtBeginDocument{

3 % \newsavebox{\KFLT@envbox}
4
5 \let\KFLT@boxinner\relax
6 \let\endKFLT@boxinner\relax
7
8 \NewEnviron{KFLT@boxinner}
9 {%
10 \LWR@traceinfo{kflt@boxinner}%
11 \LWR@stoppars%
12 \KFLT@frame{\BODY}%
13 \LWR@startpars%
14 \LWR@traceinfo{ended kflt@boxinner}%
15 }

16 \RenewDocumentEnvironment{KFLT@marginfloat}{0{-1.2ex} m}
17 {% start
18 \LWR@maybeinthisfloat%
19 % \BlockClass{marginblock}
20 \LWR@stoppars%
21 \LWR@htmltag{div class="marginblock" id="autofloat-\arabic{LWR@thisfloat}"}
22 \LWR@startpars%
23 \captionsetup{type=#2}%
24 }
25 {
26 % \endBlockClass
27 \LWR@htmldivclassend{div}
28 }

29 }% AtBeginDocument

```

Package 30

lwarp-layout.sty

97 Layout

Pkg layout layout is ignored.

for HTML output: Discard all options for lwarp-layout:

```
1 \LWR@ProvidesPackageDrop{layout}
2 \NewDocumentCommand{\layout}{s}{}
```

Package 31

lwarp-letterspace.sty

98 Letterspace

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:

```
1 \LWR@ProvidesPackageDrop{letterspace}
2 \newcommand*\lsstyle{}
3 \newcommand\textls[2] [] {}
4 \def\textls#1#{}
5 \newcommand*\lslig[1]{#1}
```

Package 32

lwarp-listings.sty

99 Listings

Pkg listings listings is supported with some limitations. Text formatting is not yet supported.

for HTML output: `1 \begin{warpHTML}`

`2 \LWR@ProvidesPackagePass{listings}`

Patches to embed listings inside `pre` tags:

`3 \let\LWR@origlst@Init\lst@Init`

`4 \let\LWR@origlst@DeInit\lst@DeInit`

`5`

`6 \let\LWR@origlsthkEveryPar\lsthk@EveryPar`

`7`

`8 \renewcommand{\l@lstlisting}[2]{\hypertocfloat{1}{\lstlisting}{1ol}{#1}{#2}}`

Done at the start of a listing.

`9 \renewcommand{\lst@Init}[1]{%`

First, perform the listings initialization:

`10 \LWR@traceinfo{\lst@Init}%`

`11 \renewcommand*{\@capttype}{\lstlisting}%`

`12 \LWR@origlst@Init{#1}%`

`13 \LWR@traceinfo{finished origlst@Init}%`

`14 \lst@ifdisplaystyle%`

Creating a display.

Disable line numbers, produce the `<pre>`, then reenable line numbers.

`15 \LWR@traceinfo{About to create verbatim.}%`

`16 \let\lsthk@EveryPar\relax%`

`17 \LWR@atbeginverbatim{programlisting}%`

`18`

`19 \let\lsthk@EveryPar\LWR@origlsthkEveryPar%`

`20 \else%`

Inline, so open a ``

```

21 \ifbool{LWR@verbtags}{\LWR@htmltag{span class="inlineprogramlisting"}}{}%
22 \fi%
23 }

24 \renewcommand*{\lst@DeInit}{%
25 \lst@ifdisplaystyle%

```

Creating a display.

Disable line numbers, produce the `</pre>`, then reenable line numbers:

```

26 \let\lsthk@EveryPar\relax%
27
28 \LWR@afterendverbatim%
29 \let\lsthk@EveryPar\LWR@origlsthkEveryPar%
30 \else%

```

Inline, so create the closing ``:

```

31 \ifbool{LWR@verbtags}{\noindent\LWR@htmltag{/span}}{}%
32 \fi%

```

Final listings deinit:

```

33 \LWR@origlst@DeInit%
34 }

```

This is called BOTH at the top and at the bottom of each listing.

Patched for lwarp.

```

35 \def\lst@MakeCaption#1{%
36 \LWR@traceinfo{MAKING CAPTION at #1}%
37 \lst@ifdisplaystyle
38 \LWR@traceinfo{making a listings display caption}%
39 \ifx #1t%
40 \ifx\lst@caption\@empty\expandafter\lst@HRefStepCounter \else
41 \expandafter\refstepcounter
42 \fi {lstlisting}%
43 \LWR@traceinfo{About to assign label: !\lst@label!}%
44 % \ifx\lst@label\@empty\else
45 % \label{\lst@label}\fi
46 \LWR@traceinfo{Finished assigning the label.}%
47 \let\lst@arg\lst@intname \lst@ReplaceIn\lst@arg\lst@filenamerpl
48 \global\let\lst@name\lst@arg \global\let\lstname\lst@name
49 \lst@ifnolol\else
50 \ifx\lst@caption\@empty
51 \ifx\lst@caption\@empty
52 \ifx\lst@intname\@empty \else \def\lst@temp{ }%

```



```
53 \ifx\lst@intname\lst@temp \else
```

This code places a contents entry for a non-float. This would have to be modified for lwarp:

```
54 \LWR@traceinfo{addcontents \lst@name: -\lst@name-}%
55 % \addcontentsline{lol}{\lstlisting}{\lst@name}
56 \fi\fi
57 \fi
58 \else
```

This would have to be modified for lwarp:

```
59 \LWR@traceinfo{addcontents \lst@@caption: -\lst@@caption-}%
60 \addcontentsline{lol}{\lstlisting}%
61 {\protect\numberline{\thelstlisting}%
62 {\protect\ignorespaces \lst@@caption \protect\relax}}%
63 \fi
64 \fi
65 \fi
66 \ifx\lst@caption\@empty\else
67 \LWR@traceinfo{\lst@caption not empty-}%
68 \lst@ifsubstring #1\lst@captionpos
69 {\begingroup
70 \LWR@traceinfo{at the selected position}%
```

These space and box commands are not needed for HTML output:

```
71 % \let\@vskip\vskip
72 % \def\vskip{\afterassignment\lst@vskip \@tempskipa}%
73 % \def\lst@vskip{\nobreak\@vskip\@tempskipa\nobreak}%
74 % \par\@parboxrestore\normalsize\normalfont % \noindent (AS)
75 % \ifx #1t\allowbreak \fi
76 \ifx\lst@title\@empty
```

New lwarp code to create a caption:

```
77 \lst@makecaption\fnum\lstlisting{\ignorespaces \lst@caption}
78 \else
```

New lwarp code to create a title:

```
79 % \lst@maketitle\lst@title % (AS)
80 \LWR@traceinfo{Making title: \lst@title}%
81 \begin{BlockClass}{\lstlistingtitle}% lwarp
82 \lst@maketitle\lst@title% lwarp
83 \end{BlockClass}% lwarp
84 \fi
85 \LWR@traceinfo{About to assign label: !\lst@label!}%
```

```

86      \ifx\lst@label\@empty\else
87 \leavevmode% gets rid of bad space factor error
88 \GetTitleStringExpand{\lst@caption}%
89 \edef\LWR@lntemp{\GetTitleStringResult}%
90 \edef\@currentlabelname{\detokenize\expandafter{\LWR@lntemp}}%
91 \label{\lst@label}\fi
92 \LWR@traceinfo{Finished assigning the label.}%

```

Not needed for lwarp:

```

93 %      \ifx #1b\allowbreak \fi
94      \endgroup\}%
95      \fi
96 \LWR@traceinfo{end of making a listings display caption}%
97      \else
98 \LWR@traceinfo{INLINE}%
99      \fi
100 \LWR@traceinfo{DONE WITH CAPTION at #1}%
101 }

```

Patched to keep left line numbers outside of the left margin, and place right line numbers in a field \VerbatimHTMLWidth wide.

```

102 \lst@Key{numbers}{none}{%
103   \let\lst@PlaceNumber\@empty
104   \lstKV@SwitchCases{#1}%
105   {none&\%
106     left&\def\lst@PlaceNumber{%
107 % \llap{
108 \LWR@orignormalfont%
109 \lst@numberstyle{\thelstnumber}\kern\lst@numbersep%
110 % }
111 }
112 \%
113   right&\def\lst@PlaceNumber{\rlap{\LWR@orignormalfont
114     \kern\VerbatimHTMLWidth \kern\lst@numbersep
115     \lst@numberstyle{\thelstnumber}}}%
116   }{\PackageError{Listings}{Numbers #1 unknown}\@ehc}}
117 \end{warpHTML}

```

Package 33

lwarp-longtable.sty

100 Longtable

Pkg `longtable` `longtable` is emulated during HTML output, and the `longtable` package is ignored.

for HTML output: `1 \LWR@ProvidesPackageDrop{longtable}`

To emulate `longtable`:



For `longtable` `\endhead`, `\endfoot`, and `\endlastfoot` rows, 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 relevant to HTML output.

See:

<http://tex.stackexchange.com/questions/43006/why-is-input-not-expandable>

Env `longtable` * `[\horizontalalignment] {<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.

```

2 \newenvironment{longtable*}[2] [] {%
3 \LWR@floatbegin{table}%
4 \setcaptiontype{\LTcaption}%
5 \caption@setoptions{longtable}%
6 \caption@setoptions{@longtable}%
7 \caption@LT@setup%
8 \booltrue{LWR@starredlongtable}%
9 \let\captionlistentry\LWR@LTcaptionlistentry%
10 \LWR@tabular{#2}
11 }
12 {\endLWR@tabular\LWR@floatend}
13
14 \newenvironment{longtable}[2] [] {%
15 \LWR@floatbegin{table}%
16 \setcaptiontype{\LTcaption}%

```

```

17 \caption@setoptions{longtable}%
18 \caption@setoptions{@longtable}%
19 \caption@LT@setup%
20 \refstepcounter{\LTcaptype}%
21 \let\captionlistentry\LWR@LTcaptionlistentry%
22 \LWR@tabular{#2}
23 }
24 {\endLWR@tabular\LWR@floatend}
25

```

Provided for compatibility, but ignored:

```

26 \newcounter{LTchunksize}
27 \def\endhead{\LWR@tabularendofline}% throws away options //[dim] and /**
28 \def\endfirsthead{\LWR@tabularendofline}
29 \def\endfoot{\LWR@tabularendofline}
30 \def\endlastfoot{\LWR@tabularendofline}
31 \newcommand\tabularnewline{\LWR@tabularendofline}
32 \newcommand{\setlongtables}{}% Obsolete command, does nothing.
33 \newlength{\LTleft}
34 \newlength{\LTright}
35 \newlength{\LTpre}
36 \newlength{\LTpost}
37 \newlength{\LTcapwidth}

\kill is ignored, place a \kill line inside
    \begin{warpprint} ... \end{warpprint} or \warpingprintonly.

38 \renewcommand*{\kill}{\LWR@tabularendofline}

```

Package 34

lwarp-lscape.sty

101 Lscape

Pkg lscape lscape is nullified.
 for HTML output: Discard all options for lwarp-lscape.

```

1 \LWR@ProvidesPackageDrop{lscape}

2 \newenvironment*{landscape}{}{}

```

Package 35

lwarp-ltcaption.sty

102 Ltcaption

Pkg ltcaption ltcaption is emulated during HTML output, and the ltcaption package is ignored.

for HTML output: `1 \LWR@ProvidesPackageDrop{ltcaption}`

`\LTcaptype` is already defined by lwarp.

`longtable*` is already defined by lwarp-longtable.

```

2 \newlength{\LTcapskip}
3 \newlength{\LTcapleft}
4 \newlength{\LTcapright}
5 \newcommand*{\LTcapmarginfalse}{}

```

Package 36

lwarp-mcaption.sty

103 Mcaption

Pkg mcaption mcaption is nullified.

for HTML output: Discard all options for lwarp-mcaption:

```
1 \LWR@ProvidesPackageDrop{mcaption}

2 \newenvironment{margincap}{}{}
3 \newcommand*{\margincapalign}{}
4 \newlength{\margincapsep}
```

Package 37


lwarp-mdframed.sty

104 Mdfamed

Pkg **mdframed** **mdframed** is loaded with options forced to **framemethod=none**.

for HTML output: `1 \LWR@ProvidesPackageDrop{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**.

For title font, use

`frametitlefont=\textbf,`

font 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.

amsthm must be loaded before **mdframed**

`2 \LWR@origRequirePackage{amsthm}`

Do not require *Tikz* or *pstricks*:

```
3 \LWR@origRequirePackage[framemethod=none]{mdframed}
```

To handle CSS and paragraphs, patch code at start and end of environment and contents:

```
4 \mdfsetup{
5   startcode={\LWR@mdframedstart},
6   endcode={\LWR@mdframedend},
7   startinnercode={\LWR@startpars},
8   endinnercode={\LWR@stoppars},
9 }
```

Given the `mdframed` key, print the color.

```
10 \newcommand*{\LWR@mdfprintcolor}[1]{%
11   \convertcolorspec{named}{\csuse{mdf@#1}}{HTML}\LWR@tempcolor%
12   \#\LWR@tempcolor
13 }
```

Given the `mdframed` key, print the length.

```
14 \newcommand*{\LWR@mdfprintlength}[1]{%
15   \rndprintlength{\csuse{mdf@#1@length}}
16 }
```

Actions before an `mdframe` starts.

Encapsulate a frame inside a `div` of the desired `class`.

```
17 \newcommand*{\LWR@mdframedstart}{%
```

Turn off paragraph handling during the generation of the encapsulating tags:

```
18 \LWR@stoppars%
```

Below, print HTML pt units:

```
19 \uselengthunit{PT}%
```

Open a `div` and with custom `class` and custom `style`:

```
20 \LWR@htmltagc{div class="\LWR@mdthisenv" \LWR@orignewline
21 style=" \LWR@orignewline
```

Convert and print the background color:

```
22 background: \LWR@mdfprintcolor{backgroundcolor} ; \LWR@orignewline
```


Convert and print the border color and width:

```
23 border: \LWR@mdfprintlength{linewidth} solid
24 \LWR@mdfprintcolor{linecolor} ; \LWR@orignewline
```

Convert and print the border radius:

```
25 border-radius: \LWR@mdfprintlength{roundcorner} ; \LWR@orignewline
```

Convert and print the shadow:

```
26 \ifbool{mdf@shadow}{%
27 box-shadow:
28 \LWR@mdfprintlength{shadowsize}
29 \LWR@mdfprintlength{shadowsize}
30 \LWR@mdfprintlength{shadowsize}
31 \LWR@mdfprintcolor{shadowcolor} ;
32 }
33 {box-shadow: none ;}
34 \LWR@orignewline

35 "}
36 % \LWR@htmldivclass{\LWR@mdthisenv}
```

`mdframed` environment may not work with the modified `\hspace` and `\rule`, so restore them to their originals while inside `mdframed`:

```
37 \let\hspace\LWR@orighspace%
38 \let\rule\LWR@origrule%
39 }
```

Actions after an `mdframe` ends.

After closing the `div`, globally restore to the default environment type:

```
40 \newcommand*{\LWR@mdframedend}{}
```

Close the custom `div`:

```
41 \LWR@htmldivclassend{\LWR@mdthisenv}
```

Reset future custom class to the default:

```
42 \gdef\LWR@mdthisenv{mdframed}
```

Resume paragraph handling:

```
43 \LWR@startpars%
44 }
```

Encapsulation of the original which places the title inside a `span` of class `mdframedtitle`:

```
45 \let\LWR@origmdfframedtitleenv\mdfframedtitleenv
46
47 \newlength{\LWR@titleroundcorner}
48
49 \renewrobustcmd\mdfframedtitleenv[1]{%
50 \LWR@origmdfframedtitleenv{%
```

Below, print HTML pt lengths:

```
51 \uselengthunit{PT}%
```

Open a `span` with a custom class and custom style:

```
52 \LWR@htmltagc{span class="mdframedtitle" \LWR@orignewline
53 style=" \LWR@orignewline
```

Convert and print the title background color:

```
54 background:
55 \LWR@mdfprintcolor{frametitlebackgroundcolor}
56 ; \LWR@orignewline
```

Convert and print the title rule:

```
57 \ifbool{mdf@frametitlerule}{%
58 border-bottom:
59 \LWR@mdfprintlength{frametitlerulewidth}
60 solid
61 \LWR@mdfprintcolor{frametitlerulecolor}
62 ; \LWR@orignewline
63 }{}%
```

The title's top border radius is adjusted for the line width:

```
64 border-radius:
65 \setlength{\LWR@titleroundcorner}
66 {\maxof{\mdf@roundcorner@length-\mdf@linewidth@length}{0pt}}
67 \rndprintlength{\LWR@titleroundcorner}
68 \rndprintlength{\LWR@titleroundcorner}
69 0pt 0pt
70 \LWR@orignewline
```

Finish the custom style and the opening `span` tag:

```
71 " \LWR@orignewline
72 }% span
```

Restrict paragraph tags inside a span:

```
73 \begin{LWR@nestspan}%
```

Print the title inside the span:

```
74 #1%
```

Close the span and unnest the paragraph tag restriction:

```
75 \LWR@htmltagc{/span}%
```

```
76 \end{LWR@nestspan}%
```

```
77 }
```

```
78 }
```

Common code for `\LWR@mdfsubtitle` and `\LWR@mdfsubsubtitle`.

Encapsulate the subtitle inside a `span` of class `mdframedsubtitle`:

```
79 \NewDocumentCommand{\LWR@mdfsubtitlecommon}{m o m}
```

```
80 {% the following empty line is required
```

```
81
```

Special handling for `mdframed`: Subtitles have `\pars` around them, so temporarily disable them here.

```
82 \let\par\LWR@origpar%
```

Open a `span` with a custom class and custom style:

```
83 \LWR@htmltagc{span class="mdframed#1title"
```

```
84 style=" \LWR@orignewline
```

Convert and print the background color:

```
85 background:
```

```
86 \LWR@mdfprintcolor{#1titlebackgroundcolor}
```

```
87 ; \LWR@orignewline
```

Convert and print the above line:

```
88 \ifbool{mdf@#1titleaboveline}{%
```

```
89 border-top:
```

```
90 \LWR@mdfprintlength{#1titleabovelinewidth}
```

```
91 solid
```

```
92 \LWR@mdfprintcolor{#1titleabovelinecolor}
```

```
93 ; \LWR@orignewline
```

```
94 }{}%
```

Convert and print the below line:

```

95 \ifbool{mdf@#1titlebelowline}{%
96 border-bottom:
97 \LWR@mdfprintlength{#1titlebelowlinewidth}
98 solid
99 \LWR@mdfprintcolor{#1titlebelowlinecolor}
100 ; \LWR@orignewline
101 }{}%
```

Finish the custom style and the opening span tag:

```

102 "% span
```

Restrict paragraph tags inside a span:

```

103 \begin{LWR@nestspan}%
```

Perform the original subtitle action:

```

104 \IfNoValueTF{#2}
105 {\csuse{LWR@origmdf#1title}{#3}}%
106 {\csuse{LWR@origmdf#1title}[#2]{#3}}%
```

Close the span and unnest the paragraph tag restriction:

```

107 \LWR@htmltagc{/span}% the following empty line is required
108 \end{LWR@nestspan}% must follow the /span or an extra <p> appears
109
110 }
```

```

111 \let\LWR@origmdfsubtitle\mdfsubtitle
112
113 \newcommand*{\LWR@mdfsubtitle}{%
114 \LWR@mdfsubtitlecommon{sub}%
115 }
116 \let\mdfsubtitle\LWR@mdfsubtitle
```

```

117 \let\LWR@origmdfsubsubtitle\mdfsubsubtitle
118
119 \newcommand*{\LWR@mdfsubsubtitle}{%
120 \LWR@mdfsubsubtitlecommon{subsub}%
121 }
122 \let\mdfsubsubtitle\LWR@mdfsubsubtitle
```

Stores the environment of the frame about to be created:

```

123 \newcommand*{\LWR@mdthisenv}{mdframed}
```

Modified from the original to remember the environment.

```

124 \renewrobustcmd*\newmdenv[2] [] {%
125 \newenvironment{#2}%
126 {%
127 \mdfsetup{#1}%
128 \renewcommand*\LWR@mdthisenv}{md#2}%
129 \begin{mdframed}%
130 }
131 {\end{mdframed}}%
132 }

```

Modified from the original to remember the environment.

```

133 \renewrobustcmd*\surroundwithmdframed[2] [] {%
134 \BeforeBeginEnvironment{#2}{%
135 \renewcommand*\LWR@mdthisenv}{md#2}%
136 \begin{mdframed}[#1]}%
137 \AfterEndEnvironment{#2}{\end{mdframed}}%
138 }

```

[*numberedlike*] {*caption*} [*within*]

Modified from the original to remember the environment.

```

139 \let\LWR@origmdtheorem\mdtheorem
140
141 \DeclareDocumentCommand{\LWR@mdtheorem}{0}{ m o m o }{%
142 \LWR@origmdtheorem[#1]{#2}[#3]{#4}[#5}%
143 \BeforeBeginEnvironment{#2}{\renewcommand*\LWR@mdthisenv}{md#2}}%
144 }
145
146 \let\mdtheorem\LWR@mdtheorem

```

[*numberedlike*] {*caption*} [*within*]

Modified from the original to remember the environment.

```

147 \DeclareDocumentCommand\newmdtheoremenv{0}{ m o m o }{%
148 \ifboolexpr{ test {\IfNoValueTF {#3}} and test {\IfNoValueTF {#5}} }%
149   {\newtheorem{#2}{#4}}{%
150     \IfValueTF{#3}{\newtheorem{#2}[#3]{#4}}{%
151       \IfValueTF{#5}{\newtheorem{#2}{#4}[#5]}{%
152         }%
153     }%
154   \BeforeBeginEnvironment{#2}{%
155     \renewcommand*\LWR@mdthisenv}{md#2}%
156     \begin{mdframed}[#1]}%
157   \AfterEndEnvironment{#2}{%
158     \end{mdframed}}%
159 }

```

Package 38

lwarp-microtype.sty

105 Microtype

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:

```

1 \LWR@ProvidesPackageDrop{microtype}

2 \renewcommand*\DeclareMicrotypeSet[3][]{\{ }
3 \renewcommand*\UseMicrotypeSet[2][]{\{ }
4 \renewcommand*\DeclareMicrotypeSetDefault[2][]{\{ }
5 \renewcommand*\SetProtrusion[3][]{\{ }
6 \renewcommand*\SetExpansion[3][]{\{ }
7 \renewcommand*\SetTracking[3][]{\{ }
8 \renewcommand*\SetExtraKerning[3][]{\{ }
9 \renewcommand*\SetExtraSpacing[3][]{\{ }
10 \renewcommand*\DisableLigatures[2][]{\{ }
11 \renewcommand*\DeclareCharacterInheritance[3][]{\{ }
12 \renewcommand*\DeclareMicrotypeVariants[1]{\{ }
13 \renewcommand*\DeclareMicrotypeAlias[2]{\{ }
14 \renewcommand*\LoadMicrotypeFile[1]{\{ }
15 \renewcommand*\DeclareMicrotypeBabelHook[2]{\{ }
16 \renewcommand*\microtypesetup[1]{\{ }
17 \renewcommand*\microtypecontext[1]{\{ }
18 \renewcommand*\textmicrotypecontext[2]{\#2}
19 \@ifpackageloaded{letterspace}{\let\MT@textls\relax}{\%
20 \renewcommand*\lsstyle{\{ }
21 \renewcommand*\textls[2][]{\{ }
22 \def\textls#1#\{ }
23 \renewcommand*\lslig[1]{\#1}
24 }
25 \def\DeclareMicrotypeSet#1#{\@gobbletwo}
26 \def\DeclareMicrotypeVariants#1#{\@gobble}
27 \@onlypreamble\DeclareMicrotypeSet
28 \@onlypreamble\UseMicrotypeSet
29 \@onlypreamble\DeclareMicrotypeSetDefault
30 \@onlypreamble\DisableLigatures
31 \@onlypreamble\DeclareMicrotypeVariants
32 \@onlypreamble\DeclareMicrotypeBabelHook

```

Package 39

lwarp-multicol.sty

106 Multicol

Pkg multicol multicol is emulated during HTML output, and the multicol package is ignored.

for HTML output: 1 \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`.

```
2 \begin{warpHTML}
```

```
3 \NewDocumentEnvironment{multicols}{s m o}
```

HTML div class to contain everything:

```
4 {\BlockClass{multicols}
```

Optional HTML div class for the heading:

```
5 \IfValueTF{#3}{\begin{BlockClass}{multicolsheading}#3\end{BlockClass}}{}}
```

When done with the environment, close the div:

```
6 {\endBlockClass}
```

Emulated null functions which are not used in HTML:

```
7 \newcommand*{\columnbreak}{}
8 \newcommand*{\RLmulticolcolumns}{}
9 \newcommand*{\LRmulticolcolumns}{}
10
11 \newlength{\premulticols}
12 \newlength{\postmulticols}
13 \newlength{\multicolsep}
14 \newlength{\multicolbaselineskip}
15 \newlength{\multicoltolerance}
16 \newlength{\multicolpretolerance}
17 \newcommand*{\columnseprulecolor}{\normalcolor}
```

```
18 \newcounter{columnbadness}
19 \newcounter{finalcolumnbadness}
20 \newcounter{collectmore}
21 \newcounter{unbalance}
22 \newlength{\multicolovershoot}
23 \newlength{\multicolundershoot}

24 \end{warpHTML}
```


Package 40

lwarp-multirow.sty

107 Multirow

Pkg multirow multirow is emulated during HTML output, and the multirow package is ignored.

for HTML output: 1 \LWR@ProvidesPackageDrop{multirow}

Package 41

lwarp-nameref.sty

108 Nameref

Pkg nameref nameref is emulated by lwarp.

for HTML output: Discard all options for lwarp-nameref:

```
1 \typeout{Using the lwarp html version of package 'nameref' -- discarding options.}
2 \typeout{   Are not using ProvidesPackage, so that other packages}
3 \typeout{   do not attempt to patch lwarp's version of 'nameref'.}
4 \DeclareOption*{}
5 \ProcessOptions\relax
```

Package 42

lwarp-needspace.sty

109 Needspace

Pkg needspace needspace is not used during HTML conversion.

for HTML output: Discard all options for lwarp-needspace:

```
1 \LWR@ProvidesPackageDrop{needspace}
2
3 \newcommand*{\needspace}[1]{ }
4 \DeclareDocumentCommand{\Needspace}{s m}{ }
```

Package 43

lwarp-newclude.sty

110 Newclude

Pkg newclude Error if newclude is loaded after lwarp.

Discard all options for lwarp-newclude:

for HTML output:

```
1 \LWR@ProvidesPackageDrop{newclude}

2 \LWR@loadbefore{newclude}
```

Package 44

lwarp-newunicodechar.sty

111 Newunicodechar

Pkg newunicodechar Error if newunicodechar is loaded after lwarp.
Discard all options for lwarp-newunicodechar:

for HTML output: 1 \LWR@ProvidesPackageDrop{newunicodechar}

2 \LWR@loadbefore{newunicodechar}

Package 45

lwarp-nextpage.sty

112 Nextpage

Pkg nextpage nextpage is nullified.

for HTML output: Discard all options for lwarp-nextpage.

1 \LWR@ProvidesPackageDrop{nextpage}

2 \newcommand{\cleartoevenpage}[1] [] {}

3 \newcommand{\movetoevenpage}[1] [] {}

4 \newcommand{\cleartooddpage}[1] [] {}

5 \newcommand{\movetooddpage}[1] [] {}

Package 46

lwarp-nowidow.sty

113 Nowidow

Pkg **nowidow** nowidow is not used during HTML conversion.

Discard all options for lwarp-nowidow:

for HTML output:

```

1 \LWR@ProvidesPackageDrop{nowidow}

2 \newcommand*{\nowidow}[1] [] {}
3 \newcommand*{\setnowidow}[1] [] {}

4 \newcommand*{\noclub}[1] [] {}
5 \newcommand*{\setnoclub}[1] [] {}

```

Package 47

lwarp-pagenote.sty

114 Pagenote

Pkg **pagenote** pagenote is used by lwarp, and its user-interface macros have been nullified.

Both footnotes and pagenotes appear as footnotes in the HTML output.

Any manipulation of **pagenote** in the user's document after the preamble should be encased within a **warpprint** environment.

Discard all options for lwarp-pagenote:

for HTML output:

```

1 \LWR@ProvidesPackageDrop{pagenote}

\pagenote is already modified to work with lwarp.

2 \renewcommand*{\makepagenote}{}
3 \RenewDocumentCommand{\printnotes}{s}{}
4 \renewcommand{\printnotes}[2] [] {}
5 \renewcommand{\addtonotes}[1] {}

```

Package 48

lwarp-parskip.sty

115 Parskip

Pkg `parskip` `parskip` is ignored.
for **HTML output:** Discard all options for `lwarp-parskip`.
1 `\LWR@ProvidesPackageDrop{parskip}`

Package 49

lwarp-placeins.sty

116 Placeins

Pkg `placeins` `placeins` is not used during HTML conversion.
Discard all options for `lwarp-placeins`:
for **HTML output:** 1 `\LWR@ProvidesPackageDrop{placeins}`
2 `\newcommand*{\FloatBarrier}{}`

Package 50

lwarp-ragged2e.sty

117 Ragged2e

Pkg ragged2e ragged2e is not used during HTML conversion.

Discard all options for lwarp-ragged2e:

```
for HTML output: 1 \LWR@ProvidesPackageDrop{ragged2e}

2 \newcommand*{\Centering}{\centering}
3 \newcommand*{\RaggedLeft}{\raggedleft}
4 \newcommand*{\RaggedRight}{\raggedright}
5 \newcommand*{\justifying}{\}
6 \newlength{\CenteringLeftskip}
7 \newlength{\RaggedLeftLeftskip}
8 \newlength{\RaggedRightLeftskip}
9 \newlength{\CenteringRightskip}
10 \newlength{\RaggedLeftRightskip}
11 \newlength{\RaggedRightRightskip}
12 \newlength{\CenteringParfillskip}
13 \newlength{\RaggedLeftParfillskip}
14 \newlength{\RaggedRightParfillskip}
15 \newlength{\JustifyingParfillskip}
16 \newlength{\CenteringParindent}
17 \newlength{\RaggedLeftParindent}
18 \newlength{\RaggedRightParindent}
19 \newlength{\JustifyingParindent}
20 \newenvironment*{Center}{\center}{\endcenter}
21 \newenvironment*{FlushLeft}{\flushleft}{\endflushleft}
22 \newenvironment*{FlushRight}{\flushright}{\endflushright}
23 \newenvironment*{justify}{\justifying}{\endjustifying}
```

Package 51

lwarp-rotating.sty

118 Rotating

Pkg rotating rotating is emulated during HTML output, and the rotating package is ignored.

This code is untested.

for HTML output:

```
1 \LWR@ProvidesPackageDrop{rotating}

2 \let\sidewaystable\table
3 \let\endsidewaystable\endtable
4
5 \let\sidewaysfigure\figure
6 \let\endsidewaysfigure\endfigure
7
8 \newenvironment*{sideways}{}{}
9 \newenvironment*{turn}[1]{}{}
10 \newenvironment*{rotate}[1]{}{}
11 \NewDocumentCommand{\turnbox}{m +m}{#2}
12 \let\rotcaption\caption
13 \let\@makerotcaption\@makecaption
```

Package 52

lwarp-setspace.sty

119 Setspace

Pkg `setspace` `setspace` is not used during HTML conversion.

Discard all options for `lwarp-setspace`:

for HTML output:

```

1 \LWR@ProvidesPackageDrop{setspace}
2
3 \newcommand*{\setstretch}[1]{}
4 \newcommand*{\SetSinglespace}[1]{}
5 \newcommand*{\singlespacing}{}
6 \newcommand*{\onehalfspacing}{}
7 \newcommand*{\doublespacing}{}
8
9 \newenvironment*{singlespace}
10 {\BlockClass{singlespace}}
11 {\endBlockClass}
12
13 \newenvironment*{singlespace*}
14 {\BlockClass{singlespace}}
15 {\endBlockClass}
16
17 \newenvironment*{spacing}[1]{
18
19 }{
20
21 }
22
23 \newenvironment*{onehalfspace}
24 {\BlockClass{onehalfspace}}
25 {\endBlockClass}
26
27 \newenvironment*{doublespace}
28 {\BlockClass{doublespace}}
29 {\endBlockClass}
```


Package 53

lwarp-showkeys.sty

120 Showkeys

Pkg showkeys showkeys is ignored.

for **HTML output:** Discard all options for lwarp-showkeys:

```
1 \LWR@ProvidesPackageDrop{showkeys}
```

```
2 \NewDocumentCommand{\showkeys}{s}{} 
```

Package 54

lwarp-sidecap.sty

121 Sidecap

Pkg sidecap sidecap is nullified.

for HTML output: Discard all options for lwarp-sidecap.

```
1 \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.

```
2 \NewDocumentEnvironment{SCtable}{soo}
3 {\IfValueTF{#3}{\table[#3]}\table}}
4 {\endtable}
5
6 \ExplSyntaxOn
7 \cs_new:cpn {SCtable*} {\SCtable*}
8 \cs_new_eq:cN {endSCtable*} \endSCtable
9 \ExplSyntaxOff
10
11
12 \NewDocumentEnvironment{SCfigure}{soo}
13 {\IfValueTF{#3}{\figure[#3]}\figure}}
14 {\endfigure}
15
16 \ExplSyntaxOn
17 \cs_new:cpn {SCfigure*} {\SCfigure*}
18 \cs_new_eq:cN {endSCfigure*} \endSCfigure
19 \ExplSyntaxOff
20
21
22 \newenvironment*{wide}{}{}
```

Package 55

lwarp-subfig.sty

122 Subfig

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.

horizontal spacing In the document source, use `\hfill` and `\hspace*` 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`:

```
1 \LWR@ProvidesPackagePass{subfig}

\sfb@@@subfloat {<1 type>} [<2 lof entry>] [<3 caption>] {<4 contents>}
```

The outer minipage allows side-by-side subfloats with `\hfill` between.

```
2 \long\def\sfb@@@subfloat#1[#2][#3]#4{%
3 \begin{minipage}{\linewidth}% new
4 \LWR@stoppars% new
5   \ifundefined{FBsc@max}{}%
6     {\FB@readaux{\let\FBsuboheight\relax}}%
7   \@tempcnta=\@ne
8   \ifminipage
9     \@tempcnta=\z@
10  \else\ifdim \lastskip=\z@ \else
11    \@tempcnta=\tw@
12  \fi\fi
13  \ifmaincaptiontop
14    \sf@top=\sf@nearskip
15    \sf@bottom=\sf@farskip
16  \else
17    \sf@top=\sf@farskip
18    \sf@bottom=\sf@nearskip
19  \fi
20  \leavevmode
21  \setbox\@tempboxa \hbox{#4}%
22    \@tempdima=\wd\@tempboxa
23    \ifundefined{FBsc@max}{}%
24      {\global\advance\Xhsize-\wd\@tempboxa
```

```

25         \dimen@=\ht\@tempboxa
26         \advance\dimen@\dp\@tempboxa
27         \ifdim\dimen@>\FBso@max
28             \global\FBso@max\dimen@
29         \fi}%
30     \vtop\bgroup
31     \vbox\bgroup
32     \ifcase\@tempcnta
33         \@minipagefalse
34     \or
35         \vskip\sf@top
36     \or
37         \ifdim \lastskip=\z@ \else
38             \@tempskipb\sf@top\relax\@xaddvskip
39         \fi
40     \fi
41     \sf@ifpositiontop{%
42         \ifx \@empty#3\relax \else
43             \sf@subcaption{#1}{#2}{#3}%
44             \vskip\sf@capskip
45             \vskip\sf@captopadj
46         \fi\egroup
47         \hrule widthOpt heightOpt depthOpt
48 \LWR@startpars% new
49 % \box\@tempboxa
50 #4
51 \LWR@stoppars% new
52 }{%
53 \LWR@startpars% new
54     \@ifundefined{FBsc@max}%
55     {
56 % \box\@tempboxa
57 #4
58 }%
59         {\ifx\FBsuboheight\relax
60 %             \box\@tempboxa
61 #4
62         \else
63 %             \vbox to \FBsuboheight{\FBafil\box\@tempboxa\FBbfil}%
64 #4
65         \fi}%
66 \LWR@stoppars% new
67     \egroup
68     \ifx \@empty#3\relax \else
69         \vskip\sf@capskip
70         \hrule widthOpt heightOpt depthOpt
71         \sf@subcaption{#1}{#2}{#3}%
72     \fi
73 }%
74     \vskip\sf@bottom

```

```

75 \egroup
76 \@ifundefined{FBsc@max}{}%
77 {\addtocounter{FRobj}{-1}%
78 \ifnum\c@FRobj=0\else
79 \subfloatrowsep
80 \fi}%
81 \ifmaincaptiontop\else
82 \global\advance\@nameuse{c@\@capttype}\m@ne
83 \fi
84 \end{minipage}% new
85 \LWR@startpars% new
86 \endgroup\ignorespaces%
87 }%

\sfb@subcaption {\langle 1 type\rangle} {\langle 2 lof entry\rangle} {\langle 3 caption\rangle}

88 \long\def\sfb@subcaption#1#2#3{%
89 \LWR@stoppars% new
90 \ifx \relax#2\relax \else
91 \bgroup
92 \let\label=\@gobble
93 \let\protect=\string
94 \def\@subcaplabel{%
95 \caption@lstfmt{\@nameuse{p@#1}}{\@nameuse{the#1}}}%
96 \sfb@updatecaptionlist{#1}{#2}{\the\value{\@capttype}}{\the\value{#1}}%
97 \egroup
98 \fi
99 \bgroup
100 \ifx \relax#3\relax
101 \let\captionlabelsep=\relax
102 \fi
103 % \setbox0\vbox{%
104 % \hb@xt@\the\@tempdima{%
105 %
106 % % \hss
107 % % \parbox[t]{\the\@tempdima}{%
108 % \caption@make
109 % {\@nameuse{sub\@capttype name}}%
110 % {\@nameuse{thesub\@capttype}}%
111 % {#3}
112 % % }%
113 % % \hss
114 % }
115 % }%
116 \@ifundefined{FBsc@max}{%
117 {\box0}%
118 {
119 % \parbox[t]{\the\@tempdima}{%
120 \LWR@traceinfo{sfb@subcap B1}% new
121 \LWR@htmlblocktag{figcaption}% new

```

```

122 \caption@make
123 {\@nameuse{sub\@capttype name}}%
124 {\@nameuse{thesub\@capttype}}%
125 {#3}
126 \LWR@htmlblocktag{/figcaption}% new
127 \LWR@traceinfo{sfsubcap B2}% new
128 % }%
129 }%
130     {\dimen@ht0%
131     \advance\dimen@dp0%
132     \ifdim\dimen@>\FBsc@max
133     \global\FBsc@max\dimen@
134     \fi
135     \FB@readaux{\let\FBsubcheight\relax}%
136     \ifx\FBsubcheight\relax
137     \def\next{
138 % \parbox[t]{\the\@tempdima}
139 }%
140     \else
141     \def\next{
142 % \parbox[t][\FBsubcheight][t]{\the\@tempdima}
143 }%
144     \fi
145     \vbox{%
146 % \hb@xt@\the\@tempdima{%
147
148 % \hss
149 % \next{%
150 \LWR@traceinfo{sfsubcap C1}% new
151     \caption@make
152         {\@nameuse{sub\@capttype name}}%
153         {\@nameuse{thesub\@capttype}}%
154         {#3}
155 \LWR@traceinfo{sfsubcap C1}% new
156 % }%
157 % \hss
158
159 % }
160 }
161 }%
162 \egroup
163 \LWR@startpars% new
164 }

\caption@@@make {\langle caption label \rangle} {\langle caption text \rangle}

165 \renewcommand\caption@@@make[2]{%
166 \LWR@startpars% new
167 \sbox\@tempboxa{#1}%
168 \ifdim\wd\@tempboxa=\z@

```

```

169   \let\caption@lsep\relax
170   \fi
171   \caption@ifempty{#2}{%
172     \let\caption@lsep\@empty
173     \let\caption@tfmt\@firstofone
174   }%
175 %   \@setpar{\@par\caption@par}\caption@par
176 \renewcommand{\@par}{\LWR@closeparagraph\LWR@orig@par}% new
177 \caption@applyfont
178 \caption@fmt
179   {\ifcaption@star\else
180     \begingroup
181       \caption@labelfont
182       #1%
183     \endgroup
184   \fi}%
185   {\ifcaption@star\else
186     \begingroup
187       \caption@iflfl\caption@labelfont
188       \relax\caption@lsep
189     \endgroup
190   \fi}%
191   {{\caption@textfont
192     \caption@ifstrut
193     {\vrule\@height\ht\strutbox\@width\z@}%
194     {}}%
195     \nobreak\hskip\z@skip % enable hyphenation
196     \caption@tfmt{#2}
197 \LWR@ensuredoingapar}% new
198   \caption@ifstrut
199     {\ifhmode\@finalstrut\strutbox\fi}%
200     {}}%
201   \par}}
202 \LWR@stoppars}% new
203 }

```

Patches for \sf@sub@label:

```

204 \def\subfloat@label{%
205 \LWR@ensuredoingapar}% new
206 \ifnextchar(%  % match left parenthesis
207   {\sf@sub@label}
208   {\sf@sub@label(Sub\@capttype\space
209     \ifundefined{thechapter}{\@nameuse{thechapter}\space}%
210     \@nameuse{p@sub\@capttype}%
211     \@nameuse{thesub\@capttype}.)}}

```

Patches for \subref.

The unstarred version uses a `\ref` link whose printed text comes from the `sub@<label>`:

```
212 \renewcommand{\sf@subref}[1]{%
213 \LWR@subnewref{#1}{sub@#1}%
214 }
```

The starred version uses the printed `sub@<label>` which is stored as if it were a page number:

```
215 \renewcommand{\sf@@subref}[1]{\LWR@origpageref{sub@#1}}
```

Defining new subfloats. The `l@sub<type>` for each is redefined.

```
216 \let\LWR@orig@newsfloat\@newsfloat
217
218 \def\@newsfloat[#1]#2{%
219 \LWR@orig@newsfloat[#1]{#2}%
220 \renewcommand{\l@sub#2}[2]{\hypertocfloat{2}{sub#2}{\ext@sub#2}{##1}{##2}}
221 }
```

Pre-defined for figures and tables:

```
222 \renewcommand{\l@subfigure}[2]{\hypertocfloat{2}{subfigure}{lof}{#1}{#2}}
223 \renewcommand{\l@subtable}[2]{\hypertocfloat{2}{subtable}{lot}{#1}{#2}}
224 % \def\subfigure{\subfloat}
225 % \def\subtable{\subfloat}
```


Package 56

lwarp-tabularx.sty

123 Tabularx

Pkg tabularx tabularx is emulated by lwarp.

for HTML output: Discard all options for lwarp-tabularx:

```
1 \LWR@ProvidesPackageDrop{tabularx}

2 \newenvironment{tabularx}[2]
3 {\tabular{#2}}
4 {\endtabular}
5
6 \newenvironment{tabularx*}[2]
7 {\tabular{#2}}
8 {\endtabular}
```

Package 57

lwarp-textpos.sty

124 Textpos

Pkg textpos textpos is emulated during HTML output, and the textpos package is ignored.

```
for HTML output: 1 \LWR@ProvidesPackageDrop{textpos}

2 \NewDocumentEnvironment{textblock}{m r()}{\}{}
3 \NewDocumentEnvironment{textblock*}{m o r()}{\}{}
4 \newcommand*{\TPGrid}[3][\]{}
5 \NewDocumentCommand{\TPMargin}{s o}{}
6 \newcommand*{\textblockcolour}[1]{}
7 \newcommand*{\textblockrulecolour}[1]{}
8 \newcommand*{\textblockcolor}[1]{}
9 \newcommand*{\textblockrulecolor}[1]{}
10 \newcommand*{\tekstblokkulur}[1]{}
11 \newcommand*{\tekstblokrulekulur}[1]{}
12 \newlength{\TPHorizModule}
13 \newlength{\TPVertModule}
14 \newlength{\TPboxrulesize}
15 \newcommand{\textblocklabel}[1]{}
16 \newcommand*{\showtextsize}{}
17 \newcommand{\textblockorigin}[2]{}

```

Package 58

lwarp-threeparttable.sty

125 Threeparttable

Pkg `threeparttable` `threeparttable` is emulated during HTML output, and the `threeparttable` package is ignored.

for HTML output: `1 \LWR@ProvidesPackageDrop{threeparttable}`

Prints the table note item header inside a CSS class of `tnoteitemheader`.

```
2 \newcommand{\LWR@printtablenote}[1]{\InlineClass{tnoteitemheader}{#1}}
```

To emulate `threeparttable`:

```
3 \newenvironment*{threeparttable}[1][b]{}{}
```

```
4 \newenvironment*{tablenotes}[1]{}{}
```

```
5 {%
```

```
6 \BlockClass{tnotes}%
```

```
7 \setlist[description]{format=\LWR@printtablenote}%
```

```
8 \description%
```

```
9 }
```

```
10 {%
```

```
11 \enddescription%
```

```
12 \endBlockClass%
```

```
13 }
```

```
14 \newcommand{\tnote}[1]{\textsuperscript{#1}}
```

Package 59

lwarp-tikz.sty

126 Tikz

Pkg **tikz** tikz is supported.

Accept all options for lwarp-tikz:

```
1 \LWR@ProvidesPackagePass{tikz}
```

catcodes lwarp changes the catcode of `$` for its own use. The Tikz `babel` library temporarily changes catcodes back to normal for Tikz's use. tikz v3.0.0 introduced the `babel` library which handles catcode changes. For older versions, lwarp must change `$`'s catcode itself.

for HTML output: 2 \begin{warpHTML}

```
3 \newboolean{LWR@tikzbabel}
4
5 \@ifpackagelater{tikz}{2013/12/20}% Test for Tikz version v3.0.0
6 {
7 \usetikzlibrary{babel}
8 \booltrue{LWR@tikzbabel}
9 }
10 {\boolfalse{LWR@tikzbabel}}
```

Env **tikzpicture** tikzpicture environment is enclosed inside a `\lateximage`. May be used as-is, and its contents will be converted to an image.

```
11 \BeforeBeginEnvironment{tikzpicture}{%
12 \lateximage%
13 \ifbool{LWR@tikzbabel}% Test for Tikz version v3.0.0
14 {}%
15 {\catcode'\$=3} % dollar sign is math shift
16 }
17
18 \AfterEndEnvironment{tikzpicture}{%
19 \endlateximage%
20 \ifbool{LWR@tikzbabel}% Test for Tikz version v3.0.0
21 {}%
22 {\catcode'\$=\active}%
23 }
```

24 \end{warpHTML}

Package 60

lwarp-titles.sty

127 Titles

Pkg titles titles is loaded and used by lwarp during HTML output. All user options and macros are ignored and disabled.

Discard all options for lwarp-titles:

for HTML output: 1 \LWR@ProvidesPackageDrop{titles}

\pagestyle and \thispagestyle are already disabled in the lwarp code.

```

2 \RenewDocumentCommand{\newpagestyle}{m o m}{}
3 \RenewDocumentCommand{\renewpagestyle}{m o m}{}

4 \RenewDocumentCommand{\sethead}{o o o m m m}{}
5 \RenewDocumentCommand{\setfoot}{o o o m m m}{}

6 \RenewDocumentCommand{\settitledmarks}{s m}{}

7 \renewcommand*{\headrule}{}
8 \renewcommand*{\footrule}{}

9 \renewcommand*{\setheadrule}[1]{}
10 \renewcommand*{\setfootrule}[1]{}

11 \newcommand*{\makeheadrule}{}
12 \newcommand*{\makefootrule}{}

13 \renewcommand{\setmarkboth}[1]{}

14 \RenewDocumentCommand{\widenhead}{s o o m m}{}

15 \renewcommand*{\bottitledmarks}{}
16 \renewcommand*{\toptitledmarks}{}
17 \renewcommand*{\firsttitledmarks}{}
18 \renewcommand*{\nexttoptitledmarks}{}
19 \renewcommand*{\outertitledmarks}{}
20 \renewcommand*{\innertitledmarks}{}

21 \RenewDocumentCommand{\newtitledmark}{s m}{}

```

```
22 \RenewDocumentCommand{\pretitlemark}{s m m}{}

23 \renewcommand{\ifsamemark}[4]{}

24 \NewDocumentCommand{\setfloathead}{s o o m m m m}{}
25 \NewDocumentCommand{\setfloatfoot}{s o o m m m m}{}

26 \NewDocumentCommand{\nextfloathead}{s o o m m m m}{}
27 \NewDocumentCommand{\nextfloatfoot}{s o o m m m m}{}

28 \newcommand{\newmarkset}[1]{}

29 \NewDocumentCommand{\newextramarkset}{s m m}{}

30 \newcommand{\botextramarks}[1]{}
31 \newcommand{\topextramarks}[1]{}
32 \newcommand{\firstextramarks}[1]{}
33 \newcommand{\nexttoextramarks}[1]{}
34 \newcommand{\outerextramarks}[1]{}
35 \newcommand{\innerextramarks}[1]{}

```

Package 61

lwarp-titlesec.sty

128 Titlesec

Pkg titlesec titlesec is emulated. All user options and macros are ignored and disabled.

Discard all options for lwarp-titlesec:

for HTML output:

```

1 \LWR@ProvidesPackageDrop{titlesec}

2 \newcommand*{\titlelabel}[1]{}

3 \newcommand\titleformat{%
4   \@ifstar{\ttl@format@s}%
5     {\ttl@format@i}}
6 \newcommand{\ttl@format@s}[1]{}
7 \NewDocumentCommand{\ttl@format@i}{m o m m m o}{}

8 \@ifundefined{chapapp}{\let\@chapapp\chaptername}{}
9 \newcommand\chaptertitlename{\@chapapp}

10 \NewDocumentCommand{\titlespacing}{s m m m m o}{}

11 \newcommand*{\filright}{}
12 \newcommand*{\filcenter}{}
13 \newcommand*{\filleft}{}
14 \newcommand*{\fillast}{}
15 \newcommand*{\filinner}{}
16 \newcommand*{\filouter}{}

17 \newcommand\wordsep{\fontdimen\tw@\font \@plus
18   \fontdimen\thr@\font \@minus \fontdimen4\font}

19 \NewDocumentCommand{\titleline}{s o m}{}

20 \providecommand*{\titlerule}{\@ifstar{\ttl@row}{\ttl@rule}}
21 \newcommand*{\ttl@rule}[1] [] {}
22 \newcommand*{\ttl@row}[2] [] {}

23 \newcommand{\iftitlemeasuring}[2] {#2}

24 \newcommand{\assignpagestyle}[2] {#2}

25 \NewDocumentCommand{\titleclass}{m o m o}
```


Package 62

lwarp-titletoc.sty

129 Titletoc

Pkg titletoc titletoc is emulated. All user options and macros are ignored and disabled.

Discard all options for lwarp-titletoc:

for HTML output:

```

1 \LWR@ProvidesPackageDrop{titletoc}

2 \NewDocumentCommand{\dottedcontents}{m o m m m}{\}

3 \newcommand{\titlecontents}{\@ifstar{\ttl@tcstar}{\ttl@tcnostar}}
4 \NewDocumentCommand{\ttl@tcstar}{m o m m m o o}{\}
5 \NewDocumentCommand{\ttl@tcnostar}{m o m m m m o}{\}

6 \newcommand{\contentsmargin}[2] [] {}

7 \newcommand*{\thecontentslabel}{thecontentslabel}
8 \newcommand*{\thecontentspage}{thecontentspage}

9 \newcommand{\contentslabel}[2] [] {\thecontentslabel}
10 \newcommand{\contentspage}[1] [] {\thecontentspage}

11 \newcommand{\contentspush}[1] {}

12 \newcommand{\contentsuse}[2] {}

13 \newcommand*{\startcontents}[1] [] {}
14 \newcommand*{\stopcontents}[1] [] {}
15 \newcommand*{\resumecontents}[1] [] {}

16 \newcommand{\printcontents}[4] [] {}

17 \newcommand{\startlist}[2] [] {}
18 \newcommand{\stoplist}[2] [] {}
19 \newcommand{\resumelist}[2] [] {}

20 \newcommand{\printlist}[4] [] {}

```

Package 63

lwarp-titling.sty

130 Titling

`Pkg titling` titling is used by lwarp. The following patches are not needed by lwarp, but are required if the user requests titling.

lwarp uses page notes for footnotes, so the various titling footnote restyling commands have no effect.

Pass all options to lwarp-titling:

for HTML output: `1 \LWR@ProvidesPackagePass{titling}`

Patch `\@bsmttitleempty`:

```
2 \let\LWR@orig@bsmttitleempty\@bsmttitleempty
3 \renewcommand*{\@bsmttitleempty}{%
4 \LWR@orig@bsmttitleempty%
5 \global\let\published\relax%
6 \global\let\subtitle\relax%
7 }
```

Patch `\keepthetitle`:

```
8 \let\LWR@origkeepthetitle\keepthetitle
9 \renewcommand*{\keepthetitle}{%
10 \LWR@orig@keepthetitle%
11 \global\let\@published\@empty%
12 \global\let\@subtitle\@empty%
13 }
```

Patch `\killtitle`:

```
14 \let\LWR@origkilltitle\killtitle
15 \renewcommand*{\killtitle}{%
16 \LWR@orig@killtitle%
17 \global\let\thepublished\relax%
18 \global\let\thesubtitle\relax%
19 }
```

Package 64

lwarp-tocloft.sty

131 Tocloft

Pkg `tocloft` `tocloft` is emulated. Most user options and macros are ignored and disabled. `\newlistof` and `\cftchapterprecis` are supported.

Discard all options for `lwarp-tocloft`:

for HTML output:

```

1 \LWR@ProvidesPackageDrop{tocloft}

2 \newcommand{\tocloftpagestyle}[1]{}

3 \newcommand*{\cftmarktoc}{}
4 \newcommand*{\cfttoctitlefont}{}
5 \newcommand*{\cftaftertoctitle}{}

6 \newlength{\cftbeforetoctitleskip}
7 \newlength{\cftaftertoctitleskip}

8 \newcommand*{\cftmarklof}{}
9 \newcommand*{\cftloftitlefont}{}
10 \newcommand*{\cftafterloftitle}{}

11 \newlength{\cftbeforeloftitleskip}
12 \newlength{\cftafterloftitleskip}

13 \newcommand*{\cftmarklot}{}
14 \newcommand*{\cftlottitlefont}{}
15 \newcommand*{\cftafterlottitle}{}

16 \newlength{\cftbeforelottitleskip}
17 \newlength{\cftafterlottitleskip}

18 \newcommand*{\cftdot}{.}
19 \providecommand*{\cftdotsep}{1}
20 \newcommand*{\cftnodots}{5000}
21
22 \providecommand{\cftdotfill}[1]{}

23 \newcommand*{\cftsetpnumwidth}[1]{}
24 \newcommand*{\cftsetrmarg}[1]{}

```

```
25 \newcommand*{\cftpnumalign}[1]{}

26 \newlength{\cftparskip}

27 \newlength{\cftbeforepartskip}
28 \newlength{\cftpartincent}
29 \newlength{\cftpnumwidth}
30 \newcommand*{\cftpfont}{}
31 \newcommand*{\cftpapresnum}{}
32 \newcommand*{\cftpataftersnum}{}
33 \newcommand*{\cftpataftersnumb}{}
34 \newcommand*{\cftpleader}{}
35 \newcommand*{\cftpdotsep}{1}
36 \newcommand*{\cftpfont}{}
37 \newcommand*{\cftpartafterpnum}{}

38 \newlength{\cftbeforechapskip}
39 \newlength{\cftchapindent}
40 \newlength{\cftchapnumwidth}
41 \newcommand*{\cftchapfont}{}
42 \newcommand*{\cftchappresnum}{}
43 \newcommand*{\cftchapaftersnum}{}
44 \newcommand*{\cftchapaftersnumb}{}
45 \newcommand*{\cftchapleader}{}
46 \newcommand*{\cftchapdotsep}{1}
47 \newcommand*{\cftchappfont}{}
48 \newcommand*{\cftchapafterpnum}{}

49 \newlength{\cftbeforesecskip}
50 \newlength{\cftsecindent}
51 \newlength{\cftsecnumwidth}
52 \newcommand*{\cftsecfont}{}
53 \newcommand*{\cftsecpresnum}{}
54 \newcommand*{\cftsecaftersnum}{}
55 \newcommand*{\cftsecaftersnumb}{}
56 \newcommand*{\cftsecleader}{}
57 \newcommand*{\cftsecdotsep}{1}
58 \newcommand*{\cftsecfont}{}
59 \newcommand*{\cftsecafterpnum}{}

60 \newlength{\cftbeforesubsecskip}
61 \newlength{\cftsubsecindent}
62 \newlength{\cftsubsecnumwidth}
63 \newcommand*{\cftsubsecfont}{}
64 \newcommand*{\cftsubsecpresnum}{}
65 \newcommand*{\cftsubsecaftersnum}{}
66 \newcommand*{\cftsubsecaftersnumb}{}
67 \newcommand*{\cftsubsecleader}{}
68 \newcommand*{\cftsubsecdotsep}{1}
```

```
69 \newcommand*{\cftsubsecpagefont}{}
70 \newcommand*{\cftsubsecafterpnum}{}

71 \newlength{\cftbeforesubsubsecskip}
72 \newlength{\cftsubsubsecindent}
73 \newlength{\cftsubsubsecnumwidth}
74 \newcommand*{\cftsubsubsecfont}{}
75 \newcommand*{\cftsubsubsecpresnum}{}
76 \newcommand*{\cftsubsubsecaftersnum}{}
77 \newcommand*{\cftsubsubsecaftersnumb}{}
78 \newcommand*{\cftsubsubsecleader}{}
79 \newcommand*{\cftsubsubsecdotsep}{1}
80 \newcommand*{\cftsubsubsecpagefont}{}
81 \newcommand*{\cftsubsubsecafterpnum}{}

82 \newlength{\cftbeforeparaskip}
83 \newlength{\cftparaindent}
84 \newlength{\cftparanumwidth}
85 \newcommand*{\cftparafont}{}
86 \newcommand*{\cftparapresnum}{}
87 \newcommand*{\cftparaftersnum}{}
88 \newcommand*{\cftparaftersnumb}{}
89 \newcommand*{\cftparaleader}{}
90 \newcommand*{\cftparadotsep}{1}
91 \newcommand*{\cftparapagefont}{}
92 \newcommand*{\cftparaafterpnum}{}

93 \newlength{\cftbeforesubparaskip}
94 \newlength{\cftsubparaindent}
95 \newlength{\cftsubparanumwidth}
96 \newcommand*{\cftsubparafont}{}
97 \newcommand*{\cftsubparapresnum}{}
98 \newcommand*{\cftsubparaftersnum}{}
99 \newcommand*{\cftsubparaftersnumb}{}
100 \newcommand*{\cftsubparaleader}{}
101 \newcommand*{\cftsubparadotsep}{1}
102 \newcommand*{\cftsubparapagefont}{}
103 \newcommand*{\cftsubparaafterpnum}{}

104 \newlength{\cftbeforefigskip}
105 \newlength{\cftfigindent}
106 \newlength{\cftfignumwidth}
107 \newcommand*{\cftfigfont}{}
108 \newcommand*{\cftfigpresnum}{}
109 \newcommand*{\cftfigaftersnum}{}
110 \newcommand*{\cftfigaftersnumb}{}
111 \newcommand*{\cftfigleader}{}
112 \newcommand*{\cftfigdotsep}{1}
113 \newcommand*{\cftfigpagefont}{}

```

```

114 \newcommand*\cftfigafterpnum){}

115 \newlength{\cftbeforesubfigskip}
116 \newlength{\cftsubfigindent}
117 \newlength{\cftsubfignumwidth}
118 \newcommand*\cftsubfigfont){}
119 \newcommand*\cftsubfigpresnum){}
120 \newcommand*\cftsubfigaftersnum){}
121 \newcommand*\cftsubfigaftersnumb){}
122 \newcommand*\cftsubfigleader){}
123 \newcommand*\cftsubfigdotsep}{1}
124 \newcommand*\cftsubfigpagefont){}
125 \newcommand*\cftsubfigafterpnum){}

126 \newlength{\cftbeforetabskip}
127 \newlength{\cfttabindent}
128 \newlength{\cfttabnumwidth}
129 \newcommand*\cfttabfont){}
130 \newcommand*\cfttabpresnum){}
131 \newcommand*\cfttabaftersnum){}
132 \newcommand*\cfttabaftersnumb){}
133 \newcommand*\cfttableader){}
134 \newcommand*\cfttabdotsep}{1}
135 \newcommand*\cfttabpagefont){}
136 \newcommand*\cfttabafterpnum){}

137 \newlength{\cftbeforesubtabskip}
138 \newlength{\cftsubtabindent}
139 \newlength{\cftsubtabnumwidth}
140 \newcommand*\cftsubtabfont){}
141 \newcommand*\cftsubtabpresnum){}
142 \newcommand*\cftsubtabaftersnum){}
143 \newcommand*\cftsubtabaftersnumb){}
144 \newcommand*\cftsubtableader){}
145 \newcommand*\cftsubtabdotsep}{1}
146 \newcommand*\cftsubtabpagefont){}
147 \newcommand*\cftsubtabafterpnum){}

148 \newcommand{\cftsetindents}[3]{}

149 \newcommand{\pagenumbersoff}[1]{}
150 \newcommand{\pagenumberson}[1]{}

```

Emulated through the \newfloat mechanism.

```

151 \NewDocumentCommand{\newlistof}{o m m}
152 {%
153 \IfValueTF{#1}

```

```

154 {\newfloat{#2}{tbp}{#3}[#1]}
155 {\newfloat{#2}{tbp}{#3}}
156 \@namedef{listof#2}{\listof{#2}{#4}}
157 \@namedef{#2depth}{1}
158 \expandafter\newlength\csuse{cftbefore#2skip}
159 \expandafter\newlength\csuse{cft#2indent}
160 \expandafter\newlength\csuse{cft#2numwidth}
161 \@namedef{cft#2font}{}
162 \@namedef{cft#2presnum}{}
163 \@namedef{cft#2aftersnum}{}
164 \@namedef{cft#2aftersnumb}{}
165 \@namedef{cft#2leader}{}
166 \@namedef{cft#2dotsep}{1}
167 \@namedef{cft#2pagefont}{}
168 \@namedef{cft#2afterpnum}{}
169 }

```

\cftchapterprecis from tocloft:

```

170 \newcommand{\cftchapterprecis}[1]{%
171   \cftchapterprecishere{#1}
172   \cftchapterprecistoc{#1}}
173 \newcommand{\cftchapterprecishere}[1]{%
174   \begin{quote}\textit{#1}\end{quote}}
175 \newcommand{\cftchapterprecistoc}[1]{
176   \addtocontents{toc}{%
177     {
178       \protect\begin{quote}#1\protect\end{quote}}
179   }
180 }

```

Package 65

lwarp-trivfloat.sty

132 Trivfloat

Pkg `trivfloat` `trivfloat` is forced to use the built-in `lwarp` emulation for floats.

Discard all options for `lwarp-trivfloat`. This tells `trivfloat` not to use `floatrow` or `memoir`.

for HTML output: `1 \LWR@ProvidesPackageDrop{trivfloat}`
`2 \LWR@origRequirePackage{trivfloat}`

for HTML & PRINT: `3 \begin{warpall}`

To create a new float type and change its name:

```
\trivfloat{example}
\renewcommand{\exemplename}{Example Name}
\crefname{example}{example}{examples}
\Crefname{example}{Example}{Examples}
```

`4 \end{warpall}`

\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: `5 \begin{warpHTML}`
`6 \AtBeginDocument{\DeclareDocumentCommand{\tfl@chapter@fix}{m m}{}}`
`7 \end{warpHTML}`

132.1 Combining `\newfloat`, `\trivfloat`, and `algorithmicx`

for HTML & PRINT: `8 \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{tflfloatcnt}{1} % start trivfloats with .lob
\makeatletter
```

```
9 \end{warpall}
```

Package 66

lwarp-verse.sty

133 Verse

Pkg **verse** **verse** is supported and patched by **lwarp**.

for HTML output: Pass all options for **lwarp-verse**:

```
1 \LWR@ProvidesPackagePass{verse}
```

\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 **\leftskip** 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.

Len **\leftmargini**

Len **\TMLvleftskip**

Len **\TMLleftmargini**

Horizontal spacing relies on **pdftotext**’s ability to discern the **-layout** 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**.

```
2 \AfterEndPreamble{
```

At the beginning of the **verse** environment:

```

3 \AtBeginEnvironment{verse}
4 {%

```

Pkg verse The verse or memoir packages can place stanza numbers to the left with their
 Pkg memoir \flagverse command. Do not allow them to go into the left margin, which would
 \flagverse cause pdfcrop to crop the entire page further to the left:

```

Len \leftskip 5 \ifdef{\vleftskip}{%
6 \setlength{\vleftskip}{\HTMLvleftskip}
7 \setlength{\leftmargini}{\HTMLleftmargini}
8 }{}
9 \LWR@atbeginverbatim{verse}
10 \unskip\vspace{-\baselineskip}
11 }

```

After the end of the verse environment, which places the pre tag at the regular left margin:

```

12 \AfterEndEnvironment{verse}{
13 \unskip\vspace{-\baselineskip}
14 \LWR@afterendverbatim
15 }

```

Patch to place poemtitle inside an HTML span of class poemtitle:

```

16 \ifdef{\poemtitle}{
17 \DeclareDocumentCommand{\@vstypeptitle}{m}{%
18 \vspace{\beforepoemtitleskip}%
19 {\InlineClass{poemtitle}{\poemtitlefont #1}\par}%
20 \vspace{\afterpoemtitleskip}%
21 }
22 }{}
23
24 }

```

Package 67

lwarp-wallpaper.sty

134 Wallpaper

Pkg wallpaper wallpaper is emulated during HTML output, and the wallpaper package is ignored.

```
for HTML output: 1 \LWR@ProvidesPackageDrop{wallpaper}

2 \newcommand*{\CenterWallPaper}[2]{}
3 \newcommand*{\ThisCenterWallPaper}[2]{}
4 \newcommand*{\TileWallPaper}[3]{}
5 \newcommand*{\ThisTileWallPaper}[3]{}
6 \newcommand*{\TileSquareWallPaper}[2]{}
7 \newcommand*{\ThisTileSquareWallPaper}[2]{}
8 \newcommand*{\ULCornerWallPaper}[2]{}
9 \newcommand*{\ThisULCornerWallPaper}[2]{}
10 \newcommand*{\LLCornerWallPaper}[2]{}
11 \newcommand*{\ThisLLCornerWallPaper}[2]{}
12 \newcommand*{\URCornerWallPaper}[2]{}
13 \newcommand*{\ThisURCornerWallPaper}[2]{}
14 \newcommand*{\LRCornerWallPaper}[2]{}
15 \newcommand*{\ThisLRCornerWallPaper}[2]{}
16 \newcommand*{\ClearWallPaper}{}
17 \newlength{\wpXoffset}
18 \newlength{\wpYoffset}
```

Package 68

lwarp-wrapfig.sty

135 Wrapfig

Pkg wrapfig wrapfig is emulated during HTML output, and the wrapfig package is ignored.

```
for HTML output: 1 \LWR@ProvidesPackageDrop{wrapfig}

Computed width of a wrapped object. Used to print the HTML style.

2 \newlength{\LWR@wrapwidth}

3
4 \newcommand*{\LWR@wrapposition}{}
5
6 \newcommand*{\LWR@subwrapfigure}[2]{%
7 \LWR@maybeinthisfloat%
8 \renewcommand*{\LWR@wrapposition}{}%
9 \ifthenelse{%
10 \equal{#1}{r}\OR\equal{#1}{R}\OR%
11 \equal{#1}{o}\OR\equal{#1}{O}%
12 }{%
13 {\renewcommand*{\LWR@wrapposition}{float:right}}%
14 {\renewcommand*{\LWR@wrapposition}{float:left}}%
15 \setlength{\LWR@wrapwidth}{#2}%
16 \addtolength{\LWR@wrapwidth}{4em}%
17 \uselengthunit{PT}%
18 % \BlockClass{marginblock}{%
19 % width:\rndprintlength{\LWR@wrapwidth} ; %
20 % \LWR@wrapposition%
21 % ]%
22 \LWR@stoppars%
23 \LWR@htmltag{div class="marginblock" id="autofloat-\arabic{\LWR@thisfloat}"
24 style="width:\rndprintlength{\LWR@wrapwidth} ; %
25 \LWR@wrapposition"%
26 }
27 \LWR@startpars
28 }
29
30
31 \NewDocumentEnvironment{wrapfigure}{o m o m}
32 {%
33 \LWR@subwrapfigure{#2}{#4}%
34 \captionsetup{type=figure}%
```

```
35 }
36 {
37 \LWR@htmldivclassend{div}
38 }
39
40
41 \NewDocumentEnvironment{wraptable}{o m o m}
42 {%
43 \LWR@subwrapfigure{#2}{#4}%
44 \captionsetup{type=table}%
45 }
46 {
47 \LWR@htmldivclassend{div}
48 }
49
50
51 \NewDocumentEnvironment{wrapfloat}{m o m o m}
52 {%
53 \LWR@subwrapfigure{#3}{#5}%
54 \captionsetup{type=#1}%
55 }
56 {
57 \LWR@htmldivclassend{div}
58 }
59
60 \newlength{\wrapoverhang}
```

Package 69

lwarp-xcolor.sty

136 Xcolor

Pkg `xcolor` `xcolor` is supported by `lwarp`.

support Color definitions, models, and mixing are fully supported without any changes required.

tables Colored tables are ignored so far. Use CSS to style tables.

colored text and boxes `\textcolor`, `\colorbox`, and `\fcolorbox` are supported.

`\color` and `\pagecolor` `\color` and `\pagecolor` are ignored. Use CSS or `\textcolor` where possible.

for HTML output: `1 \LWR@ProvidesPackagePass{xcolor}`

`2 \newcommand*{\LWR@tempcolor}{}%`

defaulting to black.

`3 \newcommand*{\LWR@currenttextcolor}{black}`

Creates a styled span with a color converted to HTML hex colorspace. Uses `LWR@spandepth` to prevent paragraph tags inside the span. If used for `\textcolor`, with a styletext of `color:`, then the new color is copied into `\LWR@currenttextcolor` for possible re-use in `\rule`.

`4 \NewDocumentCommand{\LWR@colorstyle}{m m m +m}{}%`

Use the `xcolor` package to convert to an HTML color space:

`5 \convertcolorspec{#2}{#3}{HTML}\LWR@tempcolor%`

If is a `\textcolor`, save a copy of this color for use by `\rule`:

`6 \ifthenelse{\equal{#1}{color:}}{}%`

`7 {\renewcommand*{\LWR@currenttextcolor}{\#\LWR@tempcolor}}{}%`

Create the HTML span with the styled color:

`8 \LWR@htmltagc{span style="#1\#\LWR@tempcolor"}{}%`

`9 \begin{\LWR@nestspan}%`

Prevent additional paragraph tags inside this span:

Print the contents then close the span:

```
10 #4%
11 \LWR@htmltagc{/span}%
12 \end{LWR@nestspan}%
```

For paragraph-tag handling:

```
13 \LWR@ensuredoingapar%
14 }
```

`\color` appears in the L^AT_EX PDF output, but is ignored by `pdftotext` and thus is ignored in the HTML file. Text styling by local group is not yet supported.

Each of the following macros is given a temporary name, and is `\let` to the final name once the HTML conversion starts.

`\textcolor` [*⟨model⟩*] {*⟨color⟩*} {*⟨text⟩*} is converted into an HTML hex color span.

```
15 \NewDocumentCommand{\LWR@textcolor}{0{named} m +m}{%
16 \begingroup%
17 \LWR@colorstyle{color:}{#1}{#2}{#3}%
18 \endgroup%
19 }
```

`\pagecolor` [*⟨model⟩*] {*⟨color⟩*} is ignored. Use `\NewCSS` instead.

```
20 \newcommand*{\LWR@pagecolor}[2][named]{}
```

`\colorbox` [*⟨model⟩*] {*⟨color⟩*} {*⟨text⟩*} is converted into an HTML hex background color span.

```
21 \NewDocumentCommand{\LWR@colorbox}{0{named} m m}{%
22 \begingroup%
23 \LWR@colorstyle{background:}{#1}{#2}{#3}%
24 \endgroup%
25 }
```

`\fcolorbox` [*⟨framemodel⟩*] {*⟨framecolor⟩*} [*⟨boxmodel⟩*] {*⟨boxcolor⟩*} {*⟨text⟩*} is converted into a framed HTML hex background color span.

```
26 \NewDocumentCommand{\LWR@fcolorbox}{0{named} m 0{named} m m}{%
27 \begingroup%
28 \LWR@colorstyle{border:1px solid }{#1}{#2}%
```

```
29 {\LWR@colorstyle{background:}{#3}{#4}{#5}}%  
30 \endgroup%  
31 }
```


Package 70

lwarp-xfrac.sty

137 Xfrac

Pkg **xfrac** Supported by adding xfrac instances.

for HTML output: 1 \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: 2 \begin{warpall}

User-redefinable macro which controls the font size of the fraction.

3 \newcommand*{\xfracHTMLfontsize}{.6em}

4 \end{warpall}

for HTML output: 5 \begin{warpHTML}

font size A span for a small font, used in the numerator and denominator:

```
6 \newcommand*{\LWR@htmlsmallfontstart}{%
7 \LWR@htmltagc{span style="font-size:\xfracHTMLfontsize"}{}}%
8 \LWR@nestspan%
9 %
10 }
```

```

11
12 \newcommand*{\LWR@htmlsmallfontend}{%
13 \LWR@htmltagc{/span}%
14 \endLWR@nestspan%
15 }

```

`\scalebox` A nullified `\scalebox` command, to avoid introducing HTML scaling tags:

```

16 \NewDocumentCommand{\LWR@noscalebox}{m o m}{#3}

```

instances Instances of `xfrac` for various font choices:

Produce HTML tags for a small superscript numerator and a small (non-subscript) denominator.

Scaling is turned off so that `pdftotext` correctly reads the result.

```

17 \DeclareInstance{xfrac}{default}{text}{
18 numerator-format = {%
19 \let\scalebox\LWR@noscalebox%
20 \LWR@htmlsmallfontstart\textsuperscript{#1}\,\LWR@htmlsmallfontend},
21 denominator-format = {%
22 \let\scalebox\LWR@noscalebox%
23 \LWR@htmlsmallfontstart{\,\,#1\LWR@htmlsmallfontend},

```

For `pdftotext`, do not scale the text:

```

24 scaling = false
25 }
26 \DeclareInstance{xfrac}{lmr}{text}{
27 numerator-format = {%
28 \let\scalebox\LWR@noscalebox%
29 \LWR@htmlsmallfontstart\textsuperscript{#1}\,\LWR@htmlsmallfontend},
30 denominator-format = {%
31 \let\scalebox\LWR@noscalebox%
32 \LWR@htmlsmallfontstart{\,\,#1\LWR@htmlsmallfontend},

```

For `pdftotext`, do not scale the text:

```

33 scaling = false
34 }
35 \DeclareInstance{xfrac}{lmss}{text}{
36 numerator-format = {%
37 \let\scalebox\LWR@noscalebox%
38 \LWR@htmlsmallfontstart\textsuperscript{#1}\,\LWR@htmlsmallfontend},
39 denominator-format = {%
40 \let\scalebox\LWR@noscalebox%
41 \LWR@htmlsmallfontstart{\,\,#1\LWR@htmlsmallfontend},

```

For pdftotext, do not scale the text:

```
42 scaling = false
43 }
44 \DeclareInstance{xfrac}{lmtt}{text}{
45 numerator-format = {%
46 \let\scalebox\LWR@noscalebox%
47 \LWR@htmlsmallfontstart\textsuperscript{#1}\,\LWR@htmlsmallfontend},
48 denominator-format = {%
49 \let\scalebox\LWR@noscalebox%
50 \LWR@htmlsmallfontstart{ }\,\#1\LWR@htmlsmallfontend},
```

For pdftotext, do not scale the text:

```
51 scaling = false
52 }
```

```
53 \end{warpHTML}
```

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