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Documentation (2016/09/09) generated from the source file with timestamp "Time-stamp: <09-09-2016 at 21:49:18 CEST>".

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Abstract

The **etoc** package gives to the user complete control on how the entries of the table of contents should be constituted from the *name*, *number*, and *page number* of each sectioning unit. This goes via the definition of *line styles* for each sectioning level used in the document. The package provides its own custom line styles. Simpler ones are given as examples in the documentation. The simplest usage will be to take advantage of the layout facilities of packages dealing with list environments.

Regarding the *global toc display*, **etoc** provides pre-defined styles based on a multi-column format, with, optionally, a ruled title or framed contents.

The `\tableofcontents` command may be used arbitrarily many times and it has a variant `\localtableofcontents` which prints tables of contents ‘local’ to the current surrounding document unit. An extension of the `\label/\ref` syntax allows to reproduce (with another layout) a local table of contents defined somewhere else in the document.

Via “depth tags”, one gets an even finer control for each table of contents of which sectioning units it should, or not, display.

The formatting inherited (and possibly customized by other packages) from the document class will be used when in *compatibility mode*.

The assignment of levels to the sectioning units can be changed at any time, and **etoc** can thus be used in a quite general manner to create custom “lists of”, additionally to the tables of contents related to the document sectioning units. No auxiliary file is used additionally to the standard `.toc` file.

1. Foreword

Popular packages dealing with TOCs include `tocloft`, `titletoc` and `minitoc`. Why another one? I started **etoc** for my own use, and found out only later about these mentioned packages.

As is well explained in the `tocloft` package documentation, the standard L^AT_EX layout for the Table of Contents is buried in the class definitions. In particular, most of the lengths therein are hardcoded, and the only way for the user to change them is to recopy the class definitions into the document and then change them to obtain what is desired (within suitable `\makeatletter` and `\makeatother`). The more reasonable alternative is to use a dedicated package such as `tocloft` or to use another flexible document class.

However, although now things are hopefully not hard-coded, one still has to go through the package or class interface. This means one has to memorize a (possibly large) number of macros which will serve only to this task, and one will always be constrained to customizing one initially given layout.

The spirit of **etoc** is something else. The user will deal with the *name*, the *number* and the *page number* corresponding to each document sectional division (and found in a line of the `.toc` file) in a completely arbitrary manner: they are made available via the `\etocname`, `\etocnumber`, and `\etocpage` commands.

etoc appears to be (at least partially) compatible with the `article`, `book`, `report`, `scrartcl`, `scrbook`, `scrreprt` and `memoir` classes.

Starting with release 1.07k it is possible to use **etoc** concurrently with package `tocloft`.

2. License

```
% Package: etoc
% Version: 1.08g (2015/08/29 - doc 2016/09/09)
% License: LPPL 1.3c or later
% Copyright (C) 2012-2015 Jean-Francois Burnol <jfbu at free dot fr>
% Copyright (C) 2014-2015 Christine Roemer <Christine_Roemer at t-online dot de>
% and collaborators for the translation into German of the documentation
%
% This Work may be distributed and/or modified under the
% conditions of the LaTeX Project Public License, either
% version 1.3c of this license or (at your option) any later
% version. This version of this license is in
% http://www.latex-project.org/lppl/lppl-1-3c.txt
% and the latest version of this license is in
% http://www.latex-project.org/lppl.txt
% and version 1.3 or later is part of all distributions of
% LaTeX version 2005/12/01 or later.
%
% The Authors of this Work are:
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% Christine Roemer <Christine_Roemer at t-online dot de> and collaborators
% for the translation into German of the documentation.
%
% This Work consists of the main source file etoc.dtx and the derived
% files etoc.sty, etoc.ins, etoc.tex, etoc-DE.tex, etoc.pdf, etoc-DE.pdf,
% etoc.dvi, etoc-DE.dvi, README.md.
%
% Running etex (or latex or pdflatex) on etoc.dtx extracts etoc.sty,
% etoc.ins, etoc.tex, etoc-DE.tex, and README.md. See README.md for
% further instructions.
```

Part I. Overview

Here are some statistics for this part: it contains 6 sections and 4 subsections. The name of the first section is “Do I need to be a geek to use **etoc**?” and the corresponding number is “3”. The name of the last section is “Linked list of the main package commands” and its number is “8”. The name of the first subsection is “Limitations in the use of list environments for tables of contents” and the corresponding number is “3.1”. The name of the last subsection is “Compatibility mode” and its number is “4.3”.

3. Do I need to be a geek to use **etoc**?

Not quite. The simplest way is to use `enumerate` environments, with the customizing facilities of packages such as `enumitem`,¹ to display the data fetched by **etoc** from the `.toc` file. The data consists of the *name* (`\etocname`), *number* (`\etocnumber`), and *page number* (`\etocpage`) as extracted from the `.toc` file.

This is illustrated at the start of [Part IV](#). More sophisticated examples would use more sophisticated `enumitem` options. One may say then that again the user has to memorize some customizing! indeed, but the syntax and option names to memorize are in no way related only to matters of tables of contents, hence an economy of use of the poor brain.

Next in ease of use, perhaps, is the method explained [later in this part \(section 5\)](#). For this some knowledge of `\leftskip`, `\rightskip`, etc... is necessary. And a slight elaboration of this method, whose code is to be found in [section 40](#), allows to mimick very well, if so desired, the standard looks.

As will be amply illustrated in this manual, **etoc** is quite versatile (especially as it allows to re-define at any point in the document the hierarchy of sectioning units) and one can achieve surprising effects with it: [Part III](#) is devoted to this, and some more is to be found in [Part VII](#).

A very important aspect of **etoc** is that it is geared towards making many TOCs in the same document, *using only one .toc file*! The present documentation contains 40 visible tables of contents (and a few invisible ones) and uses only one `.toc` file!² So one should think twice before adding manually extra commands to the `.toc` file (see [section 14](#)).

3.1. Limitations in the use of list environments for tables of contents

There are some limitations to the use of list environments for typesetting TOCs. One of them is intrinsic to the scope limitations created by the groups associated to the environments: the `.toc` file may contain, besides the information to be typeset in the TOCs, some other commands, such as language changing commands, which do not expect to see their scope limited in this way inside a group (\LaTeX 's environments create groups).

Therefore the built-in “line styles” proposed by **etoc** as an example (and which are illustrated³ by the [main table of contents](#) in this document) do not make use of environments. Actually, in this user manual, only the [table of contents](#) at the start of [Part IV](#) and the [subsection 38.1](#) (which is a TOC!) have their line styles expressed in terms of `enumerate` environments.

¹<http://ctan.org/pkg/enumitem>

²and the counting itself has been achieved by a table of contents which was inserted in the framed paragraph! ... the technique for this kind of effect will be explained later.

³with a twist, subsections having been downgraded to the subsection style...

4. Line styles and toc display style

A distinction shall be made between the *line styles*, i.e. the way the name, number and page numbers are used at each level, and the *toc display style* (for lack of a better name) which tells how the title should be set, whether an entry in the .toc file should be made, whether the contents should be typeset with multiple columns, etc... the latter is governed by the command `\etocsettocstyle` (or some higher-level commands) and the former by the command `\etocsetstyle`.

4.1. `\etocsetstyle` for the line styles

The command to inform **etoc** of what to do with `\etocname`, `\etocnumber`, and `\etocpage` is called `\etocsetstyle`. It has five mandatory arguments. The first one is the name of the sectional unit: a priori known names are `book`, `part`, `chapter`, `section`, `subsection`, `subsubsection`, `paragraph`, and `subparagraph`, and any other name can be declared and assigned to a (numeric) level via the `\etocsetlevel` command.⁴

The four other arguments of `\etocsetstyle` specify: 1) *what to do when this level is first encountered, down from a more general one*, then 2) & 3) (two arguments, a ‘prefix’ and a ‘contents’) *what to do when a new entry of that type is found*, and 4) *the last argument is the code to execute when a division unit of higher importance is again hit upon*.

4.2. `\etocsettocstyle` for the toc display

The `\etocsettocstyle` command allows to specify what should be done before and after the line entries of the TOC are typeset, and in particular how the title should be printed. It has two arguments, the first one is executed before the TOC contents (typically it will print “Contents” and define suitable marks for the page headings) and the second is executed after the TOC contents.

etoc provides four (customizable) higher level toc styles: `\etocmulticolstyle`, `\etocctocstyle`, `\etocruledstyle`, and `\etocframedstyle`. All use the `multicol` package with a default of two columns (single-column mode is obtained with the optional argument [1]).

These commands must be followed either by `\tableofcontents` or `\localtableofcontents`.

4.3. Compatibility mode

Both for the “line styles” and the “toc display style”, it is possible to switch into a compatibility mode which uses the defaults from the document class.⁵ This is activated by:

```
\etocstandardlines      % ‘line entries’ as without \usepackage{etoc}
\etocstandarddisplaystyle % ‘toc display’ as without \usepackage{etoc}
```

If the command `\etocsetstyle` has *not been used in the preamble* the package will be at `\begin{document}` in this compatibility mode: hence just adding `\usepackage{etoc}`

⁴under the memoir class, **etoc** knows appendix as a sectioning name.

⁵for the “toc display style” **etoc** checks if it knows the class, and if not defaults to the article class layout. It will also check if `tocloft` has customized the TOC title.

should hopefully not change anything to the look of a previously existing document, under the article, book, report, scrartcl, scrbook, scrreprt and memoir classes.

Any use of `\etocsetstyle` in the *preamble or body* of the document turns off from that point on the compatibility mode for line styles, but maintains the compatibility mode for the TOC title. One re-activates the compatibility mode for line styles with `\etocstandardlines`; and `\etococlines` will re-activate the line styles as defined with the help of `\etocsetstyle`, if their scope was not limited to a group or environment.

The command `\etocdefaultlines` resets the line styles as pre-defined internally by **etoc** and described in [section 34](#).

Even if `\etocsetstyle` has been used, the global display style remains initially as defined by the document class (or the `tocloft` package); one needs to use the command `\etocsettocstyle` or its variants to exit from this compatibility mode at the “toc display style” level. It will be re-activated if use if made of `\etocstandarddisplaystyle`.

5. A first example

Let us present a first example of specification for line styles. Immediately after the start of [Part I](#) we inserted in the source file:

```
\invisiblelocaltableofcontents \label{toc:overview}
```

This sets-up the label `toc:overview`, and we can use it at any location in the document:

```
\tableofcontents \ref{toc:overview}
```

And as we used `\invisible...`,⁶ the local TOC will exist only through its clones elsewhere in the document.

We could use the line styles defined by **etoc**, with `\etocdefaultlines`, or the default document class styles with `\etocstandardlines`, but we were a bit more ambitious here and wanted to design our own. The technique is a simple one: each heading is in its own paragraph, which may extend on multiple lines; it is responsible for setting its own `\leftskip`.

My first **etoc**: TOC of [Part I \(Overview\)](#)

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This is a simple design which does not make provisions for page breaks which should be discouraged in-between a section and a subsection etc. . . as we only used it for the table

⁶this is a shortcut for setting temporarily the `tocdepth` to `-3`, which has the effect to tell **etoc** not to print the TOC, and not even the heading.

6. A second example

of contents of this part, thus with sections as top levels, there was no need to specify a style for parts too (we defined a subsubsection line style but as it turns out there are no subsubsections in this part). The two commands used are `\etocsetstyle` for specifying the line styles, and `\etocruledstyle` for the TOC global style.

The `\rightskip` is shared by all, and creates space where the page numbers get printed. For an elaboration of this technique see the next [section 6](#) as well as [section 40](#) which provides a TOC with parts and paragraphs. Both allow multi-line headings and employ a technique for putting page numbers in the right margin which was inspired from what L^AT_EX2e's `\@dottedtocline` macro does.

```
\begingroup\parindent 0pt \parfillskip 0pt \leftskip 0cm \rightskip 1cm
\etocsetstyle {section}
{
  {\leavevmode\leftskip 0cm\relax}
  {\bfseries\normalsize\makebox[.5cm][l]{\etocnumber.}%
   \etocname\nobreak\hfill\nobreak
   \rlap{\makebox[1cm]{\mdseries\etocpage}}\par}
}
\etocsetstyle {subsection}
{
  {\leavevmode\leftskip .5cm\relax }
  {\mdseries\normalsize\makebox[1cm][l]{\etocnumber}%
   \etocname\nobreak\hfill\nobreak
   \rlap{\makebox[1cm]{\etocpage}}\par}
}
\etocsetstyle {subsubsection}
{
  {\leavevmode\leftskip 1.5cm\relax }
  {\mdseries\normalsize\makebox[1cm][l]{\etocnumber}%
   \etocname\nobreak\hfill\nobreak
   \rlap{\makebox[1cm]{\etocpage}}\par}
}
\etocruledstyle[1]{\bfseries \Large My first \etoc: TOC of
  \autoref{part:overview} (\nameref{part:overview})}
\tableofcontents \ref {toc:overview}
\endgroup
```

6. A second example

This second example displays only the contents from [Part IV](#) and [Part V](#). This selection is done via the technique of *depth tags*, described in [section 13](#) and [section 40](#). Its layout is a bit like the one of the [main document TOC](#), although the line styles are coded very differently.

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`linkedname`, `\etoclinkednumber`, `\etoclinkedpage` and `\etoclink` commands (26.7, p. 53).

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The code:

```
\begingroup
\newcommand*{\DotsAndPage}
{\nobreak\leaders\hbox{\bfseries\normalsize\hbox to .75ex {\hss.\hss}}%
\hfill\nobreak
\makebox[\rightskip][r]{\bfseries\normalsize\etocpage}\par}

\etocsetstyle {part}
{\parindent 0pt
\nobreak
\etocskipfirstprefix}
{\pagebreak[3]\bigskip}
{\large\rmfamily\bfseries\scshape\centering
\etocifnumbered{Part \etocnumber{} -- }{\etocname\par}
}

\etocsetstyle {section}
{\leftskip 0pt \rightskip .75cm \parfillskip-\rightskip
\nobreak\medskip
\etocskipfirstprefix}
{\leftskip 0pt \rightskip .75cm \parfillskip-\rightskip
\pagebreak[1]\smallskip}
{\normalsize\rmfamily\bfseries\scshape
\etocnumber. \etocname\DotsAndPage }
{\parfillskip 0pt plus 1fil\relax }

\etocsetstyle {subsection}
{\leftskip 1cm\rightskip .75cm \parfillskip 0pt plus 1fil\relax
\nobreak\smallskip}
{}
```

7. A third example: emulating the book class

```
{\footnotesize\sffamily\mdseries\itshape
\etocname{ } (\etocnumber, p. \etocpage). }
{\par\medskip}

\etocsettagdepth {preamble} {none}
\etocsettagdepth {overview} {none}
\etocsettagdepth {arbitrarily}{none}
\etocsettagdepth {surprising} {none}
\etocsettagdepth {linestyles} {subsection}
\etocsettagdepth {globalcmds} {subsection}
\etocsettagdepth {custom} {none}
\etocsettagdepth {tips} {none}
\etocsettagdepth {etocandworld}{none}
\etocsettagdepth {code} {none}

\etocsettocstyle {\centering\LARGE\textsc{\contentsname}\par\nobreak\medskip}{}
\etocsetnexttocdepth {subsection}
\tableofcontents
\endgroup
```

7. A third example: emulating the book class

As explained in [subsection 4.3](#): without explicit use of an `\etocsetstyle` command the package will leave to the document class the hand regarding the “toc line styles”. It is sometimes asked by users (for example those using `etoc` for its `\localtableofcontents`) how to stay close to but not completely identical with the design implemented by the standard classes, such as `book`. I can recommend package `tocloft` for this, as it is compatible with `etoc` (see [subsection 42.6](#)) and thus `etoc` will obey the `tocloft` customizations (as long as no use has been made of `\etocsetstyle`). It is also possible to modify only the style for, say, sections and leave the parts, chapters, subsections as in the document class, via the technique from [section 19](#).

But for complete control, here is a translation of the `book` class code into `etoc` lingua. It is then easy to modify the relevant lengths or adjust the used fonts. I thank DENIS BITOUZÉ for prompting me to include this in the `etoc` manual, as it resulted from some conversation we had about this. The code is not 100% faithful to the `book` class, and particularly its rendering of (multi-line) non-numbered units differs (... I think, as I copied pasted as is the code from where I had stored it and did not do much thinking about it again). Some proficiency in low-level $\text{T}_{\text{E}}\text{X}$ and $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$ macros is needed to understand what the code says, but for modifying fonts or some lengths such in-depth understanding is not needed.

With some extra code one can *automatically adjust the widths* assigned to typesetting sectioning numbers in order to prevent overflows, even with for example XXXVIII; but this is a more advanced feature which I have moved to [section 25](#).

First we set up some lengths. I use macro registers, not real $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$ lengths. When using `em`’s however, this means that one must pay attention to when the actual dimension assignment is made, as this will then depend upon the current font settings. In the code below, at the location where the `\TOCnumwidthB` and `\TOCnumwidthC` will be used, the `1em` from their specification will be matched to the normal medium series font, not the bold font; this is deliberate so that one can compare more readily with the other dimensions; besides, with the `\TOCcomputenumwidths` from [section 25](#) these macros will actually hold a dimension

using pt as dimensional unit.

```
% it will be easy to globally shift the TOC horizontally if needed
\def\TOCleftmargin      {0pt}
\def\TOCrightmargin     {2.55em}% like LaTeX's \@tocrmarg

% this is for dotted leaders
\newbox\TOCleaderbox
\def\TOCleaderboxwidth {0.7777em}% about like what standard classes do

% vertical spacing
\def\TOCverysmallvskip {0pt plus .2pt}
\def\TOCmedvskip       {1em plus 1pt}
\def\TOCbigvskip       {2.25em plus 1pt}

% the "numwidths" for typesetting the numbering of division units.
% I don't recall exactly how (and for which fonts) these figures were chosen.
% They quickly prove too small if using Roman numerals (as do too the book
% class defaults even though they are a bit larger).
\def\TOCnumwidthB {1.5em} % chapter
\def\TOCnumwidthC {2.278em}% section, I think default is 2.3em
\def\TOCnumwidthD {3.056em}% analog in standard class is 3.2em
\def\TOCnumwidthE {3.833em}% analog in standard class is 4.1em
\def\TOCnumwidthF {4.611em}% analog in standard class is 5em
\def\TOCnumwidthG {5.389em}% analog in standard class is 6em
```

The code for the "global toc style".

```
\makeatletter
\etocsettocstyle
  {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
   \parindent\z@ \leftskip\z@skip \rightskip \z@skip
   \setbox\TOCleaderbox\hbox to \TOCleaderboxwidth{\hss.\hss}%
   \chapter *{\noindent\kern\TOCleftmargin\relax % uses "pt"...
    \contentsname
    \@mkboth {\MakeUppercase \contentsname}{\MakeUppercase \contentsname}}%
   \rightskip \TOCrightmargin\relax
   \parfillskip -\rightskip % or a smaller value if desired
   \leftskip \TOCleftmargin \relax }
  {\if@restonecol \twocolumn \fi\cleardoublepage}%
\makeatother
```

The code for the part and chapter line styles:

```
\makeatletter
\etocsetstyle{part}
{}
{\addpenalty {-\@highpenalty}%
 \addvspace \TOCbigvskip
 \leavevmode
 {\large \bfseries % use a group to limit font change
  \interlinepenalty\@M
  \etocifnumbered{\etocnumber\hspace{1em}}{}}%
  \etocname
  \nobreak\hfil\makebox[-\parfillskip][r]{\etocpage}}\par
\nobreak
}
{}
```

7. A third example: emulating the book class

```

{}
\etocsetstyle{chapter}
{\advance\leftskip\TOCnumwidthB\relax}
{\addpenalty {-\@highpenalty }%
\vskip \TOCmedvskip\relax
\leavevmode
{\interlinepenalty\@M
\etocifnumbered
{\llap{\makebox[\TOCnumwidthB][l]{\bfseries\etocnumber}}}%
{\advance\leftskip-\TOCnumwidthB\relax}%
\bfseries\etocname
\nobreak\hfil\makebox[-\parfillskip][r]{\etocpage}\par }%
\penalty \@highpenalty
}
{}
{\advance\leftskip-\TOCnumwidthB\relax}
\makeatother

```

The remaining divisions share the same code, here abstracted into a macro:

```

\makeatletter
\newcommand\TOCsetlinestyle [2]{% #1= unit, #2= numwidth as macro
\etocsetstyle{#1}
{\advance\leftskip#2\relax}
{\vskip \TOCverysmallvskip\relax
\leavevmode
{\interlinepenalty\@M
\etocifnumbered
{\llap{\makebox[#2][l]{\etocnumber}}}{\advance\leftskip-#2\relax}%
\etocname
\nobreak\leaders \copy\TOCleaderbox
\hfil\makebox[-\parfillskip][r]{\etocpage}%
\par }%
}
{}
{\advance\leftskip-#2\relax}%
}
\makeatother
\TOCsetlinestyle {section}      {\TOCnumwidthC}
\TOCsetlinestyle {subsection}   {\TOCnumwidthD}
\TOCsetlinestyle {subsubsection}{\TOCnumwidthE}
\TOCsetlinestyle {paragraph}    {\TOCnumwidthF}
\TOCsetlinestyle {subparagraph} {\TOCnumwidthG}

```

Note Bene: the code deliberately handles the non-numbered sectioning units unlike the way of the standard document classes (particularly regarding the alignment of multi-line headings.)

In practice, typically one will want to use `\localtableofcontents`, hence we need to change a bit the global toc style for using `\section*` rather than `\chapter*` for example. When the time comes for these local “minitocs” one can do something like the following (of course all of that can be stored inside a macro, whose definition can be located in the preamble.)

For some reason this code has some hard-coded 2.25em and 4.5em which were not abstracted into macros or lengths.

The code inserts horizontal rules above and below the TOC contents in a non-separable by pagebreak way.

```
\makeatletter
\etocsettocstyle
  {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
   \setbox\TOCleaderbox\hbox to \TOCleaderboxwidth{\hss.\hss}%
   \parindent\z@
   \dimen@ 2.25em % soon to be \leftskip
   \section *{\kern\dimen@ % \dimen@ works here by sheer luck
    \contentsname
    \@mkboth {\MakeUppercase \contentsname}{\MakeUppercase \contentsname}}%
   \parskip \z@skip
   \vspace{-1.25\baselineskip}% somewhat ad hoc
   \leftskip 2.25em
   \rightskip 4.5em
   \advance\rightskip-\TOCrightmargin\relax
   \leavevmode\leaders\hrule\@height\p@\hfill\kern\z@\par
   \rightskip 4.5em
   \parfillskip -\TOCrightmargin\relax }
  {\nobreak\vskip-.5\baselineskip
   \leavevmode\leaders\hrule\@height\p@\hfill\kern\z@\par
   \bigskip
   \if@restonecol \twocolumn \fi }
\makeatother
```

We then need to specify the line styles:

```
\makeatletter
\etocsetstyle{section}
  {\advance\leftskip\TOCnumwidthC\relax
   {\addpenalty \@secpenalty
    \etociffirst{}{\addvspace{\TOCmedvskip}}}%
   \leavevmode
   {\interlinepenalty\@M
    \bfseries\etocifnumbered
    {\llap{\makebox[\TOCnumwidthC][l]{\etocnumber}}}
    {\advance\leftskip-\TOCnumwidthC}%
    \etocname\nobreak\hfil\makebox[-\parfillskip][r]{\etocpage}\par }%
   \penalty \@highpenalty }
  {}
  {\advance\leftskip-\TOCnumwidthC\relax}
\makeatother
\TOCsetlinestyle {subsection} {\TOCnumwidthD}
\TOCsetlinestyle {subsubsection}{\TOCnumwidthE}
\TOCsetlinestyle {paragraph} {\TOCnumwidthF}
\TOCsetlinestyle {subparagraph} {\TOCnumwidthG}
```

As mentioned previously, this handles non-numbered (multi-line) sectioning units somewhat differently from what happens in the standard document classes.

See [section 25](#) for more.

8. Linked list of the main package commands

<code>\etocaftercontentshook</code>	<code>\etoclocalmulticol</code>	<code>\etocsettocdepth</code>
<code>\etocaftertitlehook</code>	<code>\etoclocalruled</code>	<code>\etocsettocstyle</code>
<code>\etocaftertochook</code>	<code>\etocmulticolstyle</code>	<code>\etocskipfirstprefix</code>
<code>\etocbeforetitlehook</code>	<code>\etocmulticol</code>	<code>\etocstandarddisplaystyle</code>
<code>\etocdefaultlines</code>	<code>\etocname</code>	<code>\etocstandardlines</code>
<code>\etocdepthtag.toc</code>	<code>\etocnumber</code>	<code>\etocthelinkedname</code>
<code>\etocdisplay</code>	<code>\etocobeydepthtags</code>	<code>\etocthelinkednumber</code>
<code>\etocframedstyle</code>	<code>\etocobeytoctocdepth</code>	<code>\etocthelinkedpage</code>
<code>\etocframed</code>	<code>\etocpage</code>	<code>\etocthelink</code>
<code>\etociffirst</code>	<code>\etocruledstyle</code>	<code>\etocthename</code>
<code>\etocifnumbered</code>	<code>\etocruled</code>	<code>\etocthenumber</code>
<code>\etocignoredepthtags</code>	<code>\etocsetlevel</code>	<code>\etocthepage</code>
<code>\etocignoretoctocdepth</code>	<code>\etocsetnexttocdepth</code>	<code>\etoc toc contents line</code>
<code>\etocinline</code>	<code>\etocsetstyle</code>	<code>\etoc to c lines</code>
<code>\etoclink</code>	<code>\etocsettagdepth</code>	<code>\localtableofcontents</code>
<code>\etoclocalframed</code>	<code>\etocsettocdepth.toc</code>	<code>\tableofcontents</code>

Part II.

Arbitrarily many TOCs, and local ones too

Here are some statistics for this part: it contains 7 sections and 6 subsections. The name of the first section is “Labeling and reusing elsewhere” and the corresponding number is “9”. The name of the last section is “Two Examples” and its number is “15”. The name of the first subsection is “The hyperref option *bookmarksdepth*” and the corresponding number is “11.1”. The name of the last subsection is “A TOC with a background color” and its number is “15.2”.

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9. Labeling and reusing elsewhere

`etoc` allows arbitrarily many `\tableofcontents` commands in your document. The line styles and the toc display style may of course be changed in-between. Furthermore `\localtableofcontents` will print local tables of contents: *i.e.* all sections and sub-units inside a given chapter, or all subsections and lower inside a given subsection, etc . . .

`etoc` allows the labeling of a TOC with (for example) `\label{toc:A}` and will re-display it elsewhere when told `\tableofcontents\ref{toc:A}`. The actual layout (title inclusive) used for the cloned TOC will be decided locally. The line styles and toc display style (including the title) will be the current ones and the current value of the `tocdepth` counter is obeyed. As an example the table of contents of [Part VI](#) is in a `float` which appears on the following page.

I am from far away

33. Summary of the main style commands	65
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33.2. Setting up toc display styles	65
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35.1. Customizing the etoc pre-defined line styles	70
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We used this:

```
\begin{figure}[ht!]
\centering
\begingroup
\etocstandardlines
\renewcommand{\etocbkgcolorcmd}{\color{green!5}}
\renewcommand{\etocbelowtocskip}{0pt\relax}
\fbboxsep1ex
\etocframedstyle [1]{\fbbox{\makebox[.5\linewidth]{\etocfontminusone
\hyperref[toc:c]{I am from far away}}}}
\tableofcontents \label{toc:d} \ref{toc:c}
\endgroup
\end{figure}
```

Important: one should not use elsewhere `\tableofcontents \ref{toc:d}`. To clone again, one must use a reference to the original label: `\tableofcontents \ref{toc:c}`.

10. A powerful functionality of **etoc**: the re-assignment of levels with `\etocsetlevel`

The intrinsic levels manipulated by **etoc** are numeric: from -2 (which corresponds to book in the memoir class) down (from the big to the small) to 5 (subparagraph). But the assignment of a numeric level to a given name can be modified at any time with the command `\etocsetlevel{<level_name>}{<number>}`. In conjunction with the use of the L^AT_EX `tocdepth` counter, this has powerful applications: `<level_name>` does not have to coincide with an actual document sectioning command, and **etoc** can be used to print arbitrary “lists of things”, using no other auxiliary file than the `.toc` file. This is explained further in [Part III](#).

It is often said that in the standard classes, the sectioning level of `\part` is 0 in the classes not having a `\chapter` command, and -1 in classes having a `\chapter` command. This is *correct* for what regards the *automatic numbering*, as is governed by the value of the `secnumdepth` counter; but it is *wrong* for what regards the effect of the `tocdepth` counter: setting the `tocdepth` to -1 in the article class just before `\tableofcontents` does *not* prevent Parts from appearing in the Table of Contents. One has to set it to -2 for that, whether in the article or in the book class.

The canonical levels, a priori known to **etoc**, are those of relevance to the **tocdepth** counter in the standard classes and are recapitulated in this table:

(memoir class) book	-2
part	-1
chapter	0
section	1
subsection	2
subsubsection	3
paragraph	4
subparagraph	5

With **etoc**, the user can easily print a local table of contents inside a given subsection, where subsubsections will be printed in the style of sections, paragraphs in the style of subsections, and subparagraphs in the style of subsubsections, if so desired. One can also decide to set everything to be at the level 6 (never displayed by **etoc**), except for example paragraphs, promoted to be at level 1, and then one obtains a nice table of contents of all the paragraphs from the document! (`tocdepth` at least 1)⁷

11. The `\etocsettocdepth` and `\etocsetnexttocdepth` commands

The `tocdepth` counter has no bearing on what gets written to the `.toc` file; its action is only on the actual typesetting of the table of contents: in the standard classes there is only one `\tableofcontents` possible, whereas with **etoc**, arbitrarily many are allowed, so one may change `tocdepth` to the appropriate value (which decides the finest sectioning level displayed) again and again each time a table of contents needs to be typeset.

etoc provides `\etocsettocdepth{<level>}` whose mandatory argument is either numeric (from -3 to 5) or a division name such as `subsection` or `subsubsection` or any name previously declared to **etoc** with `\etocsetlevel` (the keywords `all` and `none` are recognized, although not corresponding to a document division). This does the appropriate `\setcounter{tocdepth}{numeric_level}`.

As is explained in the next subsection, `tocdepth` is used by `hyperref`, and one must take steps to prevent its changes from influencing the bookmarks, too. So, **etoc** has `\etocsetnexttocdepth{<level>}` whose influence ceases immediately after the next table of con-

⁷and one should naturally not print this TOC of paragraphs in compatibility mode, which would insist on inserting a gigantic left margin.

12. The command `\etocsettocdepth.toc`

tents. Thus, `\invisibletableofcontents` is essentially `\etocsetnexttocdepth{none}\tableofcontents`.

The simplest course is thus to have after `\begin{document}` and before the first `\tableofcontents` a single instance of the `\etocsettocdepth` command, with argument the deepest level (or most commonly used deepest level) among the tables of contents of the document, and to use locally, where needed, `\etocsetnexttocdepth` before `\tableofcontents` or `\localtableofcontents`.

11.1. The hyperref option `bookmarksdepth`

When modifying the counter `tocdepth` for the purposes of multiple uses of `\tableofcontents` or `\localtableofcontents`, one should be aware that package `hyperref` by default takes into account the *current* value of the `tocdepth` counter to decide whether the pdf file will contain a bookmark corresponding to sectioning commands encountered in the source file. Thus, one typically needs to reset `tocdepth` to its previous value after having temporarily modified it for a given table of contents.

Or, there is the `bookmarksdepth=n` option of package `hyperref`, with n the desired document bookmarks maximal depth, which can be numeric or the name of a level known to `hyperref`. This documentation previously passed `bookmarksdepth=3` as option to `hyperref`, so even if `tocdepth` was left to 1 by inadvertance after printing a certain table of contents this did not modify the bookmark tree of the pdf file. Now that `\etocsetnexttocdepth` has been added to the package, we have used it systematically and there was no need for `bookmarksdepth=3` anymore.

12. The command `\etocsettocdepth.toc`

This command `\etocsettocdepth.toc` implements some functionality of `tocvsec2`⁸, a package which however was incompatible with `etoc` (it can still be used for its `secnumdepth`-related commands, but its `toc`-related activities will get canceled by `etoc`) and more-or-less designed for a single table of contents.

The action of `\etocsettocdepth.toc` is totally different than the one of `\etocsettocdepth`. Rather than modifying the `tocdepth` counter immediately, it adds a line to the `.toc` file which, when executed inside a table of contents will enact this change.

The command `\etocsettocdepth.toc`, like `\etocsettocdepth`, accepts both numeric and named arguments. In the case of a named argument, the actual numeric value to be used is not yet decided at the time the `.toc` file is created; it will be the value currently specified for the named level at the time each table of contents (not having done `\etocignoretoctocdepth`) is typeset.

The `tocdepth` counter will never be set to a value finer than its initial value at the start of the table of contents: so adding commands `\etocsettocdepth.toc` in the document is a way to *restrict* locally the depth of the table of contents. For example to prevent inclusion in the tables of contents of the sub-sub-sections of a given chapter.

This gets executed in ALL tables of contents.

⁸<http://ctan.org/pkg/tocvsec2>. I thank D.B. for drawing my attention to the incompatibility of this package with `etoc`.

12.1. The commands `\etocobeytoctocdepth` and `\etocignoretoctocdepth`

So `\etocignoretoctocdepth` is provided to cancel the `\etocsettocdepth.toc` mechanism when needed; and `\etocobeytoctocdepth` will re-activate it. The package does initially `\etocobeytoctocdepth`.

13. The commands `\etocdepthtag.toc` and `\etocsettagdepth`

As mentioned above, when the argument to `\etocsettocdepth.toc` isn't numeric but a named level the actual numeric level used is decided at the time the TOC gets typeset, thus with the *shuffling abilities of etoc*, one may obtain a very flexible control in the following way: one first declares with `\etocsetlevel` some dummy named level, say `partIII`, assigning it the invisible numeric level 6. Then before the actual third `\part` command in the source one inserts `\etocsettocdepth.toc{partIII}`. At the location where the effect should cease one inserts in the source `\etocsettocdepth.toc{all}`. It is now possible to specify, each time one wants to typeset a TOC, what will be the finest level for the entries originating in the third part: one just has to do `\etocsetlevel{partIII}{1}` for example. This will limit to sections (if `tocdepth` was at least at that level at the time `\tableofcontents` is encountered).

This method has some limitations: (i) the second argument to `\etocsetlevel` must be numeric, (ii) it can not be set to `-3` (which would be necessary if one wanted to exclude an entire Book from a TOC in a memoir document with multiple such Books ... admittedly a possibly rare case!), (iii) it is a bit of a hack as `partIII` is not a real division unit, but just a *tag*.

Release 1.07h has a command `\etocdepthtag.toc` which makes it easier to achieve this variable local control of the `tocdepth` at the time of typesetting TOCs.

It is used as `\etocdepthtag.toc{<tag_name>}`, where the `<tag_name>` is anything, and this will put the tag in the `.toc` file. When typesetting a TOC, one issues a series of commands `\etocsettagdepth{<tag_name>}{<level>}` where the `<level>` may be either numeric (from `-3` to `5`) or the name of a division unit known to *etoc*, or `none` or `all`. The effect of the tag inside the `.toc` file will then be to set the `tocdepth` counter to the desired value, in real time (as mentioned already, this can not get finer than the initial value of `tocdepth` at the start of the TOC).

The added flexibility is thus that `\etocsetlevel` has not been used in a kind of hacky way, that one may use named level depths, and the keywords `none` and `all`.

As usual, once the tag depths have been set, they remain in effect until getting redefined or seeing their scope expire via the closing of a group or of a surrounding environment. For an example, see [section 40](#).

13.1. The commands `\etocobeydepthtags` and `\etocignoredepthtags`

After `\etocignoredepthtags`, the `.toc` depth tags are ignored (but `\etocdepthtag.toc` still works). The package does initially `\etocobeydepthtags` which makes *etoc* react to the found tags in the `.toc` file.

14. Adding commands to the .toc file

We described above `\etocsettocdepth.toc` and `\etocdepthtag.toc` which both insert commands inside the .toc file. An even more general mechanism of adding “action tags” to the .toc file could be envisioned, but this would just be a wrapper for direct use of `\addtocontents{toc}{\something}`.

One should be cautious when adding in this way things to the .toc file. For example, inserting `\addtocontents{toc}{\string\clearpage}` just before a `\part` to fix the problem when some part entry (in the table of contents) is isolated at the bottom of one page, will cause problems with multiple TOCs: this `\clearpage` will be executed by **etoc** each time a `\tableofcontents` or `\localtableofcontents` command is encountered! The more prudent thing is to do rather: `\addtocontents{toc}{\string\myclearpage}`, to have a `\let\myclearpage\relax` at the top level of the document and to use where needed something like:

```
\let\myclearpage\clearpage
\tableofcontents
\let\myclearpage\relax
```

The memoir class has the command `\settocdepth` which writes a `\changetocdepth` command inside the .toc file. This will impact the typesetting by **etoc** of *all* tables of contents, with (possibly) unexpected results: imagine the document has `\settocdepth{chapter}` at some point to avoid having the sections from subsequent chapters be listed in the main table of contents. Then a local table of contents in one of these chapters will print a title but will be without any entry.

As the memoir class by itself allows multiple `\tableofcontents` these issues already arise there, independently of **etoc**, see page 170 of the memoir manual.

For this specific issue, the commands `\etocsettocdepth.toc`, `\etocignoretoc-tocdepth` and `\etocobeytoctocdepth` are the way to go; or their variants `\etocdepth-tag.toc` and `\etocsettagdepth`.

As an aside, any `\setcounter{tocdepth}{n}` command added directly to the .toc file sees its effect (since release 1.07g) canceled at the end of each table of contents, which automatically does a `\setcounter{tocdepth}{previous_value}` with the value active on entering the table of contents.

14.1. The hyperref option *hidelinks*

The colored links (and also the rectangle links) are a bit annoying when used in tables of contents, especially when the document uses **etoc** and has plenty of them! One may wish for having colored links, *except* for those within table of contents! Indeed, why would things in TOCs need to be either framed in rectangles or colored, when the user *already expects them to be links*?

I use the following trick: either in the preamble using `\AtBeginDocument`, or right after `\begin{document}`, I have the command

```
\addtocontents{toc}{\protect\hypersetup{hidelinks}}
```

All TOCs typeset by **etoc** have their contents done within a group (as if enclosed in an environment). So the command `\hypersetup{hidelinks}` will be executed by *each* TOC, but its effect will be limited to that TOC.

I found out experimentally that the option `hidelinks` could indeed be set many times with `\hypersetup` (this is not the case of all `hyperref` options).

15. Two Examples

15.1. A Beautiful Thesis example

Here is another relatively simple example of use of the package functionalities. Let us set up some line styles. We choose a style for sections and sub-sections which would be suitable for, respectively, sections and sub-sections in an average length memoir. The line style specifications have some redundancy for clarity, and do not care about what to do at possible page breaks. Also, they do not worry about potential multi-column use.

```
\begingroup % we start a group to keep the style changes local
\newlength{\tocleftmargin} \setlength{\tocleftmargin}{5cm}
\newlength{\tocrightmargin} \setlength{\tocrightmargin}{1cm}

\etocsetstyle{section} % will pretend to be a Chapter
{\addvspace{1ex}\parfillskip0pt
 \leftskip\tocleftmargin % (already done in title)
 \rightskip\the\tocrightmargin plus 1fil
 \parindent0pt\color{cyan}} % (already done)
{\bfseries\LARGE\upshape\addvspace{1ex}\leavevmode}
{\llap{Chapter\hspace{.5em}}{\etocnumber}\hspace{.75cm}}{\etocname}
{\hfill\makebox[-\tocrightmargin][l]{\makebox[0pt]{\etocpage}}}\par}
{}

\etocsetstyle{subsection} % will pretend to be a Section
{}
{\mdseries\large\addvspace{.5ex}\leavevmode}
{\llap{\etocnumber\hspace{.75cm}}{\textit{\etocname}}%
 \hfill\makebox[-\tocrightmargin][l]{\makebox[0pt]{\etocpage}}}\par}
{}

\def\tmptitle{My Beautiful Thesis}
\etocsettocstyle{\color{cyan}\parindent0pt \leftskip\tocleftmargin
 \leavevmode\leaders\hrule height 1pt\hfill\
 \huge\textit{\tmptitle}\par}{\bigskip}

\tableofcontents \ref{toc:overview}
\endgroup
```

_____ *My Beautiful Thesis*

**Chapter 3 Do I need to be a geek to use
etoc?**

7

15. Two Examples

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15.2. A TOC with a background color

Let us now try out some more sophisticated line styles. The display will use the `\etoc-framedstyle` package command, which requires that the produced table of contents fits on a single page. We wrap it up in a [figure environment](#) showing up on the next page.

The actual design is not pre-built in `etoc`; it uses its ‘framed’ style with a background color. The frame borders have been set to have the same color as the one serving as background for the entire thing. This design (with other colors) is in use also for [this other toc](#), and the reader is referred to its [subsection](#) for the coding used.

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3	Do I need to be a geek to use etoc ?	7
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`\tableofcontents \ref{toc:overview}` (cf. [subsection 15.2](#) and [this other toc](#))

Part III.

Surprising uses of **etoc**

Here are some statistics for this part: it contains 10 sections and 4 subsections. The name of the first section is “The TOC of TOCs” and the corresponding number is “16”. The name of the last section is “A TOC self-adjusting widths for its typesetting” and its number is “25”. The name of the first subsection is “The commands `\etocglobaldefs` and `\etoclocaldefs`” and the corresponding number is “23.1”. The name of the last subsection is “The `\etocifwasempty` command” and its number is “24.3”.

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16. The TOC of TOCs

Here is the numbered and linked list of all tables of contents which are displayed within this document:⁹ [1](#), [2](#), [3](#), [4](#), [5](#), [6](#), [7](#), [8](#), [9](#), [10](#), [11](#), [12](#), [13](#), [14](#), [15](#), [16](#), [17](#), [18](#), [19](#), [20](#), [21](#), [22](#), [23](#), [24](#), [25](#), [26](#), [27](#), [28](#), [29](#), [30](#), [31](#), [32](#), [33](#), [34](#), [35](#), [36](#), [37](#), [38](#), [39](#), [40](#). And to obtain it here we just wrote:

```
Here is the numbered and linked list of all tables of contents
which are displayed within this document: \tableofcontents.
```

⁹The TOCs put in floats may change the order: the numbers are listed in the order the TOCs are typeset in the document; but the numbering itself is from the order of the TOCs in the *source* of this document...

The preparatory work was the following. First, we defined a counter `visibletoc` whose vocation is to get incremented at each displayed toc. `etoc` has its own private counter but it counts all TOCs, even those not displayed because the `tocdepth` value was `-2` or `-3`.

We could have added manually `\refstepcounter{visibletoc}` and `\label` commands at all suitable locations in the document source, and we would then have used here `\ref` commands, but this imposes heavy manual editing of the source.

There is a much better way: there is a hook `\etocaftertitlehook` and we told it to increment the `visibletoc` counter and to write a line to the `.toc` file, in a manner analogous to what sectioning commands such as `chapter`, `section`, or `subsection` do. As `etoc` increments its own private counter even before typesetting the title of a table of contents, this provides (most of the time) a better link destination than any counter manipulated from inside `\etocaftertitlehook` (for which the link would target the area just after the title). So, rather than including `\refstepcounter{visibletoc}` inside `\etocaftertitlehook`, we just put there `\stepcounter{visibletoc}` followed by the command `\etoccontentsline{visibletoc}{\thevisibletoc}`. This `etoc` command `\etoccontentsline{<level_name>}{<name>}` has the same effect as:

`\addcontentsline{toc}{<level_name>}{<name>}`

but its usefulness is to circumvent¹⁰ the patching for automatic creation of bookmarks done to `\addcontentsline` by the `hyperref` package, as pdf bookmarks don't make much sense here (and would elicit a complaint of `hyperref` that the bookmark level is 'unknown').¹¹

Finally, the preamble of the document did `\etocsetlevel{visibletoc}{6}`. The level 6 (or anything with a higher number) is ignored, even if `tocdepth` has value `10` for example; this is independently of whether `etoc` uses the document class default line styles or its own line styles, or the ones defined by the user with the `\etocsetstyle` command. So there is no need to worry that something could go wrong.

Then, only here we have set `\etocsetlevel{visibletoc}{0}`. And to display only this kind of entries we assign temporarily to part and chapter level 1 (or anything higher than zero) and set `tocdepth` to the value `0`. We also did `\etocsetstyle{visibletoc}{\etocskipfirstprefix}{, }{\etocname}{}` which defines an inline display with the comma as separator. Finally, as `etoc` issues `\par` automatically by default just before typesetting a table of contents, we used the command `\etocinline` (also known as `\etocnopar`) which turns off this behavior.

Here are the implementation details:

```
< in the preamble >
\newcounter{visibletoc}
\renewcommand{\etocaftertitlehook}
  {\stepcounter{visibletoc}\etoccontentsline{visibletoc}{\thevisibletoc}}
\etocsetlevel{visibletoc}{6}
\begin{document}
  < document body >
\subsection{Surprising uses of etoc}
\begin{group}
```

¹⁰using `\addtocontents` rather than `\addcontentsline`

¹¹The package provides a starred variant `\etoccontentsline*`, which does allow the creation of bookmarks and has a third mandatory argument which is the Level to be used by these bookmarks; depending on the context the starred as well as the non-starred variants may be profitably preceded by `\phantomsection`.

17. Arbitrary “Lists Of...”, `\etoccontentsline`

```
\etocinline
\etocsetlevel{part}{1}
% \etocsetlevel{chapter}{1} % (no chapters in scrartcl class)
\etocsetlevel{visibletoc}{0}
\etocsetstyle{visibletoc}
  {\etocskipfirstprefix}{, }{{\color{niceone}\etocname}}{}
\etocsettocstyle{}{} % don't set any title, rules or frame or multicol!
\etocsetnexttocdepth{visibletoc} % display only the 'visibletoc' entries from .toc
```

Here is the numbered and linked list of all tables of contents which are displayed within this document: `\tableofcontents`.
`\endgroup`

After `\etocsetstyle{visibletoc}{...}{...}{...}`, all future TOCs (not in compatibility mode) will use the defined style for level 0 (which is normally the level for chapters). To keep these changes strictly local the simplest manner is to put everything inside a group.

The [section 38](#) gives another use of the shuffling of levels.

17. Arbitrary “Lists Of...”, `\etoccontentsline`

This idea of interverting the levels is very powerful and allows to let **etoc** display lists of arbitrary things contained in the document. All of that still using nothing else than the `.toc` file! Example: imagine a document with dozens of exercises, perhaps defined as `\newtheorem{exercise}{}[section]`. Let us explain how to instruct **etoc** to display an hyperlinked list of all these exercises. For this we put in the preamble:

```
\newtheorem{exerci}{}[section]
% the exercise number will be recoverable via \etocname: v--here--v
\newcommand*{\exercisetotoc}{\etoccontentsline{exercise}{\theexerci}}
\newenvironment{exercise}{\begin{exerci}\exercisetotoc}{\end{exerci}}
\etocsetlevel{exercise}{6}
```

In this way, `\etocname` will give the exercise number (but `\etocnumber` will be empty). Had we used instead

```
\newcommand*{\exercisetotoc}
  {\etoccontentsline{exercise}{\protect\numberline{\theexerci}}}
```

the exercise number would then have been available via `\etocnumber`, and `\etocname` would have been empty. It doesn't matter which one of the two methods is used. The **etoc** command `\etoccontentsline{...}{...}` is provided as a substitute to `\addcontentsline{toc}{...}{...}`: this is to avoid the patching which is done by `hyperref` to `\addcontentsline` in its process of creation of bookmarks. If one wants to authorize `hyperref` to create bookmarks at a specific level $\langle n \rangle$, one can use (here with $\langle n \rangle = 2$) the starred variant `\etoccontentsline*` which has an additional argument:

```
\newcommand{\exercisetotoc}{\etoccontentsline*{exercise}{\theexerci}{2}}
```

The counter `exerci` is already incremented by the `exerci` theorem environment, and provides the correct destination for the link added by package `hyperref`. The command `\exercisetotoc` adds for each exercise a line to the `.toc` file, corresponding to a fictitious

document unit with name ‘exercise’. A four-column list, including the sections, can then be typeset with the following code:

```
\etocsetnexttocdepth{2}      % sections are at level 1 and will show up
\begingroup
\etocsetlevel{exercise}{2}    % but:
\etocsetlevel{chapter}{3}     %      no chapters
\etocsetlevel{subsection}{3}  %      no subsections
\etocsetlevel{part}{3}        %      no parts
\etocsetstyle{exercise}{}{}   % \etocname = exercise number
    {\noindent\etocname\strut\leaders\etoclineleaders\hfill\etocpage\par}
    {\pagebreak[2]\vskip\baselineskip}
\etocsetstyle{section}{}{}
    {\noindent\strut{\bfseries\large\etocnumber\hskip.5em\etocname}\par}
    {\nopagebreak[3]}{}
\etocrulestyle[4]{\Large\bfseries List of the exercises}
\setlength{\columnseprule}{.4pt}
\tableofcontents
\endgroup
```

18. A TOC with a fancy layout

Here is a table of contents where the sections from a given chapter are to be represented by a number range (like 18–22 for a given chapter, 42–49 for another one ... of course to be inserted automatically in the TOC).

This is not an image inclusion, the TOC is produced from its original `tex` source inserted in this document after replacement of `part`, `chapter` or `section` with `dummypart`, `dummychapter` and `dummysection` (and there is also a dummy page count). We copied the line styles used in the original and displayed the table of contents following:

```
\etocsetlevel{dummypart}{-1} \etocsetlevel{part}{2}
\etocsetlevel{dummychapter}{0} \etocsetlevel{chapter}{2}
\etocsetlevel{dummysection}{1} \etocsetlevel{section}{2}
\etocsetnexttocdepth{dummysection}
```

Each chapter displays the numbers of only the first and the last sections it contains. See the source file `etoc.dtx` for the details of how this is done.

Another technique for doing this kind of things is explained in [section 39](#).

TABLE OF CONTENTS

PART I

				SECTIONS.	PAGE.
Introductory	...	...	...	1—8	5
Concord.					
LESSON.					
1.	Concord of Subject and Verb	...	...	9—17	7
2.	Concord of Substantive and Adjective		...	18—22	9
	Concord of Relative and its Antecedent		...	23—25	

PART II

Government.

3.	The Accusative Case	...	...	...	17
	General uses	...	...	26—30	
	Particular uses	...	...	31—37	
4.	Verbs governing two Accusatives	...	...	38—41	23
5.	The Causal	...	...	42—49	25
6.	The Instrumental Case	...	...	...	27
	General uses	...	...	50—54	
	Particular uses	...	...	55—59	
7.	The Dative Case	...	...	...	33
	General uses	...	...	60—65	
	Particular uses	...	...	66—71	
8.	The Ablative Case	...	...	...	39
	General uses	...	...	72—75	
	Particular uses	...	...	76—86	
9.	The Locative Case	...	...	...	45
	General uses	...	...	87—92	
	Particular uses	...	...	93—100	

19. Another compatibility mode

As explained in [subsection 4.3](#), the commands `\etocstandardlines` and `\etocstandarddisplaystyle` tell **etoc** to, essentially, act as an observer. The document class layout for the table of contents is then perfectly obeyed. There is no way to customize this standard layout (change fonts, margins, vertical spacings, etc...) from within the package. For this, use some package dedicated to this task; because **etoc** either is (temporarily perhaps) in compatibility mode with no customization on its part possible, or the user has specified the layout in `\etocsetstyle` commands (and `\etocsettocstyle`) and is (supposedly...) in complete control.

Well, there is actually an alternative. It is possible to use the `\etocsetstyle` commands to recreate an artificial compatibility mode, in order to achieve effects like the following, all things being otherwise equal to the document class defaults:

1. get the `hyperref` link to encapsulate only the names, but not the numbers of each entry of the table of contents,
2. use the document class style for chapters and sections, but modify it only for subsections,
3. do either of the above only for some portions of the table of contents.

Here is how to proceed. One puts in the preamble:

```
\makeatletter
\newcommand{\MyStandardTOC}{%
  \begingroup
```

```

\let\savedpartline\l@part
\let\savedchapterline\l@chapter %% remove if article/scrartcl class
\let\savedsectionline\l@section
\let\savedsubsectionline\l@subsection
% and so on if \subsubsection, etc... is used
%
% for the book or article classes:
\etocsetstyle{part}{}{}
  {\savedpartline{\etocnumber\hspace{1em}\etocname}{\etocpage}}{}%
% for the scrbook or scrartcl classes:
\etocsetstyle{part}{}{}
  {\savedpartline{\numberline{\etocnumber}\etocname}{\etocpage}}{}%
% identical in book/article/scrbook/scrartcl classes:
\etocsetstyle{chapter}{}{} %% only for book and scrbook
  {\savedchapterline{\numberline{\etocnumber}\etocname}{\etocpage}}{}%
\etocsetstyle{section}{}{}
  {\savedsectionline{\numberline{\etocnumber}\etocname}{\etocpage}}{}%
\etocsetstyle{subsection}{}{}
  {\savedsubsectionline{\numberline{\etocnumber}\etocname}{\etocpage}}{}%
% etc... if further sectioning units are used
% (see the text for what to do with the memoir class)
\etocstandarddisplaystyle % this is for the title, page-marks, etc...
\tableofcontents
\endgroup}
\makeatother

```

Of course if the document has only one table of contents then there is no need to put the commands inside a macro, or even inside a group.¹² With these commands **etoc** will construct a TOC completely identical to what would have been done by one of the document class: `article`, `book`, `scrartcl`, `scrbook`.¹³ The number and the name of each entry are each separately an `hyperref` link, as is always the case with **etoc**, when not in compatibility mode. Replacing `\etocnumber` with `\etocthenumber` will give a TOC where the numbers are not links anymore, but the names still are. Or one may decide to use `\etocthename` and keep an hyperlinked number with `\etocnumber`.

Here is a subtler example where one only marginally modifies the sections (adding color to the number and removing the `hyperref` link) and keeps the subsections as in the default, *except* for those of one specific section, for which the layout is completely modified:

Contents

3. Do I need to be a geek to use etoc?	7
3.1. Limitations in the use of list environments for tables of contents	7

¹²and if moreover one just wants to keep the same layout as in the default, one may question why using **etoc**... there is *one* good reason: numbers and names are separately `hyperref` links, whereas normally there is only one link holding both the number and the name corresponding to one toc entry.

¹³For the `memoir` class, one needs a bit more: each of the command `\booknumberline`, `\partnumberline` and `\chapternumberline` will have to be saved with a `\let`, and, one then specifies:

```

\etocsetstyle{chapter}{}{}{\savedchapterline{\savedchapternumberline
  {\etocnumber}\etocname}{\etocpage}}{}

```

(and analogously for `part`, respectively `book`).

4. Line styles and toc display style	8
<i>\etocsetstyle</i> for the line styles (4.1) – <i>\etocsettocstyle</i> for the toc display (4.2) – <i>Compatibility mode</i> (4.3).	
5. A first example	9
6. A second example	10
7. A third example: emulating the book class	12
8. Linked list of the main package commands	16

This example only has sections and subsections, and the code used in `\MyStandardTOC` was:

```
\etocsetstyle{section}{{}
  {\ifnum\etocthenumber=4
    \etocsetstyle{subsection}
      {\par\nopagebreak\begin{group}
        \leftskip1.5em \rightskip\@tocrmarg \parfillskip\@flushglue
        \parindent 0pt \normalfont\normalsize\rmfamily\itshape
        % \columnseplem
        % \begin{minipage}{\dimexpr\linewidth-\leftskip-\rightskip\relax}%
        % \begin{multicols}{2}%
        \etocskipfirstprefix}
        {\allowbreak\,--\,}
        {\etocname\ \textup{(\etocnumber)}}}
        {\.\par\endgroup}%
        % {\.\par\end{multicols}\end{minipage}\par\endgroup}%
    \else
      \etocsetstyle{subsection}
        {}{}
        {\savesubsectionline{\numberline{\etocnumber}\etocname}{\etocpage}}
        {}%
    \fi}
{\savedsectionline{\numberline{{\color{cyan}\etocthenumber}}\etocname}{\etocpage}}
{}%
```

Notice the page head-mark added by this standard TOC. Sections and subsections are printed exactly as in the default (except for the subsections of one specific user-chosen section and except for the color of the section numbers), with no need to specify explicitly any length, font or other formatting instructions. But we had to examine the `scrartcl` sources to determine what to use for `\leftskip` and `\rightskip` for our customized section entries.

20. The TOC as a tree

Using `tikz`¹⁴ and the package `forest`¹⁵ we shall display the table of contents of this part as a tree. The technique is to use the **etoc** modified command `\tableofcontents` not for typesetting, but to prepare a macro, or rather here a *token list* variable, with all the

¹⁴<http://ctan.org/pkg/pgf>

¹⁵<http://ctan.org/pkg/forest>

instructions to be executed later. LESLIE LAMPORT's book has no mention whatsoever of token lists, and L^AT_EX gives the impression to not really expect the general user to ever hear about them (or delimited macros); this whole section and the next are thus for advanced users.

Putting the `\etocnumber` and `\etocname` commands in `\treetok` would be of no use: to which number or name would they then refer to, in a delayed execution?

We need to store, not the macro names, but the macro contents. And also we wish to maintain the correct `hyperref` hyperlinks.¹⁶ The commands `\etocname`, etc..., are robust, it is easier to work with `\etocthelinkednumber`, `\etocthelinkedname`, and `\etocthelinkedpage` which contain the same information in an easier accessible form.

For this forest tree we have designed very special **etoc** styles for sections and subsections. They use a token list register called `\treetok` and a macro `\appendtotok` whose rôle is to append to a given token list variable the contents of a macro given as second argument. All this will happen in reaction to a `\tableofcontents` command, but *nothing* has yet been printed in the process.¹⁷ This is the later job of a forest environment which will be given the contents of `\treetok`.

The resulting tree has been put in a `float`, which appears on the following page. Here is the code used for its production:

```
\newtoks\treetok
\newtoks\tmptok

\newcommand*\appendtotok[2]{% #1=toks variable, #2=macro, expands once #2
  #1\expandafter\expandafter\expandafter
    {\expandafter\the\expandafter #1#2}}

\newcommand*\PrepareSectionNode{%
  \tmptok {\centering\bfseries}%
  \appendtotok\tmptok\etocthelinkedname
  \edef\foresttreenode{ [{\noexpand\parbox{2cm}{\the\tmptok}}]}%
}

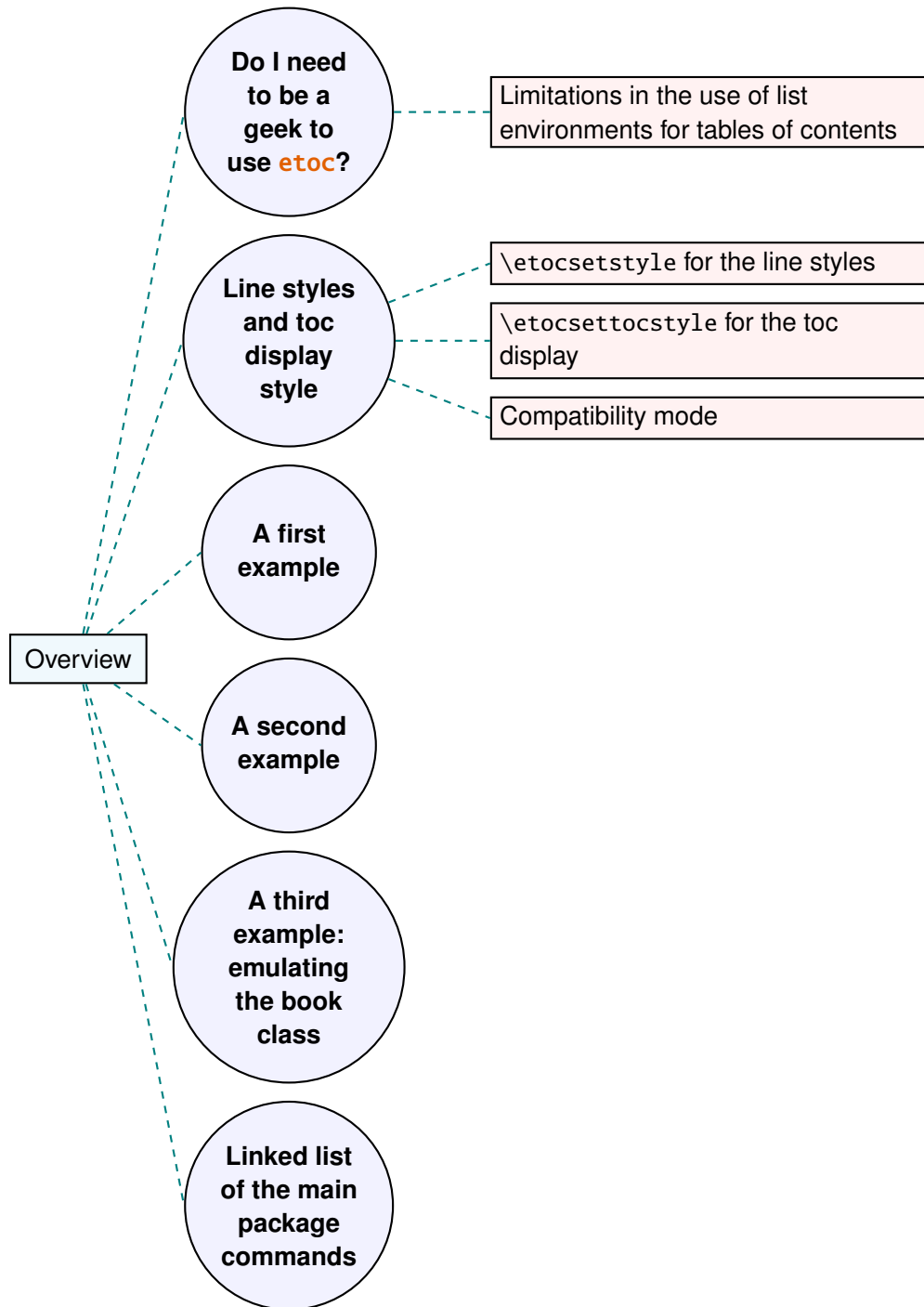
\newcommand*\PrepareSubsectionNode{%
  \tmptok {\raggedright}%
  \appendtotok\tmptok\etocthelinkedname
  \edef\foresttreenode{ [{\noexpand\parbox{6cm}{\the\tmptok}}]}%
}

\etocsetstyle{section}
{
  \etocskipfirstprefix
  {\appendtotok\treetok{ }}
  {\PrepareSectionNode \appendtotok\treetok\foresttreenode}
  {\appendtotok\treetok{ }}
}

\etocsetstyle{subsection}
{
  \etocskipfirstprefix
  {\appendtotok\treetok{ }}
  {\PrepareSubsectionNode \appendtotok\treetok\foresttreenode}
}
```

¹⁶This manual up to the version of May 14, 2013 used package `tikz-qtrees` but there were problems with hyperlinks. No such problem arises either when using `forest` or the native `tikz` syntax for trees (which will be illustrated in the next section).

¹⁷There is always a `\par`, which here is not a problem, but can be suppressed if need be via the command `\etocinline` or its synonym `\etocnopar`.



A table of contents displayed as a forest tree.

```

{\appendtotok\treetok{ }}
\etocsettocstyle
{\treetok{[\hyperref[part:overview]{Overview}]}}
{\global\appendtotok\treetok{ }}

```

```

% forest does not like @\the\treetok if \treetok is empty. On first latex
% run, this will be the case because the TOC style defined above will not
% have been executed, as the label {toc:overview} does not refer to a valid
% TOC yet. So we must give a safe default value to \treetok
\treetok{[{\run latex again}]}

\begin{figure}[th!]\centering
  \etocsetnexttocdepth{subsection}
  \tableofcontents \label{toc:forest}\ref{toc:overview}
  \hypersetup{hidelinks}%
  \bracketset{action character=@}
  \begin{forest}
    for tree={anchor=center,child anchor=west,
              grow'=east,draw,thick,
              edge={draw,thick,dashed,color=teal}},
    where={level()==1}{circle,thick,fill=blue!5,
                      before computing xy={l=3cm}}{ },
    where={level()==2}{fill=red!5,
                      before computing xy={l=6cm}}{ },
    rectangle, thick, fill=cyan!5, inner sep=6pt,
    @\the\treetok
  \end{forest}
\end{figure}

```

Why `\hypersetup{hidelinks}`? as explained in [subsection 14.1](#), I prefer the links in TOCs not to be colorized, nor framed, so this document inserts a command `\hypersetup{hidelinks}` in the .toc file. But at the time the `\treetok` contents are unpacked the `\hyperlink` commands originating in `\etocthelinkedname`, etc... will be executed in the normal environment for links (which, in this document, is to colorize them). Rather than having `etoc`'s code try to guess what the current “style” for links is (a concept not really provided by `hyperref` it seems) and store it in `\etocthelinkedname`, etc..., I opted for the simpler solution to leave it up to the user to recreate whatever conditions are desired. So here it is necessary to re-issue `\hypersetup{hidelinks}` in the figure environment.

There are some other examples in this documentation where `\tableofcontents` is used to prepare material for later typesetting:

- printing the statistics at the start of each Part (see [section 39](#)) is done using save boxes (so the problem of the appearance of the links does not arise then).
- the typesetting of the TOC as a table in the pre-1.08 way (see [section 41](#)); there we also have to issue `\hypersetup{hidelinks}` after having collected the names, numbers and page numbers in a token list register.
- and the two additional tree examples in the next section.

21. The TOC as a molecule

It is also possible to construct a TOC tree obeying the TikZ syntax for trees: but this is a more complicated task for the `etoc` line styles for reasons related to the way braces are handled by \TeX (they need, when filling up the token list to be always balanced at each step, else complicated tricks must be employed.)

21. The TOC as a molecule

The simplest strategy is to allocate a token list (or use a macro) for each level used: we may need a `\parttok`, a `\chaptertok`, a `\sectiontok` and a `\subsectiontok`, to help in the task of filling up the total `\treetok`. As we are interested here in the table of contents of this (or another) document part, only a `\sectiontok` and a `\subsectiontok` will be needed.

```
% \newtoks\treetok % already done earlier
\newtoks\sectiontok \newtoks\subsectiontok \newcommand*\treenode{}}

\newcommand*\appendchildtree[2]{% token list t1 becomes: t1 child {t2}
  \edef\tmp{\the#1 child {\the#2}}%
  #1\expandafter{\tmp}%
}
\newcommand*\preparetreenode{%
  \tmptok\expandafter{\etocthelinkednumber}% expanded one time (mandatory)
  \edef\treenode{node {\the\tmptok}}%
}

\etocsetstyle{section}
{
  \etocskipfirstprefix
  {\appendchildtree\treetok\sectiontok}
  {\preparetreenode \sectiontok\expandafter{\treenode}}
  {\appendchildtree\treetok\sectiontok}
}

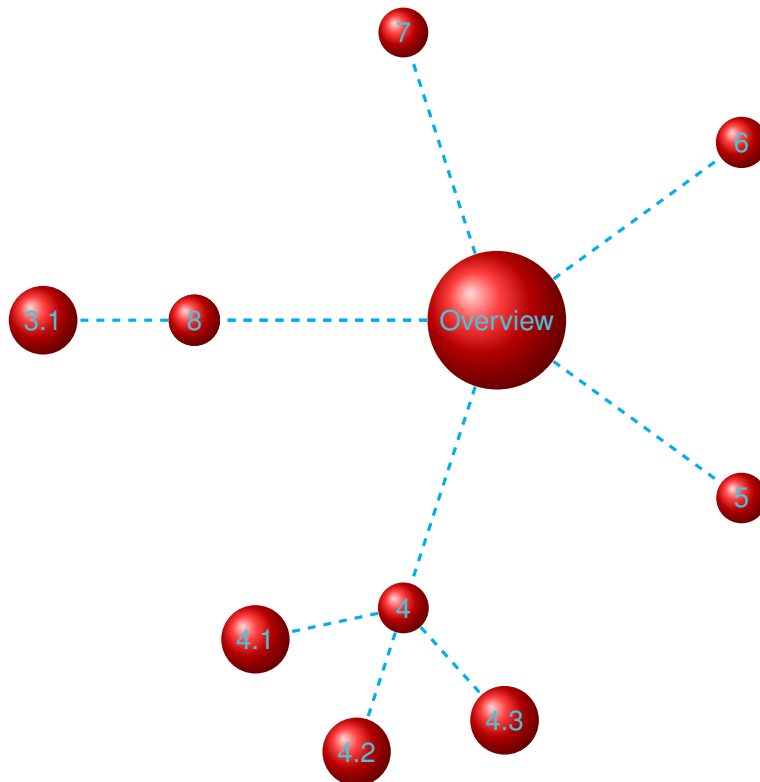
\etocsetstyle{subsection}
{
  \etocskipfirstprefix
  {\appendchildtree\sectiontok\subsectiontok}
  {\preparetreenode \subsectiontok\expandafter{\treenode}}
  {\appendchildtree\sectiontok\subsectiontok}
}

\etocsettocstyle
{
  \treetok{node {\hyperref[part:overview]{Overview}}}}
{
  \global\appendtotok\treetok{ ;}}

% moved to the inside of the figure environment for correct \pageref{toc:molecule}
% \etocsetnexttocdepth{subsection}
% \tableofcontents \label{toc:molecule} \ref{toc:overview}
```

The `\tableofcontents` command appears just above the `tikzpicture` environment in a figure float (for the label of the table of contents to certainly refer to the same page as the one where the picture will actually be printed). We thus get the table of contents as a “[molecule](#)”, which appears on the next page. Here is the code actually producing it:

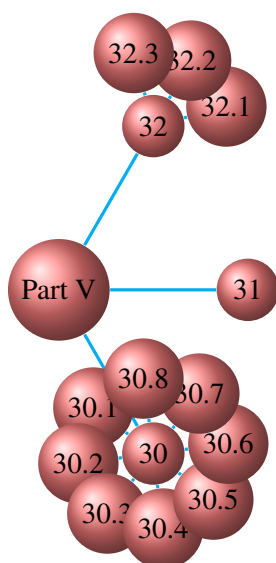
```
\begin{figure}[th!]\centering
  \etocsetnexttocdepth{subsection}
  \tableofcontents \label{toc:molecule} \ref{toc:overview}
  \hypersetup{hidelinks}%
  \begin{tikzpicture}
    [grow cyclic,
     level 1/.style={level distance=4cm,sibling angle=72},
     level 2/.style={level distance=2cm,sibling angle=60},
     every node/.style={ball color=red,circle,text=SkyBlue},
     edge from parent path={[[dashed,very thick,color=cyan]
                           (\tikzparentnode) --(\tikzchildnode)}]
    \the\treetok
  \end{tikzpicture}
```



A table of contents as a “molecule.”

`\end{figure}`

This [TikZ TOC](#) is fully hyperlinked, like the previous [Forest TOC](#).



On the side, the (fully hyperlinked) table of contents of [Part V](#).

```

\etocsettocstyle
  {\treetok{\node {\autoref{part:globalcmds}}}}
  {\global\appendtotok\treetok{ ;}}
\etocsetnexttocdepth {subsection}
\tableofcontents \ref{toc:globalcmds}
\noindent
\parbox{4cm}{\hypersetup{hidelinks}%
\begin{tikzpicture}
  [grow cyclic,
  level 1/.style={level distance=2.5cm,sibling angle=60},
  level 2/.style={level distance=1cm,sibling angle=45},
  every node/.style={ball color=red!50,circle,text=black},
  edge from parent path={ [very thick,color=cyan]
    (\tikzparentnode) --(\tikzchildnode)}]
  \the\treetok
\end{tikzpicture}}%
...

```

22. The TOC as a TikZ mind map

This is in the same spirit as the “molecule” example. The use of the ε -TeX primitive `\unexpanded` will simplify the code.¹⁸

It is difficult to get everything to fit on one page. However `\resizebox` comes to the rescue. And it preserves hyperlinks. Nevertheless for this example I excluded some sections from the display, using the technique of the `etoc` [depth tags](#). The fully hyperlinked TOC appears on the facing page.

```
\begingroup
\newtoks\treetok
\newtoks\parttok

\newcommand*\partnode {} % just to check we don't overwrite something
\newcommand*\childnode {}

\newcommand*\tmprotate {} % just to check we don't overwrite something
\newcommand*\tmpoption {} % just to check we don't overwrite something
\newcommand*\tmpstuff {} % just to check we don't overwrite something

\newcommand*\appendtotok[2]{% #1=toks variable, #2=macro, expands once #2
  #1\expandafter\expandafter\expandafter{\expandafter\the\expandafter #1#2}}

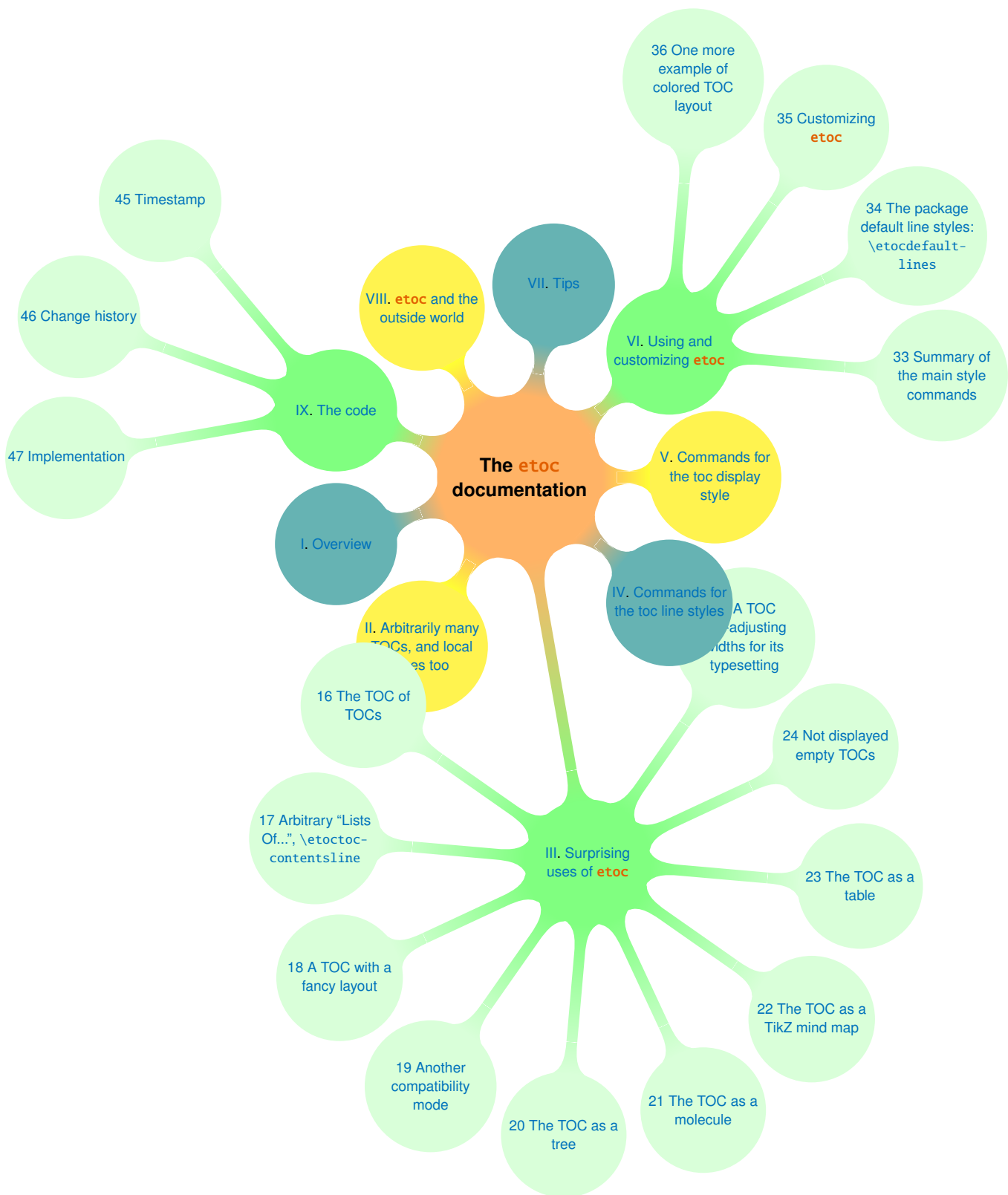
\newcommand*\appendchildtree[3]{%
% this is to construct "t1 child [#3]{t2}" from #1=t1 and #2=t2
% t1 and t2 are two toks variable (not macros)
% #3 = for example teal!60
  \edef\tmpstuff {\the#1 child [#3]{\the#2}}%
  #1\expandafter {\tmpstuff }%
}

\newcounter{partco}

% 1,2,3,4,5,... -> 1,2,3,1,2,3,1,2,3
\def\pseudomodthree #1{\numexpr #1 + 3 - 3*((#1+1)/3)\relax}

\etocsetstyle{part}
{\etocskipfirstprefix}
% This updates the global tree with the data from the previous
% part and all its children sections. Moved here because for some parts the
% sections are not displayed due to depth tags.
{\ifnum\value{partco}=3
  \appendchildtree\treetok\parttok {branch color= green!50,level distance=10cm}%
  \else
\ifcase\pseudomodthree{\value{partco}}%
  \or \appendchildtree\treetok\parttok {branch color= teal!60}% first
  \or \appendchildtree\treetok\parttok {branch color= yellow!80}% second
  \else\appendchildtree\treetok\parttok {branch color= green!50}% third and next ...
  \fi\fi
}
{\stepcounter{partco}%
```

¹⁸The “molecule” example was added to this documentation on 2013/03/03. The “mindmap” example was motivated on 2015/03/11 by <http://tex.stackexchange.com/a/232584/4686>. Further help was then obtained via <http://tex.stackexchange.com/q/232816/4686> and this led to the [title page](#) which is a further example.



22. The TOC as a TikZ mind map

```
% customize manually some TikZ set-up (should be done inside the TikZ thing I guess)
\def\tmpoption {}%
\def\tmprotate {}% first
%\ifnum\value{partco}=5 \def\tmprotate {[counterclockwise from =-40]}\fi
%\ifnum\value{partco}=8 \def\tmprotate {[counterclockwise from =-50]}\fi
% define the part node
\edef\partnode{node \tmpoption
    {\unexpanded\expandafter{\etocthelinkednumber}.
    \unexpanded\expandafter{\etocthelinkedname}}\tmprotate }%
% this is a starting point which will be filled it by the section children
\parttok\expandafter{\partnode}
{\ifcase\pseudomodthree{\value{partco}}}%
\or \appendchildtree\treetok\parttok {branch color= teal!60}% first
\or \appendchildtree\treetok\parttok {branch color= yellow!80}% second
\else\appendchildtree\treetok\parttok {branch color= green!50}% third and next ...
\fi
}

\etocsetstyle{section}
{
}
{}
{}
% define the section node
\edef\childnode{child {node {\unexpanded\expandafter{\etocthelinkednumber}
    \unexpanded\expandafter{\etocthelinkedname}}}%
% append it to the current \parttok
\appendtotok\parttok\childnode
}
{}

\etocsettocstyle
{\setcounter{partco}{0}%
\treetok{node [root concept]{\textbf{The \etoc documentation}}}}
{\global\appendtotok\treetok{ ;}}
% The \global above is mandatory because etoc always typesets TOC inside a group

\etocsetnexttocdepth{section}
% use of depth tags to cut out some sections.
\etocsettagdepth {preamble} {none}
\etocsettagdepth {overview} {part}
\etocsettagdepth {arbitrarily}{part}
\etocsettagdepth {surprising} {section}
\etocsettagdepth {linestyles} {part}
\etocsettagdepth {globalcmds} {part}
\etocsettagdepth {custom} {section}
\etocsettagdepth {tips} {part}
\etocsettagdepth {etocandworld}{part}
\etocsettagdepth {code} {section}

\tikzset{
    branch color/.style={
        concept color=#1!white,
        every child/.append style={concept color=#1!white!30!white, font=\normalsize},
    }
}%

\begin{figure}[thp!]
\tableofcontents\label{toc:mindmap}%

```



```

\centeredline{\resizebox{.85\paperwidth}{!}%
{\begin{tikzpicture}[mindmap,
    grow cyclic,
    text width=2cm,
    align=flush center,
    nodes={concept},
    concept color=orange!60,
    root concept/.append style={text width=4cm, font=\Large},
    level 1/.append style={level distance=5cm,sibling angle=40, text width=3cm},
    level 2/.append style={level distance=7cm,sibling angle=30, text width=3cm},
    level 1 concept/.append style={font=\normalsize},
    ]
\the\treetok
\end{tikzpicture}}}
\end{figure}
\endgroup

```

An interesting alternative is to use **etoc** rather to convert the entire TOC into a TikZ tree (perhaps excluding some parts) and print it out to a file from which it can be recovered and manipulated directly by the author of the document. Things written to the .log file get broken into lines. Here is a technique to get non-broken output. Once the `\treetok` has been computed by **etoc** (as in the **molecule** example, or the current example), this code snippet will write it out to file with extension `.toctree`:

```

\newwrite\TOCasTree
\immediate\openout\TOCasTree=\jobname.toctree
\immediate\write\TOCasTree{\the\treetok}%

```

The author can then copy it from there and customize it manually to get a suitable tikz picture. See also

<http://tex.stackexchange.com/a/232792>

for an elaboration of this.

23. The TOC as a table

With release 1.08 it is easier to typeset a TOC as a table. It is possible to open a tabular in the title part of the TOC (first argument to `\etocsettocstyle`) and then close it after the contents (second argument to `\etocsettocstyle`), and specify in the line styles how to use the tabulation & and tabular end of row `\`. There are some conditions and a few caveats:

1. it is mandatory to issue `\etocglobaldefs` for **etoc**'s definitions to have global scope,
2. it is impossible to start one of the *<start>*, *<prefix>*, *<contents>* or *<finish>* specification with a sole `\hline`, *i.e.* one not preceded by a `\` (it is however possible to put `\` at the end of *<prefix>* and the `\hline` at the start of *<contents>*).
3. as is explained next, it is recommended to put the `\` at the start of the *<prefix>* or *<contents>* specifications in order to close the *previous* row, rather than at the end with the idea to close the *current* row; and when the TOC is a partial one (a `\localtableofcontents`) this is (in almost all situations) mandatory.

23. The TOC as a table

Here is an example of a TOC as a longtable, as is possible relatively simply now with 1.08. The code follows.

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```

\begin{group}
\etocglobaldefs % necessary for \etocname etc... to survive &

% observe the locations of the \
\etocsetstyle{part}
{
  {\hline}
  {\strut\etocnumber &\bfseries\etocname&\etocpage }
}

\etocsetstyle{section}
{
  {\etociffirst{\etocifnumbered{\hline}{\hline\hline}}{\}}
  {\etocnumber&\etocname &\etocpage }
}

\etocsetstyle{subsection}
{
  {}
  {}
  {\&\makebox[1cm][c]{\etocnumber}%
   \parbox[t]{\dimexpr6cm-\tabcolsep\relax}{\sloppy\itshape\etocname\strut}%
   &\itshape\etocpage }
}

\etocsettocstyle
{
  {\hypersetup{hidelinks}%
   \begin{longtable}{|>{\bfseries}c|p{7cm}|r|}
   \hline
   \multicolumn{3}{|c|}{\Large\bfseries\strut\strut TABLE OF CONTENTS}%
   }
  {\hline\end{longtable}}
}

\etocsetnexttocdepth {subsection}

\tableofcontents
\end{group}

```

Examining the code above the reader will wonder why the `\` are always given first in *<prefix+contents>* and not, as is more intuitive, rather last. In some favorable cases (but almost never for local tables of contents) one may indeed construct TOC-as-tables with the `\` located at the end of the style specifications. The problem in the previous example was with the positioning of the `\hline`'s.

Due to technical aspects of how \TeX constructs alignments any definition or assignment done after an `\` starts a new row, and thus makes `\hline` an illegal token (this shows as a misplaced `\noalign` error.) Not only does **etoc** have to do such definitions to construct `\etocname` etc..., it is furthermore the case that some packages put things in the `.toc` file and as a result there is never any guarantee that between two `\contentsline` there will

23. The TOC as a table

not be such a token like `\relax` which in the contexts of alignments forces \TeX to start a cell and thus makes it impossible then to insert an `\hline`.

The safest way is thus to start with an `\\` each line style specification in order to close the *previous* table row. We had a little problem with the fact that we wanted parts not only to have a rule above them (easy, they do `\\ \hline`) but also below them: after each part there is a section, and it is these sections which are used to insert the missing `\hline` (this is done with the help of the `\etociffirst` conditional).

The attentive reader will notice one last subtlety: the title was supposed to be followed not by one, but by two `\hline`'s. To solve this we could have used a one-time macro redefining itself, but we noticed that the title was followed by the unnumbered Abstract, thus the `\etocifnumbered` switch came to the rescue.

Last technical note: because we put the `\\` inside the branches, there was no need to employ the expandable variants `\etocxiffirst` and `\etocxifnumbered`.

For the hardliner's old way of obtaining the exact same result, see [section 41](#).

Here is also a much simpler example. It is a local table of contents.

Section	number	page
Do I need to be a geek to use etoc ?	3	7
Line styles and toc display style	4	8
A first example	5	9
A second example	6	10
A third example: emulating the book class	7	12
Linked list of the main package commands	8	16

```

\begin{center}
\etocsetstyle{section}
{
  {}
  {\etociffirst{\\ \hline \hline}{\\ \hline}}
  {\etocname & \etocnumber & \etocpage }
  {}
}

\etocsettocstyle
{
  {\hypersetup{hidelinks}\begin{tabular}{|p{4cm}|c|c|}\hline
  \multicolumn{1}{|c|}{\bfseries Section}&
  \bfseries number&
  \bfseries page}
  {\hline\end{tabular}}
}

\etocglobaldefs % MANDATORY !!
\etocsetnexttocdepth{1}

\tableofcontents\ref{toc:overview}
\end{center}

```

23.1. The commands `\etocglobaldefs` and `\etoclocaldefs`

In \LaTeX the meaning of a command defined via `\newcommand\foo{...}` inside an environment (or group) vanishes from \TeX 's memory on exit from this environment (or group). At times however it is needed to make definitions with global scope, for this \TeX has the primitive prefix `\global`.

By default `etoc`'s definitions of `\etocname` etc... are local. This causes problems in certain contexts such as seen here with TOC as tables, but also with `enumitem` *inline* variants of its standard environments, because the command `\item` then closes a group.

After `\etocglobaldefs`, `etoc` will make its definitions of `\etocname` etc... have global scope. For normal use this is not necessary. It does not hurt either to activate it systematically.

To return to the default, use `\etoclocaldefs`. Note that both `\etocglobaldefs` and `\etoclocaldefs` actions are local to the environment or group where they are used.

24. Not displayed empty TOCs

24.1. The `\etoccheckemptiness` command

The user needs to issue `\etoccheckemptiness` to tell `etoc` to check whether local tables of contents are empty and in case of emptiness to print nothing at all.¹⁹ This can be useful to authors of \LaTeX classes who for example wish to have a `\chapter` command doing systematically a `\localtableofcontents`, or for people producing files via automatic conversions and some of those might have sectioning commands and others not.

«Emptiness» means that no `\contentsline` command would get executed within the scope of the local table of contents — empty line styles by themselves do not make the TOC empty. `etoc` always executes the `\etocaftertochook` command; and the test for emptiness itself executes everything else found in the `.toc` file. See [section 14](#) in this context.

The suppression of the heading (more precisely of the toc display style elements) may be effective only for the final \LaTeX runs. For example in the situation of a `\tableofcontents\ref{foo}` where the label `foo` is not yet recognized, the heading (but not the contents) is printed and the TOC is declared non-empty. Or, if one adds a `\localtableofcontents` to a document, on the next run, the test for emptiness will in fact apply to the next one, and the last local TOC of the document will have its contents temporarily unknown to `etoc`, hence will be declared non empty, and the heading will be printed.

For a finalized document compiled with initially no auxiliary files, the first \LaTeX run will declare all local TOCs non empty and print for each of them a heading (and no contents naturally). The second \LaTeX run will then correctly decide which local TOC is empty or not.

24.2. The `\etocnotocifnotoc` command

The user can then extend the emptiness-checking to the global TOCs with `\etocnotocifnotoc`. May I respectfully give the advice then to rather do none of `\usepackage{etoc}`

¹⁹Thanks to Paul Gaborit who asked for such a feature.

25. A TOC self-adjusting widths for its typesetting

nor `\tableofcontents?` ; -). Well, there is always the case of batch conversions of documents having or not sectioning units.

24.3. The `\etocifwasempty` command

The command `\etocifwasempty{<YES>}{<NO>}` executes `<YES>` if the previous TOC was found to be empty and `<NO>` if its was not so. This may serve to act appropriately after a truly empty TOC. If `\etocchecksempitness` has not been issued, this conditional always executes the `<NO>` branch.

This command is robust, and `\etocxifwasempty` is its expandable version.

Do not forget the second argument: at least an empty pair of braces must be present.

This conditional may wrongly say that the local TOC is empty or not empty until L^AT_EX compilations stabilize. But if it says that a local TOC is empty, this does mean that `etoc` considered the just encountered local table of contents to be empty (for that run) and thus printed nothing (not even a `\par`).

25. A TOC self-adjusting widths for its typesetting

This is a continuation of [section 7](#). The goal is to adjust automatically the “numwidths” used for typesetting the unit numbers in the (local) tables of contents.

```
\newcommand*\TOCcomputenumwidths [1][\% #1=empty or "local"]
\begingroup
\def\TOCnumwidthB {0pt}%
\def\TOCnumwidthC {0pt}%
\def\TOCnumwidthD {0pt}%
\def\TOCnumwidthE {0pt}%
\def\TOCnumwidthF {0pt}%
\def\TOCnumwidthG {0pt}%
\etocsetstyle{part}{}{}{}{}{}%
\etocsetstyle{chapter}{}
{\setbox0\hbox{\bfseries\etocthenumber\kern0.5em}}
{\ifdim\wd0>\TOCnumwidthB\edef\TOCnumwidthB{\the\wd0}\fi}{}%
\etocsetstyle{section}{}
{\setbox0\hbox{\bfseries\etocthenumber\kern0.5em}}
{\ifdim\wd0>\TOCnumwidthC\edef\TOCnumwidthC{\the\wd0}\fi}{}%
\etocsetstyle{subsection}{}
{\setbox0\hbox{\etocthenumber\kern0.5em}}
{\ifdim\wd0>\TOCnumwidthD\edef\TOCnumwidthD{\the\wd0}\fi}{}%
\etocsetstyle{subsubsection}{}
{\setbox0\hbox{\etocthenumber\kern0.5em}}
{\ifdim\wd0>\TOCnumwidthE\edef\TOCnumwidthE{\the\wd0}\fi}{}%
\etocsetstyle{paragraph}{}
{\setbox0\hbox{\etocthenumber\kern0.5em}}
{\ifdim\wd0>\TOCnumwidthF\edef\TOCnumwidthF{\the\wd0}\fi}{}%
\etocsetstyle{subparagraph}{}
{\setbox0\hbox{\etocthenumber\kern0.5em}}
{\ifdim\wd0>\TOCnumwidthG\edef\TOCnumwidthG{\the\wd0}\fi}{}%
%
\etocsettocstyle{}
\global\let\TOCnumwidthB\TOCnumwidthB
\global\let\TOCnumwidthC\TOCnumwidthC
\global\let\TOCnumwidthD\TOCnumwidthD
```



```

\global\let\TOCnumwidthE\TOCnumwidthE
\global\let\TOCnumwidthF\TOCnumwidthF
\global\let\TOCnumwidthG\TOCnumwidthG}%
\etocnpar
\csname #1tableofcontents\endcsname
\typeout{Next TOCs will use \TOCnumwidthB\space for chapter number width}%
\typeout{Next TOCs will use \TOCnumwidthC\space for section number width}%
\typeout{Next TOCs will use \TOCnumwidthD\space for subsection number width}%
\typeout{Next TOCs will use \TOCnumwidthE\space for subsubsection number width}%
\typeout{Next TOCs will use \TOCnumwidthF\space for paragraph number width}%
\typeout{Next TOCs will use \TOCnumwidthG\space for subparagraph number width}%
\endgroup
}%

```

One invokes either only once `\TOCcomputenumwidths` (with a prior `\etocsetnexttocdepth{all}`) or, alternatively multiple times, using the optional argument:

```

\bgroup
\etocsettocdepth{paragraph}% for example
\TOCcomputenumwidths [local]%
\localtableofcontents
\egroup

```

Then each local table of contents will compute the various “numwidths” to match exactly (with an extra 0.5em), for each sectioning unit (apart from `\part` as it has no associated “numwidth” in the table of contents code of the book class), the widest number found. As the code makes global assignments, it is either to be used only once, or for each local table of contents. Notice that the bold font serves for both chapter and section styles, but the code from [section 7](#) does not use bold for sections in the global TOC, only in local TOCs. Thus the `\TOCcomputenumwidth` will set the parameter `\TOCnumwidthC` to a value slightly larger than needed in the main TOC. Hence the section style in `\TOCcomputenumwidths` should possibly insert the `\bfseries` in the box only after testing for the optional parameter `local`.

Part IV.

Commands for the toc line styles

Here are some statistics for this part: it contains 4 sections and 9 subsections. The name of the first section is “The `\etocsetstyle` command” and the corresponding number is “26”. The name of the last section is “**Am I also red?**” and its number is “29”. The name of the first subsection is “The `\etocname` and `\etocpage` commands” and the corresponding number is “26.1”. The name of the last subsection is “**This is a (pale) red subsection for illustrative purposes**” and its number is “28.2”.

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26.2 The `\etocskipfirstprefix` and `\etociffirst` commands (p. 52)

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27 The `\etocsetlevel` command (page 54)

28 Scope of commands added to the `.toc` file (page 55)

28.1 Testing the scope (p. 55)

28.2 This is a (pale) red subsection for illustrative purposes (p. 56)

29 Am I also red? (page 56)

26. The `\etocsetstyle` command

26.1. The `\etocname` and `\etocpage` commands

Let us explain how `etoc` was used to produce the table of contents displayed at the beginning of this second part. This is a local table of contents, and we used the command `\localtableofcontents`.

We shall distinguish between the *line styles* and the *toc display style*. The line styles were (essentially) obtained in the following manner:²⁰

```
\etocsetstyle{section}
{\begin{enumerate}}
{\normalsize\bfseries\rmfamily\item}
{\etocname{} (page \etocpage)}
{\end{enumerate}}

\etocsetstyle{subsection}
{\begin{enumerate}}
{\normalfont\item}
{\etocname{} (p.~\etocpage)}
{\end{enumerate}}

\etocsetstyle{subsubsection}
{\par\nobreak\begin{group}\normalfont
  \footnotesize\itshape\etocskipfirstprefix}
{\allowbreak\,--\,}
{\etocname}
{.\hfil\par\end{group}\pagebreak[3]}
```

These provisory style definitions rely on the automatic numbering generated by the `enumerate` environments but it is much better to use the further command `\etocnumber` inside the item label, which gives the real thing. The improved definitions will thus be explained later.

With this style, one would have to be imaginative to design something then for paragraph and subparagraph entries! perhaps as superscripts? Well, usually one does not need paragraphs and subparagraphs numbered and listed in the TOC, so our putative user here chose a design where no provision is made for them and added the definitive:

```
\etocsetstyle{paragraph}{}{}{}{}
\etocsetstyle{subparagraph}{}{}{}{}
```

This is also the situation with the default package line styles!

Each `\etocsetstyle` command has five mandatory arguments:

```
\etocsetstyle{<levelname>}{<start>}{<prefix>}{<contents>}{<finish>}
```

The initially recognized `<levelname>`'s are the sectioning levels of the standard document classes: from *part* (or *book* which is used by the `memoir` class) down to *subparagraph*.

The `<start>` code is executed when a toc entry of that level is encountered and the previous one was at a higher level. The `<finish>` code is executed when one again encounters a higher level toc entry. In the mean-time all entries for that level are typeset by executing first the `<prefix>` code and then the `<contents>` code.

The (robust) commands `\etocname`, `\etocnumber` and `\etocpage` are provided for use inside the `<prefix>` and `<contents>` parts of the `\etocsetstyle` specification. They represent of course, the name, number, and page number of the corresponding toc entry. If package `hyperref` is active in the document and has added hyperlinks to the TOC data, then these links are kept in the commands `\etocname`, `\etocnumber` and `\etocpage` (this last one will have a link only if `hyperref` was passed option `linktoc=all`.)

²⁰the present document has `\renewcommand{\familydefault}{\sfdefault}` in its preamble, hence `\normalfont` switches to the sans typeface; so in the section line-style, I wrote `\rmfamily` instead.

26.2. The `\etocskipfirstprefix` and `\etociffirst` commands

The chosen subsubsection style made use of the command `\etocskipfirstprefix`, which instructs `etoc` to *not* use for the first item the specified *<prefix>* code.²¹

The command `\etociffirst{<YES CODE>}{<NO CODE>}` (new with 1.08) is a more flexible way to customize the *<prefix>* (and *<contents>*) specifications. It executes the *<YES CODE>* branch if this is the first unit at that level (inside a lower level) and the *<NO CODE>* if not. This is a robust command which survives to expansion (for example in an `enumitem` label).

The variant `\etocxiffirst` does the same, but is expandable.

26.3. The `\etocnumber` command

So far, our specifications would use the numbering generated by the `enumerate` environments, but of course we generally want the actual numbers as found in the `.toc` file. This is available via the `\etocnumber` command. To get the labels in the `enumerate` list to use it we can proceed with the syntax `label=` from the package `enumitem`:

```
\etocsetstyle{section}
{\begin{enumerate}[label=\etocnumber]}
{\normalsize\bfseries\rmfamily\item}
{\etocname{} (page \etocpage)}
{\end{enumerate}}
```

Rather than just `\etocnumber` we then used something like `\fbox{\etocnumber}`. Note that `\etocnumber` is a robust command which explains why it can be used inside the label specification without needing an added `\protect`.

26.4. The `\etocifnumbered` switch

The `\fbox` would give an unaesthetic result in the case of an unnumbered section (which ended up in the table of contents via an `\addcontentsline` command).²²

The `\etocifnumbered{<A>}{}` command executes *<A>* if the number exists, and ** if not. So we use it in the code which was finally chosen for the section level:

```
\etocsetstyle{section}
{\begin{enumerate}[leftmargin=.75cm, label=\etocifnumbered
  {\fboxrule1pt\fcolorbox{green}{white}{\etocnumber}}}]
{\normalsize\bfseries\rmfamily\item}
{\etocname{} (page \etocpage)}
{\end{enumerate}}

\etocsetstyle{subsection}
{\begin{enumerate}[leftmargin=0cm, label=\etocnumber]}
{\normalfont \item}
{\etocname{} (p.~\etocpage)}
{\end{enumerate}}
```

²¹With versions earlier than 1.08 it had to be the very last token in the *<start>* code. It may now appear anywhere therein.

²²as seen we use `\fcolorbox` rather than `\fbox`. Due to some redefinition made by package `xcolor`, had we used `\fbox` (and not used `hyperref`) we would have needed `\protect\fbox`.

26.5. The `\etocthenname`, `\etocthenumber`, and `\etocthepage` commands

If we had changed only the section level, and not the subsection level, an error on compilation would have occurred because the package style for subsections expects to start ‘in vertical mode’. An additional `\par` token in the `\contents` part of the section level would have fixed this: `{... (page \etocpage)\par}`.

The command `\etocifnumbered` is robust; `\etocxifnumbered` (new with 1.08) has the same effect but is expandable.

26.5. The `\etocthenname`, `\etocthenumber`, and `\etocthepage` commands

It is sometimes desirable to have access to the name, number and page number without the `hyperref` link data: something similar to the starred variant of the `\ref` command, when package `hyperref` is used. For example one may wish to use the unit or page number in some kind of numeric context, or change its formatting. This is provided by `\etocthenname`, `\etocthenumber`, and `\etocthepage`.

These commands are not protected, so in moving argument contexts (for example in a label specification) they should be preceded by `\protect`.

26.6. The `\etoclink` command

The command `\etoclink{<linkname>}` can be used in the line style specifications in a manner analogous to the argument-less commands `\etocname`, `\etocnumber` and `\etocpage`. It creates a link (if such a link was added by `hyperref` to the `.toc` file entry) whose destination is the corresponding document unit and whose name is the given argument. Hence `\etoclink{\etocthenname}` is like the original `\etocname`. Notice that if `hyperref` was not instructed to put a link in the page number (via its option `linktoc=all`) then `etoc`’s `\etocpage` contains no link either, but `\etoclink{\etocthepage}` does.

The command `\etoclink` is robust.

26.7. The `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage` and `\etocthelink` commands

This is for advanced uses by advanced users. The `\etocthenname` macro has been mentioned before; using it in instructions such as `\global\let\lastone\etocthenname` in an `etoc` line style will define the macro `\lastone` to expand to the last name seen at the corresponding level. But no facilities was previously available to do the same with the link data.

The package provides since 1.07f 2013/03/07 `\etocthelinkedname` to do the similar thing, with the link data included. It was used in this documentation when doing the [examples with trees](#).

Also provided with the similar goal: `\etocthelinkednumber`, `\etocthelinkedpage` (which contains a link only if `hyperref` added one to the page number) and `\etocthelink{<linkname>}` which allows to make a link with an arbitrary name.

All these commands are fragile. In fact starting with 1.08a, `\etocname` is exactly the robust variant of `\etocthelinkedname`.

Obsolete example of a table of contents done as an inline `enumitem` environment:
30. Specifying the toc display style (*p. 57*); **31.** Starred variants of the `\tableofcontents` etc... commands (*p. 61*), and **32.** Table of contents for this part (*p. 61*).

27. The `\etocsetlevel` command

Obsolete example of `\begin{group}`

```
\etocsetstyle {section}
  {\begin{itemize*}[itemjoin={{; }}, itemjoin*={{, and }}}
  {\global\let\TmpEtocNumber\etocthelinkednumber
   \global\let\TmpEtocName\etocthelinkedname
   \global\let\TmpEtocPage\etocthelinkedpage }
% (the above needed as \item closes a group in enumitem inline environments)
  {\item [{\bfseries\TmpEtocNumber.}]\TmpEtocName\
    (\emph{p. \TmpEtocPage})}
  {\end{itemize*}.}%
\etocsetnexttocdepth {section}%
\etocsettocstyle {a table of contents done as an inline
                  \texttt{enumitem} environment: }{}%
\etocinline\tableofcontents \ref{toc:globalcmds}
\endgroup
```

etoc 1.08a offers a simpler way to the same result. And there is no need anymore here for `\etocthelinkedname`, `\etocname` works.

Example of

```
\begin{group}\etocglobaldefs % <-- NEW mit etoc 1.08.
  \etocsetstyle {section}
    {\begin{itemize*}[itemjoin={{; }}, itemjoin*={{, und }}}
    {}
    {\item [{\bfseries\etocnumber.}] \etocname\ (\emph{p. \etocpage }}}
    {\end{itemize*}.}%
  \etocsetnexttocdepth {section}%
  \etocsettocstyle {a table of contents done as an inline
                    \texttt{enumitem} environment: }{}%
  \etocinline\tableofcontents \ref{toc:globalcmds}
\endgroup
```

Example of a table of contents done as an inline `enumitem` environment: **30**. Specifying the toc display style (*p.* 57); **31**. Starred variants of the `\tableofcontents` etc... commands (*p.* 61), and **32**. Table of contents for this part (*p.* 61).

27. The `\etocsetlevel` command

As already explained in [Part III](#), one can inform **etoc** of a level to associate to a given sectioning command with `\etocsetlevel`. For example:

```
\etocsetlevel{cell}{0}
\etocsetlevel{molecule}{1}
\etocsetlevel{atom}{2}
\etocsetlevel{nucleus}{3}
```

In compatibility mode, it will be assumed that the macros `\l@cell`, `\l@molecule`, ..., have been defined somewhere either by the user or a class: doing only `\etocsetlevel` is not enough for the corresponding level to work out-of-the-box in compatibility mode.

However, if no table of contents is typeset in compatibility mode, then all that matters is that the various line styles have been set. If, for example `section` is at level 1, then there is no need to do some `\etocsetstyle{molecule}{..}{..}{..}{..}` after

`\etocsetlevel{molecule}{1}` if `\etocsetstyle{section}{...}{...}{...}` has already been done (and it has been done by the package itself in its definition of its own line styles).

The accepted levels run from -2 to 6 inclusive. Anything else is mapped to 6, which is a dummy level, never displayed. The package does:

```
\etocsetlevel{book}{-2}
\etocsetlevel{part}{-1}
\etocsetlevel{chapter}{0}
\etocsetlevel{section}{1}
\etocsetlevel{subsection}{2}
\etocsetlevel{subsubsection}{3}
\etocsetlevel{paragraph}{4}
\etocsetlevel{subparagraph}{5}
```

etoc own custom styles are activated by `\etocdefaultlines`. They are illustrated by the main table of contents of this document.

These level assignments can be modified at anytime: see [Part III](#) for various applications of this technique. As one further example, let's mention here that the [main table of contents](#) of this document was typeset following these instructions:

```
\etocsettocdepth {subsubsection} % set the initial tocdepth
\etocdefaultlines % use the package default line styles. At this early stage in
                  % the document they had not yet been modified by \etocsetstyle
                  % commands, so \etocclines could have been used, too.
\etocmarkboth\contentsname
\etocmulticolumnstyle[1] % one-column display
  {\pdfbookmark[1]{Table of contents}{MAINTOC}% create a bookmark in the pdf
   \noindent\bfseries\Large
   \leaders\hrule height1pt\hfill
   \MakeUppercase{Table of Contents}}
\begingroup % use a group to limit the scope of the
  \etocsetlevel{subsection}{3} % subsection level change.
  \etocsetlevel{subsubsection}{4} % anything > tocdepth=3.
  \tableofcontents \label{toc:main}
\endgroup
```

In this way, the subsections used the style originally designed for subsubsections, the subsubsections were not printed. Without this modification, the appearance would have been very different: the package line styles were targeted to be employed in documents with many many sub-sub-sections, in a two-column layout, giving thus a more compact output that what is achieved by the default L^AT_EX table of contents. But here, we have few sub-sub-sections and it is more interesting to drop them and print in a visually different manner sections and subsections.

28. Scope of commands added to the .toc file

28.1. Testing the scope

Let us switch to the color red, and also add this command to the .toc file:

```
\color{red!50} % changing text color
\addtocontents{toc}{\string\color{red!50}} % and also in the .toc file
```

29. Am I also red?

28.2. This is a (pale) red subsection for illustrative purposes

Actually, this title here was printed black, due to the way the `scrartcl` class works (it would have been red in the `article` class), but we are more interested in how it looks in the tables of contents: it does appear red in the [main table of contents](#) at the beginning of this document, and also in the [table of contents for this part](#). Both entries obey as expected the `\color{red!50}` command inserted in the `.toc` file.

But let us now close this subsection and start a section.

29. Am I also red?

The question is about how it appears in the tables of contents: the answer is that, yes it is red in the [main TOC](#), and no it is not red in the [local TOC for this part](#). The reason is that the `\finish` code for the subsection level closed a group, as it used `\end{enumerate}`.

This illustrates the discussion from [subsection 3.1](#).

The default package line styles do not contain group opening and closing instructions: the influence of a command added to the `.toc` file will propagate until cancelled by another explicit such command inserted in the `.toc` file.

```
\normalcolor
\addtocontents{toc}{\string\normalcolor}
```

Back to black. Note that this scope problem arises in real life in a multi-lingual document, as the `babel` package writes to the `.toc` file the language changes occurring in the document.

Part V.

Commands for the toc display style

Here are some statistics for this part: it contains 3 sections and 11 subsections. The name of the first section is “Specifying the toc display style” and the corresponding number is “30”. The name of the last section is “Table of contents for this part” and its number is “32”. The name of the first subsection is “The command `\etocsettocstyle`” and the corresponding number is “30.1”. The name of the last subsection is “A (crazy) inline display” and its number is “32.3”.

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30. Specifying the toc display style

The *toc display* style says whether the TOC appears with multiple columns or just one, whether the title is typeset as in the `article` or `book` class, or should be centered above the entries, with rules on its sides, or if the entire TOC should be put in a frame. For example, to opt for a ruled heading and single column layout, one issues commands of the following type:

```
\etocruledstyle[1]{Title} \tableofcontents      (or \localtableofcontents)
shortcuts:      \etocruled[1]{Title} (or \etoclocalruled[1]{Title})
```

30.1. The command `\etocsettocstyle`

This is a command with two mandatory arguments:

```
\etocsettocstyle{before_toc}{after_toc}
```

30. Specifying the toc display style

The `{\before_toc}` part is responsible for typesetting the heading, for example it can be something like `\section*{\contentsname}`.

Generally speaking this heading should leave \TeX in “vertical mode” when the actual typesetting of the contents will start: the line styles (either from the standard classes or the package default line styles) all expect to get started in ‘vertical mode’.

The first argument to `\etocsettocstyle` can also contain instructions to mark the page headings. Or it could check (book class) to see if two-column mode is on, and switch to one-column style, and the `\after_toc` part would then reenact the two-column mode.

The commands to be described next `\etocmulticolstyle`, `\etocruledstyle`, and `\etocframedstyle` all call `\etocsettocstyle` as a lower-level routine, to start a multi-cols environment in `{\before_toc}` and close it in `{\after_toc}`.

30.2. The commands `\etocmulticolstyle`, `\etocmulticol`, and `\etoclocalmulticol`

This is a command with one optional and one mandatory argument:

`\etocmulticolstyle``[\langle number_of_columns \rangle]{\langle heading \rangle}`

The `\langle number_of_columns \rangle` can go from 1 to 10 (it defaults to 2; if its value is 1, naturally no multicol environment is then created). The `\langle heading \rangle` will typically be some ‘vertical’ material like: `\langle heading \rangle = \section*{\langle title \rangle}` but one may also have horizontal material like `\fbox{Hello World}` (`etoc` adds automatically a `\par` at the end of this “heading” argument to `\etocmulticolstyle`). Here is for example how the main table of contents of this document was configured:

```
\etocmulticolstyle{\noindent\bfseries\Large
                  \leaders\hrule height1pt\hfill
                  \MakeUppercase{Table of Contents}}
```

After `\etocmulticolstyle` all future `\tableofcontents` will use the specified style, if it does not get changed in-between. A shortcut for just one table of contents and no impact on the styles of later TOCs is:

`\etocmulticol``[\langle number_of_columns \rangle]{\langle heading \rangle}`

And there is also `\etoclocalmulticol``[\langle number_of_columns \rangle]{\langle heading \rangle}`.

30.3. The command `\etoc tocstyle`

`\etoc tocstyle``[\langle kind \rangle]{\langle number_of_columns \rangle}{\langle title \rangle}`
`= \etocmulticolstyle``[number_of_columns]{\kind*{\langle title \rangle}}`

where `kind` is one of `chapter`, `section`, ... and defaults to `chapter` or `section` depending on the document class.

30.3.1. The command `\etoc tocstylewithmarks`

`\etoc tocstylewithmarks``[\langle kind \rangle]{\langle number_of_columns \rangle}{\langle title \rangle}{\langle mark \rangle}`
`= \etocmulticolstyle``[number_of_columns]{\kind*{\langle title \rangle \markboth{\MakeUppercase{\langle mark \rangle}}}}`

where `kind` is one of `chapter`, `section`, ... The actual display of the marks depends on the settings of the page style. There is variant `\etoc tocstylewithmarksnouc` which does not uppercase.

30.3.1.1. Do we really want paragraph entries in the TOC?

30.3.1.2. really?

30.4. The commands `\etocruledstyle`, `\etocruled` and `\etoclocalruled`

The general format of `\etocruledstyle` is:

`\etocruledstyle[⟨number of columns⟩]{⟨title of the toc⟩}`

The title is horizontal material (the LR mode of *TeX*, a document preparation system); if it does not fit on one line it should be put in a `\parbox` of a given width. The green frame for the heading of the table of contents at the [start of the second part of this document](#) was obtained with:

```
\etocruledstyle[1]{\etocfontminusone\color{green}%
  \fboxrule1pt\fboxseplex
  \framebox[\linewidth]
    {\normalcolor\hss Contents of this part\hss}}
```

As a shortcut to set the style with `\etocruledstyle` and then issue a `\tableofcontents`, all inside a group so that future table of contents will not be affected, there is:

`\etocruled[⟨number_of_columns⟩]{⟨title⟩}`

And the local form will be `\etoclocalruled`.

30.5. The commands `\etocframedstyle`, `\etocframed`, and `\etoclocalframed`

Same mechanism:

`\etocframedstyle[⟨number_of_columns⟩]{⟨title⟩}`

and the accompanying shortcut:

`\etocframed[⟨number_of_columns⟩]{⟨title⟩}`

The shortcut is used if one does not want to modify the style of the next TOCs (the other way is to put the whole thing inside braces or a `\begingroup... \endgroup`; there is also `\etoclocalframed` for a local table of contents).

The entire table of contents is framed. The title itself is not framed: if one wants a frame one should set it up inside the `⟨title⟩` argument to `\etocframedstyle` or `\etocframed`. The colors for the background and for the components (top, left, right, bottom) of the border are specified via suitable `\renewcommand`'s (see [subsection 35.2](#)).

A minipage is used, hence the produced table of contents isn't compatible with a page break. For allowing page breaks, use of the commands of `mdframed`²³ or `tcolorbox`²⁴ in the arguments of `\etocsettocstyle` is recommended.

Examples in this document are on pages [18](#), [25](#), [63](#), and [74](#).

²³<http://ctan.org/pkg/mdframed>

²⁴<http://ctan.org/pkg/tcolorbox>

30.6. Headings, titles, `\etocoldpar`, `\etocinnertopsep`

For `\etocmulticolstyle` the mandatory *<heading>* argument can be either vertical mode material like `\section*{\emph{Table of Contents}}` or horizontal mode material like in the simple `\etocmulticolstyle{Hello World}`.

No explicit `\par` or empty line can be inserted in the mandatory argument of `\etocmulticolstyle`, but **etoc** provides `\etocoldpar` as a substitute: it does `\let\etocoldpar\par` before the `multicols` environment and inserts this `\etocoldpar`²⁵ at the end of the heading, then does a vertical skip of value `\etocinnertopsep`. The command `\etocoldpar` can also be used explicitly if needed in the mandatory argument to `\etocmulticolstyle` (it is not allowed to insert an empty line in this argument).

On the other hand the commands `\etocruledstyle` and `\etocframedstyle` expect an argument “in LR mode” (to use the terminology from *LaTeX, a document preparation system*). This means that multiline titles are only possible if enclosing them inside something like a `\parbox`.

An important dimension used by all three of `\etocmulticolstyle`, `\etocruledstyle` and `\etocframedstyle` is `\etocinnertopsep`. It gives the amount of separation between the heading and the start of the contents. Its default value is `2ex` and it is changed with `\renewcommand*{\etocinnertopsep}{<new_value>}`, not with `\setlength`.

30.7. The compatibility mode `\etocstandarddisplaystyle`

etoc will then emulate what the document class would have done regarding the global display style of the table of contents, in its absence. All customizing from inside the class should be obeyed, too.

30.7.1. The commands `\etocarticlestyle`, `\etocbookstyle`, ...

These are the commands used internally by **etoc** in compatibility mode depending on the document class. For example `\etocarticlestyle` instructs **etoc** to use `\section*{\<contentsname>}` (with marks on the page) and `\etocbookstyle` says to use `\chapter*{\<contentsname>}`. It can prove useful to issue `\etocarticlestyle` for a `\localtableofcontents` inside a chapter, in book class and compatibility mode for the global TOC display style.

30.8. The command `\etocinline`

With `\etocinline`, or its synonym `\etocnopar`, the `\tableofcontents` command and its variants do *not* first issue a `\par` to close the previous paragraph. Hence, the table of contents can be printed in an inline style; or, if used only for preparing some token list or macro, it will leave nothing in the token stream on execution.

Issue `\etocdisplay` to return to the default situation that `\tableofcontents` and variants issue a `\par` to switch to vertical mode before typesetting the TOC title and contents.

²⁵this command `\etocoldpar` (= working `\par` in the argument to `\etocmulticolstyle`) is not related to the switch `\etocinline` whose purpose is to tell **etoc** not to do a `\par` before the table of contents.

31. Starred variants of the `\tableofcontents` etc... commands

The `\tableofcontents`, `\localtableofcontents`, `\etocmulticol`, and all their cousins and variants have starred variants (the star must be before the other arguments). For all but the `memoir` class, they are like the original. For the `memoir` class, the original prints an entry in the `.toc` file, as is the usage for the original `\tableofcontents` command in that class, whereas the starred variants do not, as is the habit in that class.

As soon as one starts using local table of contents one discovers that the default `memoir` thing which is to create a chapter entry for each TOC is not convenient. The command `\etocmemoirtocformat{<kind>}{<name>}` will change the format (`<kind>` is `chapter`, `section`, `subsection`... and `<name>` can be for example `\contentsname`.) The initial set-up is with `chapter` and `\contentsname`.

The format of the actual heading of the TOC should also be set appropriately (for example with `\etocstyle`), to use the identical division unit as in the first argument to `\etocmemoirtocformat`.

A weird situation arises when one has two successive `\localtableofcontents` (obviously this is not a truly real life situation), just after a `\part` for example. The first one creates (if the default has not been modified as indicated above) a Chapter heading which is written to the `.toc`. Then the second one thinks to be local to this chapter . . . and as a result it displays nothing. The fix is to define the second one to be a clone of the first one.

Independently of the situation with the `memoir` class there is generally speaking a hook macro called `\etocaftertitlehook` which is inhibited by using the starred variants of the displaying commands. Except for the `memoir` class, this hook is initially defined to do nothing.

There are also (independently of the document class) `\etocaftercontentshook`, `\etocbeforetitlehook` and `\etocaftertochook` which are initially defined to do nothing and can be used for some special effects.

32. Table of contents for this part

32.1. Testing the compatibility mode

As a third example we now print the local table of contents for this part. First we will test the compatibility mode.²⁶ The original was invisibly defined with a label at the beginning of this [Part V](#).

```
\KOMAOptions{toc=left}
\etocstandarddisplaystyle % necessary for the display to obey toc=left
\etocstandardlines
\tableofcontents \ref{toc:globalcmds}
```

Contents

²⁶the present document uses the `scrartcl` class, and we check here that the `etoc` compatibility mode does respect the customizing done via the class commands.

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32.2. A framed display

We now opt for a “framed” style, using the package default line styles and some colors added (it has been put in a float which appears on the next page).

```

\etocdefaultlines
\begingroup
\renewcommand{\etoccolumnsep}{2em}
\renewcommand{\etocinnerleftsep}{1.5em}
\renewcommand{\etocinnerrightsep}{1.5em}
% specify a background color for the toc contents
\renewcommand{\etocbkgcolorcmd}{\color{yellow!10}}
% set up the top and bottom rules
\renewcommand{\etoctoprulename}{\hrule height 1pt}
\renewcommand{\etoctoprulecolorcmd}{\color{red!25}}
\renewcommand{\etocbottomrule}{\hrule height 1pt}
\renewcommand{\etocbottomrulecolorcmd}{\color{red!25}}
% set up the left and right rules
\renewcommand{\etocleftrule}{\vrule width 5pt}
\renewcommand{\etocrightrule}{\vrule width 5pt}
\renewcommand{\etocleftrulecolorcmd}{\color{red!25}}
\renewcommand{\etocrightrulecolorcmd}{\color{red!25}}
% use \fcolorbox to set up a colored frame for the title
\fbxrule1pt
\renewcommand{\etocbelowtocskip}{0pt\relax}
\etocframedstyle {\normalsize\rmfamily\itshape
  \fcolorbox{red}{white}{\parbox{.8\linewidth}{\centering
    This is a table of contents \a la \etoc, but just for
    the sections and subsections in this part. As it is put
    in a frame, it has to be small enough to fit on
    one page. It has the label |toc:b|.}}}
\begin{figure}[ht!]
  \centering
\tableofcontents \label{toc:b} \ref{toc:globalcmds}
\end{figure}

```

\endgroup

*This is a table of contents à la **etoc**, but just for the sections and subsections in this part. As it is put in a frame, it has to be small enough to fit on one page. It has the label `toc:b`.*

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`darddisplaystyle` ... 30.7, p. 60

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32.3. A (crazy) inline display

Let us finally make some crazy inline display of the table of contents of this entire document. We will typeset the subsections as footnotes... This kind of style is suitable for a hyperlinked document, probably not for print! (although I like it, but my personal tastes in many matters do not seem to be widely shared).

Here is the inline table of contents. *Abstract, Foreword, License. Overview: Do I need to be a geek to use **etoc**?²⁷, Line styles and toc display style²⁸, A first example, A second example, A third example: emulating the book class, Linked list of the main package commands. Arbitrarily many TOCs, and local ones too: Labeling and reusing elsewhere, A powerful functionality of **etoc**: the re-assignment of levels with `\etocsetlevel`, The `\etocsettocdepth` and `\etocsetnexttocdepth` commands²⁹, The command `\etocsettocdepth.toc`³⁰, The commands `\etocdepthtag.toc` and `\etocsettagdepth`³¹, Adding commands to the `.toc` file³², Two Examples³³. Surprising uses of*

²⁷Limitations in the use of list environments for tables of contents.

²⁸`\etocsetstyle` for the line styles; `\etocsettocstyle` for the toc display; Compatibility mode.

²⁹The hyperref option `bookmarksdepth`.

³⁰The commands `\etocobeytocdepth` and `\etocignoretocdepth`.

³¹The commands `\etocobeydepthtags` and `\etocignoredepthtags`.

³²The hyperref option `hidelinks`.

³³A Beautiful Thesis example; A TOC with a background color.

etoc: The TOC of TOCs, Arbitrary “Lists Of...”, \etoccontentsline, A TOC with a fancy layout, Another compatibility mode, The TOC as a tree, The TOC as a molecule, The TOC as a TikZ mind map, The TOC as a table³⁴, Not displayed empty TOCs³⁵, A TOC self-adjusting widths for its typesetting. **Commands for the toc line styles:** The \etocsetstyle command³⁶, The \etocsetlevel command, Scope of commands added to the .toc file³⁷, Am I also red?. **Commands for the toc display style:** Specifying the toc display style³⁸, Starred variants of the \tableofcontents etc... commands, Table of contents for this part³⁹. **Using and customizing etoc:** Summary of the main style commands⁴⁰, The package default line styles: \etocdefaultlines, Customizing etoc⁴¹, One more example of colored TOC layout. **Tips:** Hacking framed parboxes, Inverting the levels⁴², Displaying statistics, Using depth tags, Typesetting the TOC as a table (the old way). **etoc and the outside world:** Compatibility with other packages⁴³, T_EXnical matters, Errors and catastrophes. **The code:** Timestamp, Change history, Implementation.

The code used:

```
\begingroup
\newsavebox{\forsubsections}
\etocsetstyle{part}{\upshape. \etocskipfirstprefix}{. \upshape}
{\bfseries\etocname:~}{\bfseries\etocname:~}{}
\etocsetstyle{section}{\itshape\etocskipfirstprefix}{, }
{\mdseries\etocname}{\mdseries\etocname}{}
\etocsetstyle{subsection}
{\begin{lrbox}{\forsubsections}\upshape\etocskipfirstprefix}
{; }{\etocname}\end{lrbox}\footnote{\unhbox\forsubsections.}}
\etocsetstyle{subsubsection}
{(\itshape\etocskipfirstprefix){, }{\etocname}{\/\upshape)}
\etocsettocstyle{Here is the inline table of contents. }{\par}
\tableofcontents
\endgroup
```

³⁴The commands \etocglobaldefs and \etoclocaldefs.

³⁵The \etocchecksemtiness command; The \etocnotocifnotoc command; The \etocifwasempty command.

³⁶The \etocname and \etocpage commands; The \etocskipfirstprefix and \etociffirst commands; The \etocnumber command; The \etocifnumbered switch; The \etocthename, \etocthenumber, and \etocthepage commands; The \etoclink command; The \etocthelinkedname, \etocthelinkednumber, \etocthelinkedpage and \etocthelink commands.

³⁷Testing the scope; This is a (pale) red subsection for illustrative purposes.

³⁸The command \etocsettocstyle; The commands \etocmulticolstyle, \etocmulticol, and \etoclocalmulticol; The command \etoclocstyle; The commands \etocruledstyle, \etocruled and \etoclocalruled; The commands \etocframedstyle, \etocframed, and \etoclocalframed; Headings, titles, \etocoldpar, \etocinnertopsep; The compatibility mode \etocstandarddisplaystyle; The command \etocinline.

³⁹Testing the compatibility mode; A framed display; A (crazy) inline display.

⁴⁰Setting up local styles; Setting up toc display styles; Displaying tables of contents; Labels and references.

⁴¹Customizing the etoc pre-defined line styles; Customizing the toc display styles.

⁴²All subsections of this document.

⁴³Generalities; Compatibility with beamer; Compatibility with Babel; Compatibility with hyperref; Compatibility with multicol; Compatibility with tocloft; Compatibility with the memoir class; Compatibility with package tocvsec2; Compatibility with package tableof; Compatibility with package tocstyle.

Part VI.

Using and customizing **etoc**

Here are some statistics for this part: it contains 4 sections and 6 subsections. The name of the first section is “Summary of the main style commands” and the corresponding number is “33”. The name of the last section is “One more example of colored TOC layout” and its number is “36”. The name of the first subsection is “Setting up local styles” and the corresponding number is “33.1”. The name of the last subsection is “Customizing the toc display styles” and its number is “35.2”.

This is a table of contents for the sections and subsections in this part. It carries the label `toc:c`

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33. Summary of the main style commands

33.1. Setting up local styles

```
\etocsetstyle{<levelname>}{<start>}{<prefix>}{<contents>}{<finish>}  
\etocname, \etocnumber, \etocpage, \etocifnumbered{<A>}{<B>}  
\etocthename, \etocthenumber, \etocthepage, \etoclink{<linkname>}
```

33.2. Setting up toc display styles

```
\etocmulticolstyle[<number_of_columns>]{<heading>}  
\etocstyle[<kind>]{<number_of_columns>}{<title>}  
\etocstylewithmarks[<kind>]{<number_of_columns>}{<title>}{<mark>}  
\etocstylewithmarksnouc[<kind>]{<number_of_columns>}{<title>}{<mark>}  
\etocruledstyle[<number_of_columns>]{<title>}  
\etocframedstyle[<number_of_columns>]{<title>}  
\etocsettocstyle{<before_toc>}{<after_toc>}
```

33.3. Displaying tables of contents

```
\tableofcontents
\localtableofcontents
\etocmulticol[⟨number_of_columns⟩]{⟨heading⟩}
\etoclocalmulticol[⟨number_of_columns⟩]{⟨heading⟩}
\etocruled[⟨number_of_columns⟩]{⟨title⟩}
\etoclocalruled[⟨number_of_columns⟩]{⟨title⟩}
\etocframed[⟨number_of_columns⟩]{⟨title⟩}
\etoclocalframed[⟨number_of_columns⟩]{⟨title⟩}
and their starred variants
```

33.4. Labels and references

The commands (starred or not) to actually display the table of contents can be followed with optional labels or references:

```
\tableofcontents \label{toc:here}
\tableofcontents \ref{toc:far}
\tableofcontents \label{toc:here} \ref{toc:far}
\localtableofcontents \label{toc:here}
\localtableofcontents \ref{toc:far}
\localtableofcontents \label{toc:here} \ref{toc:far}
similarly with \etocmulticol etc . . .
```

New with 1.08e: `\localtableofcontents \ref{toc:far}` as synonym for `\tableofcontents \ref{toc:far}`.

When re-displaying another toc, only its contents are transferred: both the line styles and the toc display style are the ones currently defined, not the ones from the cloned toc.

34. The package default line styles: `\etocdefaultlines`

These line styles were written at an early stage in the development of the package; although the next section explains how to customize the font choicess or vertical spaces, etc. . . , used by these line styles, most other changes would require copying them from the sources and modify them directly. Admittedly they have been written at a rather scary low- \TeX level, and will not serve as a very friendly starting point.

Activating their use is done via `\etocdefaultlines`, or `\etoclines` if the line styles have not been modified with `\etocsetstyle`. Sections and sub-sections are printed in essentially the same manner, except that the leading for sub-sections is a bit smaller (with document classes lacking a `\chapter` command, the sections are printed in bold typeface; this is the case in the present document). Sub-sub-sections are printed inline, in one paragraph, with no numbers or page numbers. This style was designed and tested with documents having lots of sub-sub-sections, and should be used on a two-column layout: it provides (only in that situation with many sub-sub-sections) a more compact presentation

than what is achieved by the L^AT_EX default.⁴⁴ On the other hand, used with a one-column layout, and with few sub-sub-sections, the style is a bit more spread out vertically than the L^AT_EX default, sub-sections are not visually much different from sections (especially for document classes with a `\chapter` command), so the result is less hierarchical in appearance than in the L^AT_EX default.

In this document, for the [main table of contents](#), we did `\etocsetlevel{subsection}{3}` hence the sub-sections were printed with the sub-sub-section inline style.

Let us, to the contrary, typeset now this main table of contents as if the document had been done with a class having the `\chapter` command: we will print sections as chapters, and subsections as sections. We use `\etocsetlevel` for that, and also we need to change the font style of “sections” (which in truth are our subsections) to use not the bold but the medium series; we modify the `\etocfontone` command for that. Also we use dot leaders which are less spread out than in the package default.

```
\etocruledstyle[2]{\normalfont\normalsize\rmfamily\itshape
  \fbox{\parbox{.6\linewidth}{
    \leftskip 0pt plus .5fil
    \rightskip 0pt plus -.5fil
    \parfillskip 0pt plus 1fil This is the global table of
    contents on two columns, using \etoc default line styles, but with
    sections as chapters, and subsections as sections.
  }}}
\etocdefaultlines
\etocsetnexttocdepth{1}
\begingroup
\etocsetlevel{section}{0}
\etocsetlevel{subsection}{1}
\renewcommand*{\etocfontone}{\normalfont \normalsize}
\renewcommand*{\etoclineleaders}
  {\hbox{\normalfont\normalsize\hbox to 1ex {\hss.\hss}}}
\sloppy
\tableofcontents
\endgroup
```

*This is the global table of contents on two columns, using **etoc** default line styles, but with sections as chapters, and subsections as sections.*

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35. Customizing **etoc**

35.1. Customizing the **etoc** pre-defined line styles

We will simply list the relevant commands as defined in the package. Customizing them goes through suitable `\renewcommands`:

```
\newcommand*\etocfontminustwo{\normalfont \LARGE \bfseries}  
\newcommand*\etocfontminusone{\normalfont \large \bfseries}  
\newcommand*\etocfontzero{\normalfont \large \bfseries}  
\newcommand*\etocfontone{\normalfont \normalsize \bfseries}  
\newcommand*\etocfonttwo{\normalfont \normalsize}  
\newcommand*\etocfontthree{\normalfont \footnotesize}  
  
\newcommand*\etocsepminustwo{4ex plus .5ex minus .5ex}  
\newcommand*\etocsepminusone{4ex plus .5ex minus .5ex}  
\newcommand*\etocsepzero{2.5ex plus .4ex minus .4ex}  
\newcommand*\etocsepone{1.5ex plus .3ex minus .3ex}  
\newcommand*\etocseptwo{.5ex plus .1ex minus .1ex}
```

```

\newcommand*\etocsepthree{.25ex plus .05ex minus .05ex}

\newcommand*\etocminustwoleftmargin{1.5em plus 0.5fil}
\newcommand*\etocminustworightmargin{1.5em plus -0.5fil}
\newcommand*\etocminusoneleftmargin{1em}
\newcommand*\etocminusonerightmargin{1em}

\newcommand*\etocbaselinespreadminustwo{1}
\newcommand*\etocbaselinespreadminusone{1}
\newcommand*\etocbaselinespreadzero{1}
\newcommand*\etocbaselinespreadone{1}
\newcommand*\etocbaselinespreadtwo{1}
\newcommand*\etocbaselinespreadthree{.9}
\newcommand*\etoclineleaders
  {\hbox{\normalfont\normalsize\hbox to 2ex {\hss.\hss}}}%
\newcommand*\etocabbrevpagename{p.~} % initial of "page"
\newcommand*\etocpartname{Part} % prior to v1.08b, was \partname
% but this didn't make sense e.g. with babel+frenchb whose \frenchpartname
% takes into account the value of the part counter.
\newcommand*\etocbookname{Book} % to be modified according to language

```

No customizing of the standard line styles is possible from within **etoc**. As already explained, when `\etocstandardlines` has been issued, the package just makes itself very discrete and acts only at the global level, and the TOC entries are (hopefully) formatted as would have happened in the absence of **etoc**.⁴⁵

The `\etocstandardlines` compatibility mode will work also with sectioning commands made known to **etoc** via `\etocsetlevel`, under the condition of course that these sectioning commands are accompanied with all the relevant definitions for typesetting toc entries in the L^AT_EX default manner (existence of the macros `\l@something . . .`).

Using the command `\etocsetstyle`, be it in the preamble or in the body of the document, has the secondary effect of switching off the compatibility mode.

35.2. Customizing the toc display styles

Again we list the relevant macros, what they do should be legible from their names. Note that `\renewcommand`'s and not `\setlength`'s have to be used for what appear to be lengths, and that color commands are not just color specifications, they must include `\color`, and are canceled by re-defining them to do `\relax`.

```

\newcommand*\etocabovetocskip{3.5ex plus 1ex minus .2ex}
\newcommand*\etocbelowtocskip{3.5ex plus 1ex minus .2ex}

\newcommand*\etoccolumnsep{2em}
\newcommand*\etocmulticolsep{0ex}
\newcommand*\etocmulticolpretolerance{-1}
\newcommand*\etocmulticoltolerance{200}
\newcommand*\etocdefaultnbcol{2}
\newcommand*\etocinnertopsep{2ex}
\newcommand*\etocinertprule{\hrule}
\newcommand*\etocinertprulecolorcmd{\relax}

```

⁴⁵with the KOMA-script classes, we noticed that `\etocstandarddisplaystyle` was apparently needed for the KOMA options `toc=left` to be active at the level of the line entries.

36. One more example of colored TOC layout

```
% for the framed style only:
\newcommand*\etocinnerleftsep{2em}
\newcommand*\etocinnerrightsep{2em}
\newcommand*\etocinnerbottomsep{3.5ex}

\newcommand*\etocleftrule{\vrule}
\newcommand*\etocrightrule{\vrule}
\newcommand*\etocbottomrule{\hrule}
\newcommand*\etocleftrulecolorcmd{\relax}
\newcommand*\etocrightrulecolorcmd{\relax}
\newcommand*\etocbottomrulecolorcmd{\relax}

\newcommand*\etocbkgcolorcmd{\relax}

% hooks
\newcommand\etocframedmphook{\relax}
```

The `\etocframedmphook` is positioned immediately after the beginning of a minipage environment where the contents of the framed TOC are typeset.

The `\...colorcmd` commands are initially set to expand to `\relax` (hence do not require package `color` or `xcolor` to be loaded). If one has modified a command such as `\etocbkgcolorcmd` to expand to a color command and wants to reset it to do nothing, one *must* use `\renewcommand{\etocbkgcolorcmd}{\relax}` and not `\let\etocbkgcolorcmd\relax`.

Regarding the dimensions of the top rule they can be specified in ex's or em's as in this example:

```
\renewcommand{\etoc_toprule}{\hrule height 1ex}
```

The package code is done in such a manner that it is the font size in instance at the end of typesetting the title argument to `\etocruledtoc` or `\etocframedtoc` which will be used for the meaning of the '1ex'. Of course also the other rule commands can have their dimensions in font relative units, but their values are decided on the basis of the font in effect just before the table of contents.

The top and bottom rules do not have to be rules and can be horizontal *leaders* (of a specified height) in the general T_EX sense. However the left and right rules are not used as (horizontal) leaders but as objects of a given specified width. Note that *only* the Plain T_EX syntax for rules is accepted here.

36. One more example of colored TOC layout

The command `\etocframedstyle` puts the title on the top rule in a centered position. This is not very convenient for this example so we included the title as part of the `<start>` code at section level, to get it *inside* the frame.

```
\begingroup
\definecolor{subsecnum}{RGB}{13,151,225}
\definecolor{secbackground}{RGB}{0,177,235}
\definecolor{tocbackground}{RGB}{212,237,252}

\renewcommand{\etocbkgcolorcmd}{\color{tocbackground}}
\renewcommand{\etocleftrulecolorcmd}{\color{tocbackground}}
\renewcommand{\etocrightrulecolorcmd}{\color{tocbackground}}
```



```

\renewcommand{\etocbottomrulecolorcmd}{\color{tocbackground}}
\renewcommand{\etocoprulcolorcmd}{\color{tocbackground}}

\renewcommand{\etocleftrule}{\vrule width 1cm}
\renewcommand{\etocrightrule}{\vrule width .5cm}
\renewcommand{\etocbottomrule}{\hrule height 12pt}
\renewcommand{\etocoprul}{\hrule height 12pt}

\renewcommand{\etocinnertopsep}{0pt}
\renewcommand{\etocinnerbottomsep}{0pt}
\renewcommand{\etocinnerleftsep}{0pt}
\renewcommand{\etocinnerrightsep}{0pt}

\newcommand\shiftedwhiterule[2]{%
  \hbox to \linewidth{\color{white}%
    \hskip#1\leaders\vrule height1pt\hfil}\nointerlineskip\vskip#2}

\etocsetstyle{subsubsection}{\etocskipfirstprefix}
{\shiftedwhiterule{\leftskip}{6pt}}
{\sffamily\footnotesize
  \leftskip2.5cm\hangindent1cm\rightskip1cm\noindent
  \hbox to 1cm{\color{subsecnum}\etocnumber\hss}%
  \color{black}\etocname\leaders\hbox to .2cm{\hss.}\hfill
  \rlap{\hbox to 1cm{\hss\etocpage\hskip.2cm}}\par
  \nointerlineskip\vskip3pt}
{}}

\etocsetstyle{subsection}{\etocskipfirstprefix}
{\shiftedwhiterule{1.5cm}{6pt}}
{\sffamily\small
  \leftskip1.5cm\hangindent1cm\rightskip1cm\noindent
  \hbox to 1cm{\color{subsecnum}\etocnumber\hss}%
  \color{black}\etocname\leaders\hbox to .2cm{\hss.}\hfill
  \rlap{\hbox to 1cm{\hss\etocpage\hskip.2cm}}\par
  \nointerlineskip\vskip6pt}
{}}

\newcommand{\coloredstuff}[2]{%
  \leftskip0pt\rightskip0pt\parskip0pt
  \fboxsep0pt % \colorbox uses \fboxsep also when no frame!
  \noindent\colorbox{secbackground}
    {\parbox{\linewidth}{%
      \vskip5pt
      {\noindent\color{#1}#2\par}\nointerlineskip
      \vskip3pt}}%
  \par\nointerlineskip}

\etocsetstyle{section}
{\coloredstuff{white}
  {\hfil \hyperref[toc:b]{\bfseries\large I am a twin of
    that other TOC (click me!)}\hfil}}
{\vskip3pt\sffamily\small}
{\coloredstuff{white}
  {\leftskip1.5cm\rightskip.5cm\parfillskip-\rightskip
    \makebox[0pt][r]{\makebox[.5cm][r]{\etocnumber\hspace{.2cm}}}%
    \etocname\hfill\makebox[.5cm][r]{\etocpage\hspace{.2cm}}}%
  \vskip6pt }

```

36. One more example of colored TOC layout

```
{%
\etocframedstyle[1]{%
\tableofcontents \label{toc:clone} \ref{toc:globalcmds}
\endgroup
```

I am a twin of that other TOC (click me!)		
30	Specifying the toc display style	57
30.1	The command <code>\etocsettocstyle</code>	57
30.2	The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulticol</code>	58
30.3	The command <code>\etoctocstyle</code>	58
30.4	The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code>	59
30.5	The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>	59
30.6	Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>	60
30.7	The compatibility mode <code>\etocstandarddisplaystyle</code> ...	60
30.8	The command <code>\etocinline</code>	60
31	Starred variants of the <code>\tableofcontents</code> etc... commands	61
32	Table of contents for this part	61
32.1	Testing the compatibility mode	61
32.2	A framed display	62
32.3	A (crazy) inline display	63

The TOC has been put in a `float` which appears on this page. The coding is a bit involved⁴⁶ as it does not use any additional package. Also, it was written at some early stage and I have not revised it since.

A better solution would be to use some package to set up a background color possibly extending accross pages, as the framed style (which we used to get this background color) can only deal with material short enough to fit on one page.

Regarding colors, generally speaking all color commands inside `etoc` are initially defined to do nothing, and the choice to use or not colors is left to the user.

⁴⁶and reveals the author's preference for the \TeX syntax...

Part VII.

Tips

Here are some statistics for this part: it contains 5 sections and 1 subsection. The name of the first section is “Hacking framed parboxes” and the corresponding number is “37”. The name of the last section is “Typesetting the TOC as a table (the old way)” and its number is “41”. The name of the first subsection is “All subsections of this document” and the corresponding number is “38.1”. The name of the last subsection is “All subsections of this document” and its number is “38.1”.

37. Hacking framed parboxes	75
38. Interverting the levels	76
38.1. All subsections of this document	76
39. Displaying statistics	77
40. Using depth tags	79
41. Typesetting the TOC as a table (the old way)	81

37. Hacking framed parboxes

```
\etocdefaultlines
\renewcommand\etocoprul{\hrule height 2pt depth 2pt}
\etocruled{\color{green}\fboxrule2pt\fboxseplex
\fbx{\raisebox{-\fontdimen22\textfont2}
{\color{blue}\parbox{.5\linewidth}
{\normalfont This text is perfectly centered
vertically with respect to the
surrounding horizontal rules.}}}}
\ref{toc:globalcmds}
```

This text is perfectly centered vertically with respect to the surrounding horizontal rules.

Specifying the toc display style	30, p. 57	The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code>
The command <code>\etocsettocstyle</code>	30.1, p. 57	30.4, p. 59
The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulti-</code>	30.2, p. 58	The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>
The command <code>\etoclocstyle</code>	30.3, p. 58	30.5, p. 59
		Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>
		30.6, p. 60
		The compatibility mode <code>\etocstandard-</code>
		<code>displaystyle</code>
		30.7, p. 60

38. Interverting the levels

The command <code>\etocinline</code>	30.8, p. 60	Table of contents for this part	32, p. 61
Starred variants of the <code>\tableofcontents</code> etc... commands . . .	31, p. 61	Testing the compatibility mode	32.1, p. 61
		A framed display	32.2, p. 62
		A (crazy) inline display	32.3, p. 63

38. Interverting the levels

Let us display and count all subsections occurring in this document (see [Part III](#) for other uses of this technique):

```
\etocsetnexttocdepth{2}
\begingroup
\etocsetlevel{part}{3}
\etocsetlevel{section}{3}
\etocsetstyle{subsection}
{
  \small\begin{enumerate}[itemsep=0pt,label=,leftmargin=0pt]}
  {\normalfont\bfseries\item}
  {\roman{enumi}. \mdseries\etocname{}} (\etocnumber, p.\~\etocpage)}
  {\end{enumerate}}
\renewcommand{\etoccolumnsep}{2.75em}
\renewcommand{\columnseprule}{1pt}
\etocmulticol[3]{\subsection{All subsections of this document}}
\endgroup
```

38.1. All subsections of this document

i. Limitations in the use of list environments for tables of contents (3.1, p. 7)	<i>hidelinks</i> (14.1, p. 22)	commands (26.2, p. 52)
ii. <code>\etocsetstyle</code> for the line styles (4.1, p. 8)	ix. A Beautiful Thesis example (15.1, p. 23)	xvii. The <code>\etocnumber</code> command (26.3, p. 52)
iii. <code>\etocsettocstyle</code> for the toc display (4.2, p. 8)	x. A TOC with a background color (15.2, p. 24)	xviii. The <code>\etocifnumbered</code> switch (26.4, p. 52)
iv. Compatibility mode (4.3, p. 8)	xi. The commands <code>\etocglobaldefs</code> and <code>\etoclocaldefs</code> (23.1, p. 47)	xix. The <code>\etocthename</code> , <code>\etocthenumber</code> , and <code>\etocthepage</code> commands (26.5, p. 53)
v. The <code>hyperref</code> option <code>bookmarksdepth</code> (11.1, p. 20)	xii. The <code>\etocchecksemptiness</code> command (24.1, p. 47)	xx. The <code>\etoclink</code> command (26.6, p. 53)
vi. The commands <code>\etocobeytoctocdepth</code> and <code>\etocignoretoctocdepth</code> (12.1, p. 21)	xiii. The <code>\etocnotocifnotoc</code> command (24.2, p. 47)	xxi. The <code>\etocthelinkedname</code> , <code>\etocthelinkednumber</code> , <code>\etocthelinkedpage</code> and <code>\etocthelink</code> commands (26.7, p. 53)
vii. The commands <code>\etocobeydepthtags</code> and <code>\etocignoredepthtags</code> (13.1, p. 21)	xiv. The <code>\etocifwasempty</code> command (24.3, p. 48)	xxii. Testing the scope (28.1, p. 55)
viii. The <code>hyperref</code> option	xv. The <code>\etocname</code> and <code>\etocpage</code> commands (26.1, p. 50)	xxiii. This is a (pale) red subsection for illustrative purposes (28.2, p. 56)
	xvi. The <code>\etocskipfirstprefix</code> and <code>\etociffirst</code>	

xxiv. The command <code>\etoc-settocstyle</code> (30.1, p. 57)	xxxii. Testing the compatibility mode (32.1, p. 61)	xlili. Compatibility with beamer (42.2, p. 84)
xxv. The commands <code>\etoc-multicolstyle</code> , <code>\etoc-multicol</code> , and <code>\etoclocalmulticol</code> (30.2, p. 58)	xxxiii. A framed display (32.2, p. 62)	xliv. Compatibility with Babel (42.3, p. 84)
xxvi. The command <code>\etoc-tocstyle</code> (30.3, p. 58)	xxxiv. A (crazy) inline display (32.3, p. 63)	xlv. Compatibility with hyperref (42.4, p. 84)
xxvii. The commands <code>\etoc-ruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code> (30.4, p. 59)	xxxv. Setting up local styles (33.1, p. 65)	xlvi. Compatibility with multicol (42.5, p. 84)
xxviii. The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code> (30.5, p. 59)	xxxvi. Setting up toc display styles (33.2, p. 65)	xlvii. Compatibility with tocloft (42.6, p. 84)
xxix. Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code> (30.6, p. 60)	xxxvii. Displaying tables of contents (33.3, p. 66)	xlviii. Compatibility with the memoir class (42.7, p. 85)
xxx. The compatibility mode <code>\etocstandarddisplaystyle</code> (30.7, p. 60)	xxxviii. Labels and references (33.4, p. 66)	xliv. Compatibility with package tocvsec2 (42.8, p. 85)
xxxi. The command <code>\etoc-inline</code> (30.8, p. 60)	xxxix. Customizing the <code>etoc</code> pre-defined line styles (35.1, p. 70)	I. Compatibility with package tableof (42.9, p. 85)
	xl. Customizing the toc display styles (35.2, p. 71)	II. Compatibility with package tocstyle (42.10, p. 85)
	xli. All subsections of this document (38.1, p. 76)	
	xlii. Generalities (42.1, p. 83)	

39. Displaying statistics

Each part of this document starts with a paragraph telling how many sections and subsections it has. Well, each one of this paragraph is a table of contents! We designed a macro `\thispartstats` to do that. It uses “storage” boxes to keep the information about the first and last section or subsection. Using boxes is the simplest manner to encapsulate the `hyperref` link for later use (whether there is one or none). However, one cannot modify then the font or the color. If such a need arises, one must switch from using boxes to using macros, and store the `hyperref` data for later use as was done in the code presented in [section 21](#). We present also this second method.

But first, the code of `\thispartstats`:

```
\newsavebox\firstnamei \newsavebox\firstnumberi
\newsavebox\lastnamei \newsavebox\lastnumberi
\newsavebox\firstnameii \newsavebox\firstnumberii
\newsavebox\lastnameii \newsavebox\lastnumberii
\newcounter{mycounti} \newcounter{mycountii}
\newcommand*\thispartstatsauxi{} \newcommand*\thispartstatsauxii{}
\newcommand*\oldtocdepth{}
\newcommand*\thispartstats{%
  \setcounter{mycounti}{0}%
  \setcounter{mycountii}{0}%
  \def\thispartstatsauxi{%
    \sbox{\firstnamei}{\etocname}%
    \sbox{\firstnumberi}{\etocnumber}%
  }
  \def\thispartstatsauxii{}%
```

39. Displaying statistics

```

\def\thispartstatsauxii{%
    \sbox{\firstnameii}{\etocname}%
    \sbox{\firstnumberii}{\etocnumber}%
    \def\thispartstatsauxii{}}%
\begingroup
\etocsetstyle{subsection} {} {}
{
\thispartstatsauxii
\stepcounter{mycountii}%
\sbox{\lastnameii}{\etocname}%
\sbox{\lastnumberii}{\etocnumber}} {}%
\etocsetstyle{section} {} {}
{
\thispartstatsauxi
\stepcounter{mycounti}%
\sbox{\lastnamei}{\etocname}%
\sbox{\lastnumberi}{\etocnumber}}
{Here are some statistics for this part: it contains \arabic{mycounti}
section\ifnum\value{mycounti}>1 s\fi{} and \arabic{mycountii}
subsection\ifnum\value{mycountii}>1 s\fi. The name of the first section is
\unhbox\firstnamei{} and the corresponding number is \unhbox\firstnumberi.
The name of the last section is \unhbox\lastnamei{} and its number is
\unhbox\lastnumberi. The name of the first subsection is \unhbox\firstnameii{}
and the corresponding number is \unhbox\firstnumberii. The name of the last
subsection is \unhbox\lastnameii{} and its number is \unhbox\lastnumberii.}%
\etocinline % cancels the automatic \par automatically before the TOC
\etocsettocstyle {}{}
\etocsetnexttocdepth{2}%
\localtableofcontents % to be used at the top level of a Part.
\endgroup
}

```

And now, the variant with macros rather than boxes (this variant as it stands here is for using within a section).

```

\makeatletter
\newcommand*\firstsubname {} \newcommand*\lastsubname {}
\newcommand*\firstsubnumber {} \newcommand*\lastsubnumber {}
\newcommand*\thisspecialstatsaux{}
\newcommand*{\thisspecialstats}{%
    \setcounter{mycounti}{0}%
    \def\thisspecialstatsaux{%
        \let\firstsubname\etocthelinkedname
        \let\firstsubnumber\etocthelinkednumber
        \def\thisspecialstatsaux{}}
    \begingroup
    \etocsetstyle{subsection} {} {}
    {
\thisspecialstatsaux
\stepcounter{mycounti}%
\let\lastsubname\etocthelinkedname
\let\lastsubnumber\etocthelinkednumber }
    {Here are some statistics for this section. It contains \arabic{mycounti}
    subsections. The name of its first is \emph{\firstsubname{}} and the
    corresponding number is {\firstsubnumber}. The name of the last
    subsection is \emph{\lastsubname{}} and its number is {\lastsubnumber}.}%
    \etocsettocstyle {}{}
    \etocinline
    \etocsetnexttocdepth {1}%
    \localtableofcontents % to be used within a section
    \endgroup
}
\makeatother

```

```

\endgroup
}
\makeatother

```

40. Using depth tags

We want a TOC which will have a heading for each `\part` (except the last part with the code source, which we decide not to include), and will additionally open up [Part V](#) up to paragraphs. To achieve this we added to this source various `\etocdepthtag.toc` commands, and it remains now to set the levels for each tag using `\etocsettagdepth` (this was used earlier in this document, in [section 6](#), within a group hence it did not affect the other tables of contents).

However, the package line styles do not display paragraphs, and the standard line styles of the document class give too much vertical spacing (in this context) when displaying a Part heading in the TOC. So we cook up our own, quickly designed line styles, in the style of [section 5](#) (but with a way to put page numbers on the right which is more like the method used by L^AT_EX2_ε's `@dottedtocline`; and multi-line headings now leave empty the area underneath the numbers contrarily to the code from [section 5](#)). And after a few minutes for choosing lengths (now that this has been done once, it can be recycled easily) we get:

A TOC using depth tags	
I Overview	6
II Arbitrarily many TOCs, and local ones too	17
III Surprising uses of <code>etoc</code>	26
IV Commands for the toc line styles	50
V Commands for the toc display style	57
30 Specifying the toc display style	57
30.1 The command <code>\etocsettocstyle</code>	57
30.2 The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulticol</code>	58
30.3 The command <code>\etoclocalstyle</code>	58
30.3.1 The command <code>\etoclocalstylewithmarks</code>	58
30.3.1.1 Do we really want paragraph entries in the TOC?	59
30.3.1.2 really?	59
30.4 The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code>	59
30.5 The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>	59
30.6 Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>	60
30.7 The compatibility mode <code>\etocstandarddisplaystyle</code>	60
30.7.1 The commands <code>\etocarticlestyle</code> , <code>\etocbookstyle</code> , ...	60
30.8 The command <code>\etocinline</code>	60
31 Starred variants of the <code>\tableofcontents</code> etc... commands	61

40. Using depth tags

32 Table of contents for this part	61
32.1 Testing the compatibility mode	61
32.2 A framed display	62
32.3 A (crazy) inline display	63
VI Using and customizing etoc	65
VII Tips	75
VIII etoc and the outside world	83

```
\etocsetnexttocdepth {all}
\begingroup
\parindent 0pt \leftskip 0cm \rightskip .75cm \parfillskip -\rightskip
\newcommand*{\EndParWithPagenoInMargin}
{
  \nobreak\hfill
  \nobreak\makebox[0.75cm][r]{\mdseries\normalsize\etocpage}%
  \par}
\renewcommand*{\etoclineleaders}
{
  \hbox{\normalfont\normalsize\hbox to .75ex {\hss.\hss}}}
\newcommand*{\EndParWithPagenoInMarginAndLeaders}
{
  \nobreak\leaders\etoclineleaders\hfill
  \nobreak\makebox[0.75cm][r]{\mdseries\normalsize\etocpage}%
  \par}
\etocsetstyle {part}
{
  {}
  {\leavevmode\leftskip 1cm\relax}
  {\bfseries\large\llap{\makebox[1cm][r]{\etocnumber\ }}%
  \etocname\EndParWithPagenoInMargin\smallskip}
  {}
}
\etocsetstyle {section}
{
  {}
  {\leavevmode\leftskip 1.75cm\relax}
  {\bfseries\normalsize\llap{\makebox[.75cm][l]{\etocnumber}}%
  \etocname\EndParWithPagenoInMarginAndLeaders}
  {}
}
\etocsetstyle {subsection}
{
  {}
  {\leavevmode\leftskip 2.75cm\relax}
  {\mdseries\normalsize\llap{\makebox[1cm][l]{\etocnumber}}%
  \etocname\EndParWithPagenoInMarginAndLeaders}
  {}
}
\etocsetstyle {subsubsection}
{
  {}
  {\leavevmode\leftskip 4cm\relax}
  {\mdseries\normalsize\llap{\makebox[1.25cm][l]{\etocnumber}}%
  \etocname\EndParWithPagenoInMarginAndLeaders}
  {}
}
\etocsetstyle {paragraph}
{
  {}
  {\leavevmode\leftskip 5.5cm\relax}
  {\mdseries\normalsize\llap{\makebox[1.5cm][l]{\etocnumber}}%
  \etocname\EndParWithPagenoInMarginAndLeaders}
  {}
}
\etocsettagdepth {preamble} {none}
\etocsettagdepth {overview} {part}
```



```

\etocsettagdepth {arbitrarily}{part}
\etocsettagdepth {surprising} {part}
\etocsettagdepth {linestyles} {part}
\etocsettagdepth {globalcmds} {paragraph}
\etocsettagdepth {custom}      {part}
\etocsettagdepth {tips}        {part}
\etocsettagdepth {etocandworld}{part}
\etocsettagdepth {code}        {none}
\renewcommand\etocptprule {\hrule height 3pt\relax }
\renewcommand\etocptprulecolorcmd {\color{blue}}
\renewcommand\etocaftercontentshook
  {\medskip\begingroup \color{blue}\hrule height 3pt \endgroup }
\etocruledstyle [1]{\Large\bfseries
  \fbox{\makebox[8cm]{A TOC using depth tags}}}
\sloppy
\tableofcontents
\endgroup

```

41. Typesetting the TOC as a table (the old way)

Due to, among other things, the fact that alignment cells create and close groups, and that by default definitions of `\etocname`, `\etocnumber`, `\etocpage` made by `etoc` are local, it was not easy to typeset a TOC as table with `etoc`, prior to release 1.08.

Not only `\etocname` etc... caused a problem, but also the basic redefinition of `\contentsline` was made by `etoc` only after the first argument to `\etocsettocstyle` had been executed, hence if this argument were to open a tabular, the `etoc` redefinition of `\contentsline` would be done in the first cell of the first row and get lost thereafter.

Thus one had to resort to the technique explained in [section 20](#) of using the execution of `\tableofcontents` as a way to store data which was then displayed later.

For the record, here is how the TOC from [section 23](#) was coded in the old days. We don't have here the problems with the positioning of `\hline`'s we face with the newer method; on the other hand we must manipulate token registers which are not familiar to most \LaTeX users (macros could be used, but would be more cumbersome, except perhaps if using the $\varepsilon\text{-TeX}$ `\unexpanded`).

The method here is the most powerful because it filters out of the `.toc` file only the data we want (the other things are not ignored, they are executed but hopefully do not create havoc; typically they are language changing instructions, etc...), and we are less susceptible to fall potential victims of various external macros inserted in the `.toc` file by other packages.

Note: rather than `\toks` registers it would be easier here to use $\varepsilon\text{-TeX}$ `\unexpanded` primitive. See for example [section 22](#).

```

\newtoks\toctabletok
\newcommand*\appendtotok[2]{% #1=toks variable, #2=macro, expands once #2
  #1\expandafter\expandafter\expandafter {\expandafter\the\expandafter #1#2}}

\newcommand*\PreparePart{%
  \toks0 \expandafter{\etocthelinkednumber}%
  \toks2 \expandafter{\etocthelinkedname}%
  \toks4 \expandafter{\etocthelinkedpage}%
  \edef\toctablepiece {\noexpand\hline

```

41. Typesetting the TOC as a table (the old way)

```

\noexpand\strut\the\toks0 &\noexpand\bfseries\the\toks2
&\the\toks4 \noexpand\\noexpand\hline}%
}
\newcommand*\PrepareSection{%
\toks0 \expandafter{\etocthelinkednumber}%
\toks2 \expandafter{\etocthelinkedname}%
\toks4 \expandafter{\etocthelinkedpage}%
\edef\tocablepiece {\the\toks0 &\the\toks2 &\the\toks4 \noexpand\\}%
}
% new version for 1.07k, 2014/03/06
\newcommand*\PrepareSubsection{%
\toks0 \expandafter{\etocthelinkednumber}%
\toks2 \expandafter{\expandafter\itshape\etocthelinkedname\strut}%
\toks4 \expandafter{\expandafter\itshape\etocthelinkedpage}%
\edef\tocablepiece{&\noexpand\makebox[1cm][c]{\the\toks0}%
\noexpand\parbox[t]{\dimexpr6cm-\tabcolsep\relax}
{\noexpand\sloppy\the\toks2}%
&\the\toks4 \noexpand\\}%
}

\begingroup
\etocsetstyle{part}{}{}{\PreparePart \appendtotok\tocabletok\tocablepiece}{}

\etocsetstyle{section}{}{}{\PrepareSection \appendtotok\tocabletok\tocablepiece}{}

\etocsetstyle{subsection}{}{}{\PrepareSubsection\appendtotok\tocabletok\tocablepiece}{}

\etocsettocstyle
{\tocabletok{\hypersetup{hidelinks}%
\begin{longtable}{|>\bfseries c|p{7cm}|r|}\hline
\multicolumn{3}{|c|}{\Large\bfseries\strut TABLE OF CONTENTS}%
\\ \hline \hline}}
{\global\tocabletok\expandafter{\the\tocabletok\hline\end{longtable}}}
\etocsettocdepth {subsection}
\tableofcontents
\the\tocabletok
\endgroup

```

Part VIII.

etoc and the outside world

42. Compatibility with other packages

42.1. Generalities

The contents of the .toc file (if it already exists) are read into memory by **etoc** once, at the time of `\begin{document}`.⁴⁷

The .toc file remains available to other packages for read operations until the location of the first table of contents at which time a write stream is opened by **etoc** and from that point the file is erased until its contents are again written to the disk by \LaTeX at the end of the compilation.

Don't use `\if<condition> stuff \tableofcontents\fi`, but:

`\if<condition> stuff \expandafter\tableofcontents\fi`

Also a `\else` immediately following `\tableofcontents` or `\localtableofcontents` requires a previous `\expandafter`.

etoc can not really cohabit with packages modifying the `\tableofcontents` command: some sort of truce can be achieved if **etoc** is loaded last, hence is the winner.

Do not modify the `\tableofcontents` command like this:

```
\let\oldtableofcontents\tableofcontents
```

```
\renewcommand\tableofcontents{\oldtableofcontents foo}
```

as this will make the `\label/\ref` mechanism impossible.

Rather use

```
\renewcommand\etocaftertochook{foo}
```

and there is also `\etocaftercontentshook` which is executed a bit earlier⁴⁸ just before the closing part of the toc display style (and thus still within a group.)

Prepending is less of a problem (and anyhow there is also `\etocbeforetitlehook` available to the user).

Under certain circumstances **etoc** imposes its views on `\tableofcontents` at the time of `\begin{document}`. You may thus have to use `\AtBeginDocument` to delay your (necessarily ugly and non-recommendable) patches. Patching after `\begin{document}` is naturally possible but I feel almost a rebel to mention this to \LaTeX users!

etoc requires the .toc file to use the `\contentsline` macro. It **can not** work if there is no .toc file or if the .toc file does not contain the relevant data or if the .toc file does not use the `\contentsline` macro or if the `\contentsline` macro does not invoke the `\l@<divisionunit>` macros.

⁴⁷New with 1.07m. Earlier versions read the .toc file at the time of `\usepackage{etoc}`. Thanks to Denis Bitouzé who signaled a Babel related problem, which turned out to be caused by this.

⁴⁸contrarily to `\etocaftertochook`, `\etocaftercontentshook` is not executed if the `tocdepth` did not allow the printing of the TOC.

42. Compatibility with other packages

42.2. Compatibility with beamer

For the very reasons mentioned right before, **etoc** is incompatible with the beamer class. However, if beamer is used in an article mode, i.e., with the article class in conjunction with the beamerarticle package, then **etoc** should work.

42.3. Compatibility with Babel

One must load **etoc** *after* babel. This is in order for babel's shorthands to be active at the time when **etoc** loads the .toc file.

42.4. Compatibility with hyperref

Please inform the author in case of issues: **etoc** was from the start designed to be 100% compatible with package hyperref.

The macros `\etocname`, `\etocnumber`, and `\etocpage` contain the hyperref links, if present (note that the `linktoc=all` option of hyperref tells it to put a link also in the page number corresponding to a given toc entry). For example, the tables of contents of the present document are all fully linked. It doesn't matter whether **etoc** or hyperref is loaded first.

42.5. Compatibility with multicol

etoc loads the package multicol.

42.6. Compatibility with tocloft

Release 1.07k added compatibility with package tocloft:⁴⁹ steps are taken to prevent the redefinition of `\tableofcontents` done by tocloft at `\begin{document}`. As long as **etoc** is left in compatibility mode the customization done by tocloft will be obeyed, for both the line styles and the TOC title. One may still benefit from the *depth tags* management by **etoc**, from its `\localtableofcontents`, from its `\label+\ref` mechanism. One may use `\etocsetstyle` to define via **etoc** the layout for one TOC and then use rather tocloft for another one, if `\tableofcontents` follows `\etocstandardlines` and `\etocstandarddisplaystyle`. In this compatibility mode `\etocsetlevel{division unit}{6}` will render invisible the chosen division level, but exchanging levels is otherwise not possible.

One should load **etoc** *after* tocloft. A warning is issued if otherwise, because if **etoc** is loaded before it will realize that at the time of `\begin{document}` and trick tocloft into believing having been loaded with the `titles` option.

It is possible to customize (using package tocloft for example) throughout the document the macros `\l@section`, `\l@subsection` ... and the effect will be seen in the next table of contents typeset by **etoc** in compatibility mode.

⁴⁹<http://ctan.org/pkg/tocloft>

42.7. Compatibility with the memoir class

Release 1.071 has also improved the compatibility with the memoir class: its appendix level has been made known to `etoc`. It is at the same level as chapter, thus the chapter line style should possibly do a test for some user defined boolean whose activation may be added to the .toc file at the suitable location via `\addtocontents{toc}{. .}`, if one needs to distinguish the two kinds of divisions.

42.8. Compatibility with package tocvsec2

`etoc` used to be incompatible with package tocvsec2⁵⁰; it now cohabits, sort of, as it deactivates tocvsec2's modification of `\tableofcontents` (done in the style above) and also cancels its other toc-related macros, but reimplements partially their functionality with `\etocsettocdepth.toc`. By the way, at least two latex runs are necessary for new uses of this command in a document to have an effect in tables of contents.

42.9. Compatibility with package tableof

It is possible to use simultaneously `etoc` and `tableof`⁵¹. Release 1.08 of `etoc` requires at least version 1.4a of `tableof`. If `\etocglobaldefs` is put in the preamble, this must be after the loading of package `tableof`. `tableof` command `\nexttocwithtags` should work as expected.

`tableof` commands `\tableof`, `\tablenotof`, ... will typeset the (a priori global) table of contents according to the document class defaults, obeying the `etoc` depth tags; as explained in the `tableof` documentation they do not typeset a TOC title. They should *not* be used in case `\etocglobaldefs` was issued before, except if its scope has been terminated since then, or `\etoclocaldefs` has cancelled its influence.

42.10. Compatibility with package tocstyle

Unknown. (not tested a.t.t.o.w).

43. T_EXnical matters

The `\etocname`, `\etocnumber`, `\etocpage` commands are protected against premature expansion. They contain suitable hyperref links if package `hyperref` is loaded and active for the TOC. The commands `\etoclink` and `\etocifnumbered` are also protected against premature expansion. Also `\etociffirst` and `\etoccontentsline`.

On the other hand `\etocthenname`, `\etocthenumber`, `\etocthepage` are *not* protected against expansion. And neither are `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage`. The latter contain hyperlink data, if present in the .toc file.

The commands such as `\etocsetstyle`, `\etocsetlevel`, `\etocsettocstyle`, `\etocmulticolstyle`, `\etocruledstyle`, `\etocframedstyle` obey L^AT_EX's groups. All TOCs are typeset inside groups.

⁵⁰<http://ctan.org/pkg/tocvsec2>

⁵¹<http://ctan.org/pkg/tableof>

44. Errors and catastrophes

When a `\localtableofcontents` is inserted by the user in the document, a line containing an **etoc** inner command and an identification number is added to the `.toc` file. The correct local table of contents will be displayed only on the next `latex` run.

44. Errors and catastrophes

After using `\etocsetstyle` for one level, the remaining uncustomized levels use the **etoc** default styles (those which are activated by `\etocdefaultlines`). One has to make sure that all levels needed for the next table of contents are mutually compatible: in particular the **etoc** default line styles expect each to be started in “vertical mode”.

When using multiple `\tableofcontents` commands in a document, one should beware from adding typesetting instructions directly in the `.toc` file, as they will be executed by **etoc** for all TOCs: even for a `\localtableofcontents` it doesn’t matter if that instruction seems to concern material outside of its scope, it will get executed nevertheless. If absolutely necessary (but this should never be) these instructions should be done in such a way that they can be activated or deactivated easily from the document source, as need be.

As is usual with `toc` and `labels`, after each change, one has to run `latex` a certain number of times to let the produced document get its final appearance (at least twice).

Part IX.

The code

45. Timestamp

This is the documentation as of 2016/09/09, printed from the source file with the time stamp Time-stamp: <09-09-2016 at 21:49:18 CEST>. The package version is v1.08g, of 2015/08/29.

46. Change history

v1.08g [2015/08/29]

Downgraded to a mere info message the etoc-issued warning (relative to \settocdepth/\maxtocdepth) under class memoir.

v1.08f [2015/04/28]

Minor changes to the documentation. \etocsetlevel more economical.

v1.08e [2015/04/17]

The command \etocchecksemtiness tells etoc to not print, from that point on, the headings of the local tables of contents if they have empty contents. This is mainly for class authors who might want to have their \section or \chapter automatically do a \localtableofcontents. Could prove also useful for batch conversions of documents. Thanks to Paul Gaborit who asked for such a feature.

The command \etocnotocifnotoc extends this behaviour to global TOCs: indeed why should documents with no sectioning units take this as an excuse not to use package etoc ?

The command \etocifwasempty{yes}{no} can be used for suitable extra action.

A \tableofcontents\ref{foo} now expects foo to be a label to a `_local_` TOC. The use with foo a label to a `_global_` TOC is not supported anymore as it had no utility and made the code more complex.

The syntax \localtableofcontents\ref{foo} is now accepted as a synonym to the earlier syntax \tableofcontents\ref{foo}.

v1.08d [2015/04/09]

Translation into German of the additions made to the documentation for the 1.08x series of releases.

Thanks to Christine Römer!

v1.08c [2015/03/30]

- removed a few unneeded \long from the code.
- removed use of \arabic at one location of the code, as it may get redefined by some language modules for babel or polyglossia.

v1.08b [2015/03/18]

Bug fixes:

- extra space token removed from 'localtableofcontents' (showed only for inline TOCs.)
- \etocpartname (a macro used by the package own default line styles) was defined to be \partname, but this is not compatible at least with babel+french context. Now simply expands to Part.
- some problems fixed in the German documentation.
- [2015/03/28] some more problems fixed in the documentation. Added mention of \etocarticlestyle and \etocbookstyle.

v1.08a [2015/03/13]

\etocname, \etocnumber and \etocpage are now the robust variants of \etocthelinkedname, \etocthelinkednumber and \etocthelinkedpage. This should arguably have been done since the addition of the latter to etoc with v1.07f [2013/03/07]. The earlier robust commands \etocname etc... contained the hyperlink destination only in an unexpanded form.

The documentation has a brand new title page and a new section The TOC as a TikZ mind map both illustrating further uses of etoc to display tables of contents as trees in an automatic manner.

v1.08 [2015/03/10]

\etocskipfirstprefix may now appear anywhere in the <start> part of a level style.

46. Change history

New commands `\etociffirst`, `\etocxiffirst`, `\etocxifnumbered`, `\etocglobaldefs` and `\etoclocaldefs`.

It is now possible to issue line style specifications directly with `&` and `\` tokens, in order to typeset a TOC as a tabular or longtable with the opening for example in the first argument of `\etocsettocstyle` and the closing in its second argument.

It is mandatory for such uses to issue `\etocglobaldefs` which tells etoc to proceed globally for certain definitions. This is also useful in the context of the inline environments of package `enumitem`.

On this occasion, various old parts of the code have been improved.

v1.07n [2015/03/05]

No more use of `\toks@` when etoc constructs `\etocthelinkedname` etc... Thus `\toks@` can be put in the line styles in order to accumulate information. Only useful if it is certain nothing else will change `\toks@` either.

In the documentation: list of main commands now in alphabetic order.

v1.07m [2015/01/23]

Reading of `.toc` file is delayed to `\begin{document}` to account for possible Babel active characters used therein. Thanks to Denis Bitouzé who reported a Babel related problem.

Improved global toc display emulation under KOMA-script classes.

New command `\etocbeforetitlehook`. New command `\etocdisplay`.

v1.07l [doc of 2014/04/29]

Added to the documentation an example of use of `\etocthelinkedname` together with an `enumitem` inline `itemize*` environment; moved main TOC to immediately after the title, and license to the first pages.

Incorporation of the translation into German done on the initiative of Christine Römer by Felix Baral-Weber, Jenny Rothkrämer-Vogt, Daniel Büttner, Claudia Dahl, Christian Otto and Christine Römer (FSU Jena). My grateful thanks to all!

v1.07i [2014/04/22]

Fixes a bug with the 1.07k compatibility layer with `tocloft` which had broken the 1.07k (sic) compatibility with `memoir` (yes, `memoir` class 1.07k testing had been done before adding the `tocloft` thing to the source code . . .). Also, etoc when detecting `tocvsec2` now checks if this is

under the `memoir` class, as then nothing special needs to be done to rescue `\tableofcontents`, contrarily to the situation with the native `tocvsec2`.

v1.07k [2014/03/06]

Compatibility with package `tocloft`; and improved compatibility with class `memoir`. Novel TOC example in Overview.

v1.07j [2013/12/03]

Some issues with the documentation formatting (now two-sided) have been addressed, and a novel documentation section “Typesetting the TOC as a table” has been added. Very minor code change (`\Etoc@readtoc`).

v1.07i [2013/10/21]

Changes to the `\etocmulticolstyle` and `\etocruledstyle` codes to lessen the risk of a page break after the title (in the one-column case).

v1.07h [2013/10/16]

New commands `\etocdepthtag.toc`, `\etocsettagdepth`, `\etocobeydepthtags`, `\etocignoredepthtags`.

v1.07g [2013/10/13]

New commands `\etocsettocdepth`, `\etocsettocdepth.toc`, `\etocobeytoctocdepth`, `\etocignoretoctocdepth` which emulate part of `tocvsec2` functionality ; measures to make `tocvsec2` partially compatible with etoc.

New commands `\etocsetnexttocdepth`, `\invisibletableofcontents`, `\invisiblelocaltableofcontents`.

Switched from `tikz-qtrees` to `forest` for the first ‘toc as tree’ example.

Command names are linked to their descriptions, and many other changes in the documentation.

Removed printing of temporary message when the local toc id is not yet stabilized; indeed `\localtableofcontents` can have many uses, such as filling up some token list register and one may wish to not have anything typeset, even in an intermediate run.

All of `tex etoc.dtx`, `etex etoc.dtx`, `xetex etoc.dtx`, `latex etoc.dtx`, `pdflatex etoc.dtx` are now possible, and the extracted file `etoc.tex` allows easy customization of compilation options for the documentation (default is via `dvipdfmx` which produces the smallest file).

v1.07f [2013/03/07]

New macros `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage`, and `\etocthelink`.

v1.07e [2013/03/01]

Improvements in the package own line styles with regards to penalties and vertical spaces.
Addition to the documentation of an example of a tree-like table of contents (uses tikz).
More such examples added 2013/03/03.

v1.07d [2013/02/24]

Minor code improvements and new documentation section “Another compatibility mode”.

v1.07b [2013/02/02]

Removal of the `\xspace` from the macros `\etocname`, `\etocnumber`, `\etocpage`.
Additional examples in the documentation.

v1.07 [2013/01/29]

New commands:

`\etocthename`, `\etocthenumber`, `\etocthe-
page`, `\etoclink`,
`\etoccontentsline`, `\etoccontentsline*`
`\etocnopar`, `\etocaftercontentshook`

Modified command: `\etocmulticolstyle`

New documentation section “Surprising uses of etoc” which explains how to do “Lists of arbitrary things”, in addition to the tables of contents.

v1.06 [2012/12/07]

The standard macros `\@section` etc... are modified only during the calls to `\tableofcontents`; they can thus be customized as will by the user (with the help of a package like `tocloft`) and this will be taken into account by `etoc` for the TOCs typeset in compatibility mode.

v1.05 [2012/12/01]

`\localtableofcontents` replaces `\tableofcontents*` (for compatibility with the `memoir` class).

Compatibility with KOMA-script and memoir document classes.

v1.04 [2012/11/24]

A (possibly local) table of contents can be labeled:

`\tableofcontents \label{toc:1}`

and reproduced elsewhere in the document (with a possibly completely different layout):

`\tableofcontents \ref{toc:1}`

v1.02 [2012/11/18]

Initial version.

47. Implementation

```
1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesPackage{etoc}
3 [2015/08/29 v1.08g Completely customisable TOCs (JFB)]
4 \RequirePackage{multicol}
5 \DeclareOption*{\PackageWarning{etoc}{Option ‘\CurrentOption’ is unknown.}}
6 \ProcessOptions\relax

1.08 suppresses \ifEtoc@part and defines \ifEtoc@skiprefix. It also defines \etocglobaldefs,
\etoclocaldefs and \Etoc@global.
7 \newtoks\Etoc@toctoks
8 \def\Etoc@par{\par}
9 \def\etocinline{\def\Etoc@par{}}
10 \let\etocnopar\etocinline
11 \def\etocdisplay{\def\Etoc@par{\par}}% 1.07m 2015/01/23

\etocglobaldefs should be used only for special things such as TOC as a table; it should be put
in a group to limit its scope. If used in the preamble, it must come after \tableof if the latter is
loaded too.

12 \let\Etoc@global\@empty % 1.08 2015/03/10
13 \def\etocglobaldefs{\let\Etoc@global\global\let\tof@global\global}
14 \def\etoclocaldefs {\let\Etoc@global\@empty\let\tof@global\@empty}
15 \newif\ifEtoc@jj % book
16 \newif\ifEtoc@j % part
17 \newif\ifEtoc@ % chapter
```

47. Implementation

```
18 \newif\ifEtoc@i % section
19 \newif\ifEtoc@ii % subsection
20 \newif\ifEtoc@iii % subsubsection
21 \newif\ifEtoc@iv % paragraph
22 \newif\ifEtoc@v % subparagraph
23 \newif\ifEtoc@number
24 \newif\ifEtoc@hyperref
25 \newif\ifEtoc@parskip % 1.07d
26 \newif\ifEtoc@tocwithid
27 \newif\ifEtoc@standard
28 \newif\ifEtoc@skiprefix % 1.08
29 \newif\ifEtoc@isfirst % 1.08
30 \newif\ifEtoc@localtoc
31 \newif\ifEtoc@skipthisone
32 \newif\ifEtoc@stoptoc
33 \newif\ifEtoc@notactive
34 \newif\ifEtoc@mustclosegroup
35 \newif\ifEtoc@emptytoc % 1.08e
36 \newif\ifEtoc@checksemtiness % 1.08e. Default is 'no checks'.
37 \newcommand*\etocchecksemtiness {\Etoc@checksemtinesstrue }
38 \newif\ifEtoc@notocifnotoc % 1.08e
39 \newcommand*\etocnotocifnotoc {\Etoc@checksemtinesstrue\Etoc@notocifnotoctrue }
40 \def\etoc@{\etoc@}
```

1.07g uses a second counter; this could be avoided, but ok, let's not be that strict.

```
41 \newcounter{etoc@tocid}
42 \newcounter{etoc@tocdepth}% 1.07g
```

2015/03/08 Why do I use jj in the flags and minustwo here? and is there an entity full of forgiveness out there to save my soul even if taking into consideration my use of single and doubled @'s ? Although I desperately need to waste time I miraculously decided not to change everything today and thus the somewhat dispendious set-up below is maintained.

```
43 \@ifclassloaded{memoir}{\def\Etoc@minf{-\thr@@}}{\def\Etoc@minf{-\tw@}}
44 \def\Etoc@@minustwo@{-\tw@}
45 \let\Etoc@@minusone@@\m@ne
46 \let\Etoc@@zero@@ \z@
47 \let\Etoc@@one@@ \@ne
48 \let\Etoc@@two@@ \tw@
49 \let\Etoc@@three@@ \thr@@
50 \chardef\Etoc@@four@@ 4
51 \chardef\Etoc@@five@@ 5
52 \chardef\Etoc@@six@@ 6
53 %%\let\Etoc@localtop\Etoc@@minustwo@@ % 1.08e does it at each local TOC.
54 \def\Etoc@@minustwo@{minustwo}
55 \def\Etoc@@minusone@{minusone}
56 \def\Etoc@@zero@ {zero}
57 \def\Etoc@@one@ {one}
58 \def\Etoc@@two@ {two}
59 \def\Etoc@@three@ {three}
60 \def\Etoc@@four@ {four}
61 \def\Etoc@@five@ {five}
```

1.07g.

```
62 \expandafter\def\csname Etoc@-3@@\endcsname {-\thr@@}
63 \expandafter\let\csname Etoc@-2@@\endcsname \Etoc@@minustwo@@
64 \expandafter\let\csname Etoc@-1@@\endcsname \Etoc@@minusone@@
65 \expandafter\let\csname Etoc@0@@\endcsname \Etoc@@zero@@
66 \expandafter\let\csname Etoc@1@@\endcsname \Etoc@@one@@
```

```

67 \expandafter\let\csname Etoc@2@@\endcsname \Etoc@@two@@
68 \expandafter\let\csname Etoc@3@@\endcsname \Etoc@@three@@
69 \expandafter\let\csname Etoc@4@@\endcsname \Etoc@@four@@
70 \expandafter\let\csname Etoc@5@@\endcsname \Etoc@@five@@
71 \expandafter\let\csname Etoc@6@@\endcsname \Etoc@@six@@
72 \let\Etoc@all@@ \Etoc@@five@@
73 \let\Etoc@none@@ \Etoc@minf

```

Versions earlier than 1.08 did \Etoc@newlevel in a quite embarrassing way with an \edef.

1.08f's \etocsetlevel avoids multiple insertions of the same level in the \Etoc@levellist list.

```

74 \let\Etoc@levellist\@empty
75 \def\Etoc@newlevel #1{\expandafter\def\expandafter\Etoc@levellist\expandafter
76   {\Etoc@levellist\Etoc@levellist@elt #1}}
77 \def\etocsetlevel#1#2{%
78   \ifundefined{Etoc@#1@@}{\expandafter\Etoc@newlevel\csname l@#1\endcsname}{}%
79   \ifcase#2\relax
80     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@zero@@
81     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@zero@
82   \or
83     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@one@@
84     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@one@
85   \or
86     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@two@@
87     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@two@
88   \or
89     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@three@@
90     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@three@
91   \or
92     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@four@@
93     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@four@
94   \or
95     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@five@@
96     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@five@
97   \or
98     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@six@@
99   \else
100     \ifnum#2=\m@ne
101       \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@minusone@@
102       \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@minusone@
103     \else
104       \ifnum#2=-\tw@
105         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@minustwo@@
106         \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@minustwo@
107       \else
108         \PackageWarning{etoc}
109           {unexpected value '#2' in \string\etocsetlevel.^^}%
110           Should be -2,-1, 0, 1, 2, 3, 4, 5, or 6. Set to 6 (=ignored)}%
111         \expandafter\let\csname Etoc@#1@@\endcsname\Etoc@@six@@
112 \fi\fi\fi}
113 \etocsetlevel{book}{-2}
114 \etocsetlevel{part}{-1}
115 \etocsetlevel{chapter}{0}
116 \etocsetlevel{section}{1}
117 \etocsetlevel{subsection}{2}
118 \etocsetlevel{subsubsection}{3}
119 \etocsetlevel{paragraph}{4}

```

47. Implementation

```
120 \etocsetlevel{subparagraph}{5}
```

The first two parameters of `\Etoc@et@hop` are exchanged in 1.08 compared to earlier versions; this is in relation to changes done in `\Etoc@etoccontentsline`.

```
121 \AtBeginDocument{%
122 \ifpackageloaded{parskip}{\Etoc@parskiptrue}{}%
123 \ifpackageloaded{hyperref}{\Etoc@hyperreftrue
124     \def\Etoc@et@hop#1#2#3#4#5{#2{#3}{#4}{#5}#1}%
125     \long\def\Etoc@gobblesixorfive#1#2#3#4#5#6{}}
126     {\def\Etoc@et@hop#1#2#3#4{#2{#3}{#4}#1}%
127     \long\def\Etoc@gobblesixorfive#1#2#3#4#5{}}%
128 }
```

2015/03/08 One has to be careful about the `\Etoc@end@<level>` user defined macros which may close groups. This has always been the reason for the `\global`'s here and elsewhere.

1.08 uses `\Etoc@level` rather than a `#1` which used to be anyhow always the `\Etoc@tmp`. Now `\Etoc@level` is what was called formerly `\Etoc@tmp` in `\Etoc@etoccontentsline`.

```
129 \def\Etoc@setflags {%
130   \ifcase \Etoc@level
131     \global\Etoc@vfalse
132     \global\Etoc@ivfalse
133     \global\Etoc@iiifalse
134     \global\Etoc@iifalse
135     \global\Etoc@ifalse
136     \global\Etoc@true
137   \or
138     \global\Etoc@vfalse
139     \global\Etoc@ivfalse
140     \global\Etoc@iiifalse
141     \global\Etoc@iifalse
142     \global\Etoc@itrue
143   \or
144     \global\Etoc@vfalse
145     \global\Etoc@ivfalse
146     \global\Etoc@iiifalse
147     \global\Etoc@iitrue
148   \or
149     \global\Etoc@vfalse
150     \global\Etoc@ivfalse
151     \global\Etoc@iiitrue
152   \or
153     \global\Etoc@vfalse
154     \global\Etoc@ivtrue
155   \or
156     \global\Etoc@vtrue
157   \else
```

2015/03/08 I move up the common assignments.

```
158   \global\Etoc@vfalse
159   \global\Etoc@ivfalse
160   \global\Etoc@iiifalse
161   \global\Etoc@iifalse
162   \global\Etoc@ifalse
163   \global\Etoc@false
164   \ifnum\Etoc@level=\m@ne
165     \global\Etoc@jtrue
166   \else
167     \global\Etoc@jfalse
```

```

168     \global\Etoc@jjtrue
169   \fi
170 \fi}

```

1.08 This was originally in `\Etoc@etoccontentsline`, intermixed with the definitions of `\Etoc@contents` and `\Etoc@prefix`. Separated here for clarity of code. One has to be careful that this may close groups. The conditionals are all global. The `\Etoc@level` has been `\global\let` to a `\chardef` variable. The final `\else` of the `\ifcase` assumes none of the `\Etoc@end@...` routines modify it, naturally.

```

171 \def\Etoc@doends {%
172   \ifcase \Etoc@level
173     \ifEtoc@v \Etoc@end@five\fi
174     \ifEtoc@iv \Etoc@end@four\fi
175     \ifEtoc@iii \Etoc@end@three\fi
176     \ifEtoc@ii \Etoc@end@two\fi
177     \ifEtoc@i \Etoc@end@one\fi
178   \or
179     \ifEtoc@v \Etoc@end@five\fi
180     \ifEtoc@iv \Etoc@end@four\fi
181     \ifEtoc@iii \Etoc@end@three\fi
182     \ifEtoc@ii \Etoc@end@two\fi
183   \or
184     \ifEtoc@v \Etoc@end@five\fi
185     \ifEtoc@iv \Etoc@end@four\fi
186     \ifEtoc@iii \Etoc@end@three\fi
187   \or
188     \ifEtoc@v \Etoc@end@five\fi
189     \ifEtoc@iv \Etoc@end@four\fi
190   \or
191     \ifEtoc@v \Etoc@end@five\fi
192   \or
193   \else
194     \ifEtoc@v \Etoc@end@five \fi
195     \ifEtoc@iv \Etoc@end@four \fi
196     \ifEtoc@iii \Etoc@end@three\fi
197     \ifEtoc@ii \Etoc@end@two \fi
198     \ifEtoc@i \Etoc@end@one \fi
199     \ifEtoc@ \Etoc@end@zero \fi
200     \ifnum \Etoc@level =-\tw@
201       \ifEtoc@j \Etoc@end@minusone\fi
202     \fi
203   \fi
204 }

```

Heart of **etoc** hack into execution of `.toc` file. The `.toc` file must contain (at least indirectly via expansion) `\contentsline {<unit>}...` instructions, with the standard meaning of executing `\l@unit` (the hyperref modifications are taken into account). It is the various `\l@unit`'s which are (locally) `\let` to `\Etoc@lxyz` and it is `\Etoc@lxyz` which does the parsing of the arguments in order to extract name, number and page number. Once they are obtained, via the execution of this indirectly hacked `\contentsline`, the code executes the `\Etoc@prefix` and `\Etoc@contents` corresponding to that unit level, according to the user `\etocsetstyle` declarations. Before that the begin part is executed when **etoc** first encounters that level coming from a higher one and the end part will be executed when hitting a more important level.

`\etocskipfirstprefix` was already part of the very first release of **etoc**. Up to 1.07n it was just an elegant `\@thirdofthree` possibly executed just before a `\@firstoftwo{\Etoc@swa{#1}}{\Etoc@swb{#1}}` line. But this made it impossible for me to execute things after the begin parts.

Executing stuff before begin is now a potential problem because the user can close some group

47. Implementation

in the `begin` code (this was in fact impossible in versions <1.08 because this would have erased the definitions of `\Etoc@contents` and `\Etoc@prefix`). Thus I am not so free now to define things before execution of `begin`, if I allow people to close a group therein, except if I make them global.

The mechanism of `\etocskipfirstprefix` made it impossible to add anything at the end of the `begin` codes. Thus I changed it in 1.08 to simply work with a (global) boolean flag. This gives user the freedom to use `\etocskipfirstprefix` anywhere in the `begin` code and it made room for a delimited macro I called `\etoconlyonfirst`. But then I dropped it in favor of definition of the `\etociffirst` conditional.

Macros `\Etoc@swa` and `\Etoc@swb` which did the `\Etoc@et@hop` thing have been suppressed, their effect is incorporated to the end of `\Etoc@etoccontentsline`.

```
205 \def\etocskipfirstprefix {\global\Etoc@skipprefixtrue }
206 \def\Etoc@etoccontentsline #1{%
207   \global\expandafter\let\expandafter\Etoc@level\csname Etoc@#1@@\endcsname
208   \Etoc@skipthisonefalse
209   \ifnum\Etoc@level=\Etoc@@six@@
210     \Etoc@skipthisonetrue
211   \else
212     \ifEtoc@localtoc
213       \let\Etoc@next\relax
214       \ifEtoc@stoptoc
215         \Etoc@skipthisonetrue
216       \fi
217       \ifnum\Etoc@level<\Etoc@localtop
218         \def\Etoc@next{\global\Etoc@stoptoctrue}%
219         \Etoc@skipthisonetrue
220       \fi
221       \ifEtoc@notactive
222         \def\Etoc@next{\Etoc@setflags}%
223         \Etoc@skipthisonetrue
224       \fi
225       \Etoc@next
226     \fi
227   \fi
228   \let\Etoc@next\Etoc@gobblesixorfive
229   \ifnum\c@tocdepth<\Etoc@level
230     \else
231     \ifEtoc@skipthisone
232     \else
```

1.08 New way to handle the compatibility mode. One has to worry only for the local tables of contents (in inactive state, which still must be parsed for global level flags) but in this case `\Etoc@setflags` was done above already. Earlier method proceeded with dummy empty line styles.

```
233   \ifEtoc@standard\let\Etoc@next\@thirdofthree
234   \else
```

2015/03/08 Ever since the first release of **etoc**, the code has to be careful that the `\Etoc@end@<level>` user defined macros may close groups. This is the reason why some assignments have to be done globally. The `\let\Etoc@next\Etoc@gobblesixorfive` above could be local, because it is used only in case the stuff below is skipped, inclusive of `\Etoc@doends` which may close groups.

Versions 1.08 extracts to a separate macro `\Etoc@doends`. Earlier code did `\global\let\Etoc@next\relax` but we can now give a default `\relax` value to `\Etoc@next` with no need of a `\global` prefix.

235 \Etoc@doends

1.08 the \Etoc@next will (possibly) execute the begin code, *before* \Etoc@contents and \Etoc@prefix get defined, contrarily to what I did in earlier versions. I still reset the flags before execution of the begin codes (although the flags are not supposed to be used therein anyhow).

Also the *<begin>* code does \Etoc@isfirsttrue.

236 \let\Etoc@next\@empty

237 \Etoc@global\Etoc@isfirstfalse

2015/03/08 If my naming scheme had not been so baroque, I could easily do things in a more concise way here...

238 \ifcase\Etoc@level

239 \ifEtoc@\else \def\Etoc@next{\Etoc@begin@zero}\fi

240 \or

241 \ifEtoc@i\else \def\Etoc@next{\Etoc@begin@one}\fi

242 \or

243 \ifEtoc@ii\else \def\Etoc@next{\Etoc@begin@two}\fi

244 \or

245 \ifEtoc@iii\else \def\Etoc@next{\Etoc@begin@three}\fi

246 \or

247 \ifEtoc@iv\else \def\Etoc@next{\Etoc@begin@four}\fi

248 \or

249 \ifEtoc@v\else \def\Etoc@next{\Etoc@begin@five}\fi

250 \else

251 \ifnum\Etoc@level=\m@ne

252 \ifEtoc@j\else \def\Etoc@next{\Etoc@begin@minusone}\fi

253 \else

254 \ifEtoc@jj\else \def\Etoc@next{\Etoc@begin@minustwo}\fi

255 \fi

256 \fi

257 \Etoc@setflags

258 \Etoc@next

259 \let\Etoc@next\@empty

1.08:

1. separates the definition of \Etoc@prefix and \Etoc@contents from the execution of the end parts. And it does the definition with some \csname's.
2. implements \etocskipfirstprefix with a boolean, this is less slick but more flexible than the earlier method.
3. defines the \etociffirst conditional.
4. has \Etoc@level rather than \Etoc@tmp and thus we can dispense with the \ifEtoc@part switch as we will be able to test the equality \Etoc@level=-1 inside of \Etoc@lxyz.
5. adds the \Etoc@global prefix.

260 \Etoc@global\expandafter\def\expandafter\Etoc@prefix\expandafter

261 {\csname Etoc@prefix@\csname Etoc@#1@\endcsname\endcsname }%

262 \Etoc@global\expandafter\def\expandafter\Etoc@contents\expandafter

263 {\csname Etoc@contents@\csname Etoc@#1@\endcsname\endcsname }%

264 \ifEtoc@skipprefix \Etoc@global\let\Etoc@prefix\@empty\fi

265 \global\Etoc@skipprefixfalse

266 \fi\fi\fi

1.08 modifies the ending to not use the \Etoc@swa and \Etoc@swb things. With this version, the \Etoc@next here is only to gobble everything if it has to (or gobble only the **etoc** things, when in compatibility mode).

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For the record we don't do `\csname l@#1\endcsname` mainly because `hyperref` patches `\contentsline`.

The location where `\Etoc@savedcontentsline` is `\let` to `\contentsline` has been moved with release 1.08 to before the title as set by `\etocsettoctyle`, thus it is now possible to open a tabular in this part. And with the `\Etoc@global` prefix the user may opt for global definitions of `\etocname` and the like, thus use freely & and other group closing things. Also, some care has been put into doing only expandable things after expansion of the *<prefix>* and *<contents>* parts of a sectioning unit style.

```
267 \Etoc@next
268 \Etoc@et@hop{\Etoc@prefix\Etoc@contents}{\Etoc@savedcontentsline{#1}}%
269 }
```

2013/03/07: up to 1.06 **etoc** defined only `\etocname`, `\etocnumber` and `\etocpage`. The `hyperref` added data is recycled in the simplest manner, prefixing it with `\leavevmode`. The included `\Hy@tocdestname` is (was, see below 1.07f and 1.08a) left unexpanded. We have to spend some time with delimited macros to dis-entangle the .toc data, and reconstruct the possible `hyperref` data. If the page number is not hyperlinked, `\etocpage` does *not* add the link found possibly in the name.

1.07 adds `\etocthename`, `\etocthenumber`, `\etocthepage` which are left fragile and do not have the links data, and `\etoclink{<linkname>}` which is robust and reconstructs an arbitrarily named link.

A need (for things like building up a token list to be used in a `tikzpicture`) arose later to have some form of the link which could be saved by a simple command like one can do `\global\let\lastname\etocthename`, and avoid having to manipulate `\Hy@tocdestname`. So 1.07f adds `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage`, `\etocthelink`: they use `\hyperlink` with an expanded `\Hy@tocdestname`.

1.07 also adds `\leavevmode` to `\etoclink` which should have been done earlier, as it was included in `\etocname` etc... attention, `\@namedef{A}{B}` and not `\@namedef{A} {B}` !! on the other hand this gives a simple way to insert a space as the first token in the parameters. For `\Etoc@again` (which appears later in the code), a `\@firstofone` construct is however the simplest of all.

1.08 adds `\Etoc@global` prefix (2015/03/09).

1.08a drops the original constructions of `\etocname` etc... The obvious decision to convert `\etocname`, etc ... to be the robust versions of `\etocthelinkedname`, etc ... was delayed two years (from 1.07f 2013/03/07 to 1.08a 2015/03/13) for sentimental reason. But the original versions contained the `hyperref` destination only in unexpanded form, this forced to use `\etocthelinkedname`, etc... in cases when the thing had to be stored for delayed use. Now the user can do this directly with `\etocname`, `\etocnumber`, `\etocpage`.

```
270 \def\Etoc@lxyz #1#2{%
271   \Etoc@global\@namedef {etoclink }{\leavevmode}%           fall-back
272   \Etoc@global\let\etocthelink      \@empty %               fall-back
273   \Etoc@global\def\etocthename      {#1}% (if link, will be removed later)
274   \Etoc@global\def\etocthelinkedname {#1}% will probably get redefined
275   \Etoc@getthepage #2\etoc@ % defines \etocthelinkedpage (and \etoclink)
276   \Etoc@getnb #1\relax\relax\etoc@ % gets number *and* name, and \etoclink
277   \ifEtoc@number\else
278     \ifnum\Etoc@level=\m@ne
279       \Etoc@getit #1\hspace\relax\etoc@ % additional job for parts
280     \fi
281   \fi
282   \Etoc@global\expandafter\let\csname etocname \endcsname\etocthelinkedname
283   \Etoc@global\expandafter\let\csname etocnumber \endcsname\etocthelinkednumber
284   \Etoc@global\expandafter\let\csname etocpage \endcsname\etocthelinkedpage
285 }
```

1.08 adds the `\Etoc@global`'s.


```

286 \def\Etoc@getthepage #1{%
287   \let\Etoc@next\Etoc@getthepage@nohyp
288   \ifEtoc@hyperref\ifx #1\hyper@linkstart
289     \let\Etoc@next\Etoc@getthepage@hyp
290   \fi\fi
291   \Etoc@next #1%
292 }
293 \def\Etoc@getthepage@nohyp #1\etoc@ {%
294   \Etoc@global\def\etocthepage {#1}%
295   \Etoc@global\def\etocthelinkedpage {#1}%
296 }

```

1.07k corrects a bug here with an extra space before ##1 in \@namedef{etoclink } ##1. In 99.99% of use cases however, the macro gets redefined at a later stage, thus the bug did not show.

1.07n replaces use of \toks@ by macro \Etoc@tmp. Thus, the user has the (not so recommended) possibility to use \toks@ in the styles, even to store information whose scope extends beyond the execution of each \contentsline.

1.08 adds the \Etoc@global's.

```

297 \def\Etoc@getthepage@hyp #1#2#3#4#5\etoc@ {%
298   \Etoc@global\@namedef{etoclink }##1{\leavevmode #1{#2}{#3}{##1}{#5}%
299   \Etoc@global\def\etocthepage {#4}%
300   \edef\Etoc@tmp {{#3}}%
301   \Etoc@global\expandafter\def\expandafter\etocthelinkedpage\expandafter
302     {\expandafter\hyperlink \Etoc@tmp{#4}}%
303 }
304 %
305 \def\Etoc@getnb #1{%
306   \let\Etoc@next\Etoc@getnb@nohyp
307   \ifEtoc@hyperref\ifx #1\hyper@linkstart
308     \let\Etoc@next\Etoc@getnb@hyp
309   \fi\fi
310   \Etoc@next #1%
311 }
312 %
313 \def\Etoc@getit #1{%
314   \let\Etoc@next\Etoc@getit@nohyp
315   \ifEtoc@hyperref\ifx #1\hyper@linkstart
316     \let\Etoc@next\Etoc@getit@hyp
317   \fi\fi
318   \Etoc@next #1%
319 }

```

1.08 adds the \Etoc@global's.

```

320 \def\Etoc@getnb@nohyp #1#2#3\etoc@ {%
321   \def\Etoc@getname ##1\relax\relax\etoc@ {%
322     \Etoc@global\def\etocthename {##1}%
323     \Etoc@global\def\etocthelinkedname {##1}%
324   }%
325   \ifx #1\numberline
326     \Etoc@global\def\etocthenumber {#2}%
327     \Etoc@global\def\etocthelinkednumber {#2}%
328     \Etoc@global\Etoc@numbertrue
329     \Etoc@getname #3\etoc@
330   \else % then \etocthename and \etocthelinkedname already defined
331     \Etoc@global\let\etocthenumber \@empty
332     \Etoc@global\let\etocthelinkednumber \@empty
333     \Etoc@global\Etoc@numberfalse
334   \fi

```

47. Implementation

```
335 }
1.07n replaces use of \toks@ by macro \Etoc@tmp. 1.08 adds the \Etoc@global's.
336 \def\Etoc@getnb@hyp #1#2#3#4#5#6\etoc@ {%
337     \def\Etoc@getname ##1\relax\relax\etoc@ {%
338         \Etoc@global\def\etocthename {##1}%
339         \edef\Etoc@tmp {{#3}}%
340         \Etoc@global\expandafter\def\expandafter\etocthelinkedname\expandafter
341             {\expandafter\hyperlink \Etoc@tmp{##1}}%
342     }%
343     \def\Etoc@getnbr ##1##2##3\etoc@ {%
344         \ifx ##1\numberline
345             \Etoc@global\def\etocthenumber {##2}%
346             \edef\Etoc@tmp {{#3}}%
347             \Etoc@global\expandafter\def\expandafter\etocthelinkednumber
348                 \expandafter{\expandafter\hyperlink \Etoc@tmp{##2}}%
349             \Etoc@global\Etoc@numbertrue
350             \Etoc@getname ##3\etoc@
351         \else
352             \Etoc@global\let\etocthenumber \@empty
353             \Etoc@global\let\etocthelinkednumber \@empty
354             \Etoc@global\Etoc@numberfalse
355             \Etoc@global\def\etocthename {#4}%
356             \edef\Etoc@tmp {{#3}}%
357             \Etoc@global\expandafter\def\expandafter\etocthelinkedname
358                 \expandafter {\expandafter\hyperlink \Etoc@tmp{#4}}%
359         \fi
360     }%
361     \Etoc@global\@namedef {etoclink }##1{\leavevmode #1{#2}{#3}{##1}#5}%
362     \Etoc@global\edef\etocthelink ##1{\noexpand\hyperlink {#3}{##1}}%
363     \Etoc@getnbr #4\relax\relax\etoc@
364 }
1.08 adds the \Etoc@global's.
365 \def\Etoc@getit@nohyp #1\hspace#2#3\etoc@ {%
366     \def\Etoc@getname ##1\hspace\relax\etoc@ {%
367         \Etoc@global\def\etocthename {##1}%
368         \Etoc@global\def\etocthelinkedname {##1}%
369     }%
370     \ifx\relax#2\else
371         \Etoc@global\def\etocthenumber {#1}%
372         \Etoc@global\def\etocthelinkednumber {#1}%
373         \Etoc@global\Etoc@numbertrue
374         \Etoc@getname #3\etoc@
375     \fi
376 }
1.07n replaces use of \toks@ by macro \Etoc@tmp. 1.08 adds the \Etoc@global's.
377 \def\Etoc@getit@hyp #1#2#3#4#5#6\etoc@ {%
378     \def\Etoc@getname ##1\hspace\relax\etoc@ {%
379         \Etoc@global\def\etocthename {##1}%
380         \edef\Etoc@tmp {{#3}}%
381         \Etoc@global\expandafter\def\expandafter\etocthelinkedname
382             \expandafter{\expandafter\hyperlink \Etoc@tmp{##1}}%
383     }%
384     \def\Etoc@getnbr ##1\hspace##2##3\etoc@ {%
385         \ifx\relax##2\else
386             \Etoc@global\def\etocthenumber {##1}%
387             \edef\Etoc@tmp {{#3}}%
```

```

388      \Etoc@global\expandafter\def\expandafter\etocthelinkednumber
389      \expandafter{\expandafter\hyperlink \Etoc@tmp{##1}}%
390      \Etoc@global\Etoc@numbertrue
391      \Etoc@getname ##3\etoc@
392      \fi
393    }%
394    \Etoc@getnbr #4\hspace\relax\etoc@
395  }

1.08a of 2015/03/12 does the long-postponed thing to let \etocname etc.. be simply the robust
variant of \etocthelinkedname etc...
396 \let\etocthename \@empty
397 \let\etocthenumber \@empty
398 \let\etocthepage \@empty
399 \let\etocthelinkedname \@empty
400 \let\etocthelinkednumber \@empty
401 \let\etocthelinkedpage \@empty
402 \let\etocthelink \@empty
403 \DeclareRobustCommand*\etocname {}
404 \DeclareRobustCommand*\etocnumber {}
405 \DeclareRobustCommand*\etocpage {}
406 \DeclareRobustCommand*\etoclink {}
407 \DeclareRobustCommand*\etocifnumbered
408   {\ifEtoc@number\expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi}
409 \expandafter\let\expandafter\etocxifnumbered\csname etocifnumbered \endcsname

1.08 defines \etociffirst
410 \DeclareRobustCommand*\etociffirst
411   {\ifEtoc@isfirst\expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi}
412 \expandafter\let\expandafter\etocxiffirst\csname etociffirst \endcsname

1.07j modifies \Etoc@readtoc.
413 \def\Etoc@readtoc {%
414   \ifeof \Etoc@tf
415   \else
416     \read \Etoc@tf to \Etoc@buffer
417     \Etoc@toctoks=\expandafter\expandafter\expandafter
418       {\expandafter\the\expandafter\Etoc@toctoks\Etoc@buffer}%
419     \expandafter\Etoc@readtoc
420   \fi
421 }

1.07m moves the reading of the toc file At Begin Document. Needed for Babel activated characters.
422 \Etoc@toctoks {}% (superfluous, but for clarity)
423 \AtBeginDocument{\IfFileExists{\jobname.toc}
424   {\endlinechar=\m@ne
425     \makeatletter
426     \newread\Etoc@tf
427     \openin\Etoc@tf\@filef@und
428     \Etoc@readtoc
429     \global\Etoc@toctoks=\expandafter{\the\Etoc@toctoks}%
430     \closein\Etoc@tf}}
431   {\typeout{No file \jobname.toc.}}}

1.07d: parskip and \@nobreakfalse stuff moved to \Etoc@tableofcontents
432 \def\Etoc@openouttoc{%
433   \ifEtoc@hyperref
434     \ifx\hyper@last\@undefined
435     \IfFileExists{\jobname .toc}

```

47. Implementation

```

436     {\Hy@WarningNoLine
437       {old toc file detected, not used; run LaTeX again (cheers from etoc)}}%
438     \global\Etoc@toctoks={}
439   }
440   {}%
441   \fi
442 \fi
443 \if@filesw
444   \newwrite \tf@toc
445   \immediate \openout \tf@toc \jobname .toc\relax
446 \fi
447 \global\let\Etoc@openouttoc\empty
448 }

```

1.08 has a new way to handle `\Etoc@standardtrue`.

Also the expansion of `\Etoc@levelist` is moved to inside `\Etoc@tableofcontents` as set-up by `\etocsettocstyle`. This opens up the possibility for the user to open a group in the title (for example start a tabular) which would be closed (by the first `&`) sometime later. In combination with `\etocglobaldefs` it will be now much easier to typeset TOC as tables with **etoc**!

```

449 \def\Etoc@toctoc{%
450   \global\Etoc@vfalse
451   \global\Etoc@ivfalse
452   \global\Etoc@iiifalse
453   \global\Etoc@iifalse
454   \global\Etoc@ifalse
455   \global\Etoc@false
456   \global\Etoc@jfalse
457   \global\Etoc@jjfalse
458 \the\Etoc@toctoks
459 \ifEtoc@notactive\else
460   \ifEtoc@v \Etoc@end@five\fi
461   \ifEtoc@iv \Etoc@end@four\fi
462   \ifEtoc@iii \Etoc@end@three\fi
463   \ifEtoc@ii \Etoc@end@two\fi
464   \ifEtoc@i \Etoc@end@one\fi
465   \ifEtoc@ \Etoc@end@zero\fi
466   \ifEtoc@j \Etoc@end@minusone\fi
467   \ifEtoc@jj \Etoc@end@minustwo\fi
468 \fi}

```

Slightly better coded in 1.08b. Had some bad experiences with TeX conditionals back in 2011/2012 when I started LaTeX programming, and the code was a remnant of extra cautious attitude. Also, now `\etoc@@startlocaltoc` is expandable if it does nothing.

2015/04/16: 1.08e removes a `\ifEtoc@notactive` test as `\ifnum` can be positive only once anyhow; although the `\ifEtoc@notactive` boolean could be faster than an `\ifnum`, it adds to it as long as the local toc id is not yet found.

I replace (1.08e) the `\Etoc@global's` for `\Etoc@localtop` by `\global's`.

```

469 \def\etoc@@startlocaltoc#1#2{%
470   \ifEtoc@localtoc
471     \ifnum #1=#2\relax
472       \ifEtoc@jj \global\let\Etoc@localtop\Etoc@@minusone@@ \fi
473       \ifEtoc@j \global\let\Etoc@localtop\Etoc@@zero@@ \fi
474       \ifEtoc@ \global\let\Etoc@localtop\Etoc@@one@@ \fi
475       \ifEtoc@i \global\let\Etoc@localtop\Etoc@@two@@ \fi
476       \ifEtoc@ii \global\let\Etoc@localtop\Etoc@@three@@ \fi
477       \ifEtoc@iii \global\let\Etoc@localtop\Etoc@@four@@ \fi
478       \ifEtoc@iv \global\let\Etoc@localtop\Etoc@@five@@ \fi

```

```

479      \ifEtoc@v   \global\let\Etoc@localtop\Etoc@@six@@   \fi
480      \global\Etoc@notactivefalse
481      \global\Etoc@vfalse
482      \global\Etoc@ivfalse
483      \global\Etoc@iiifalse
484      \global\Etoc@iifalse
485      \global\Etoc@ifalse
486      \global\Etoc@false
487      \global\Etoc@jfalse
488      \global\Etoc@jjfalse
489      \fi
490  \fi
491 }
492 \let\etoc@startlocaltoc\@gobble

```

2015/03/16: 1.08e tests if a local table of contents turns out empty. The `\Etoc@localtop` here does not have the same meaning as when set-up by the regular `\etoc@@startlocaltoc`. It is off by 1 (in general).

After some hesitation I opted for making and obeying the test always (*) for local tables of contents, and do it also for global tables of contents but for the latter the user must issue `\etocno-tocifnotoc` for the emptiness test to be obeyed. The emptiness tests are to be trusted only when the compilations have stabilized.

(*) finally the user must issue `\etocchecksempiness` once.

`\Etoc@tocid` is the number of the toc (possibly gotten via a `\ref` following a `\tableofcontents`), or it is `\z@` if the emptiness test is from a global toc. Until the compilations stabilize, some local TOCs can get printed at wrong locations naturally and emptiness tests can not be trusted either. Releases earlier than 1.08e authorized `\tableofcontents\ref{foo}` with `foo` the label of a *global* toc. But as it was impossible (without much complications) to discriminate, until auxiliary files have stabilized, between a `\ref` to a local toc whose id is not yet in the `.toc` file and a `\ref` to a global toc whose id will in the end definitely not be in the `.toc` file, I decided that this silly possibility should not be supported anymore. This allowed to remove a few tokens from `\Etoc@tableofcontents` as well. And it also allowed improvements to `\Etoc@localtableofcontents`.

```

493 \def\Etoc@setemptytocbool {%
494   \global\Etoc@stoptocfalse
495   \global\Etoc@emptytoctrue
496   \global\let\Etoc@level\Etoc@minf
497   \begingroup
498     \def\etoc@startlocaltoc##1{%
499       \ifnum##1=\Etoc@tocid\relax
500         \global\let\Etoc@localtop\Etoc@level
501         \global\Etoc@notactivefalse
502       \fi }%
503   \let\contentsline\Etoc@testingcontentsline
504   \Etoc@storetocdepth
505   \the\Etoc@toctoks
506   \Etoc@resettocdepth
507 \endgroup
508 }
509 \DeclareRobustCommand*\etocifwasempty
510 { \ifEtoc@emptytoc\expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi }
511 \expandafter
512 \let\expandafter\etocxifwasempty\csname etocifwasempty \endcsname
513 \def\Etoc@testingcontentsline #1{%
514   \ifEtoc@stoptoc
515   \else

```

47. Implementation

```
516 \ifnum\csname Etoc@#1@@\endcsname=\Etoc@@six@@
517 \else
518 \global\expandafter\let\expandafter\Etoc@level\csname Etoc@#1@@\endcsname
519 \ifEtoc@notactive
520 \else
521 \ifnum\Etoc@level>\c@tocdepth
522 \else
523 \global\Etoc@stoptoctrue
524 \ifnum\Etoc@level>\Etoc@localtop\global\Etoc@emptytocfalse\fi
525 \fi\fi
526 \fi\fi
527 \Etoc@gobblesixorfive\relax\relax\relax
528 }
```

1.07g suppresses the printing of `--unknown etoc ref: run latex again--` as sometimes one uses `\localtableofcontents` to prepare something else, and one does not want any text output even in intermediate runs.

Also 1.07g adds `\etocaftertochook` to help with `\invisiblelocaltableofcontents` (and then I did `\etocsetnexttocdepth`). 1.07h makes the hook used by `\etocsetnexttocdepth` private.

2015/03/14: 1.08b suppresses a space token from an unprotected end of line at the end after the replacement text of `\etoc@startlocaltoc` (bug dating back to 1.03 2012/11/23). I didn't see it due to the originally badly formatted source of `\Etoc@next`.

2015/03/16: 1.08e lets `\localtableofcontents` do a first scan of the `.toc` file (as stored in `\Etoc@toctoks`) to determine if the table of contents will in fact end up empty. In that case, nothing is typeset. The command `\etocaftertochook` is still executed though. Other ways were envisioned (like delimited macros) to determine this potential emptiness, but in the end I opted for execution of the `.toc` file with suitable definitions for `\contentsline` and `\etoc@startlocaltoc`. Notice though that if emptiness would result from empty line styles, this can not be detected. Emptiness means “no executed `\contentsline`”.

For this detection of emptiness, assignments (here and in `\Etoc@testingcontentsline`) are made globally, I think this is the best (just in case some portions of the `.toc` file turn out to be inside some groups — perhaps for some silly color assignments, etc... — whose boundaries do not necessarily respect unit levels).

The flag `\Etoc@tocwithid` discriminates between a `\localtableofcontents` and a `\tableofcontents \ref{foo}`; the latter could so far possibly refer to a local or also to a global table of contents but release 1.08e has deprecated the latter use as it complicated the code, for something truly silly. Thus `\ref{foo}` must now be with `foo` a label of a local TOC.

In the case of a `\refed-to toc` whose label was just added hence is not yet in the `.aux` file, `\Etoc@tocid` is 0. **etoc** used to issue a warning to run latex again and did no printing at all. Release 1.08e in such cases prints the heading (this may gain one compilation step). Emptiness test is not executed as it would necessarily turn out positive and can not be trusted anyhow. The TOC is declared non empty, which it probably is...

Emptiness detection for local tables of contents (either from a `\localtableofcontents` or from a `\tableofcontents \ref{localtoc}`) can be trusted only when the `.toc` file has stabilized. The emptiness status of a local TOC whose Id is not yet in the `.toc` is by necessity undecided yet (and not to be trusted really as the numbering may have changed; only when compilation runs settle is the emptiness status to be trusted). The code declares the TOC non empty, as it will be in 95% of use cases.

Dropping support for `\tableofcontents \ref{globaltoc}` means here that when a TOC id is not found in the `.toc` file we can assume it definitely has to be a local TOC needing more compilations. The emptiness status is undecided, the code declares the TOC non empty.

```
529 \def\Etoc@localtableofcontents#1{%
530 \edef\Etoc@tocid{#1}%
```

```

531 \global\Etoc@emptytocfalse
532 \ifnum\Etoc@tocid<\@ne
533 \PackageWarning{etoc}{Unknown toc reference \@secondoftwo#1. Run LaTeX again}%
534 % versions < 1.08e did not do any printing, 1.08e prints the toc head-
ing.
535 \global\Etoc@notactivetrue
536 \global\Etoc@stoptoctrue % do only heading
537 \Etoc@localtoctrue % needed for stoptoc obedience
538 \Etoc@tableofcontents
539 \expandafter\Etoc@gobbletoetoc@ % skip all the rest
540 \fi
541 \global\Etoc@notactivetrue
542 \ifEtoc@checkemptiness \Etoc@setemptytocbool \fi
543 \ifEtoc@emptytoc
544 \ifEtoc@notactive
545 \PackageWarning{etoc}{Unknown toc ID \number\Etoc@tocid. Run LaTeX again}%
546 % emptiness undecided. Declare it non empty.
547 \global\Etoc@emptytocfalse
548 \global\Etoc@stoptoctrue % do only heading
549 \Etoc@localtoctrue
550 \Etoc@tableofcontents
551 \expandafter\expandafter\expandafter\Etoc@gobbletoetoc@
552 \else
553 %% \PackageWarning{etoc}{This toc is apparently empty}%
554 \fi
555 \else
556 \Etoc@localtoctrue
557 \global\Etoc@stoptocfalse
558 \global\Etoc@notactivetrue
559 \global\let\Etoc@localtop\Etoc@@minustwo@@
560 \edef\etoc@startlocaltoc##1{\noexpand\etoc@@startlocaltoc{##1}{\Etoc@tocid}}%
561 \Etoc@tableofcontents
562 \fi
563 \@gobble\etoc@
564 \endgroup\ifEtoc@mustclosegroup\endgroup\fi
565 \Etoc@aftertochook % 1.07h
566 \etocaftertochook % 1.07g
567 }

```

2013/03/07: I discover a \@namedef trick to construct the \Etoc@again space delimited macro:

```
\namedef {Etoc@again} {...stuff...}
```

Original version was (copied from analogous stuff in source2e):

```
{\def\1{\Etoc@again}\expandafter\gdef\1 {...stuff...}}
```

and in the end (now that I think about it) I simply use \@firstofone.

```

568 \def\Etoc@getrefno #1#2\etoc@ {#1}
569 \def\Etoc@getref #1{\@ifundefined{r#1}{0}{\expandafter\expandafter\expandafter
570 \Etoc@getrefno\curname r#1\endcurname\relax\etoc@}}
571 \def\Etoc@ref#1{\Etoc@localtableofcontents{\Etoc@getref{#1}}}
572 \def\Etoc@label#1{\label{#1}\futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}
573 \@firstofone{\def\Etoc@again} {\futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}

```

1.08e adds test for emptiness. And uses another coding style for conditional branching. Easier to read. Not tested for efficiency.

Also, \ref{foo} expects foo to be a label to a *local* TOC. Earlier versions accepted a reference to a global TOC, I have removed the support from \Etoc@tableofcontents.

The syntax \localtableofcontents\ref{foo} is now accepted.

```
574 \def\Etoc@dohis #1#2\etoc@ {\fi #1}
```

47. Implementation

```

575 \def\Etoc@t@bleofcontents{%
576   \ifx\Etoc@nexttoken\label
577     \Etoc@dothis{\expandafter\Etoc@label\@gobble}%
578   \fi
579   \ifx\Etoc@nexttoken\@sptoken
580     \Etoc@dothis{\Etoc@again}%
581   \fi
582   \ifx\Etoc@nexttoken\ref
583     \Etoc@dothis{\Etoc@tocwithidfalse\expandafter\Etoc@ref\@gobble}%
584   \fi
585   \ifEtoc@tocwithid
586     \Etoc@dothis{\Etoc@localtableofcontents{\c@etoc@tocid}}%
587   \fi
588   \global\Etoc@notactivefalse
589   \global\Etoc@emptytocfalse
590   \ifEtoc@checksemtiness
591     \let\Etoc@tocid\z@
592     \global\let\Etoc@localtop\Etoc@minf
593     \Etoc@setemptytocbool
594   \fi
595   \ifEtoc@emptytoc
596     \ifEtoc@notocifnotoc\else
597       \Etoc@localtocfalse
598       \Etoc@tableofcontents
599     \fi
600   \else
601     \Etoc@localtocfalse
602     \Etoc@tableofcontents
603   \fi
604   \endgroup\ifEtoc@mustclosegroup\endgroup\fi
605   \Etoc@aftertochook % 1.07h
606   \etocaftertochook % 1.07g
607   \@gobble\etoc@
608 }

```

1.07g for consistency Etoc@ prefix added.

1.08c does not use `\arabic` in the `\addtocontents` since I have seen that in some circumstances (for some right to left languages with polyglossia or babel), one can not rely on `\arabic` having its default definition. As the number written here will be used later in an `\ifnum`, I should not have used it in the first place (done 2015/03/30).

```

609 \def\Etoc@table@fcontents{%
610   \refstepcounter{etoc@tocid}%
611   \Etoc@tocwithidfalse
612   \futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}
613 \def\Etoc@localtable@fcontents{%
614   \refstepcounter{etoc@tocid}%
615   \addtocontents{toc}{\string\etoc@startlocaltoc{\the\c@etoc@tocid}}%
616   \Etoc@tocwithidtrue
617   \futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}

```

1.07g defines `\etoc@tableofcontents` to be able to undo the evil and brutal doings of some packages with `\tableofcontents`.

1.08 patches `tableof`'s influence. Version 1.4a or later of `tableof` is needed.

```

618 \let\etocaftertitlehook \@empty
619 \let\etocaftercontentshook \@empty
620 \def\etoc@tableofcontents{%
621   \Etoc@openouttoc
622   \begingroup % closed in \Etoc@t@bleofcontents or \Etoc@localtableofcontents

```


No need for the `tableof` extra group level, even it is better to get rid of it. I don't globally cancel `\tof@begingroup` and `\tof@endgroup` to leave open for the user the (dubious) possibility of using directly `\tableof`, `\tablenotof` (rather than only the reasonable thing which is `\nexttocwithtags{}`).

```

623 \let\tof@begingroup\@empty
624 \let\tof@endgroup \@empty
625 \def\etoc@startlocaltoc##1{\etoc@startlocaltoc{##1}{\c@etoc@tocid}}%
626 \@ifstar
627 {\def\Etoc@aftertitlehook{}\Etoc@table@fcontents}
628 {\let\Etoc@aftertitlehook\etocaftertitlehook\Etoc@table@fcontents}}
629 \let\tableofcontents\etoc@tableofcontents
630 \newcommand*\localtableofcontents{%
631 \Etoc@openouttoc
632 \begingroup % closed in \Etoc@tableofcontents or \Etoc@localtableofcontents
633 \let\tof@begingroup\@empty
634 \let\tof@endgroup \@empty
635 \@ifstar
636 {\def\Etoc@aftertitlehook{}\Etoc@localtable@fcontents}
637 {\let\Etoc@aftertitlehook\etocaftertitlehook\Etoc@localtable@fcontents}}

```

1.08 moves earlier the definitions of `\Etoc@savedcontentsline` as well as `\Etoc@levellist`. It will thus not be operative to do `\etocsetlevel` from inside the title now. But perhaps it will be easier to deal with tables.

Also I remove a big `\@firstofone`, and use rather `\Etoc@gobbletoetoc@` for the gobbling case.

Also, 1.08 modifies the code to do only expandable things after `\Etoc@toctoc`, in order to allow opening of an alignment in the first argument and closing in the second. Earlier versions had an `\Etoc@next` initially set to relax after the first `\Etoc@toctoc`. I was in 2012/2013 quite uneasy with the TeX conditionals hence wanted for safety to move the things for the second invocation of `\Etoc@toctoc` after the `\fi\fi\fi`. I could define an `\afterfififi` macro, but it should be ok as it is done here.

1.08e moved the `\Etoc@par` to `\Etoc@tableofcontents`. This was needed for the implementation of the emptiness test. It might have some impact in fringe cases as the `\refstepcounter` is now done before the `\par` is issued.

1.08e suppresses the possibility to do a `\tableofcontents\ref{foo}` with `foo` the label of a global TOC: issuing `\tableofcontents` alone suffices. Allowed to simplify some code.

1.08g moves `\Etoc@par` to before `\etocbeforetitlehook`, not after.

```

638 \long\def\Etoc@gobbletoetoc@ #1\etoc@ {}
639 \newcommand\etocsettocstyle[2]{%
640 \def\Etoc@tableofcontents
641 {%
642 \ifnum\c@tocdepth>\Etoc@minf
643 \else\expandafter
644 \Etoc@gobbletoetoc@
645 \fi
646 \Etoc@par
647 \etocbeforetitlehook % 1.07m
648 \Etoc@storetocdepth % 1.07g
649 \let\Etoc@savedcontentsline\contentsline % moved up here 1.08
650 \let\contentsline\Etoc@etoccontentsline
651 \ifEtoc@standard
652 \else % moved here from \Etoc@toctoc (1.08)
653 \def\Etoc@levellist@elt####1{\let####1\Etoc@lxyz}%
654 \Etoc@levellist
655 \let\booknumberline\numberline
656 \let\partnumberline\numberline
657 \let\chapternumberline\numberline

```

47. Implementation

```
658 \fi
659 #1%
660 \ifEtoc@parskip\parskip\z@skip\fi %1.07d
661 \Etoc@aftertitlehook
662 \Etoc@toctoc
663 \etocaftercontentshook
664 #2\@nobreakfalse % 1.07d: \@nobreakfalse moved here
665 \Etoc@resettocdepth % 1.07g. moved here from before #2 by 1.08
```

1.08: necessary if tableof 1.4a has been used in global mode and thus was forced to modify globally \contentsline. The collateral effect is that **etoc** is now forced to reset globally \contentsline.

```
666 \ifx\Etoc@global\global\ifx\tof@finish\@empty\else
667 \global\let\contentsline\Etoc@savedcontentsline
668 \fi\fi
669 \@gobble\etoc@
670}% end of \Etoc@tableofcontents definition by \etocsettocstyle
671 }
```

1.08 hacks the begin parts to update therein the \ifEtoc@isfirst flag (2015/03/09).

1.08c removes unneeded \long from the \def's inside \etoc@setstyle (2015/03/29).

```
672 \def\etocsetstyle{\Etoc@standardfalse\etoc@setstyle}
673 \long\def\etoc@setstyle#1#2#3#4#5{%
674 \expandafter\def
675 \csname Etoc@begin@\csname Etoc@#1@\endcsname\endcsname
676 {#2\Etoc@global\Etoc@isfirsttrue}%
677 \expandafter\def
678 \csname Etoc@prefix@\csname Etoc@#1@\endcsname\endcsname {#3}%
679 \expandafter\def
680 \csname Etoc@contents@\csname Etoc@#1@\endcsname\endcsname {#4}%
681 \expandafter\def
682 \csname Etoc@end@\csname Etoc@#1@\endcsname\endcsname {#5}%
683 }
```

placeholder for comments

```
684 \def\etocfontminustwo {\normalfont \LARGE \bfseries}
685 \def\etocfontminusone {\normalfont \large \bfseries}
686 \def\etocfontzero {\normalfont \large \bfseries}
687 \def\etocfontone {\normalfont \normalsize \bfseries}
688 \def\etocfonttwo {\normalfont \normalsize}
689 \def\etocfontthree {\normalfont \footnotesize}
```

placeholder for comments

```
690 \def\etocsepminustwo {4ex \@plus .5ex \@minus .5ex}
691 \def\etocsepminusone {4ex \@plus .5ex \@minus .5ex}
692 \def\etocsepzero {2.5ex \@plus .4ex \@minus .4ex}
693 \def\etocsepone {1.5ex \@plus .3ex \@minus .3ex}
694 \def\etocseptwo {.5ex \@plus .1ex \@minus .1ex}
695 \def\etocsepthree {.25ex \@plus .05ex \@minus .05ex}
```

placeholder for comments

```
696 \def\etocbaselinespreadminustwo {1}
697 \def\etocbaselinespreadminusone {1}
698 \def\etocbaselinespreadzero {1}
699 \def\etocbaselinespreadone {1}
700 \def\etocbaselinespreadtwo {1}
701 \def\etocbaselinespreadthree {.9}
```

placeholder for comments

```

702 \def\etocminustwoleftmargin {1.5em plus 0.5fil}
703 \def\etocminustworightmargin {1.5em plus -0.5fil}
704 \def\etocminusoneleftmargin {1em}
705 \def\etocminusonerightmargin {1em}
706 \def\etoclineleaders
707     {\hbox{\normalfont\normalsize\hb@xt@2ex {\hss.\hss}}}
708 \def\etocabbrevpagename {p.~}

```

Versions earlier than 1.08b (and since v1.05 2012/12/01) defined \etocpartname (for use by **etoc**'s own line styles) to expand to \partname. But this didn't make sense in the context for example of babel and frenchb, because \frenchpartname does things depending on the current value of the counter part. The code in recent frenchb (but not yet v2.5a when \etocpartname was introduced) constructs control sequences \ordinali, etc... If the part counter is zero, this gives \ordinal. Usually this is not defined, hence no error happens (as it is constructed via \csname), but under class memoir the bug showed up. All this to explain that I found out about this long lasting problem only on 2015/03/14. Probably a sign that **etoc**'s own line styles are rarely used...

```

709 \def\etocpartname      {Part}% modified 1.08b
710 \def\etocbookname      {Book}

```

placeholder for comments The macro \etocdefaultlines was initially called \etoclines. Now \etoclines just does \Etoc@standardfalse. Version 1.07e has rewritten entirely the stuff related to penalties and \addvspace, as this was not satisfactory in the earlier versions, which were written at a early stage in the development of the package. Actually I am not fully satisfied with these line styles.

```

711 \def\etocdefaultlines{\Etoc@standardfalse %
712 %% 'book':
713 \etoc@setstyle{@minustwo}
714   {\addpenalty\@M\etocskipfirstprefix}
715   {\addpenalty\@secpenalty}
716   {\begingroup
717     \etocfontminustwo
718     \addvspace{\etocsepminustwo}%
719     \parindent \z@
720     \leftskip \etocminustwoleftmargin
721     \rightskip \etocminustworightmargin
722     \parfillskip \@flushglue
723     \vbox{\etocifnumbered{\etocbookname\enspace\etocnumber:\quad}}{\etocname
724       \baselineskip\etocbaselinespreadminustwo\baselineskip
725       \par}%
726     \addpenalty\@M\addvspace{\etocsepminusone}%
727     \endgroup}
728   {}%
729 %% 'part':
730 \etoc@setstyle{@minusone}
731   {\addpenalty\@M\etocskipfirstprefix}
732   {\addpenalty\@secpenalty}
733   {\begingroup
734     \etocfontminusone
735     \addvspace{\etocsepminusone}%
736     \parindent \z@
737     \leftskip \etocminusoneleftmargin
738     \rightskip \etocminusonerightmargin
739     \parfillskip \@flushglue
740     \vbox{\etocifnumbered{\etocpartname\enspace\etocnumber.\quad}}{\etocname
741       \baselineskip\etocbaselinespreadminusone\baselineskip
742       \par}%
743     \addpenalty\@M\addvspace{\etocsepzero}%

```

47. Implementation

```
744 \endgroup}
745 {}%
746 %% 'chapter':
747 \etoc@setstyle{@zero}
748 {\addpenalty\@M\etocskipfirstprefix}
749 {\addpenalty\@itempenalty}
750 {\begingroup
751 \etocfontzero
752 \addvspace{\etocsepzero}%
753 \parindent \z@ \parfillskip \@flushglue
754 \vbox{\etocifnumbered{\etocnumber.\enspace{}}\etocname
755 \baselineskip\etocbaselinespreadzero\baselineskip
756 \par}%
757 \endgroup}
758 {\addpenalty{-\@highpenalty}\addvspace{\etocsepmminusone}}%
759 %% 'section':
760 \etoc@setstyle{@one}
761 {\addpenalty\@M\etocskipfirstprefix}
762 {\addpenalty\@itempenalty}
763 {\begingroup
764 \etocfontone
765 \addvspace{\etocsepone}%
766 \parindent \z@ \parfillskip \z@
767 \setbox\z@\vbox{\parfillskip\@flushglue
768 \etocname\par
769 \setbox\tw@lastbox
770 \global\setbox\@ne\hbox{\unhbox\tw@\ }}%
771 \dimen\z@=\wd\@ne
772 \setbox\z@=\etoclineleaders
773 \advance\dimen\z@\wd\z@
774 \etocifnumbered
775 {\setbox\tw@\hbox{\etocnumber, \etocabbrevpagename\etocpage}}
776 {\setbox\tw@\hbox{\etocabbrevpagename\etocpage}}%
777 \advance\dimen\z@\wd\tw@
778 \ifdim\dimen\z@ < \linewidth
779 \vbox{\etocname~%
780 \leaders\box\z@\hfil\box\tw@
781 \baselineskip\etocbaselinespreadone\baselineskip
782 \par}% 1.08b adds the % here
783 \else
784 \vbox{\etocname~%
785 \leaders\copy\z@\hfil\break
786 \hbox{}}\leaders\box\z@\hfil\box\tw@
787 \baselineskip\etocbaselinespreadone\baselineskip
788 \par}%
789 \fi
790 \endgroup}
791 {\addpenalty\@secpenalty\addvspace{\etocsepzero}}%
792 %% 'subsection':
793 \etoc@setstyle{@two}
794 {\addpenalty\@medpenalty\etocskipfirstprefix}
795 {\addpenalty\@itempenalty}
796 {\begingroup
797 \etocfonttwo
798 \addvspace{\etocseptwo}%
799 \parindent \z@ \parfillskip \z@
800 \setbox\z@\vbox{\parfillskip\@flushglue
```


47. Implementation

1.08b revisits this old code written perhaps at a time I didn't know about `\expandafter` !

```
850 \newcommand\etocmulticolstyle[2][\etocdefaultnbcol]{%
851 \etocsettocstyle
852   {\let\etocoldpar\par
853    \addvspace{\etocabovetocskip}%
854    \ifnum #1>\@ne
855      \expandafter\@firstoftwo
856    \else \expandafter\@secondoftwo
857    \fi
858    {\multicolpretolerance\etocmulticolpretolerance
859     \multicoltolerance\etocmulticoltolerance
860     \setlength{\columnsep}{\etoccolumnsep}%
861     \setlength{\multicolsep}{\etocmulticolsep}%
862     \begin{multicols}{#1}[#2\etocoldpar\addvspace{\etocinnertopsep}]}
863    {#2\ifvmode\else\begin{group}\interlinepenalty\@M\parskip\z@skip
864     \@@par\end{group}
865     \fi
866     \nobreak\addvspace{\etocinnertopsep}%
867     \pretolerance\etocmulticolpretolerance
868     \tolerance\etocmulticoltolerance}%
869   }%
870   {\ifnum #1>\@ne
871     \expandafter\@firstofone
872   \else \expandafter\@gobble
873   \fi
874   {\end{multicols}}}%
875   \addvspace{\etocbelowtocskip}}%
876 }
```

placeholder for comments

```
877 \def\etocinnerbottomsep{3.5ex}
878 \def\etocinnerleftsep{2em}
879 \def\etocinnerrightsep{2em}
880 \def\etoctoprule{\hrule}
881 \def\etocleftrule{\vrule}
882 \def\etocrightrule{\vrule}
883 \def\etocbottomrule{\hrule}
884 \def\etoctoprulecolorcmd{\relax}
885 \def\etocbottomrulecolorcmd{\relax}
886 \def\etocleftrulecolorcmd{\relax}
887 \def\etocrightrulecolorcmd{\relax}
```

1.07i moves the `\nobreak` to before the `\vskip\etocinnertopsep` (especially important for the single column case).

```
888 \def\etoc@ruledheading #1{%
889   \hb@xt@\linewidth{\color@begin{group}
890     \hss #1\hss\hskip-\linewidth
891     \etoctoprulecolorcmd\leaders\etoctoprule\hss
892     \phantom{#1}%
893     \leaders\etoctoprule\hss\color@end{group}}%
894     \nointerlineskip\nobreak\vskip\etocinnertopsep}
895 \newcommand*\etocruledstyle[2][\etocdefaultnbcol]{%
896 \etocsettocstyle
897   {\addvspace{\etocabovetocskip}%
898    \ifnum #1>\@ne\expandafter\@firstoftwo
899    \else \expandafter\@secondoftwo
900    \fi
901    {\multicolpretolerance\etocmulticolpretolerance
```

```

902      \multicoltolerance\etocmulticoltolerance
903      \setlength{\columnsep}{\etoccolumnsep}%
904      \setlength{\multicolsep}{\etocmulticolsep}%
905      \begin{multicols}{#1}[\etoc@ruledheading{#2}]
906      {\etoc@ruledheading{#2}}%
907      \pretolerance\etocmulticolpretolerance
908      \tolerance\etocmulticoltolerance}}
909  {\ifnum #1>\@ne\expandafter\@firstofone
910   \else \expandafter\@gobble
911   \fi
912   {\end{multicols}}}%
913   \addvspace{\etocbelowtocskip}}}}

```

1.07k defines `\Etoc@relax` and `\etocbkgcolorcmd` as `\long`: the user manual says to use `\renewcommand\etocbkgcolorcmd`, and an `\ifx` test is used in the framed style. It was thus a bug to have non-long definitions before. Or I could have said in the user manual to use `\renewcommand*`, or in `\etocframedstyle` I should test for the two, or I should pause to try to remember about this code and think about it.

```

914 \def\etocframedmhook{\relax}
915 \long\def\etocbkgcolorcmd{\relax}
916 \long\def\Etoc@relax{\relax}

placeholder for comments
917 \newbox\etoc@framed@titlebox
918 \newbox\etoc@framed@contentsbox
919 \newcommand*\etocframedstyle[2][\etocdefaultnbcol]{%
920 \etocsettocstyle{%
921   \addvspace{\etocabovetocskip}%
922   \sbox\z@{\#2}%
923   \dimen\z@{\dp\z@
924     \ifdim\wd\z@<\linewidth \dp\z@\z@ \else \dimen\z@\z@ \fi
925   \setbox\etoc@framed@titlebox=\hb@xt@\linewidth{\color@begingroup
926     \hss
927     \ifx\etocbkgcolorcmd\Etoc@relax\else
928       \sbox\tw@{\color{white}%
929         \vrule\@width\wd\z@\@height\ht\z@\@depth\dimen\z@}%
930     \ifdim\wd\z@<\linewidth \dp\tw@\z@\fi
931     \box\tw@
932     \hskip-\wd\z@
933   \fi
934   \copy\z@
935   \hss
936   \hskip-\linewidth
937   \etoctoprulecolorcmd\leaders\etoctoprule\hss%
938   \hskip\wd\z@
939   \etoctoprulecolorcmd\leaders\etoctoprule\hss\color@endgroup}%
940 \setbox\z@\hbox{\etocleftrule\etocrightrule}%
941 \dimen\tw@\linewidth\advance\dimen\tw@-\wd\z@
942 \advance\dimen\tw@-\etocinnerleftsep
943 \advance\dimen\tw@-\etocinnerrightsep
944 \setbox\etoc@framed@contentsbox=\vbox\bgroup
945   \hsize\dimen\tw@
946   \kern\dimen\z@
947   \vskip\etocinnertopsep
948   \hbox\bgroup
949   \begin{minipage}{\hsize}%
950   \etocframedmhook
951   \ifnum #1>\@ne\expandafter\@firstoftwo

```

47. Implementation

```

952 \else \expandafter\@secondoftwo
953 \fi
954 {\multicolpretolerance\etocmulticolpretolerance
955 \multicoltolerance\etocmulticoltolerance
956 \setlength{\columnsep}{\etoccolumnsep}%
957 \setlength{\multicolsep}{\etocmulticolsep}%
958 \begin{multicols}{#1}}
959 {\pretolerance\etocmulticolpretolerance
960 \tolerance\etocmulticoltolerance}}
961 {\ifnum #1>\@ne\expandafter\@firstofone
962 \else \expandafter\@gobble
963 \fi
964 {\end{multicols}\unskip }%
965 \end{minipage}%
966 \egroup
967 \vskip\etocinnerbottomsep
968 \egroup
969 \vbox{\hsize\linewidth
970 \ifx\etocbkgcolorcmd\Etoc@relax\else
971 \kern\ht\etoc@framed@titlebox
972 \kern\dp\etoc@framed@titlebox
973 \hb@xt@\linewidth{\color@begingroup
974 \etocleftrulecolorcmd\etocleftrule
975 \etocbkgcolorcmd
976 \leaders\vrule
977 \@@height\ht\etoc@framed@contentsbox
978 \@@depth\dp\etoc@framed@contentsbox
979 \hss
980 \etocrightrulecolorcmd\etocrightrule
981 \color@endgroup}\nointerlineskip
982 \vskip-\dp\etoc@framed@contentsbox
983 \vskip-\ht\etoc@framed@contentsbox
984 \vskip-\dp\etoc@framed@titlebox
985 \vskip-\ht\etoc@framed@titlebox
986 \fi
987 \box\etoc@framed@titlebox\nointerlineskip
988 \hb@xt@\linewidth{\color@begingroup
989 {\etocleftrulecolorcmd\etocleftrule}%
990 \hss\box\etoc@framed@contentsbox\hss
991 \etocrightrulecolorcmd\etocrightrule\color@endgroup}
992 \nointerlineskip
993 \vskip\ht\etoc@framed@contentsbox
994 \vskip\dp\etoc@framed@contentsbox
995 \hb@xt@\linewidth{\color@begingroup\etocbottomrulecolorcmd
996 \leaders\etocbottomrule\hss\color@endgroup}}
997 \addvspace{\etocbelowtocskip}}
placeholder for comments
998 \newcommand\etoc@multicoltoc[2][\etocdefaultnbcol]{%
999 \etocmulticolstyle[#1]{#2}%
1000 \tableofcontents}
1001 \newcommand\etoc@multicoltoctoci[2][\etocdefaultnbcol]{%
1002 \etocmulticolstyle[#1]{#2}%
1003 \tableofcontents*}
1004 \newcommand\etoc@local@multicoltoc[2][\etocdefaultnbcol]{%
1005 \etocmulticolstyle[#1]{#2}%
1006 \localtableofcontents}
1007 \newcommand\etoc@local@multicoltoctoci[2][\etocdefaultnbcol]{%

```



```

1008 \etocmulticolstyle[#1]{#2}%
1009 \localtableofcontents*}
placeholder for comments
1010 \newcommand*{\etoc@ruledtoc}[2][\etocdefaultnbcol]{%
1011 \etocruledstyle[#1]{#2}%
1012 \tableofcontents}
1013 \newcommand*{\etoc@ruledtoci}[2][\etocdefaultnbcol]{%
1014 \etocruledstyle[#1]{#2}%
1015 \tableofcontents*}
1016 \newcommand*{\etoc@local@ruledtoc}[2][\etocdefaultnbcol]{%
1017 \etocruledstyle[#1]{#2}%
1018 \localtableofcontents}
1019 \newcommand*{\etoc@local@ruledtoci}[2][\etocdefaultnbcol]{%
1020 \etocruledstyle[#1]{#2}%
1021 \localtableofcontents*}
placeholder for comments
1022 \newcommand*{\etoc@framedtoc}[2][\etocdefaultnbcol]{%
1023 \etocframedstyle[#1]{#2}%
1024 \tableofcontents}
1025 \newcommand*{\etoc@framedtoci}[2][\etocdefaultnbcol]{%
1026 \etocframedstyle[#1]{#2}%
1027 \tableofcontents*}
1028 \newcommand*{\etoc@local@framedtoc}[2][\etocdefaultnbcol]{%
1029 \etocframedstyle[#1]{#2}%
1030 \localtableofcontents}
1031 \newcommand*{\etoc@local@framedtoci}[2][\etocdefaultnbcol]{%
1032 \etocframedstyle[#1]{#2}%
1033 \localtableofcontents*}
placeholder for comments
1034 \def\etocmulticol{\begingroup
1035 \Etoc@mustclosegrouptrue
1036 \@ifstar
1037 {\etoc@multicoltoctoci}
1038 {\etoc@multicoltoctoc}}
1039 \def\etocruled{\begingroup
1040 \Etoc@mustclosegrouptrue
1041 \@ifstar
1042 {\etoc@ruledtoci}
1043 {\etoc@ruledtoc}}
1044 \def\etocframed{\begingroup
1045 \Etoc@mustclosegrouptrue
1046 \@ifstar
1047 {\etoc@framedtoci}
1048 {\etoc@framedtoc}}
1049 \def\etoclocalmulticol{\begingroup
1050 \Etoc@mustclosegrouptrue
1051 \@ifstar
1052 {\etoc@local@multicoltoctoci}
1053 {\etoc@local@multicoltoctoc}}
1054 \def\etoclocalruled{\begingroup
1055 \Etoc@mustclosegrouptrue
1056 \@ifstar
1057 {\etoc@local@ruledtoci}
1058 {\etoc@local@ruledtoc}}
1059 \def\etoclocalframed{\begingroup
1060 \Etoc@mustclosegrouptrue

```

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```
1061 \@ifstar
1062 {\etoc@local@framedtoci}
1063 {\etoc@local@framedtoc}}
placeholder for comments
1064 \def\etocarticlestyle{%
1065 \etocsettocstyle
1066 {\section *{\contentsname
1067 \mkboth {\MakeUppercase \contentsname}
1068 \MakeUppercase \contentsname}}}
1069 {}
1070 \def\etocarticlestylenomarks{%
1071 \etocsettocstyle
1072 {\section *{\contentsname}}
1073 {}
placeholder for comments
1074 \def\etocbookstyle{%
1075 \etocsettocstyle
1076 {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
1077 \chapter *{\contentsname
1078 \mkboth {\MakeUppercase \contentsname}
1079 \MakeUppercase \contentsname}}}
1080 {\if@restonecol \twocolumn \fi}}
1081 \def\etocbookstylenomarks{%
1082 \etocsettocstyle
1083 {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
1084 \chapter *{\contentsname}}
1085 {\if@restonecol \twocolumn \fi}}
1086 \let\etocreportstyle\etocbookstyle
1087 \let\etocreportstylenomarks\etocbookstylenomarks
1088 \def\etocmemoirtocformat #1#2{%
1089 \def\Etoc@addsuitablecontentsline{\addcontentsline {toc}{#1}{#2}}%
1090 \renewcommand*\etocaftertitlehook{%
1091 \ifmem@em@starred@listof
1092 \else\phantomsection\aftergroup\Etoc@addsuitablecontentsline\fi}}
1093 \def\etocmemoirstyle{%
1094 \etocsettocstyle
1095 {\ensureonecol \par \begingroup \@nameuse {@tocmaketitle}
1096 \Etoc@aftertitlehook\let\Etoc@aftertitlehook\relax
1097 \parskip \cftparskip \@nameuse {cfttocbeforelisthook}}
1098 {\@nameuse {cfttocafterlisthook}\endgroup\restorefromonecol}}
placeholder for comments
1099 \def\etocscartclstyle{%
1100 \etocsettocstyle
1101 {\let\if@dynlist\if@tocleft
1102 \def\@current{toc}% added 1.07m 2015/01/23
1103 \iftocfeature {toc}{onecolumn}
1104 {\iftocfeature {toc}{leveldown}
1105 {}
1106 {\if@twocolumn \aftergroup \twocolumn \onecolumn \fi }}
1107 {}}%
1.07k: next line to do as within current scartcl 2013/12/19 v3.12 KOMA-Script article class.
1108 \iftocfeature {toc}{numberline}{\def \nonumberline {\numberline {}{}}}%
1109 \tocbasic@listhead {\listoftocname}%
1110 \begingroup \expandafter \expandafter \expandafter
1111 \endgroup \expandafter
```

```

1112 \ifx
1113 \csname microtypesetup\endcsname \relax
1114 \else
1115 \iftocfeature {toc}{noprotrusion}{}
1116 {\microtypesetup {protrusion=false}%
1117 \PackageInfo {tocbasic}%
1118 {character protrusion at toc deactivated}}%
1119 \fi
1120 \setlength {\parskip }{\z@ }%
1121 \setlength {\parindent }{\z@ }%
1122 \setlength {\parfillskip }{\z@ \@plus 1fil}%
1123 \csname tocbasic@@before@hook\endcsname
1124 \csname tb@toc@before@hook\endcsname}
1125 {\csname tb@toc@after@hook\endcsname
1126 \csname tocbasic@@after@hook\endcsname}}
1127 \let\etocscrbookstyle\etocscrartclstyle
1128 \let\etocscrreprtstyle\etocscrartclstyle

placeholder for comments

1129 \def\etocstandarddisplaystyle{\etocarticlestyle}
1130 \newcommand*\etocmarkboth[1]{%
1131 \mkboth{\MakeUppercase{#1}}{\MakeUppercase{#1}}}
1132 \newcommand*\etocmarkbothnouc[1]{\mkboth{#1}{#1}}
1133 \newcommand\etocstyle[3][section]{\etocmulticolstyle[#2]%
1134 {\csname #1\endcsname *{#3}}}
1135 \newcommand\etocstylewithmarks[4][section]{\etocmulticolstyle[#2]%
1136 {\csname #1\endcsname *{#3\etocmarkboth{#4}}}}
1137 \newcommand\etocstylewithmarksnouc[4][section]{\etocmulticolstyle[#2]%
1138 {\csname #1\endcsname *{#3\etocmarkbothnouc{#4}}}}

placeholder for comments

1139 \def\Etoc@redefetocstyle#1{%
1140 \renewcommand\etocstylewithmarks[4][#1]
1141 {\etocmulticolstyle[##2]%
1142 {\csname ##1\endcsname *{##3\etocmarkboth{##4}}}}
1143 \renewcommand\etocstylewithmarksnouc[4][#1]
1144 {\etocmulticolstyle[##2]%
1145 {\csname ##1\endcsname *{##3\etocmarkbothnouc{##4}}}}
1146 \renewcommand\etocstyle[3][#1]{%
1147 \etocmulticolstyle[##2]{\csname ##1\endcsname *{##3}}}
1148 \@ifclassloaded{scrartcl}
1149 {\renewcommand*\etocstandarddisplaystyle{\etocscrartclstyle}}{}
1150 \@ifclassloaded{book}
1151 {\renewcommand*\etocfontone{\normalfont\normalsize}
1152 \renewcommand*\etocstandarddisplaystyle{\etocbookstyle}
1153 \Etoc@redefetocstyle{chapter}}{}
1154 \@ifclassloaded{report}
1155 {\renewcommand*\etocfontone{\normalfont\normalsize}
1156 \renewcommand*\etocstandarddisplaystyle{\etocreportstyle}
1157 \Etoc@redefetocstyle{chapter}}{}
1158 \@ifclassloaded{scrbook}
1159 {\renewcommand*\etocfontone{\normalfont\normalsize}
1160 \renewcommand*\etocstandarddisplaystyle{\etocscrbookstyle}
1161 \Etoc@redefetocstyle{chapter}}{}
1162 \@ifclassloaded{scrreprt}
1163 {\renewcommand*\etocfontone{\normalfont\normalsize}
1164 \renewcommand*\etocstandarddisplaystyle{\etocscrreprtstyle}
1165 \Etoc@redefetocstyle{chapter}}{}

```

47. Implementation

1.07k (2014/03/06) adds the appendix to the list of known levels if class memoir is detected.

```
1166 \@ifclassloaded{memoir}
1167   {\etocsetlevel{appendix}{0}%
1168    \renewcommand*{\etocfontone{\normalfont\normalsize}
1169    \etocmemoirtoc\tocfmt{chapter}{\contentsname}%
1170    \renewcommand*{\etocstandarddisplaystyle{\etocmemoirstyle}
1171    \Etoc@redefetocstyle{chapter}}{}}
```

1.07k (2014/03/06) adds the compatibility with the tocloft package; in compatibility mode etoc will obey the tocloft customisation for the division headings as well as for the toc title.

1.07l (2014/04/02) fixes the bug from the tocloft compatibility layer which was memoir incompatible: memoir has its version of tocloft which doesn't have the \if@cftnctoc boolean.

```
1172 \def\etoc\tocloftstyle {%
1173   \etocsettocstyle
1174   {\@cfttocstart\par\begin{group}
1175    \parindent\z@ \parskip\cftparskip \@cftmaketoctitle
1176    \if@cfttocbibind\@cftdobibtoc\fi }%
1177   {\endgroup\@cfttocfinish }%
1178 }
1179 \@ifclassloaded{memoir}{}
1180 {\@ifpackageloaded{tocloft}
1181   {\if@cftnctoc\else
1182    \renewcommand*{\etocstandarddisplaystyle{\etoc\tocloftstyle}
1183    \AtBeginDocument{\let\tableofcontents\etoc\tocloftstyle}
1184    \fi }
1185   {\AtBeginDocument
1186    {\@ifpackageloaded{tocloft}
1187     {\if@cftnctoc\else
1188      \PackageWarning{etoc}
1189      {Package 'tocloft' was loaded after 'etoc'!^^}%
1190 **** to prevent it from overwriting \protect\tableofcontents, it will be tricked^^}%
1191 **** into believing to have been loaded with option 'titles'. For better^^}%
1192 **** compatibility, please load 'tocloft' before 'etoc'}%
1193     \AtEndDocument{\PackageWarning{etoc}
1194                      {Please load 'tocloft' /before/ 'etoc'!}}\fi
1195     \@cftnctoctrue }%
1196     {}%
1197   }%
1198 }%
1199 }
```

placeholder for comments

```
1200 \def\Etoc@addtocontents #1#2%
1201   {\ifEtoc@hyperref
1202    \addtocontents {toc}{\protect\contentsline
1203                      {#1}{#2}%
1204                      {\thepage }{\@currentHref }}%
1205   \else
1206    \addtocontents {toc}{\protect\contentsline
1207                      {#1}{#2}{\thepage }}%
1208   \fi}
1209 \def\Etoc@addcontentsline@ #1#2#3%
1210   {\@namedef{toclevel@#1}{#3}%
1211    \addcontentsline {toc}{#1}{#2}}
1212 \DeclareRobustCommand*{\etoc\toccontentsline}
1213   {\@ifstar{\Etoc@addcontentsline@}{\Etoc@addtocontents}}
```

All the following added for version 1.07g [2013/10/13]. Motivated by a demand about tovsec2.

But it is impossible to make tocvsec2 compatible, if not re-doing all ‘toc’ macros in tocvsec2 (v1.3, 2011/08/07). I do not retain the stack idea, which does not convince me as useful. The empty line in the .toc file is put there by tocvsec2 (see its code line 143).

I take this opportunity to add to the start of the toc file `\let\etoc@startlocaltoc\@gobble` in case etoc is not detected, I should possibly have done that long ago (like I did in tableof).

In 1.07h I decide that I should not have used `\Etoc@` but `\etoc@` for `\Etoc@settocdepth`. So I now use lowercase and add a temporary line for transition in the very improbable situation that someone actually did already use the just released 1.07g.

In 1.07i the deactivation of `\etoc@settocdepth` done at the start of the .toc file (for the case this file is used after having removed etoc from the document, or imported in another document) is done via letting it to `\@gobble` rather than `\count@` (which would not be ok, as what follows would be undefined too). The reason for the `\count@` also used originally in `\etocignoretoctocdepth` is that when I first worked on 1.07g I possibly had more than one token after `\etoc@settocdepth`, but I changed that later.

```

1214 \def\Etoc@storetocdepth {\global\c@etoc@tocdepth\c@tocdepth }
1215 \def\Etoc@resettocdepth {\global\c@tocdepth\c@etoc@tocdepth }
1216 \def\etocobeytoctocdepth {\def\etoc@settocdepth
1217     {\afterassignment\Etoc@@nottoo deep \global\c@tocdepth}}
1218 \def\Etoc@@nottoo deep {\ifnum\c@tocdepth>\c@etoc@tocdepth
1219     \global\c@tocdepth\c@etoc@tocdepth\fi }
1220 \def\etocignoretoctocdepth {\let\etoc@settocdepth\@gobble }
1221 \def\etocsettocdepth {\futurelet\Etoc@nexttoken\Etoc@set@tocdepth }
1222 \def\Etoc@set@tocdepth {\ifx\Etoc@nexttoken\bgroup
1223     \expandafter\Etoc@set@tocdepth@
1224     \else\expandafter\Etoc@set@toctocdepth
1225     \fi }
1226 \def\Etoc@set@tocdepth@ #1{\@ifundefined {Etoc@#1@@}
1227     {\PackageWarning{etoc}
1228         {Unknown sectioning unit #1, \protect\etocsettocdepth\space ignored}}
1229     {\global\c@tocdepth\c@name Etoc@#1@@\endcsname}%
1230 }
1231 \def\Etoc@set@toctocdepth #1#{\Etoc@set@toctocdepth@ }
1232 \def\Etoc@set@toctocdepth@ #1{%
1233     \@ifundefined{Etoc@#1@@}%
1234     {\PackageWarning{etoc}
1235         {Unknown sectioning depth #1, \protect\etocsettocdepth.toc ignored}}%
1236     {\addtocontents {toc}
1237         {\protect\etoc@settocdepth\expandafter\protect\c@name Etoc@#1@@\endcsname}}%
1238 }

```

1.07h adds the depth tags, and an even more general mechanism could be added at some point: we could insert ‘action’ tags and have the user map them to arbitrary commands. For the time being we just provide `\etocdepthtag.toc {name}` and `\etocsettagdepth {tag_name}{level}` where level is numeric or alphabetical. The numeric level -3 is now again not accepted by `\etocsetlevel`, it can be used with `\etocsettagdepth` (which accepts equivalently none).

```

1239 \def\etocdepthtag #1#{\Etoc@depthtag } % \etocdepthtag.toc {name}
1240 \def\Etoc@depthtag #1{\addtocontents {toc}{\protect\etoc@depthtag {#1}}}
1241 \def\etocignoredepthtags {\let\etoc@depthtag \@gobble }
1242 \def\etocobeydepthtags {\let\etoc@depthtag \Etoc@depthtag@ }
1243 \def\Etoc@depthtag@ #1{\@ifundefined{Etoc@depthhof@#1}%
1244     {% ignore in silence if tag has no associated depth
1245     {\afterassignment\Etoc@@nottoo deep
1246         \global\c@tocdepth\c@name Etoc@depthhof@#1\endcsname}%
1247 }
1248 \def\etocsettagdepth #1#2{\@ifundefined{Etoc@#2@@}%

```

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```
1249     {\PackageWarning{etoc}  
1250       {Unknown sectioning depth #2, \protect\etocsettagdepth\space ignored}}%  
1251     {\@namedef{Etoc@depthof#1}{\@nameuse{Etoc@#2@@}}}%  
1252 }
```

We must cancel all tocvsec2 toc-related actions. But a check must be done for the memoir class, as its tocvsec2 emulation does not have the incompatible things etoc needs to revert. This extra check added with etoc 1.07l. Release 1.08g modifies the info message under class memoir (and downgrades it from warning to info).

```
1253 \def\Etoc@tocvsec@err #1{\PackageError {etoc}  
1254     {the command \protect#1\space is incompatible with etoc}  
1255     {use \protect\etocsettocdepth.toc as replacement (see etoc manual)}}%  
1256 }%  
1257 \AtBeginDocument {%  
1258   \@ifclassloaded{memoir}  
1259   {\PackageInfo {etoc}  
1260     {Regarding memoir class command \protect\settocdepth, consider^^J  
1261     \protect\etocsettocdepth.toc as a drop-in replacement with  
1262     more capabilities^^J (see etoc manual). Similarly  
1263     \protect\etocsettocdepth\space and  
1264     \protect\etocsetnexttocdepth^^J should replace  
1265     use of memoir's \protect\maxtocdepth\space command.}}  
1266   {\@ifpackageloaded {tocvsec2}  
1267     {\def\maxtocdepth #1{\Etoc@tocvsec@err \maxtocdepth }%  
1268     \def\settocdepth #1{\Etoc@tocvsec@err \settocdepth }%  
1269     \def\resettocdepth {\@ifstar {\Etoc@tocvsec@err \resettocdepth }%  
1270     {\Etoc@tocvsec@err \resettocdepth }%  
1271     }%  
1272     \def\save@tocdepth #1#2#3{}}% % if etoc is added to file previously  
1273     \let\reset@tocdepth\relax % using tocvsec2  
1274     \let\remax@tocdepth\relax  
1275     \let\tableofcontents\etoc\tableofcontents  
1276     \PackageWarning {etoc}  
1277     {package tocvsec2 detected and its modification of^^J  
1278     \protect\tableofcontents\space reverted. Use  
1279     \protect\etocsettocdepth.toc as a replacement^^J  
1280     for the tocvsec2 toc-related commands}}}%  
1281   }%  
1282 }%
```

1.07g

```
1283 \def\invisibletableofcontents {\etocsetnexttocdepth {-3}\tableofcontents }%  
1284 \def\invisiblelocaltableofcontents  
1285     {\etocsetnexttocdepth {-3}\localtableofcontents }%  
1286 \def\etocsetnexttocdepth #1{%  
1287   \@ifundefined{Etoc@#1@@}  
1288   {\PackageWarning{etoc}  
1289     {Unknown sectioning unit #1, \protect\etocsetnexttocdepth\space ignored}}  
1290   {\edef\Etoc@aftertochook {\global\c@tocdepth\the\c@tocdepth\space  
1291     \let\noexpand\Etoc@aftertochook\noexpand\@empty }%  
1292     \global\c@tocdepth\csname Etoc@#1@@\endcsname}%  
1293 }%
```

1.07h. In order for the .toc file to be usable without error even without etoc. In 1.07i use of \@gobble for \etoc@settocdepth.

```
1294 \addtocontents {toc}{\protect\@ifundefined{etoc\style}%  
1295     {\let\protect\etoc@startlocaltoc\protect\@gobble  
1296     \let\protect\etoc@settocdepth\protect\@gobble
```

```

1297         \let\protect\etoc@depthtag\protect\@gobble }{}}%
    Initializations.
1298 \def\etocstandardlines {\Etoc@standardtrue}
1299 \def\etococlines       {\Etoc@standardfalse}
1300 \etocdefaultlines
1301 \etocstandardlines
1302 \etocstandarddisplaystyle
1303 \etocobeytoctocdepth
1304 \etocobeydepthtags
1305 \let\Etoc@aftertochook\@empty % private for \etocsetnexttocdepth
1306 \let\etocaftertochook \@empty % public for end user.
1307 \let\etocbeforetitlehook \@empty % new with 1.07m
1308 \endinput

```