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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: 1.08a (2015/03/13)
% 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
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%       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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%   English documentation, and
% 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 tex or etex on etoc.dtx extracts etoc.sty, etoc.ins, etoc.etex,
% etoc-DE.tex, and README.md. See README.md for further instructions.
%
% It is also possible to typeset etoc.dtx directly via latex or pdflatex.
```

Part I.

Overview

Here are some statistics for this part: it contains 5 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 “7”. 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 [subsection 34.5](#), 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 13](#)).

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

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.

other commands, such as language changing commands, which do not expect to see their scope limited in this way inside a group (L^AT_EX’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 34.3](#) (which is a TOC!) have their line styles expressed in terms of enumerate environments.

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`, `\etoctocstyle`, `\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`.

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

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

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}` 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 31](#).

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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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.

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.

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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 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 [subsection 34.5](#) 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 12](#) and [subsection 34.5](#). Its layout is a bit like the one of the [main document TOC](#), although the line styles are coded

6. A second example

very differently.

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The code:

```
\beginingroup
\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}
{\leftskip1cm\rightskip .75cm \parfillskip 0pt plus 1fil\relax
\nobreak\smallskip}
{}
{\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 {code} {none}

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

```

7. Linked list of the main package commands

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

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 “8”. The name of the last section is “Two Examples” and its number is “14”. The name of the first subsection is “The hyperref option *bookmarksdepth*” and the corresponding number is “10.1”. The name of the last subsection is “A TOC with a background color” and its number is “14.2”.

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8. 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 subsubsections 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 facing page.

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We used this:

```
\begin{figure}[ht!]
  \centering
  \begingroup
  \etocstandardlines
  \renewcommand{\etocbkgcolorcmd}{\color{green!5}}
  \renewcommand{\etocbelowtocskip}{\Opt\relax}
  \fboxseplex
  \etocframedstyle [1]{\fbox{\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}`.

9. 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 \LaTeX `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](#).

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

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

10. 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.

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`.

10.1. 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.

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

11.1. The commands `\etocbeytoctocdepth` and `\etocignoretoctocdepth`

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

12. 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 [subsection 34.5](#).

12.1. The commands `\etocbeydepthtags` and `\etocignoredepthtags`

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

13. 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`, `\etocignoretocdepth` and `\etocobeytocdepth` are the way to go; or their variants `\etocdepthtag.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.

13.1. 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}}
```

14. Two Examples

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).

14. Two Examples

14.1. 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?

6

3.1	<i>Limitations in the use of list environments for tables of contents</i>	6
Chapter 4	Line styles and toc display style	7
4.1	<i>\etocsetstyle for the line styles</i>	7
4.2	<i>\etocsettocstyle for the toc display</i>	7
4.3	<i>Compatibility mode</i>	8
Chapter 5	A first example	8
Chapter 6	A second example	9
Chapter 7	Linked list of the main package commands	11

14.2. A TOC with a background color

Let us now try out some more sophisticated line styles. The display will use the `\etocframedstyle` 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 current page.

Contents of Part One		
3	Do I need to be a geek to use <code>etoc</code> ?	6
3.1	Limitations in the use of list environments for tables of contents	6
4	Line styles and toc display style	7
4.1	<code>\etocsetstyle</code> for the line styles	7
4.2	<code>\etocsettocstyle</code> for the toc display	7
4.3	Compatibility mode	8
5	A first example	8
6	A second example	9
7	Linked list of the main package commands	11

`\tableofcontents \ref{toc:overview}` (cf. [subsection 14.2](#) and [this other toc](#))

The actual design is not pre-built in `etoc`; it uses its ‘framed’ style with a background

14. *Two Examples*

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.

Part III.

Surprising uses of **etoc**

Here are some statistics for this part: it contains 8 sections and 1 subsection. The name of the first section is “The TOC of TOCs” and the corresponding number is “15”. The name of the last section is “The TOC as a table” and its number is “22”. The name of the first subsection is “The commands `\etocglobaldefs` and `\etoclocaldefs`” and the corresponding number is “22.1”. The name of the last subsection is “The commands `\etocglobaldefs` and `\etoclocaldefs`” and its number is “22.1”.

15. The TOC of TOCs	21
16. Arbitrary “Lists Of...”, <code>\etoccontentsline</code>	23
17. A TOC with a fancy layout	24
18. Another compatibility mode	25
19. The TOC as a tree	27
20. The TOC as a molecule	30
21. The TOC as a TikZ mind map	32
22. The TOC as a table	35
22.1. The commands <code>\etocglobaldefs</code> and <code>\etoclocaldefs</code>	40

15. 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.
```

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

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...

15. The TOC of TOCs

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}
  \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
\end{group}
```

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

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`.

`\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 [subsection 34.2](#) gives another use of the shuffling of levels.

16. 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}
```

17. A TOC with a fancy layout

```
{\pagebreak[2]\vskip\baselineskip}
\etocsetstyle{section}{}{}
{\noindent\strut{\bfseries\large\etocnumber\hskip.5em\etocname}\par
\nopagebreak[3]}{}
\etocruledstyle[4]{\Large\bfseries List of the exercises}
\setlength{\columnseprule}{.4pt}
\tableofcontents
\endgroup
```

17. 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 [subsection 34.4](#).

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	

18. 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?	6
3.1. Limitations in the use of list environments for tables of contents	6
4. Line styles and toc display style	7
<i>\etocsetstyle for the line styles</i> (4.1) – <i>\etocsettocstyle for the toc display</i> (4.2) – <i>Compatibility mode</i> (4.3).	
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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).

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

```
\etocsetstyle{section}{}
{\ifnum\etocthenumber=3
  \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}
  {}{}
  {\savedsubsectionline{\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.

19. 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 instructions to be executed later. LESLIE LAMPORT's book has no mention whatsoever of token lists, and \LaTeX 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,

¹⁴<http://ctan.org/pkg/pgf>

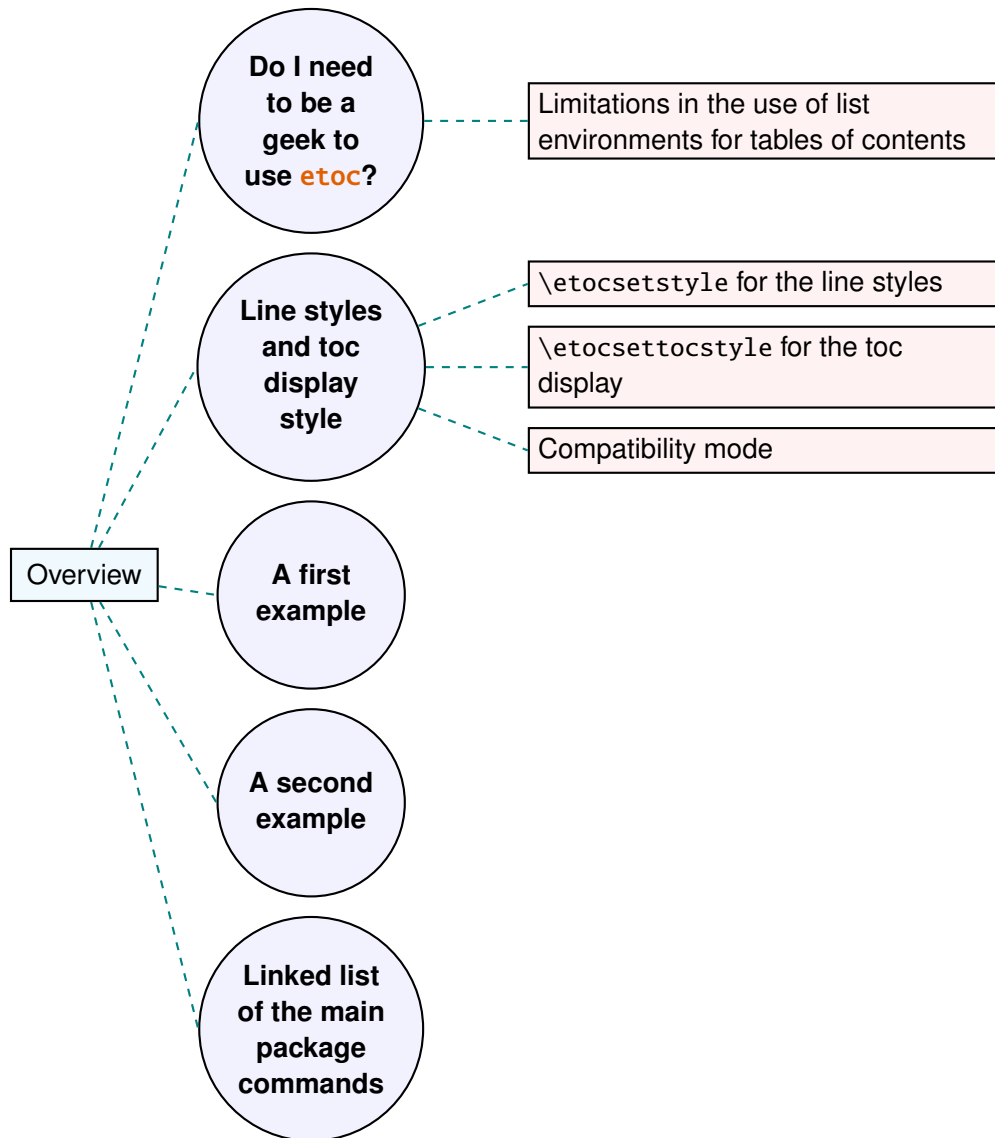
¹⁵<http://ctan.org/pkg/forest>

¹⁶This manual up to the version of May 14, 2013 used package `tikz-qtree` but there were problems

19. The TOC as a tree

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`.



A table of contents displayed as a forest tree.

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`.

The resulting tree has been put in a [float](#), which appears on the facing page. Here is the code used for its production:

```
\newtoks\treetok
\newtoks\temptok

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

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

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

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

\etocsetstyle{subsection}
{
  \etocskipfirstprefix
  {\appendtotok\treetok{ }}
  {\PrepareSubsectionNode \appendtotok\treetok\foresttreenode}
  {\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,
  \end{forest}
\end{figure}
```

20. The TOC as a molecule

```
@\the\treetok
\end{forest}
\end{figure}
```

Why `\hypersetup{hidelinks}`? as explained in [subsection 13.1](#), 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 [subsection 34.4](#)) 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 [subsection 34.6](#)); 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.

20. 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.)

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}
```

```

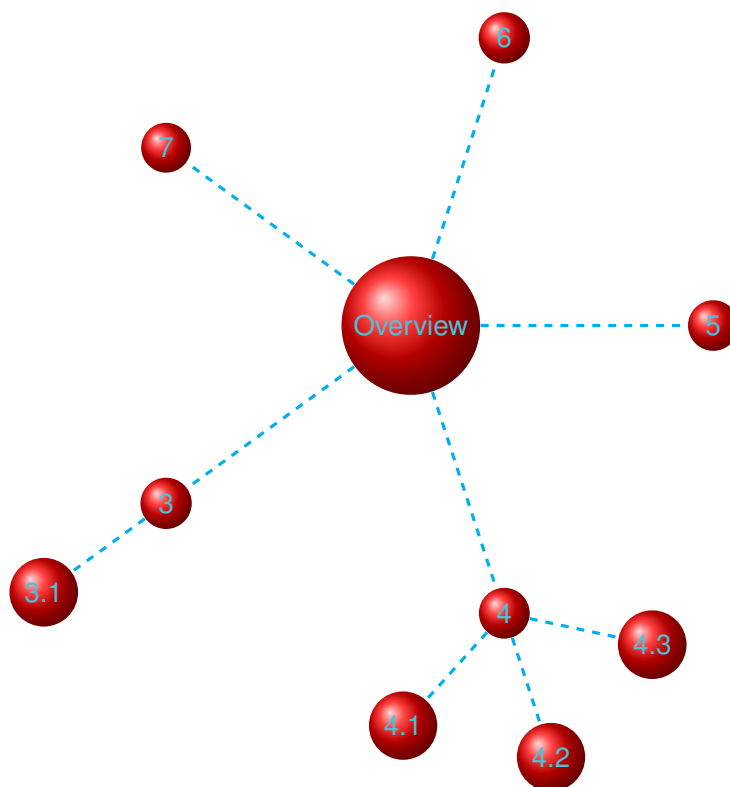
{\appendchildtree\treetok\sectiontok}
{\preparetreenode \sectiontok\expandafter{\treenode}}
{\appendchildtree\treetok\sectiontok}

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

\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}

```



A table of contents as a “molecule.”

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 above. Here is the code actually producing it:

```

\begin{figure}[th!]\centering
\etocsetnexttocdepth{subsection}
\tableofcontents \label{toc:molecule} \ref{toc:overview}

```

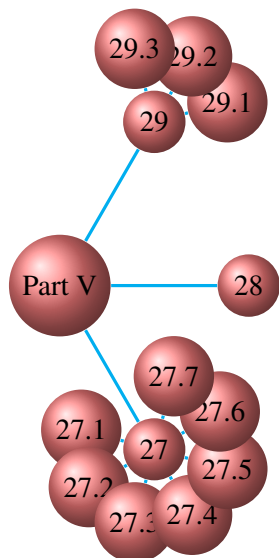
21. The TOC as a TikZ mind map

```

\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}
\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}}%
...

```

21. 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.

```

\begin{group}
\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

```

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.



```

\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\the\expandafter #1#2}}

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

```

21. The TOC as a TikZ mind map

```

\edef\tmpstuff {\the#1 child [branch color = #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.
{\ifcase\pseudomodthree{\value{partco}}%
\or \appendchildtree\treetok\parttok {teal!60}% first
\or \appendchildtree\treetok\parttok {yellow!80}% second
\else\appendchildtree\treetok\parttok {green!50}% third and next ...
\fi
}
{\stepcounter{partco}%
% customize manually some TikZ set-up (should be done inside the TikZ thing I guess)
\def\tmption {}%
\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 \tmption
\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 {teal!60}% first
\or \appendchildtree\treetok\parttok {yellow!80}% second
\else\appendchildtree\treetok\parttok {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} {section}
\etocsettagdepth {arbitrarily}{part}
\etocsettagdepth {surprising} {section}
\etocsettagdepth {linestyles} {part}
\etocsettagdepth {globalcmds} {section}
\etocsettagdepth {custom} {section}
\etocsettagdepth {tips} {section}
\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}[th!]
\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=45, text width=3cm},
  level 2/.append style={level distance=8cm,sibling angle=25, 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.

22. 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

22. The TOC as a table

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 $\langle start \rangle$, $\langle prefix \rangle$, $\langle contents \rangle$ or $\langle finish \rangle$ specification with a sole `\hline`, *i.e.* one not preceded by a `\\` (it is however possible to put `\\` at the end of $\langle prefix \rangle$ and the `\hline` at the start of $\langle contents \rangle$).
3. as is explained next, it is recommended to use the `\\` at the start of the $\langle prefix \rangle$ or $\langle contents \rangle$ specifications to close the *previous* row, not at the end to close the *current* row; when the TOC is a partial one (a `\localtableofcontents`) this advice becomes (in almost all situations) mandatory.

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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```

\begingroup
\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
\endgroup

```

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 many cases one may indeed construct TOC-as-tables with the `\\` located at the end of the style specifications (but almost never for a `\localtableofcontents`). 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 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 to start with an `\\` each line style specification. 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, thus the section which are first of their kind used the `\etociffirst` conditional branching. The attentive reader

22. The TOC as a table

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 [subsection 34.6](#).

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	6
Line styles and toc display style	4	7
A first example	5	8
A second example	6	9
Linked list of the main package commands	7	11

```
\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}
```

22.1. 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.

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

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.

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 “23”. The name of the last section is “**Am I also red?**” and its number is “26”. The name of the first subsection is “The `\etocname` and `\etocpage` commands” and the corresponding number is “23.1”. The name of the last subsection is “**This is a (pale) red subsection for illustrative purposes**” and its number is “25.2”.

Contents of Part IV

23 The `\etocsetstyle` command (page 42)

23.1 The `\etocname` and `\etocpage` commands (p. 42)

23.2 The `\etocskipfirstprefix` and `\etociffirst` commands (p. 44)

23.3 The `\etocnumber` command (p. 44)

23.4 The `\etocifnumbered` switch (p. 44)

23.5 The `\etocthenname`, `\etocthenumber`, and `\etocthepage` commands (p. 45)

23.6 The `\etoclink` command (p. 45)

23.7 The `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage` and `\etoc-thelink` commands (p. 45)

24 The `\etocsetlevel` command (page 46)

25 Scope of commands added to the `.toc` file (page 47)

25.1 Testing the scope (p. 47)

25.2 **This is a (pale) red subsection for illustrative purposes** (p. 48)

26 **Am I also red?** (page 48)

23. The `\etocsetstyle` command

23.1. 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:¹⁹

¹⁹the 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.

```

\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`.)

23. The `\etocsetstyle` command

23.2. 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.²⁰

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.

23.3. 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`.

23.4. 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).²¹

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}}
```

²⁰With versions earlier than 1.08 it had to be the very last token in the *<start>* code. It may now appear anywhere therein.

²¹as 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`.

23.5. 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.

23.5. 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`.

23.6. 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{\etocthename}` 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.

23.7. 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: **27.** Specifying the toc display style (p. 49); **28.** Starred variants of the `\tableofcontents` etc... commands (p. 52), and **29.** Table of contents for this part (p. 53).

24. The `\etocsetlevel` command

Obsolete example of `\begingroup`

```
\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

```
\begingroup\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: **27**. Specifying the toc display style (*p. 49*); **28**. Starred variants of the `\tableofcontents` etc... commands (*p. 52*), and **29**. Table of contents for this part (*p. 53*).

24. 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 \etoclines could have been used, too.
\etocmarkboth\contentsname
\etocmulticolstyle[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 \LaTeX 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.

25. Scope of commands added to the .toc file

25.1. 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
```

26. Am I also red?

25.2. 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.

26. 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 10 subsections. The name of the first section is “Specifying the toc display style” and the corresponding number is “27”. The name of the last section is “Table of contents for this part” and its number is “29”. The name of the first subsection is “The command `\etocsettocstyle`” and the corresponding number is “27.1”. The name of the last subsection is “A (crazy) inline display” and its number is “29.3”.

27. Specifying the toc display style	49
27.1. The command <code>\etocsettocstyle</code>	49
27.2. The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulticol</code>	50
27.3. The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code> .	51
27.4. The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>	51
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29. Table of contents for this part	53
29.1. Testing the compatibility mode	53
29.2. A framed display	54
29.3. A (crazy) inline display	54

27. 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})
```

27.1. The command `\etocsettocstyle`

This is a command with two mandatory arguments:

```
\etocsettocstyle{<before_toc>}{<after_toc>}
```

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

27. Specifying the toc display style

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>`.

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

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

`\etocmulticolstyle[<number_of_columns>]{<heading>}`

The `<number_of_columns>` can go from 1 to 10 (it defaults to 2; if its value is 1, naturally no multicol environment is then created). The `<heading>` will typically be some ‘vertical’ material like: `<heading> = \section*{<title>}` 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[<number_of_columns>]{<heading>}`

And there is also `\etoclocalmulticol[<number_of_columns>]{<heading>}`.

27.2.1. The command `\etocstyle`

`\etocstyle[<kind>]{<number_of_columns>}{<title>}`
`= \etocmulticolstyle[<number_of_columns>]{\kind*{<title>}}`

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

27.2.1.1. `\etocstylewithmarks[<kind>]{<number_of_columns>}{<title>}{<mark>}`

`= \etocmulticolstyle[<number_of_columns>]{\kind*{<title> \markboth{\MakeUppercase{<mark>}}}}`

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

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

27.2.1.3. really?

27.3. 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`.

27.4. 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 32.2](#)).

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](#)²² or [tcolorbox](#)²³ in the arguments of `\etocsettocstyle` is recommended.

Examples in this document are on pages [13](#), [19](#), [55](#), and [66](#).

27.5. 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}`.

²²<http://ctan.org/pkg/mdframed>

²³<http://ctan.org/pkg/tcolorbox>

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

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`²⁴ 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`.

27.6. 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.

27.7. 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.

28. 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 `\etocmemoirtotocfmt{\<kind>}{\<name>}` will change the format (`\<kind>` is `chapter`, `section`, `subsection`... and `\<name>` can be for example `\contentsname`.) The initial setup is with `chapter` and `\contentsname`.

²⁴this 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.

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

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 `\etoc after title hook` 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 is `\etoc after contents hook`, similarly defined to do nothing. And `\etoc before title hook` is also initially defined to do nothing. They can be used for some special effects.

29. Table of contents for this part

29.1. 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.²⁵ 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}
```

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²⁵the 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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29.2. 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).²⁶

```
\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{\etoctoprule}{\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
\normalcolor % work-around to a bug involving color and multicols (and figure)
\tableofcontents \label{toc:b} \ref{toc:globalcmds}
\end{figure}
\endgroup
```

29.3. 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 taste in many matters does not seem to be widely shared).

²⁶inside the figure environment and before the framed toc, which uses multicols, we added \normalcolor as work-around to an interaction bug (related to the \color{red} command we added to the .toc file) between multicols, color and the figure environment. This bug has nothing to do with **etoc**.

*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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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, 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 **etoc**: The TOC of TOCs, Arbitrary “Lists Of..”, `\etoc-toccontentsline`, 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. Commands for the toc line styles: The `\etocsetstyle` command³⁵, The `\etocsetlevel` command, Scope of commands added to the `.toc` file³⁶, Am I also red?. Commands for*

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 `\etocobeytoctocdepth` and `\etocignoretoctocdepth`.

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

³²The hyperref option `hidelinks`.

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

³⁴The commands `\etocglobaldefs` and `\etoclocaldefs`.

³⁵The `\etocname` and `\etocpage` commands; The `\etocskipfirstprefix` and `\etociffirst` commands; The `\etocnumber` command; The `\etocifnumbered` switch; The `\etocthenname`, `\etocthenumber`, and `\etocthepage` commands; The `\etoclink` command; The `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage` and `\etocthelink` commands.

³⁶Testing the scope; This is a (pale) red subsection for illustrative purposes.

the toc display style: *Specifying the toc display style*³⁷, *Starred variants of the \table-of-contents etc... commands, Table of contents for this part*³⁸. **Using and customizing etoc:** *Summary of the main style commands*³⁹, *The package default line styles: \etoc-defaultlines, Customizing etoc*⁴⁰, *One more example of colored TOC layout. Tips: ... and tricks*⁴¹. **The code:** *Timestamp, Change history, Implementation.*

The code used:

```
\begingroup
\newsavebox{\forsubsections}
\etocsetstyle{part}{\upshape. \etocskipfirstprefix}{. \upshape}
{\bfseries\etocname:~~}{}
\etocsetstyle{section}{\itshape\etocskipfirstprefix}{, }
{\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
```

³⁷The command \etocsettocstyle; The commands \etocmulticolstyle, \etoc-multicol, and \etoclocalmulticol; The commands \etocruledstyle, \etocruled and \etoclocalruled; The commands \etocframedstyle, \etocframed, and \etoclocalframed; Headings, titles, \etocoldpar, \etocinnertopsep; The compatibility mode \etocstandarddisplaystyle; The command \etocinline.

³⁸Testing the compatibility mode; A framed display; A (crazy) inline display.

³⁹Setting up local styles; Setting up toc display styles; Displaying tables of contents; Labels and references.

⁴⁰Customizing the etoc pre-defined line styles; Customizing the toc display styles.

⁴¹Hacking framed parboxes; Interverting the levels; All subsections of this document; Displaying statistics; Using depth tags; Typesetting the TOC as a table (the old way); Compatibility with other packages; T_EXnical matters; Errors and catastrophes.

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 “30”. The name of the last section is “One more example of colored TOC layout” and its number is “33”. The name of the first subsection is “Setting up local styles” and the corresponding number is “30.1”. The name of the last subsection is “Customizing the toc display styles” and its number is “32.2”.

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

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30. Summary of the main style commands

30.1. Setting up local styles

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

30.2. 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>}
```

30.3. 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
```

30.4. 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}
similarly with \etocmulticol etc . . .
```

The commands for local tables of contents do *not* react to a `\ref` following them.

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.

31. 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 `\etococlines` 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 \LaTeX default.⁴² On the other hand, used with a one-column

⁴²and there will never be a Part or Chapter entry alone at the bottom of a column or page (except if it has no sub-unit).

layout, and with few sub-sub-sections, the style is a bit more spread out vertically than the \LaTeX 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 \LaTeX 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
\fbbox{\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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32. Customizing **etoc**

32.1. 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*\etocclineleaders
  {\hbox{\normalfont\normalsize\hbox to 2ex {\hss.\hss}}}
\newcommand*\etocabbrevpagename{p.~} % initial of "page"
\newcommand*\etocpartname{\partname} % utilisateurs de frenchb: attention
                                     % car donne "partie" sans majuscule.
\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**.⁴³

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.

⁴³with 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.

32.2. 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*\etoctoprule{\hrule}
\newcommand*\etocbottomrulecolorcmd{\relax}
```

```
% 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{\etocbottomrule}{\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 $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ sense. However the left and right rules are not used as

33. One more example of colored TOC layout

(horizontal) leaders but as objects of a given specified width. Note that *only* the Plain \TeX syntax for rules is accepted here.

33. 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{\etoctoprulecolorcmd}{\color{tocbackground}}

\renewcommand{\etocleftrule}{\vrule width 1cm}
\renewcommand{\etocrightrule}{\vrule width .5cm}
\renewcommand{\etocbottomrule}{\hrule height 12pt}
\renewcommand{\etoctoprule}{\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
\fbboxsep0pt % \colorbox uses \fbboxsep 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 }
{}}

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

```

The TOC has been put in a [float](#) which appears on the following page. The coding is a bit involved⁴⁴ 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.

⁴⁴and reveals the author's preference for the T_EX syntax...

33. One more example of colored TOC layout

I am a twin of that other TOC (click me!)		
27	Specifying the toc display style	49
27.1	The command <code>\etocsettocstyle</code>	49
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27.4	The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>	51
27.5	Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>	51
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Part VII.

Tips

Here are some statistics for this part: it contains 1 section and 9 subsections. The name of the first section is “... and tricks” and the corresponding number is “34”. The name of the last section is “... and tricks” and its number is “34”. The name of the first subsection is “Hacking framed parboxes” and the corresponding number is “34.1”. The name of the last subsection is “Errors and catastrophes” and its number is “34.9”.

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34.1. Hacking framed parboxes	67
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34.7. Compatibility with other packages	74
34.8. T _E Xnical matters	76
34.9. Errors and catastrophes	76

34. ... and tricks

34.1. Hacking framed parboxes

```
\etocdefaultlines
\renewcommand\etocdotprule{\hrule height 2pt depth 2pt}
\etocruled{\color{green}\fboxrule2pt\fboxseplex
  \fbox{\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	27, p. 49	The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code>	27.3, p. 51
The command <code>\etocsettocstyle</code>	27.1, p. 49	The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>	27.4, p. 51
The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulticol</code>	27.2, p. 50	Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>	27.5, p. 51

34. ... and tricks

The compatibility mode `\etocstandard-`
`displaystyle` 27.6, p. 52
The command `\etocinline`
. 27.7, p. 52

**Starred variants of the `\tableofcon-`
`tents etc...` commands . . . 28, p. 52**

Table of contents for this part
. **29, p. 53**
Testing the compatibility mode
. 29.1, p. 53
A framed display 29.2, p. 54
A (crazy) inline display . . . 29.3, p. 54

34.2. 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
```

34.3. All subsections of this document

- | | | |
|---|---|--|
| <p>i. Limitations in the use of list environments for tables of contents (3.1, p. 6)</p> <p>ii. <code>\etocsetstyle</code> for the line styles (4.1, p. 7)</p> <p>iii. <code>\etocsettocstyle</code> for the toc display (4.2, p. 7)</p> <p>iv. Compatibility mode (4.3, p. 8)</p> <p>v. The <code>hyperref</code> option <code>bookmarksdepth</code> (10.1, p. 15)</p> <p>vi. The commands <code>\etocobeytocdepth</code> and <code>\etocignoretocdepth</code> (11.1, p. 16)</p> <p>vii. The commands <code>\etocobeydepthtags</code> and <code>\etocignoredepthtags</code> (12.1, p. 16)</p> <p>viii. The <code>hyperref</code> option <code>hidelinks</code> (13.1, p. 17)</p> | <p>ix. A Beautiful Thesis example (14.1, p. 18)</p> <p>x. A TOC with a background color (14.2, p. 19)</p> <p>xi. The commands <code>\etocglobaldefs</code> and <code>\etoclocaldefs</code> (22.1, p. 40)</p> <p>xii. The <code>\etocname</code> and <code>\etocpage</code> commands (23.1, p. 42)</p> <p>xiii. The <code>\etocskipfirstprefix</code> and <code>\etociffirst</code> commands (23.2, p. 44)</p> <p>xiv. The <code>\etocnumber</code> command (23.3, p. 44)</p> <p>xv. The <code>\etocifnumberedswitch</code> (23.4, p. 44)</p> <p>xvi. The <code>\etocthename</code>, <code>\etocthenumber</code>, and <code>\etocthepage</code> commands (23.5, p. 45)</p> | <p>xvii. The <code>\etoclink</code> command (23.6, p. 45)</p> <p>xviii. The <code>\etocthelinkedname</code>, <code>\etocthelinkednumber</code>, <code>\etocthelinkedpage</code> and <code>\etocthelink</code> commands (23.7, p. 45)</p> <p>xix. Testing the scope (25.1, p. 47)</p> <p>xx. This is a (pale) red subsection for illustrative purposes (25.2, p. 48)</p> <p>xxi. The command <code>\etocsettocstyle</code> (27.1, p. 49)</p> <p>xxii. The commands <code>\etocmulticolstyle</code>, <code>\etocmulticol</code>, and <code>\etoclocalmulticol</code> (27.2, p. 50)</p> <p>xxiii. The commands <code>\etocruledstyle</code>, <code>\etocruled</code> and <code>\etoclocalruled</code> (27.3, p. 51)</p> |
|---|---|--|

xxiv. The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code> (27.4, p. 51)	xxxi. Setting up local styles (30.1, p. 57)	xxxix. All subsections of this document (34.3, p. 68)
xxv. Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code> (27.5, p. 51)	xxxii. Setting up toc display styles (30.2, p. 57)	xl. Displaying statistics (34.4, p. 69)
xxvi. The compatibility mode <code>\etocstandarddisplaystyle</code> (27.6, p. 52)	xxxiii. Displaying tables of contents (30.3, p. 58)	xli. Using depth tags (34.5, p. 71)
xxvii. The command <code>\etocinline</code> (27.7, p. 52)	xxxiv. Labels and references (30.4, p. 58)	xlii. Typesetting the TOC as a table (the old way) (34.6, p. 73)
xxviii. Testing the compatibility mode (29.1, p. 53)	xxxv. Customizing the <code>etoc</code> pre-defined line styles (32.1, p. 62)	xliii. Compatibility with other packages (34.7, p. 74)
xxix. A framed display (29.2, p. 54)	xxxvi. Customizing the toc display styles (32.2, p. 63)	xliv. T _E Xnical matters (34.8, p. 76)
xxx. A (crazy) inline display (29.3, p. 54)	xxxvii. Hacking framed parboxes (34.1, p. 67)	xl. Errors and catastrophes (34.9, p. 76)
	xxxviii. Interverting the levels (34.2, p. 68)	

34.4. 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 (using the T_EX primitive `\setbox` rather than the L^AT_EX `\sbox` would allow to change the color of the un-boxed saved box). 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 20](#). 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\thispartstatsauxi{}}%
  \def\thispartstatsauxii{%
    \sbox{\firstnameii}{\etocname}%
    \sbox{\firstnumberii}{\etocnumber}%
    \def\thispartstatsauxii{}}%
  \begingroup
  \etocsetstyle{subsection} {} {}

```

34. ... and tricks

```

    {\thispartstatsauxii
     \stepcounter{mycounti}%
     \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{mycounti}
    subsection\ifnum\value{mycounti}>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

```

34.5. 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_EX2e’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	12
III Surprising uses of <code>etoc</code>	21
IV Commands for the toc line styles	42
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27.2.1.2 Do we really want paragraph entries in the TOC?	50
27.2.1.3 really?	51
27.3 The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code>	51
27.4 The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>	51
27.5 Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>	51
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27.7 The command <code>\etocinline</code>	52
28 Starred variants of the <code>\tableofcontents</code> etc... commands	52
29 Table of contents for this part	53
29.1 Testing the compatibility mode	53
29.2 A framed display	54
29.3 A (crazy) inline display	54
VI Using and customizing <code>etoc</code>	57
VII Tips	67

```

\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 {code} {none}
\renewcommand\etocdotprule {\hrule height 3pt\relax}
\renewcommand\etocdotprulecolorcmd {\color{blue}}

```

```

\renewcommand\etocaftercontentshook
  {\medskip\begin{group} \color{blue}\hrule height 3pt \end{group} }
\etocruledstyle [1]{\Large\bfseries
  \fbox{\makebox[8cm]{A TOC using depth tags}}}
\sloppy
\tableofcontents
\endgroup

```

34.6. 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 19](#) 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 22](#) 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, or updates to certain counters, 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 21](#).

```

\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
    \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\toctablepiece {\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\\}%
}

\begin{group}
\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

```

34.7. Compatibility with other packages

The contents of the .toc file (if it already exists) are read into memory by **etoc** once, at the time of `\begin{document}`.⁴⁵

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

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 L^AT_EX at the end of the compilation.

etoc loads the package `multicol`.

etoc requires the .toc file to use the `\contentsline` macro (possibly patched by other packages). It is thus 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.

etoc is `hyperref` aware and hopefully `hyperref` compatible: the macros `\etocname`, `\etocnumber`, and `\etocpage` contain the `hyperref` links, if present (note that the `link-toc=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.

⁴⁵New 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.

Release 1.07k adds compatibility with package `tocloft`:⁴⁶ 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.

Release 1.07l 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.

`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\mystuff}
```

as this will make the `\label/\ref` mechanism impossible. Rather you may do

```
\renewcommand\etocaftertochook{\mystuff}
```

and there is also `\etocaftercontentshook` which is executed a bit earlier⁴⁷ just before the closing part of the toc display style (and thus still within a group.)

`etoc` used to be incompatible with package `tocvsec2`⁴⁸; 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.

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.

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.

⁴⁶<http://ctan.org/pkg/tocloft>

⁴⁷contrarily to `\etocaftertochook`, `\etocaftercontentshook` is not executed if the `tocdepth` did not allow the printing of the TOC.

⁴⁸<http://ctan.org/pkg/tocvsec2>

It is possible to use simultaneously **etoc** and `tableof`⁴⁹. 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.

34.8. 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.

34.9. 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).

⁴⁹<http://ctan.org/pkg/tableof>

Part VIII.

The code

35. Timestamp

This is the documentation as of 2015/03/13, printed from the source file with the time stamp 13-03-2015 at 23:06:42 CET. The package version is v1.08a, of 2015/03/13.

36. Change history

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 `\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.

New commands `\etociffirst`, `\etocxiffirst`, `\etocxifnumbered`.

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!

v1.07l [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`).

37. Implementation

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`, `\etocthepage`, `\etoclink`,

`\etoccontentline`, `\etoccontentline*`

`\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.

37. Implementation

```
1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesPackage{etoc}
3 [2015/03/13 v1.08a 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@skipprefix`. 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\etocnoper\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 later 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
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 \def\etoc@{\etoc@}

```

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

```

36 \newcounter{etoc@tocid}
37 \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.

```

38 \@ifclassloaded{memoir}{\def\Etoc@minf{-\thr@@}}{\def\Etoc@minf{-\tw@}}
39 \def\Etoc@@minustwo@@{-\tw@}
40 \let\Etoc@@minusone@@\m@ne
41 \let\Etoc@@zero@@ \z@
42 \let\Etoc@@one@@ \@ne
43 \let\Etoc@@two@@ \tw@
44 \let\Etoc@@three@@ \thr@@
45 \chardef\Etoc@@four@@ 4
46 \chardef\Etoc@@five@@ 5
47 \chardef\Etoc@@six@@ 6
48 \let\Etoc@localtop\Etoc@@minustwo@@
49 \def\Etoc@@minustwo@{minustwo}
50 \def\Etoc@@minusone@{minusone}
51 \def\Etoc@@zero@ {zero}
52 \def\Etoc@@one@ {one}
53 \def\Etoc@@two@ {two}

```

37. Implementation

```
54 \def\Etoc@@three@    {three}
55 \def\Etoc@@four@     {four}
56 \def\Etoc@@five@     {five}
```

1.07g.

```
57 \expandafter\def\csname Etoc@-3@@\endcsname {-\thr@@}
58 \expandafter\let\csname Etoc@-2@@\endcsname \Etoc@@minustwo@@
59 \expandafter\let\csname Etoc@-1@@\endcsname \Etoc@@minusone@@
60 \expandafter\let\csname Etoc@0@@\endcsname \Etoc@@zero@@
61 \expandafter\let\csname Etoc@1@@\endcsname \Etoc@@one@@
62 \expandafter\let\csname Etoc@2@@\endcsname \Etoc@@two@@
63 \expandafter\let\csname Etoc@3@@\endcsname \Etoc@@three@@
64 \expandafter\let\csname Etoc@4@@\endcsname \Etoc@@four@@
65 \expandafter\let\csname Etoc@5@@\endcsname \Etoc@@five@@
66 \expandafter\let\csname Etoc@6@@\endcsname \Etoc@@six@@
67 \let\Etoc@all@@ \Etoc@@five@@
68 \let\Etoc@none@@ \Etoc@minf
```

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

```
69 \let\Etoc@levellist\@empty
70 \def\Etoc@newlevel #1%
71 {\expandafter\def\expandafter\Etoc@levellist\expandafter
72   {\Etoc@levellist\Etoc@levellist@elt #1}%
73 }
74 \def\etocsetlevel#1#2{%
75   \expandafter\Etoc@newlevel\csname l@#1\endcsname
76   \ifcase#2\relax
77     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@zero@@
78     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@zero@
79   \or
80     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@one@@
81     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@one@
82   \or
83     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@two@@
84     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@two@
85   \or
86     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@three@@
87     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@three@
88   \or
89     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@four@@
90     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@four@
91   \or
92     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@five@@
93     \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@five@
94   \or
95     \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@six@@
96   \else
97     \ifnum#2=\m@ne
98       \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@minusone@@
99       \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@minusone@
100    \else
101      \ifnum#2=-\tw@
102        \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@minustwo@@
103        \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@minustwo@
104      \else
105        \PackageWarning{etoc}
106          {unexpected value ‘#2’ in \string\etocsetlevel.^^}%
107          Should be -2,-1, 0, 1, 2, 3, 4, 5, or 6. Set to 6 (=ignored)}%
```

```

108      \expandafter\let\csname Etoc@#1@@\endcsname\Etoc@@six@@
109 \fi\fi\fi}
110 \etocsetlevel{book}{-2}
111 \etocsetlevel{part}{-1}
112 \etocsetlevel{chapter}{0}
113 \etocsetlevel{section}{1}
114 \etocsetlevel{subsection}{2}
115 \etocsetlevel{subsubsection}{3}
116 \etocsetlevel{paragraph}{4}
117 \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`.

```

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

```

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`.

```

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

```

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

```

155   \global\Etoc@vfalse

```

37. Implementation

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

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

Heart of **etoc** hack into execution of `.toc` file. It MUST be the case that the file contains `\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 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.

```
202 \def\etocskipfirstprefix {\global\Etoc@skipprefixtrue }
```

2015/03/08 Let's record that \Etoc@level used to be called \Etoc@tmp in versions earlier than 1.08 (and \Etoc@tmp is used in the completely different ulterior \Etoc@lxyz context). The code sets it for example to be \Etoc@section@@ which has been let by \etocsetlevel to \@ne, thus is always self-terminating in \ifnum...\fi contexts.

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

37. Implementation

```
230 \ifEtoc@standard\let\Etoc@next\@thirdofthree
231 \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.

```
232 \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`.

```
233 \let\Etoc@next\@empty
234 \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...

```
235 \ifcase\Etoc@level
236   \ifEtoc@else \def\Etoc@next{\Etoc@begin@zero}\fi
237 \or
238   \ifEtoc@i\else \def\Etoc@next{\Etoc@begin@one}\fi
239 \or
240   \ifEtoc@ii\else \def\Etoc@next{\Etoc@begin@two}\fi
241 \or
242   \ifEtoc@iii\else \def\Etoc@next{\Etoc@begin@three}\fi
243 \or
244   \ifEtoc@iv\else \def\Etoc@next{\Etoc@begin@four}\fi
245 \or
246   \ifEtoc@v\else \def\Etoc@next{\Etoc@begin@five}\fi
247 \else
248   \ifnum\Etoc@level=\m@ne
249     \ifEtoc@j\else \def\Etoc@next{\Etoc@begin@minusone}\fi
250   \else
251     \ifEtoc@jj\else \def\Etoc@next{\Etoc@begin@minustwo}\fi
252   \fi
253 \fi
254 \Etoc@setflags
255 \Etoc@next
256 \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.

```
257 \Etoc@global\expandafter\def\expandafter\Etoc@prefix\expandafter
258   {\csname Etoc@prefix@\csname Etoc@#1@\endcsname\endcsname }%
```

```

259 \Etoc@global\expandafter\def\expandafter\Etoc@contents\expandafter
260 {\csname Etoc@contents@\csname Etoc@#1\endcsname\endcsname}%
261 \ifEtoc@skipprefix\Etoc@global\let\Etoc@prefix\empty\fi
262 \global\Etoc@skipprefixfalse
263 \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).

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.

```

264 \Etoc@next
265 \Etoc@et@hop{\Etoc@prefix\Etoc@contents}{\Etoc@savedcontentsline{#1}}%
266 }

```

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 left unexpanded. We have to spend some time with delimited macros to disentangle 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.

Then 1.07 added `\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`.

1.08a: I delayed from 2013/03/07 to release 1.08a of 2015/03/13 the obvious decision to convert `\etocname`, etc ... to be the robust versions of `\etocthelinkedname`, etc ..., for sentimental reason. But the earlier variants contained the `hyperref` destination in unexpanded form.

1.07f 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.

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

2015/03/13: 1.08a drops the original constructions of `\etocname` etc... which contained an unexpanded `hyperref` destination.

```

267 \def\Etoc@lxyz #1#2{%
268   \Etoc@global\@namedef {etoclink }{\leavevmode}%           fall-back
269   \Etoc@global\let\etocthelink \empty %                      fall-back
270   \Etoc@global\def\etocthename {#1}% (if link, will be removed later)
271   \Etoc@global\def\etocthelinkedname {#1}% will probably get redefined
272   \Etoc@getthepage #2\etoc@ % defines \etocthelinkedpage (and \etoclink)
273   \Etoc@getnb #1\relax\relax\etoc@ % gets number *and* name, and \etoclink
274   \ifEtoc@number\else
275     \ifnum\Etoc@level=\m@ne

```

37. Implementation

```
276      \Etoc@getit #1\hspace\relax\etoc@    % additional job for parts
277      \fi
278      \fi
279      \Etoc@global\expandafter\let\csname etocname \endcsname\etocthelinkedname
280      \Etoc@global\expandafter\let\csname etocnumber \endcsname\etocthelinkednumber
281      \Etoc@global\expandafter\let\csname etocpage \endcsname\etocthelinkedpage
282      }
```

1.08 adds the \Etoc@global's.

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

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.

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

1.08 adds the \Etoc@global's.

```
317 \def\Etoc@getnb@nohyp #1#2#3\etoc@ {%
318   \def\Etoc@getname ##1\relax\relax\etoc@ {%
319     \Etoc@global\def\etocthename    {##1}%
320     \Etoc@global\def\etocthelinkedname {##1}%
321   }%
322   \ifx #1\numberline
```

```

323 \Etoc@global\def\etocthenumber {#2}%
324 \Etoc@global\def\etocthelinkednumber {#2}%
325 \Etoc@global\Etoc@numbertrue
326 \Etoc@getname #3\etoc@
327 \else % then \etocthename and \etocthelinkedname already defined
328 \Etoc@global\let\etocthenumber \@empty
329 \Etoc@global\let\etocthelinkednumber \@empty
330 \Etoc@global\Etoc@numberfalse
331 \fi
332 }

```

1.07n replaces use of \toks@ by macro \Etoc@tmp. 1.08 adds the \Etoc@global's.

```

333 \def\Etoc@getnb@hyp #1#2#3#4#5#6\etoc@ {%
334 \def\Etoc@getname ##1\relax\relax\etoc@ {%
335 \Etoc@global\def\etocthename {##1}%
336 \edef\Etoc@tmp {{#3}}%
337 \Etoc@global\expandafter\def\expandafter\etocthelinkedname\expandafter
338 {\expandafter\hyperlink \Etoc@tmp{##1}}%
339 }%
340 \def\Etoc@getnbr ##1##2##3\etoc@ {%
341 \ifx ##1\numberline
342 \Etoc@global\def\etocthenumber {##2}%
343 \edef\Etoc@tmp {{#3}}%
344 \Etoc@global\expandafter\def\expandafter\etocthelinkednumber
345 \expandafter{\expandafter\hyperlink \Etoc@tmp{##2}}%
346 \Etoc@global\Etoc@numbertrue
347 \Etoc@getname ##3\etoc@
348 \else
349 \Etoc@global\let\etocthenumber \@empty
350 \Etoc@global\let\etocthelinkednumber \@empty
351 \Etoc@global\Etoc@numberfalse
352 \Etoc@global\def\etocthename {#4}%
353 \edef\Etoc@tmp {{#3}}%
354 \Etoc@global\expandafter\def\expandafter\etocthelinkedname
355 \expandafter {\expandafter\hyperlink \Etoc@tmp{#4}}%
356 \fi
357 }%
358 \Etoc@global\@namedef {etoclink }##1{\leavevmode #1{#2}{#3}{##1}#5}%
359 \Etoc@global\edef\etocthelink ##1{\noexpand\hyperlink {#3}{##1}}%
360 \Etoc@getnbr #4\relax\relax\etoc@
361 }

```

1.08 adds the \Etoc@global's.

```

362 \def\Etoc@getit@nohyp #1\hspace#2#3\etoc@ {%
363 \def\Etoc@getname ##1\hspace\relax\etoc@ {%
364 \Etoc@global\def\etocthename {##1}%
365 \Etoc@global\def\etocthelinkedname {##1}%
366 }%
367 \ifx\relax#2\else
368 \Etoc@global\def\etocthenumber {#1}%
369 \Etoc@global\def\etocthelinkednumber {#1}%
370 \Etoc@global\Etoc@numbertrue
371 \Etoc@getname #3\etoc@
372 \fi
373 }

```

1.07n replaces use of \toks@ by macro \Etoc@tmp. 1.08 adds the \Etoc@global's.

```

374 \def\Etoc@getit@hyp #1#2#3#4#5#6\etoc@ {%
375 \def\Etoc@getname ##1\hspace\relax\etoc@ {%

```

37. Implementation

```

376      \Etoc@global\def\etocthename {##1}%
377      \edef\Etoc@tmp    {{#3}}%
378      \Etoc@global\expandafter\def\expandafter\etocthelinkedname
379          \expandafter{\expandafter\hyperlink \Etoc@tmp{##1}}%
380      }%
381      \def\Etoc@getnbr ##1\hspace##2##3\etoc@ {%
382          \ifx\relax##2\else
383              \Etoc@global\def\etocthenumber {##1}%
384              \edef\Etoc@tmp    {{#3}}%
385              \Etoc@global\expandafter\def\expandafter\etocthelinkednumber
386                  \expandafter{\expandafter\hyperlink \Etoc@tmp{##1}}%
387              \Etoc@global\Etoc@numbertrue
388              \Etoc@getname ##3\etoc@
389          \fi
390      }%
391      \Etoc@getnbr #4\hspace\relax\etoc@
392  }

```

1.08a of 2015/03/12 does the long-postponed thing to let \etocname etc.. be simply the robust variant of \etocthelinkedname etc...

```

393 \let\etocthename    \@empty
394 \let\etocthenumber  \@empty
395 \let\etocthepage    \@empty
396 \let\etocthelinkedname \@empty
397 \let\etocthelinkednumber \@empty
398 \let\etocthelinkedpage \@empty
399 \let\etocthelink    \@empty
400 \DeclareRobustCommand*\etocname {}
401 \DeclareRobustCommand*\etocnumber {}
402 \DeclareRobustCommand*\etocpage {}
403 \DeclareRobustCommand*\etoclink {}
404 \DeclareRobustCommand*\etocifnumbered
405     {\ifEtoc@number\expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi}
406 \expandafter\let\expandafter\etocxifnumbered\csname etocifnumbered \endcsname

```

1.08 defines \etociffirst

```

407 \DeclareRobustCommand*\etociffirst
408     {\ifEtoc@isfirst\expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi}
409 \expandafter\let\expandafter\etocxiffirst\csname etociffirst \endcsname

```

1.07j modifies \Etoc@readtoc.

```

410 \def\Etoc@readtoc {%
411     \ifeof \Etoc@tf
412     \else
413         \read \Etoc@tf to \Etoc@buffer
414         \Etoc@toctoks=\expandafter\expandafter\expandafter
415             {\expandafter\the\expandafter\Etoc@toctoks\Etoc@buffer}%
416         \expandafter\Etoc@readtoc
417     \fi
418 }

```

1.07m moves the reading of the toc file At Begin Document. Needed for Babel activated characters.

```

419 \Etoc@toctoks {}% (superfluous, but for clarity)
420 \AtBeginDocument{\IfFileExists{\jobname.toc}
421     {{\endlinechar=\m@ne
422         \makeatletter
423         \newread\Etoc@tf
424         \openin\Etoc@tf\@filef@und
425         \Etoc@readtoc

```

```

426     \global\Etoc@toctoks=\expandafter{\the\Etoc@toctoks}%
427     \closein\Etoc@tf}}
428     {\typeout{No file \jobname.toc.}}}

1.07d: parskip and \@nobreakfalse stuff moved to \Etoc@tableofcontents
429 \def\Etoc@openouttoc{%
430   \ifEtoc@hyperref
431     \ifx\hyper@last\@undefined
432     \IfFileExists{\jobname .toc}
433       {\Hy@WarningNoLine
434         {old toc file detected, not used; run LaTeX again (cheers from etoc)}}%
435     \global\Etoc@toctoks={}
436   }
437   {}%
438   \fi
439 \fi
440 \if@filesw
441   \newwrite \tf@toc
442   \immediate \openout \tf@toc \jobname .toc\relax
443 \fi
444 \global\let\Etoc@openouttoc\empty
445 }

```

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**!

```

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

placeholder for comments
466 \def\etoc@@startlocaltoc#1#2{%
467   \let\Etoc@next\relax
468   \ifEtoc@localtoc
469     \ifEtoc@notactive
470       \ifnum #1=#2\relax
471         \ifEtoc@jj \Etoc@global\let\Etoc@localtop\Etoc@@minusone@@ \fi
472         \ifEtoc@j \Etoc@global\let\Etoc@localtop\Etoc@@zero@@ \fi
473         \ifEtoc@ \Etoc@global\let\Etoc@localtop\Etoc@@one@@ \fi

```

37. Implementation

```

474      \ifEtoc@i   \Etoc@global\let\Etoc@localtop\Etoc@@two@@ \fi
475      \ifEtoc@ii  \Etoc@global\let\Etoc@localtop\Etoc@@three@@ \fi
476      \ifEtoc@iii \Etoc@global\let\Etoc@localtop\Etoc@@four@@ \fi
477      \ifEtoc@iv  \Etoc@global\let\Etoc@localtop\Etoc@@five@@ \fi
478      \ifEtoc@v   \Etoc@global\let\Etoc@localtop\Etoc@@six@@ \fi
479      \def\Etoc@next{\global\Etoc@notactivefalse
480                  \global\Etoc@vfalse
481                  \global\Etoc@ivfalse
482                  \global\Etoc@iiifalse
483                  \global\Etoc@iifalse
484                  \global\Etoc@iffalse
485                  \global\Etoc@false
486                  \global\Etoc@jfalse
487                  \global\Etoc@jjfalse}%
488      \fi
489      \fi\fi
490 \Etoc@next}
491 \let\etoc@startlocaltoc\@gobble

```

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.

```

492 \def\Etoc@localtableofcontents#1{%
493   \edef\Etoc@tmp{#1}%
494   \ifnum\Etoc@tmp<\@ne
495     \PackageWarning{etoc}
496       {Unknown toc id: run LaTeX to get references right}%
497     \let\Etoc@next\@gobble\else\let\Etoc@next\@firstofone\fi
498     \Etoc@next
499     {\edef\etoc@startlocaltoc##1{%
500       \noexpand\etoc@@startlocaltoc{##1}{#1}}
501      \Etoc@localtoctrue
502      \let\Etoc@localtop\Etoc@@minustwo@@
503      \global\Etoc@stoptocfalse
504      \global\Etoc@notactivetrue
505      \Etoc@tableofcontents}%
506     \endgroup\ifEtoc@mustclosegroup\endgroup\fi
507     \Etoc@aftertochook % 1.07h
508     \etocaftertochook % 1.07g
509 }

```

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.

```

510 \def\Etoc@getrefno #1#2\etoc@ {#1}
511 \def\Etoc@getref #1{\@ifundefined{r@#1}{0}{\expandafter\expandafter\expandafter
512   \Etoc@getrefno\csname r@#1\endcsname\relax\etoc@}}
513 \def\Etoc@ref#1{\Etoc@localtableofcontents{\Etoc@getref{#1}}}
514 \def\Etoc@label#1{\label{#1}\futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}
515 \@firstofone{\def\Etoc@again} {\futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}

```

Why \global for \Etoc@notactivefalse? and not for \Etoc@localtocfalse. Must think about this, a pity I did not document it when I was young and intelligent ...

```

516 \def\Etoc@t@bleofcontents{%
517   \ifx\Etoc@nexttoken\label
518     \def\Etoc@next{\expandafter\Etoc@label\@gobble}\else
519   \ifx\Etoc@nexttoken\@sptoken
520     \let\Etoc@next\Etoc@again\else
521   \ifEtoc@tocwithid
522     \def\Etoc@next{\Etoc@localtableofcontents{\c@etoc@tocid}}}%
523   \else
524     \ifx\Etoc@nexttoken\ref
525       \def\Etoc@next{\expandafter\Etoc@ref\@gobble}%
526     \else
527       \def\Etoc@next{\Etoc@localtocfalse
528         \global\Etoc@notactivefalse
529         \Etoc@tableofcontents
530         \endgroup
531         \ifEtoc@mustclosegroup\endgroup\fi
532         \Etoc@aftertochook % 1.07h
533         \etocaftertochook % 1.07g
534         }%
535     \fi
536   \fi\fi\fi\Etoc@next}

```

1.07g for consistency Etoc@ prefix added.

```

537 \def\Etoc@table@fcontents{%
538   \refstepcounter{etoc@tocid}%
539   \Etoc@tocwithidfalse
540   \futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}
541 \def\Etoc@localtable@fcontents{%
542   \refstepcounter{etoc@tocid}%
543   \addtocontents{toc}
544     {\string\etoc@startlocaltoc{\arabic{etoc@tocid}}}%
545   \Etoc@tocwithidtrue
546   \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.

```

547 \let\etocaftertitlehook \@empty
548 \let\etocaftercontentshook \@empty
549 \def\etoc@tableofcontents{%
550   \Etoc@openouttoc
551   \Etoc@par
552   \begingroup % closed in \Etoc@t@bleofcontents or \Etoc@localtableofcontents

```

No need for tableof extra group level, and furthermore it is better to get rid of it if. However I can't do it globally because I want to leave open for the user the possibility (whose interest is quasi nil however) of using directly \tableof, \tablenotof, ... and not the only reasonable thing which is \nexttocwithtags{}}.

```

553   \let\tof@begingroup\@empty
554   \let\tof@endgroup \@empty
555   \def\etoc@startlocaltoc##1{\etoc@@startlocaltoc{##1}{\c@etoc@tocid}}%
556   \@ifstar
557     {\def\Etoc@aftertitlehook{}\Etoc@table@fcontents}
558     {\let\Etoc@aftertitlehook\etocaftertitlehook\Etoc@table@fcontents}}
559 \let\tableofcontents\etoc@tableofcontents
560 \newcommand*\localtableofcontents{%

```

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```
561 \Etoc@openouttoc
562 \Etoc@par
563 \begingroup % closed in \Etoc@tableofcontents or \Etoc@localtableofcontents
564 \let\tof@begingroup\@empty
565 \let\tof@endgroup \@empty
566 \@ifstar
567 {\def\Etoc@aftertitlehook{}\Etoc@localtable@fcontents}
568 {\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.

```
569 \long\def\Etoc@gobbletoetoc@ #1\etoc@ {}
570 \newcommand\etocsettocstyle[2]{%
571 \def\Etoc@tableofcontents
572 {%
573 \ifnum\c@tocdepth>\Etoc@minf\else
574 \expandafter\Etoc@gobbletoetoc@
575 \fi
576 \etocbeforetitlehook % 1.07m
577 \Etoc@storetocdepth % 1.07g
578 \let\Etoc@savedcontentsline\contentsline % moved up here 1.08
579 \let\contentsline\Etoc@etoccontentsline
580 \ifEtoc@standard
581 \else % moved here from \Etoc@toctoc (1.08)
582 \def\Etoc@levellist@elt####1{\let####1\Etoc@lxyz}%
583 \Etoc@levellist
584 \let\booknumberline\numberline
585 \let\partnumberline\numberline
586 \let\chapternumberline\numberline
587 \fi
588 #1%
589 \ifEtoc@parskip\parskip\z@skip\fi %1.07d
590 \Etoc@aftertitlehook
591 \Etoc@toctoc
592 \ifEtoc@tocwithid\else
593 \ifEtoc@localtoc
594 \ifEtoc@notactive
595 \Etoc@localtocfalse
596 \global\Etoc@notactivefalse
597 \Etoc@toctoc
598 \fi
599 \fi
600 \fi
601 \etocaftercontentshook
602 #2\@nbreakfalse % 1.07d: \@nbreakfalse moved here
603 \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.

```

604 \ifx\Etoc@global\global\ifx\tof@finish\@empty\else
605 \global\let\contentsline\Etoc@savedcontentsline
606 \fi\fi
607 \@gobble\etoc@
608}% end of \Etoc@tableofcontents definition by \etocsettocstyle
609}

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

610\def\etocsetstyle{\Etoc@standardfalse\etoc@setstyle}
611\long\def\etoc@setstyle#1#2#3#4#5{%
612 \long\expandafter\def
613 \csname Etoc@begin@\csname Etoc@#1@\endcsname\endcsname
614 {#2\Etoc@global\Etoc@isfirsttrue}%
615 \long\expandafter\def
616 \csname Etoc@prefix@\csname Etoc@#1@\endcsname\endcsname {#3}%
617 \long\expandafter\def
618 \csname Etoc@contents@\csname Etoc@#1@\endcsname\endcsname {#4}%
619 \long\expandafter\def
620 \csname Etoc@end@\csname Etoc@#1@\endcsname\endcsname {#5}%
621}

placeholder for comments

622\def\etocfontminustwo {\normalfont \LARGE \bfseries}
623\def\etocfontminusone {\normalfont \large \bfseries}
624\def\etocfontzero {\normalfont \large \bfseries}
625\def\etocfontone {\normalfont \normalsize \bfseries}
626\def\etocfonttwo {\normalfont \normalsize}
627\def\etocfontthree {\normalfont \footnotesize}

placeholder for comments

628\def\etocsepminustwo {4ex \@plus .5ex \@minus .5ex}
629\def\etocsepminusone {4ex \@plus .5ex \@minus .5ex}
630\def\etocsepzero {2.5ex \@plus .4ex \@minus .4ex}
631\def\etocseppone {1.5ex \@plus .3ex \@minus .3ex}
632\def\etocseptwo {.5ex \@plus .1ex \@minus .1ex}
633\def\etocsepthree {.25ex \@plus .05ex \@minus .05ex}

placeholder for comments

634\def\etocbaselinespreadminustwo {1}
635\def\etocbaselinespreadminusone {1}
636\def\etocbaselinespreadzero {1}
637\def\etocbaselinespreadone {1}
638\def\etocbaselinespreadtwo {1}
639\def\etocbaselinespreadthree {.9}

placeholder for comments

640\def\etocminustwoleftmargin {1.5em plus 0.5fil}
641\def\etocminustworightmargin {1.5em plus -0.5fil}
642\def\etocminusoneleftmargin {1em}
643\def\etocminusonerightmargin {1em}
644\def\etocclineleaders
645 {\hbox{\normalfont\normalsize\hb@xt@2ex {\hss.\hss}}}
646\def\etocabbrevpagename {p.~}
647\def\etocpartname {\partname}
648\def\etocbookname {Book}

```

37. Implementation

placeholder for comments The macro `\etocdefaultlines` was initially called `\etococlines`. Now `\etococlines` 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.

```
649 \def\etocdefaultlines{\Etoc@standardfalse %
650 %% 'book':
651 \etoc@setstyle{@minustwo}
652   {\addpenalty\@M\etocskipfirstprefix}
653   {\addpenalty\@secpenalty}
654   {\beginngroup
655     \etocfontminustwo
656     \addvspace{\etocsepminustwo}%
657     \parindent \z@
658     \leftskip \etocminustwoleftmargin
659     \rightskip \etocminustworightmargin
660     \parfillskip \@flushglue
661     \vbox{\etocifnumbered{\etocbookname\enspace\etocnumber:\quad}}{\etocname
662       \baselineskip\etocbaselinespreadminustwo\baselineskip
663       \par}%
664     \addpenalty\@M\addvspace{\etocsepminusone}%
665     \endgroup}
666   }%
667 %% 'part':
668 \etoc@setstyle{@minusone}
669   {\addpenalty\@M\etocskipfirstprefix}
670   {\addpenalty\@secpenalty}
671   {\beginngroup
672     \etocfontminusone
673     \addvspace{\etocsepminusone}%
674     \parindent \z@
675     \leftskip \etocminusoneleftmargin
676     \rightskip \etocminusonerightmargin
677     \parfillskip \@flushglue
678     \vbox{\etocifnumbered{\etocpartname\enspace\etocnumber.\quad}}{\etocname
679       \baselineskip\etocbaselinespreadminusone\baselineskip
680       \par}%
681     \addpenalty\@M\addvspace{\etocsepzero}%
682     \endgroup}
683   }%
684 %% 'chapter':
685 \etoc@setstyle{@zero}
686   {\addpenalty\@M\etocskipfirstprefix}
687   {\addpenalty\@itempenalty}
688   {\beginngroup
689     \etocfontzero
690     \addvspace{\etocsepzero}%
691     \parindent \z@ \parfillskip \@flushglue
692     \vbox{\etocifnumbered{\etocnumber.\enspace}}{\etocname
693       \baselineskip\etocbaselinespreadzero\baselineskip
694       \par}%
695     \endgroup}
696   {\addpenalty{-\@highpenalty}\addvspace{\etocsepminusone}}%
697 %% 'section':
698 \etoc@setstyle{@one}
699   {\addpenalty\@M\etocskipfirstprefix}
```

```

700 {\addpenalty\@itempenalty}
701 {\begingroup
702   \etocfontone
703   \addvspace{\etocsepone}%
704   \parindent \z@ \parfillskip \z@
705   \setbox\z@\vbox{\parfillskip\@flushglue
706                     \etocname\par
707                     \setbox\tw@\lastbox
708                     \global\setbox\@ne\hbox{\unhbox\tw@\ }}%
709   \dimen\z@=\wd\@ne
710   \setbox\z@=\etoclineleaders
711   \advance\dimen\z@\wd\z@
712   \etocifnumbered
713     {\setbox\tw@\hbox{\etocnumber, \etocabbrevpagename\etocpage}}
714     {\setbox\tw@\hbox{\etocabbrevpagename\etocpage}}%
715   \advance\dimen\z@\wd\tw@
716   \ifdim\dimen\z@ < \linewidth
717     \vbox{\etocname~%
718           \leaders\box\z@\hfil\box\tw@
719           \baselineskip\etocbaselinespreadone\baselineskip
720           \par}
721   \else
722     \vbox{\etocname~%
723           \leaders\copy\z@\hfil\break
724           \hbox{}}\leaders\box\z@\hfil\box\tw@
725           \baselineskip\etocbaselinespreadone\baselineskip
726           \par}
727   \fi
728   \endgroup}
729 {\addpenalty\@secpenalty\addvspace{\etocsepzero}}%
730 %% 'subsection':
731 \etoc@setstyle{@two}
732 {\addpenalty\@medpenalty\etocskipfirstprefix}
733 {\addpenalty\@itempenalty}
734 {\begingroup
735   \etocfonttwo
736   \addvspace{\etocseptwo}%
737   \parindent \z@ \parfillskip \z@
738   \setbox\z@\vbox{\parfillskip\@flushglue
739                     \etocname\par\setbox\tw@\lastbox
740                     \global\setbox\@ne\hbox{\unhbox\tw@}}%
741   \dimen\z@=\wd\@ne
742   \setbox\z@=\etoclineleaders
743   \advance\dimen\z@\wd\z@
744   \etocifnumbered
745     {\setbox\tw@\hbox{\etocnumber, \etocabbrevpagename\etocpage}}
746     {\setbox\tw@\hbox{\etocabbrevpagename\etocpage}}%
747   \advance\dimen\z@\wd\tw@
748   \ifdim\dimen\z@ < \linewidth
749     \vbox{\etocname~%
750           \leaders\box\z@\hfil\box\tw@
751           \baselineskip\etocbaselinespreadtwo\baselineskip
752           \par}
753   \else
754     \vbox{\etocname~%
755           \leaders\copy\z@\hfil\break
756           \hbox{}}\leaders\box\z@\hfil\box\tw@

```

37. Implementation

```

757          \baselineskip\etocbaselinespreadtwo\baselineskip
758          \par}
759  \fi
760  \endgroup}
761  {\addpenalty\@secpenalty\addvspace{\etocseppone}}%
762 %% 'subsubsection':
763 \etoc@setstyle{@three}
764 {\addpenalty\@M
765  \etocfontthree
766  \vspace{\etocsepthree}%
767  \noindent
768  \etocskipfirstprefix}
769 {\allowbreak\,--\,}
770 {\etocname}
771 {\hfil
772  \beginingroup
773   \baselineskip\etocbaselinespreadthree\baselineskip
774   \par
775   \endgroup
776   \addpenalty{-\@highpenalty}}%

```

placeholder for comments

```

777 \etoc@setstyle{@four}{\}{\}{\}{\}%
778 \etoc@setstyle{@five}{\}{\}{\}{\}%
779 } % end of \etocdefaultlines!

```

The `\etocinnertopsep` default value is too big as well as `\etocbelowtocskip` and `\etocabovetocskip`, I guess, but if I am remember correctly I chose them to mimick the standard TOC spacings in article class.

```

780 \def\etocabovetocskip{3.5ex \@plus 1ex \@minus .2ex}
781 \def\etocbelowtocskip{3.5ex \@plus 1ex \@minus .2ex}
782 \def\etoccolumnsep{2em}
783 \def\etocmulticolsep{0ex}
784 \def\etocmulticolpretolerance{-1}
785 \def\etocmulticoltolerance{200}
786 \def\etocdefaultnbcol{2}
787 \def\etocinnertopsep{2ex}

```

1.07i adds a `\nobreak` before the `\etocinnertopsep` and a test of vertical mode to see if truly adding a `\par` is a reasonable idea, in the case of single-column mode.

```

788 \newcommand\etocmulticolstyle[2][\etocdefaultnbcol]{%
789 \etocsettocstyle
790  {\let\etocoldpar\par
791   \addvspace{\etocabovetocskip}%
792   \ifnum #1>\@ne\let\Etoc@next\@firstoftwo
793    \else \let\Etoc@next\@secondoftwo\fi
794   \Etoc@next}%
795  \multicolpretolerance\etocmulticolpretolerance
796  \multicoltolerance\etocmulticoltolerance
797  \setlength{\columnsep}{\etoccolumnsep}%
798  \setlength{\multicolsep}{\etocmulticolsep}%
799  \begin{multicols}{#1}[#2\etocoldpar\addvspace{\etocinnertopsep}]}
800  {#2\ifvmode\else\beginingroup\interlinepenalty\@M\parskip\z@skip
801   \@@par\endgroup
802   \fi
803   \nobreak\addvspace{\etocinnertopsep}%
804   \pretolerance\etocmulticolpretolerance
805   \tolerance\etocmulticoltolerance}}

```

```

806 {\ifnum #1>\@ne\let\Etoc@next\@firstofone
807 \else \let\Etoc@next\@gobble\fi
808 \Etoc@next{\end{multicols}}}%
809 \addvspace{\etocbelowtocskip}}

```

placeholder for comments

```

810 \def\etocinnerbottomsep{3.5ex}
811 \def\etocinnerleftsep{2em}
812 \def\etocinnerrightsep{2em}
813 \def\etocoprulerule{\hrule}
814 \def\etocleftrulerule{\vrule}
815 \def\etocrightrulerule{\vrule}
816 \def\etocbottomrule{\hrule}
817 \def\etocoprulerulecolorcmd{\relax}
818 \def\etocbottomrulecolorcmd{\relax}
819 \def\etocleftrulerulecolorcmd{\relax}
820 \def\etocrightrulerulecolorcmd{\relax}

```

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

```

821 \def\etoc@ruledheading #1{%
822 \hb@xt@\linewidth{\color@begingroup
823 \hss #1\hss\hskip-\linewidth
824 \etocoprulerulecolorcmd\leaders\etocoprulerule\hss
825 \phantom{#1}}%
826 \leaders\etocoprulerule\hss\color@endgroup}%
827 \nointerlineskip\nobreak\vskip\etocinnertopsep}
828 \newcommand*\etocruledstyle[2][\etocdefaultnbcoll]{%
829 \etocsettocstyle
830 {\addvspace{\etocabovetocskip}}%
831 \ifnum #1>\@ne\let\Etoc@next\@firstoftwo
832 \else \let\Etoc@next\@secondoftwo\fi
833 \Etoc@next
834 {\multicolpretolerance\etocmulticolpretolerance
835 \multicoltolerance\etocmulticoltolerance
836 \setlength{\columnsep}{\etoccolumnsep}%
837 \setlength{\multicolsep}{\etocmulticolsep}%
838 \begin{multicols}{#1}[\etoc@ruledheading{#2}]}
839 {\etoc@ruledheading{#2}}%
840 \pretolerance\etocmulticolpretolerance
841 \tolerance\etocmulticoltolerance}}
842 {\ifnum #1>\@ne\let\Etoc@next\@firstofone
843 \else \let\Etoc@next\@gobble\fi
844 \Etoc@next{\end{multicols}}}%
845 \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.

```

846 \def\etocframedmphook{\relax}
847 \long\def\etocbkgcolorcmd{\relax}
848 \long\def\Etoc@relax{\relax}

```

placeholder for comments

```

849 \newbox\etoc@framed@titlebox
850 \newbox\etoc@framed@contentsbox

```

37. Implementation

```

851 \newcommand*\etocframedstyle[2][\etocdefaultnbcoll]{%
852 \etocsettocstyle{%
853   \addvspace{\etocabovetocskip}%
854   \sbox\z@{\#2}%
855   \dimen\z@\dp\z@
856   \ifdim\wd\z@<\linewidth \dp\z@\z@ \else \dimen\z@\z@ \fi
857   \setbox\etoc@framed@titlebox=\hb@xt@\linewidth{\color@begingroup
858     \hss
859     \ifx\etocbkgcolorcmd\Etoc@relax\else
860       \sbox\tw@\color{white}%
861       \vrule\@width\wd\z@\@height\ht\z@\@depth\dimen\z@}%
862       \ifdim\wd\z@<\linewidth \dp\tw@\z@\fi
863       \box\tw@
864       \hskip-\wd\z@
865     \fi
866     \copy\z@
867     \hss
868     \hskip-\linewidth
869     \etoctoprulecolorcmd\leaders\etoctoprule\hss%
870     \hskip\wd\z@
871     \etoctoprulecolorcmd\leaders\etoctoprule\hss\color@endgroup}%
872   \setbox\z@\hbox{\etocleftrule\etocrightrule}%
873   \dimen\tw@\linewidth\advance\dimen\tw@-\wd\z@
874   \advance\dimen\tw@-\etocinnerleftsep
875   \advance\dimen\tw@-\etocinnerrightsep
876   \setbox\etoc@framed@contentsbox=\vbox\bgroup
877     \hsize\dimen\tw@
878     \kern\dimen\z@
879     \vskip\etocinnertopsep
880     \hbox\bgroup
881     \begin{minipage}{\hsize}%
882     \etocframedmphook
883     \ifnum #1>\@ne\let\Etoc@next\@firstoftwo
884     \else \let\Etoc@next\@secondoftwo\fi
885     \Etoc@next
886     {\multicolpretolerance\etocmulticolpretolerance
887     \multicoltolerance\etocmulticoltolerance
888     \setlength{\columnsep}{\etoccolumnsep}%
889     \setlength{\multicolsep}{\etocmulticolsep}%
890     \begin{multicols}{#1}}
891     {\pretolerance\etocmulticolpretolerance
892     \tolerance\etocmulticoltolerance}}
893     {\ifnum #1>\@ne\let\Etoc@next\@firstofone
894     \else \let\Etoc@next\@gobble\fi
895     \Etoc@next\end{multicols}\unskip}%
896     \end{minipage}%
897   \egroup
898   \vskip\etocinnerbottomsep
899   \egroup
900   \vbox{\hsize\linewidth
901     \ifx\etocbkgcolorcmd\Etoc@relax\else
902       \kern\ht\etoc@framed@titlebox
903       \kern\dp\etoc@framed@titlebox
904       \hb@xt@\linewidth{\color@begingroup
905         \etocleftrulecolorcmd\etocleftrule
906         \etocbkgcolorcmd
907         \leaders\vrule

```

```

908             \@height\ht\etoc@framed@contentsbox
909             \@depth\dp\etoc@framed@contentsbox
910         \hss
911         \etocrightrulecolorcmd\etocrightrule
912         \color@endgroup}\nointerlineskip
913         \vskip-\dp\etoc@framed@contentsbox
914         \vskip-\ht\etoc@framed@contentsbox
915         \vskip-\dp\etoc@framed@titlebox
916         \vskip-\ht\etoc@framed@titlebox
917     \fi
918     \box\etoc@framed@titlebox\nointerlineskip
919     \hb@xt@\linewidth{\color@begingroup
920     {\etocleftrulecolorcmd\etocleftrule}%
921     \hss\box\etoc@framed@contentsbox\hss
922     \etocrightrulecolorcmd\etocrightrule\color@endgroup}
923     \nointerlineskip
924     \vskip\ht\etoc@framed@contentsbox
925     \vskip\dp\etoc@framed@contentsbox
926     \hb@xt@\linewidth{\color@begingroup\etocbottomrulecolorcmd
927     \leaders\etocbottomrule\hss\color@endgroup}}
928     \addvspace{\etocbelowtocskip}}
placeholder for comments
929 \newcommand\etoc@multicoltoc[2][\etocdefaultnbcol]{%
930     \etocmulticolstyle[#1]{#2}%
931     \tableofcontents}
932 \newcommand\etoc@multicoltoi[2][\etocdefaultnbcol]{%
933     \etocmulticolstyle[#1]{#2}%
934     \tableofcontents*}
935 \newcommand\etoc@local@multicoltoc[2][\etocdefaultnbcol]{%
936     \etocmulticolstyle[#1]{#2}%
937     \localtableofcontents}
938 \newcommand\etoc@local@multicoltoi[2][\etocdefaultnbcol]{%
939     \etocmulticolstyle[#1]{#2}%
940     \localtableofcontents*}
placeholder for comments
941 \newcommand*\etoc@ruledtoc[2][\etocdefaultnbcol]{%
942     \etocruledstyle[#1]{#2}%
943     \tableofcontents}
944 \newcommand*\etoc@ruledtoi[2][\etocdefaultnbcol]{%
945     \etocruledstyle[#1]{#2}%
946     \tableofcontents*}
947 \newcommand*\etoc@local@ruledtoc[2][\etocdefaultnbcol]{%
948     \etocruledstyle[#1]{#2}%
949     \localtableofcontents}
950 \newcommand*\etoc@local@ruledtoi[2][\etocdefaultnbcol]{%
951     \etocruledstyle[#1]{#2}%
952     \localtableofcontents*}
placeholder for comments
953 \newcommand*\etoc@framedtoc[2][\etocdefaultnbcol]{%
954     \etocframedstyle[#1]{#2}%
955     \tableofcontents}
956 \newcommand*\etoc@framedtoi[2][\etocdefaultnbcol]{%
957     \etocframedstyle[#1]{#2}%
958     \tableofcontents*}
959 \newcommand*\etoc@local@framedtoc[2][\etocdefaultnbcol]{%
960     \etocframedstyle[#1]{#2}%

```

37. Implementation

```
961 \localtableofcontents}
962 \newcommand*\etoc@local@framedtoci[2][\etocdefaultnbcot]{%
963 \etocframedstyle[#1]{#2}%
964 \localtableofcontents*}
placeholder for comments
965 \def\etocmulticol{\begingroup
966 \Etoc@mustclosegrouptrue
967 \@ifstar
968 {\etoc@multicoltoct}
969 {\etoc@multicoltoct}}
970 \def\etocruled{\begingroup
971 \Etoc@mustclosegrouptrue
972 \@ifstar
973 {\etoc@ruledtoct}
974 {\etoc@ruledtoct}}
975 \def\etocframed{\begingroup
976 \Etoc@mustclosegrouptrue
977 \@ifstar
978 {\etoc@framedtoct}
979 {\etoc@framedtoct}}
980 \def\etoclocalmulticol{\begingroup
981 \Etoc@mustclosegrouptrue
982 \@ifstar
983 {\etoc@local@multicoltoct}
984 {\etoc@local@multicoltoct}}
985 \def\etoclocalruled{\begingroup
986 \Etoc@mustclosegrouptrue
987 \@ifstar
988 {\etoc@local@ruledtoct}
989 {\etoc@local@ruledtoct}}
990 \def\etoclocalframed{\begingroup
991 \Etoc@mustclosegrouptrue
992 \@ifstar
993 {\etoc@local@framedtoct}
994 {\etoc@local@framedtoct}}
placeholder for comments
995 \def\etocarticlestyle{%
996 \etocsettocstyle
997 {\section *{\contentsname
998 \@mkboth {\MakeUppercase \contentsname}
999 {\MakeUppercase \contentsname}}}
1000 {}
1001 \def\etocarticlestylenomarks{%
1002 \etocsettocstyle
1003 {\section *{\contentsname}}
1004 {}
placeholder for comments
1005 \def\etocbookstyle{%
1006 \etocsettocstyle
1007 {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
1008 \chapter *{\contentsname
1009 \@mkboth {\MakeUppercase \contentsname}
1010 {\MakeUppercase \contentsname}}}
1011 {\if@restonecol \twocolumn \fi}}
1012 \def\etocbookstylenomarks{%
1013 \etocsettocstyle
```

```

1014     {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
1015     \chapter *{\contentsname}}
1016     {\if@restonecol \twocolumn \fi}}
1017 \let\etocreportstyle\etocbookstyle
1018 \let\etocreportstylenomarks\etocbookstylenomarks
1019 \def\etocmemoirtoc\tocfmt #1#2{%
1020     \def\Etoc@addsuitablecontentsline{\addcontentsline {toc}{#1}{#2}}%
1021     \renewcommand*\etocaftertitlehook{%
1022         \ifmem@em@starred@listof
1023         \else\phantomsection\aftergroup\Etoc@addsuitablecontentsline\fi}}
1024 \def\etocmemoirstyle{%
1025     \etocsettocstyle
1026         {\ensureonecol \par \begingroup \@nameuse {@tocmaketitle}
1027         \Etoc@aftertitlehook\let\Etoc@aftertitlehook\relax
1028         \parskip \cftparskip \@nameuse {cfttocbeforelisthook}}
1029         {\@nameuse {cfttocafterlisthook}\endgroup\restorefromonecol}}
placeholder for comments
1030 \def\etocscartclstyle{%
1031     \etocsettocstyle
1032         {\let\if@dynlist\if@tocleft
1033         \def\@current{toc}% added 1.07m 2015/01/23
1034         \iftocfeature {toc}{onecolumn}
1035         {\iftocfeature {toc}{leveldown}
1036         {}
1037         {\if@twocolumn \aftergroup \twocolumn \onecolumn \fi }}
1038         {}%
1.07k: next line to do as within current scartcl 2013/12/19 v3.12 KOMA-Script article class.
1039     \iftocfeature {toc}{numberline}{\def \nonumberline {\numberline {}}}}%
1040     \tocbasic@listhead {\listoftocname}%
1041     \begingroup \expandafter \expandafter \expandafter
1042     \endgroup \expandafter
1043     \ifx
1044         \csname microtypesetup\endcsname \relax
1045     \else
1046         \iftocfeature {toc}{noptrusion}}%
1047         {\microtypesetup {protrusion=false}%
1048         \PackageInfo {tocbasic}%
1049         {character protrusion at toc deactivated}}%
1050     \fi
1051     \setlength {\parskip }{\z@ }%
1052     \setlength {\parindent }{\z@ }%
1053     \setlength {\parfillskip }{\z@ \@plus 1fil}%
1054     \csname tocbasic@@before@hook\endcsname
1055     \csname tb@toc@before@hook\endcsname}
1056     {\csname tb@toc@after@hook\endcsname
1057     \csname tocbasic@@after@hook\endcsname}}
1058 \let\etocscrbookstyle\etocscartclstyle
1059 \let\etocscrreprtstyle\etocscartclstyle
placeholder for comments
1060 \def\etocstandarddisplaystyle{\etocarticlestyle}
1061 \newcommand*\etocmarkboth[1]{%
1062     \@mkboth{\MakeUppercase{#1}}{\MakeUppercase{#1}}}
1063 \newcommand*\etocmarkbothnouc[1]{\@mkboth{#1}{#1}}
1064 \newcommand\etoc\tocstyle[3][section]{\etocmulticolstyle[#2]%
1065     {\csname #1\endcsname *{#3}}}%
1066 \newcommand\etoc\tocstylewithmarks[4][section]{\etocmulticolstyle[#2]%

```

37. Implementation

```
1067 {\csname #1\endcsname *{##3\etocmarkboth{##4}}}}
1068 \newcommand\etocetocstylewithmarksnouc[4][section]{\etocmulticolstyle[#2]%
1069 {\csname #1\endcsname *{##3\etocmarkbothnouc{##4}}}}
placeholder for comments
1070 \def\Etoc@redefetocstyle#1{%
1071 \renewcommand\etocetocstylewithmarks[4][#1]
1072 {\etocmulticolstyle[##2]%
1073 {\csname ##1\endcsname *{##3\etocmarkboth{##4}}}}
1074 \renewcommand\etocetocstylewithmarksnouc[4][#1]
1075 {\etocmulticolstyle[##2]%
1076 {\csname ##1\endcsname *{##3\etocmarkbothnouc{##4}}}}
1077 \renewcommand\etocetocstyle[3][#1]{%
1078 \etocmulticolstyle[##2]{\csname ##1\endcsname *{##3}}}}
1079 \@ifclassloaded{scrartcl}
1080 {\renewcommand*\etocstandarddisplaystyle{\etocscrartclstyle}}{}
1081 \@ifclassloaded{book}
1082 {\renewcommand*\etocfontone{\normalfont\normalsize}
1083 \renewcommand*\etocstandarddisplaystyle{\etocbookstyle}
1084 \Etoc@redefetocstyle{chapter}}{}
1085 \@ifclassloaded{report}
1086 {\renewcommand*\etocfontone{\normalfont\normalsize}
1087 \renewcommand*\etocstandarddisplaystyle{\etocreportstyle}
1088 \Etoc@redefetocstyle{chapter}}{}
1089 \@ifclassloaded{scrbook}
1090 {\renewcommand*\etocfontone{\normalfont\normalsize}
1091 \renewcommand*\etocstandarddisplaystyle{\etocscrbookstyle}
1092 \Etoc@redefetocstyle{chapter}}{}
1093 \@ifclassloaded{scrreprt}
1094 {\renewcommand*\etocfontone{\normalfont\normalsize}
1095 \renewcommand*\etocstandarddisplaystyle{\etocscrreprtstyle}
1096 \Etoc@redefetocstyle{chapter}}{}

```

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

```
1097 \@ifclassloaded{memoir}
1098 {\etocsetlevel{appendix}{0}%
1099 \renewcommand*\etocfontone{\normalfont\normalsize}
1100 \etocmemoirtocetocfmt{chapter}{\contentsname}%
1101 \renewcommand*\etocstandarddisplaystyle{\etocmemoirstyle}
1102 \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.

```
1103 \def\etocetocloftstyle {%
1104 \etocsettocstyle
1105 {\@cfttocstart\par\begingroup
1106 \parindent\z@ \parskip\cftparskip \@cftmaketoctitle
1107 \if@cfttocbibind\@cftdobibtoc\fi }%
1108 {\endgroup\@cfttocfinish }%
1109 }
1110 \@ifclassloaded{memoir}{}
1111 {\@ifpackageloaded{tocloft}
1112 {\if@cftnctoc\else
1113 \renewcommand*\etocstandarddisplaystyle{\etocetocloftstyle}
1114 \AtBeginDocument{\let\tableofcontents\etocetocloftstyle}
1115 \fi }

```

```

1116     {\AtBeginDocument
1117       {\ifpackageloaded{tocloft}
1118         {\if@cftnctoc\else
1119           \PackageWarning{etoc}
1120             {Package 'tocloft' was loaded after 'etoc'!^^}%
1121 **** to prevent it from overwriting \protect\tableofcontents, it will be tricked^^}%
1122 **** into believing to have been loaded with option 'titles'. For better^^}%
1123 **** compatibility, please load 'tocloft' before 'etoc'}%
1124       \AtEndDocument{\PackageWarning{etoc}
1125         {Please load 'tocloft' /before/ 'etoc'!}}\fi
1126       \@cftnctoctrue}%
1127     {}%
1128   }%
1129 }%
1130 }

```

placeholder for comments

```

1131 \def\Etoc@addtocontents #1#2%
1132   {\ifEtoc@hyperref
1133     \addtocontents {toc}{\protect\contentsline
1134       {#1}{#2}%
1135       {\thepage }{\@currentHref }}}%
1136   \else
1137     \addtocontents {toc}{\protect\contentsline
1138       {#1}{#2}{\thepage }}}%
1139   \fi}
1140 \def\Etoc@addcontentsline@ #1#2#3%
1141   {\@namedef{toclevel@#1}{#3}%
1142     \addcontentsline {toc}{#1}{#2}}
1143 \DeclareRobustCommand*\etoccontentsline{
1144   {\@ifstar{\Etoc@addcontentsline@}{\Etoc@addtocontents}}

```

All the following added for version 1.07g [2013/10/13]. Motivated by a demand about tocvsec2. 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 \etocignoretocdepth is that when I first worked on 1.07g I possibly had more than one token after \etoc@settocdepth, but I changed that later.

```

1145 \def\Etoc@storetocdepth {\global\c@etoc@tocdepth\c@tocdepth }
1146 \def\Etoc@resettocdepth {\global\c@tocdepth\c@etoc@tocdepth }
1147 \def\etocobeytocdepth {\def\etoc@settocdepth
1148   {\afterassignment\Etoc@@nottodeep \global\c@tocdepth}}
1149 \def\Etoc@@nottodeep {\ifnum\c@tocdepth>\c@etoc@tocdepth
1150   \global\c@tocdepth\c@etoc@tocdepth\fi }
1151 \def\etocignoretocdepth {\let\etoc@settocdepth\@gobble }
1152 \def\etocsettocdepth {\futurelet\Etoc@nexttoken\Etoc@set@tocdepth }
1153 \def\Etoc@set@tocdepth {\ifx\Etoc@nexttoken\bgroup
1154   \expandafter\Etoc@set@tocdepth@

```

37. Implementation

```

1155             \else\expandafter\Etoc@set@toctocdepth
1156             \fi }
1157 \def\Etoc@set@tocdepth@ #1{\@ifundefined {Etoc@#1@@}
1158     {\PackageWarning{etoc}
1159     {Unknown sectioning unit #1, \protect\etocsettocdepth\space ignored}}
1160     {\global\c@tocdepth\csname Etoc@#1@@\endcsname}%
1161 }
1162 \def\Etoc@set@toctocdepth #1#{\Etoc@set@toctocdepth@ }
1163 \def\Etoc@set@toctocdepth@ #1{%
1164     \@ifundefined{Etoc@#1@@}%
1165     {\PackageWarning{etoc}
1166     {Unknown sectioning depth #1, \protect\etocsettocdepth.toc ignored}}%
1167     {\addtocontents {toc}
1168     {\protect\etoc@settocdepth\expandafter\protect\csname Etoc@#1@@\endcsname}}%
1169 }

```

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).

```

1170 \def\etocdepthtag #1#{\Etoc@depthtag } % \etocdepthtag.toc {name}
1171 \def\Etoc@depthtag #1{\addtocontents {toc}{\protect\etoc@depthtag {#1}}}
1172 \def\etocignoredepthtags {\let\etoc@depthtag \@gobble }
1173 \def\etocobeydepthtags {\let\etoc@depthtag \Etoc@depthtag@ }
1174 \def\Etoc@depthtag@ #1{\@ifundefined{Etoc@depthhof@#1}%
1175     {}% ignore in silence if tag has no associated depth
1176     {\afterassignment\Etoc@nottodeep
1177     \global\c@tocdepth\csname Etoc@depthhof@#1\endcsname}%
1178 }
1179 \def\etocsettagdepth #1#2{\@ifundefined{Etoc@#2@@}%
1180     {\PackageWarning{etoc}
1181     {Unknown sectioning depth #2, \protect\etocsettagdepth\space ignored}}%
1182     {\@namedef{Etoc@depthhof@#1}{\@nameuse{Etoc@#2@@}}}%
1183 }

```

We must cancel all `toctvsec2` toc-related actions. But a check must be done for the memoir class, as its `toctvsec2` emulation does not have the incompatible things `etoc` needs to revert. This extra check added with `etoc 1.07l`.

```

1184 \def\Etoc@toctvsec@err #1{\PackageError {etoc}
1185     {the command \protect#1\space is incompatible with etoc}
1186     {use \protect\etocsettocdepth.toc as replacement (check the manual)}}%
1187 }%
1188 \AtBeginDocument {%
1189     \@ifclassloaded{memoir}
1190     {\PackageWarning{etoc}{You may consider using \protect\etocsettocdepth.toc
1191     as a drop-in^^J
1192     replacement to the memoir own \protect\settocdepth\space
1193     if you wish to exploit etoc to its^^J
1194     fullest. Similarly consider using
1195     \protect\etocsettocdepth\space and
1196     \protect\etocsetnexttocdepth^^J rather
1197     than memoir's \protect\maxtocdepth.}}
1198     {\@ifpackageloaded {toctvsec2}
1199     {\def\maxtocdepth #1{\Etoc@toctvsec@err \maxtocdepth }%
1200     \def\settocdepth #1{\Etoc@toctvsec@err \settocdepth }%
1201     \def\resettocdepth {\@ifstar {\Etoc@toctvsec@err \resettocdepth }%

```

```

1202                                     {\Etoc@tocvsec@err \resettocdepth }%
1203                                     }%
1204     \def\save@tocdepth #1#2#3{%      % if etoc is added to file previously
1205     \let\reset@tocdepth\relax        % using tocvsec2
1206     \let\remax@tocdepth\relax
1207     \let\tableofcontents\etoc\tableofcontents
1208     \PackageWarning {etoc}
1209     {package tocvsec2 detected and its modification of^^J
1210     \protect\tableofcontents\space reverted. Use
1211     \protect\etocsettocdepth.toc as a replacement^^J
1212     for the tocvsec2 toc-related commands}}}%
1213 }%
1214 }%

1.07g
1215 \def\invisibletableofcontents {\etocsetnexttocdepth {-3}\tableofcontents }%
1216 \def\invisiblelocaltableofcontents
1217     {\etocsetnexttocdepth {-3}\localtableofcontents }%
1218 \def\etocsetnexttocdepth #1{%
1219     \@ifundefined{Etoc@#1@@}
1220     {\PackageWarning{etoc}
1221     {Unknown sectioning unit #1, \protect\etocsetnexttocdepth\space ignored}}
1222     {\edef\Etoc@aftertochook {\global\c@tocdepth\the\c@tocdepth\space
1223     \let\noexpand\Etoc@aftertochook\noexpand\@empty }%
1224     \global\c@tocdepth\csname Etoc@#1@@\endcsname}%
1225 }%

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.
1226 \addtocontents {toc}{\protect\@ifundefined{etoc\tocstyle}%
1227     {\let\protect\etoc@startlocaltoc\protect\@gobble
1228     \let\protect\etoc@settocdepth\protect\@gobble
1229     \let\protect\etoc@depthtag\protect\@gobble }{}}%

Initializations.
1230 \def\etocstandardlines {\Etoc@standardtrue}
1231 \def\etoc\oclines      {\Etoc@standardfalse}
1232 \etocdefaultlines
1233 \etocstandardlines
1234 \etocstandarddisplaystyle
1235 \etocobeytoctocdepth
1236 \etocobeydepthtags
1237 \let\Etoc@aftertochook\@empty % private for \etocsetnexttocdepth
1238 \let\etoc\aftertochook \@empty % public for end user.
1239 \let\etoc\beforetitlehook \@empty % new with 1.07m
1240 \endinput

```