

The **etoc** package

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Package version: v1.07i (2013/10/21)

Documentation generated from the source file
with timestamp “21-10-2013 at 18:35:52 CEST”

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 compatible with the `article`, `book`, `report`, `scrartcl`, `scrbook`, `scrreprt` and `memoir` classes.

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Part I.

Overview

Here are some statistics for this part: it contains 4 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 “2”. The name of the last section is “Linked list of the main package commands” and its number is “5”. The name of the first subsection is “Limitations in the use of list environments for tables of contents” and the corresponding number is “2.1”. The name of the last subsection is “Compatibility mode” and its number is “3.3”.

2. 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 \(section 4\)](#). 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 30.5](#), allows to mimick very well, if so desired, the standard looks (but one would need to add to these line styles some suitably chosen penalties to reduce the possibilities for bad page breaks in TOCs).

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 30 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 11](#)).

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.

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

There are some limitations to the use of list environments for typesetting TOCs. One of them is intrinsic to the scope limitations created by the groups associated to the environments: the .toc file may contain, besides the information to be typeset in the TOCs, some other commands, such as language changing commands, which do not expect to see their scope limited in this way inside a group (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 30.3](#) (which is a TOC!) have their line styles expressed in terms of enumerate environments.

3. 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`.

3.1. `\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.

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*.

3.2. `\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`, `\etocstyle`, `\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`.

3.3. 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.⁴ This is activated by:

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

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

⁴for the “toc display style” **etoc** checks if it knows the class, and if not defaults to the article class layout.

4. A first example

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. One re-activates the compatibility mode with `\etocstandardlines`; and the command `\etoc toc lines` will re-activate the line styles as defined by the last uses of `\etocsetstyle`, if their scope was not limited to a group or environment.

The command `\etocdefaultlines` resets the line styles to be the package initial default ones.

Even if `\etocsetstyle` has been used, the global display style remains initially as defined by the document class; 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`.

4. 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...`,⁵ 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 <code>etoc</code>: TOC of Part I (Overview)	
2. Do I need to be a geek to use <code>etoc</code>?	4
2.1 Limitations in the use of list environments for tables of contents	5
3. Line styles and toc display style	5
3.1 <code>\etocsetstyle</code> for the line styles	5
3.2 <code>\etocsettocstyle</code> for the toc display	5
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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. See also [subsection 30.5](#) which provides a TOC with parts and paragraphs, with multi-line headings as

⁵this 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.

5. Linked list of the main package commands

in the standard classes layout (and the technique for setting there the page numbers on the right is closer than here to what L^AT_EX2e's `\@dottedtocline` macro does).

```
\beginingroup\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
```

5. Linked list of the main package commands

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

Part II.

Arbitrarily many TOCs, and local ones too

Here are some statistics for this part: it contains 7 sections and 6 subsections. The name of the first section is “Labeling and reusing elsewhere” and the corresponding number is “6”. The name of the last section is “Two Examples” and its number is “12”. The name of the first subsection is “The hyperref option *bookmarksdepth*” and the corresponding number is “8.1”. The name of the last subsection is “A TOC with a background color” and its number is “12.2”.

6. Labeling and reusing elsewhere

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

etoc allows the labeling of a TOC with (for example) `\label{toc:A}` and will redisplay 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 this page.

I am from far away	
26. Summary of the main style commands	37
26.1. Setting up local styles	37
26.2. Setting up toc display styles	38
26.3. Displaying tables of contents	38
26.4. Labels and references	38
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28. Customizing etoc	42
28.1. Customizing the etoc pre-defined line styles	42
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We used this:

```
\begin{figure*}[ht!]  
  \centering  
  \begingroup  
  \etocstandardlines  
  \renewcommand{\etocbkgcolorcmd}{\color{green!5}}  
  \renewcommand{\etocbelowtocskip}{0pt\relax}
```


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

```
\fboxsep1ex
\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}`.

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

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

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

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

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

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

⁶and one should naturally not print this TOC of paragraphs in compatibility mode, which would insist on inserting a gigantic left margin.

8. 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 contents. 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`.

8.1. 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.

9. The command `\etocsettocdepth.toc`

This command `\etocsettocdepth.toc` implements some functionality of `tocvsec2`⁷, 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

⁷<http://ctan.org/pkg/tocvsec2>. I thank D.B. for drawing my attention to the incompatibility of this package with **etoc**.

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

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 `\etocsettagdepth` gets executed in ALL tables of contents.

9.1. 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`.

10. 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 30.5](#).

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

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

11. 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`, `\etocignoretoctocdepth` and `\etocobeytoctocdepth` are the way to go; or their variants `\etocdepthtag.toc` and `\etocset-tagdepth`.

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.

11.1. The hyperref option *hidelinks*

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

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

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

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

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

12. Two Examples

12.1. 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
```

	<hr style="width: 20%; margin-left: 0;"/> <i>My Beautiful Thesis</i>	
Chapter 2	Do I need to be a geek to use	
	etoc?	4
2.1	<i>Limitations in the use of list environments for</i>	
	<i>tables of contents</i>	5
Chapter 3	Line styles and toc display	
	style	5

12. Two Examples

3.1	<i>\etocsetstyle for the line styles</i>	5
3.2	<i>\etocsettocstyle for the toc display</i>	5
3.3	<i>Compatibility mode</i>	5
Chapter 4	A first example	6
Chapter 5	Linked list of the main package commands	7

12.2. 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		
2	Do I need to be a geek to use etoc ?	4
2.1	Limitations in the use of list environments for tables of contents	5
3	Line styles and toc display style	5
3.1	<code>\etocsetstyle</code> for the line styles	5
3.2	<code>\etocsettocstyle</code> for the toc display	5
3.3	Compatibility mode	5
4	A first example	6
5	Linked list of the main package commands	7

`\tableofcontents \ref{toc:overview}` (cf. [subsection 12.2](#) and [this other toc](#))

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

Part III.

Surprising uses of **etoc**

Here are some statistics for this part: it contains 6 sections and 0 subsection. The name of the first section is “The TOC of TOCs” and the corresponding number is “13”. The name of the last section is “The TOC as a molecule” and its number is “18”.

The TOC of TOCs	13, p. 15
Arbitrary “Lists Of...”, <code>\etoccontentsline</code>	14, p. 16
A TOC with a fancy layout	15, p. 17
Another compatibility mode	16, p. 19
The TOC as a tree	17, p. 21
The TOC as a molecule	18, p. 23

13. The TOC of TOCs

Here is the numbered and linked list of all tables of contents which are displayed within this document:⁸ [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](#). 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 **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 circumvent⁹ the patching for automatic creation of bookmarks done to `\addcontentsline` by the `hyperref` package, as pdf bookmarks don’t make much sense here (and

⁸The 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...

⁹using `\addtocontents` rather than `\addcontentsline`

14. Arbitrary “Lists Of...”, \etoccontentsline

would elicit a complaint of hyperref that the bookmark level is ‘unknown’).¹⁰

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`.

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 30.2](#) gives another use of the shuffling of levels.

14. 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:

¹⁰ The 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`.

15. A TOC with a fancy layout

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

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

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

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

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

The counter `exerci` is already incremented by the `exerci` theorem environment, and provides the correct destination for the link added by package `hyperref`. The command `\exercisetotoc` adds for each exercise a line to the `.toc` file, corresponding to a fictitious document unit with name 'exercise'. A four-column list, including the sections, can then be typeset with the following code:

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

15. 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:

15. A TOC with a fancy layout

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

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 30.4](#).

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	

16. Another compatibility mode

As explained in [subsection 3.3](#), 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.¹¹ With these commands **etoc** will construct a TOC completely identical to what would have been done by one of the document class: `article`, `book`,

¹¹and 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.

`scrartcl`, `scrbook`.¹² 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

2. Do I need to be a geek to use <code>etoc</code>?	4
2.1. Limitations in the use of list environments for tables of contents	5
3. Line styles and toc display style	5
3.1. <code>\etocsetstyle</code> for the line styles	5
3.2. <code>\etocsettocstyle</code> for the toc display	5
3.3. Compatibility mode	5
4. A first example	6
5. Linked list of the main package commands	7

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

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

¹²For 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).

17. The TOC as a tree

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.

17. The TOC as a tree

Using `tikz`¹³ and the package `forest`¹⁴ 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.¹⁵ The hyperlink information put by `etoc` inside `\etocname`, etc. . . , is just a pointer, not storable for later use; but the package provides `\etocthelinkednumber`, `\etocthelinkedname`, and `\etocthelinkedpage` whose contents contain the hyperlink in a form which can be stored and later reused.

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.¹⁶ This is the later job of a `forest` environment which will be given the contents of `\treetok`.

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

```
\newtoks\treetok
\newtoks\tmptok

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

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

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

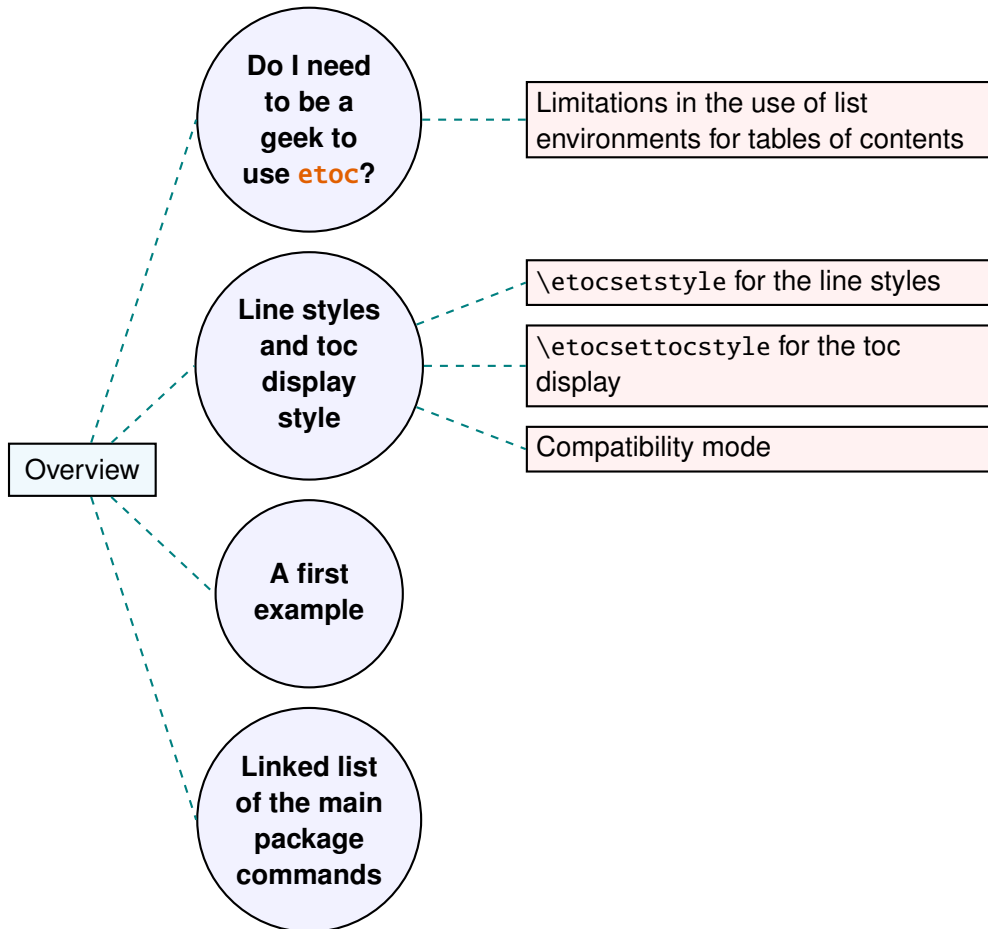
¹³<http://ctan.org/pkg/pgf>

¹⁴<http://ctan.org/pkg/forest>

¹⁵This manual up to the version of May 14, 2013 used package `qtikz-tree` but there were problems with hyperlinks. No such problem arises either when using `forest` or the native `tikz` syntax for trees (which will be illustrated in the next section).

¹⁶There is always a `\par`, which here is not a problem, but can be suppressed if need be via the command `\etocinline` or its synonym `\etocnoper`.

17. The TOC as a tree



A table of contents displayed as a forest tree.

```

\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

```

18. The TOC as a molecule

```

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

```

Why `\hypersetup{hidelinks}`? as explained in [subsection 11.1](#), 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, as for example (see [subsection 30.4](#)) for printing the statistics at the start of each Part: the code there uses save boxes, so the problem of the appearance of the links does not arise then, they will be stored as ready to be re-used boxes.

18. 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}
}

```

18. The TOC as a molecule

```

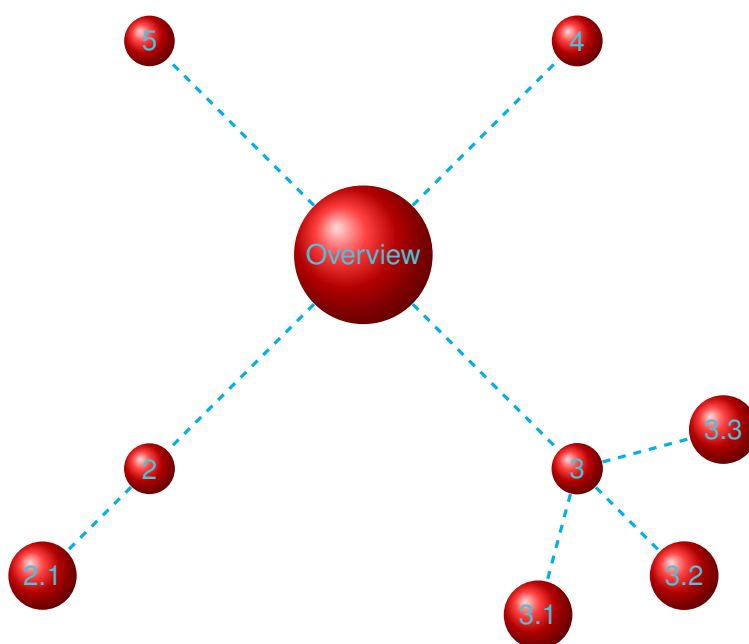
{\preparetreenode \sectiontok\expandafter{\treenode}}
{\appendchildtree\treetok\sectiontok}

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

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

% moved to the inside of the figure environment for correct \pageref{toc:molecule}
% \etocsetnexttocdepth{2}
% \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{2}
  \tableofcontents \label{toc:molecule} \ref{toc:overview}
  \hypersetup{hidelinks}%
  \begin{tikzpicture}
    [grow cyclic,
     level 1/.style={level distance=4cm,sibling angle=90},
     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)]}]

```

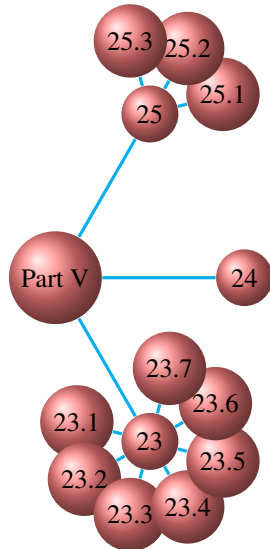


```

\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}}%
...

```

Part IV.

Commands for the toc line styles

Here are some statistics for this part: it contains 4 sections and 8 subsections. The name of the first section is “The `\etocsetstyle` command” and the corresponding number is “19”. The name of the last section is “[Am I also red?](#)” and its number is “22”. The name of the first subsection is “The `\etocname` and `\etocpage` commands” and the corresponding number is “19.1”. The name of the last subsection is “[This is a \(pale\) red subsection for illustrative purposes](#)” and its number is “21.2”.

Contents of [Part IV](#)

19 The `\etocsetstyle` command (page 26)

19.1 The `\etocname` and `\etocpage` commands (p. 26)

19.2 The `\etocskipfirstprefix` command (p. 27)

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The `\etocifnumbered` switch.

19.4 The `\etocthenname`, `\etocthenumber`, and `\etocthepage` commands (p. 28)

19.5 The `\etoclink` command (p. 28)

19.6 The `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage` and `\etoc-thelink` commands (p. 28)

20 The `\etocsetlevel` command (page 28)

21 Scope of commands added to the `.toc` file (page 29)

21.1 Testing the scope (p. 29)

21.2 This is a (pale) red subsection for illustrative purposes (p. 30)

22 Am I also red? (page 30)

19. The `\etocsetstyle` command

19.1. 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:¹⁷

```
\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\endgroup\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.

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

¹⁷the 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.

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`.)

The chosen subsubsection style also uses the command `\etocskipfirstprefix`, which, if present, *must* be the very last one in the *start* code. It instructs to not use for the first item the specified “prefix” code.

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

19.3. The \etocnumber command

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

19.3.1. The \etocifnumbered switch

The `\etocifnumbered{⟨A⟩}{⟨B⟩}` command executes $\langle A \rangle$ if the number exists, and $\langle B \rangle$ 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]}
```

27

20. The `\etocsetlevel` command

```
{\normalfont \item}  
{\etocname{}} (p.\etocpage)}  
\end{enumerate}}
```

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}`.

19.4. The `\etocthename`, `\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 `\etocthename`, `\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`.

19.5. 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.

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

This is for advanced uses by advanced users. The `\etocthename` macro has been mentioned before; using it in instructions such as `\global\let\lastone\etocthename` 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 now provides `\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.

20. 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}
```

21. Scope of commands added to the .toc file

Of course, in compatibility mode, it will be assumed here that the macros `\l@cell`, `\l@molecule`, ..., pre-exist. If no table of contents is typeset in compatibility mode, then all that matters is that the line styles have been set. If for example section is at level 1, then there is no need to do a `\etocsetstyle{molecule}` 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-subsections, in a two-column layout, giving thus a more compact output than what is achieved by the default L^AT_EX table of contents. But here, we have few sub-sub-sections and it is more interesting to drop them and print in a visually different manner sections and subsections.

21. Scope of commands added to the .toc file

21.1. 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
```

21.2. 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.

22. 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 2.1.

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

Code in the source: `\invisiblelocaltableofcontents \label{toc:globalcmds}`

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 “23”. The name of the last section is “Table of contents for this part” and its number is “25”. The name of the first subsection is “The command `\etocsettocstyle`” and the corresponding number is “23.1”. The name of the last subsection is “A (crazy) inline display” and its number is “25.3”.

23. 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})
```

23.1. 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}`.

Generally speaking this heading should leave T_EX 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 multicol environment in `{<before_toc>}` and close it in `{<after_toc>}`.

23.2. 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>}`.

23.2.1. 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.

23.2.1.1. `\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.

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

23.2.1.3. really?

23.3. 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\fboxsep1ex
  \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`.

23.4. 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 28.2](#)).

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`¹⁹ or `tcolorbox`²⁰ in the arguments of `\etocsettocstyle` is recommended.

Examples in this document are on pages 8, 14, 35, and 45.

23.5. 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}`.

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`²¹ 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).

¹⁹<http://ctan.org/pkg/mdframed>

²⁰<http://ctan.org/pkg/tcolorbox>

²¹this 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.

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

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}{\langle new_value \rangle}`, not with `\setlength`.

23.6. 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.

23.7. 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.

24. 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 `\etocmemoirtoc\tocfmt{\langle kind \rangle}{\langle name \rangle}` will change the format (`\langle kind \rangle` is `chapter`, `section`, `subsection`... and `\langle name \rangle` can be for example `\contentsname`.) The initial set-up is with `chapter` and `\contentsname`.

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

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

Independently of the situation with the `memoir` class there is generally speaking a hook macro called `\etocaftertitlehook` which is inhibited by using the starred variants of the displaying commands. Except for the `memoir` class, this hook is initially defined to do nothing. There is also `\etocaftercontentshook`, similarly defined to do nothing. They can be used for some special effects.

25. Table of contents for this part

25.1. 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.²² 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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25.2. 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 following page).²³

```
\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}}
```

²²the present document uses the `scrartcl` class, and we check here that the `etoc` compatibility mode does respect the customizing done via the class commands.

²³inside 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`.

Contents

```

\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
\fbboxrule1pt
\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

```

*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`.*

Specifying the toc display style

23, p. 30

The command `\etocsettocstyle`

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

23.2, p. 31

The command `\etocstyle`.

The commands `\etocruledstyle`,

`\etocruled` and `\etoclocalruled`

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The commands `\etocframedstyle`,

`\etocframed`, and `\etoclocalframed`

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Headings, titles, `\etocoldpar`, `\etocinnertopsep`

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The compatibility mode `\etocstandarddisplaystyle`

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The command `\etocinline`

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

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Table of contents for this part

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Testing the compatibility mode

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A framed display

25.2, p. 34

A (crazy) inline display

25.3, p. 35

25.3. 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,

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probably not for print! (although I like it, but my personal taste in such matters does not seem to be highly shared).

Here is the inline table of contents. *Foreword. Overview: Do I need to be a geek to use **etoc***²⁴, *Line styles and toc display style*²⁵, *A first 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` commands*²⁶, *The command `\etocsettocdepth.toc`*²⁷, *The commands `\etocdepthtag.toc` and `\etocsettagdepth`*²⁸, *Adding commands to the .toc file*²⁹, *Two Examples*³⁰. **Surprising uses of **etoc****: *The TOC of TOCs, Arbitrary “Lists Of...”, `\etoc toc contentsline`, A TOC with a fancy layout, Another compatibility mode, The TOC as a tree, The TOC as a molecule. Commands for the toc line styles: The `\etocsetstyle` command*³¹, *The `\etocsetlevel` command, Scope of commands added to the .toc file*³², *Am I also red?. Commands for the toc display style: Specifying the toc display style*³³, *Starred variants of the `\tableofcontents` etc... commands, Table of contents for this part*³⁴. **Using and customizing **etoc****: *Summary of the main style commands*³⁵, *The package default line styles: `\etocdefaultlines`, Customizing **etoc***³⁶, *One more example of colored TOC layout. Tips: ... and tricks*³⁷. **The code**: *Timestamp, License, installation, Change history, Implementation.*

Here is the code used:³⁸

```
\begingroup
\newsavebox{\forsubsections}
\etocsetstyle{part}{\upshape. \etocskipfirstprefix}{. \upshape}
{\bfseries\etocname:~}{\bfseries\etocname:~}{\bfseries\etocname:~}
\etocsetstyle{section}{\itshape\etocskipfirstprefix}{, }
{\mdseries\etocname}{\mdseries\etocname}
\etocsetstyle{subsection}
{\begin{lrbox}{\forsubsections}\upshape\etocskipfirstprefix}
{; }{\etocname}{\end{lrbox}\footnote{\unhbox\forsubsections.}}
```

²⁴Limitations in the use of list environments for tables of contents.

²⁵`\etocsetstyle` for the line styles; `\etocsettocstyle` for the toc display; Compatibility mode.

²⁶The hyperref option `bookmarksdepth`.

²⁷The commands `\etocobeytoctocdepth` and `\etocignoretoctocdepth`.

²⁸The commands `\etocobeydepthtags` and `\etocignoredepthtags`.

²⁹The hyperref option `hidelinks`.

³⁰A Beautiful Thesis example; A TOC with a background color.

³¹The `\etocname` and `\etocpage` commands; The `\etocskipfirstprefix` command; The `\etocnumber` command (*The `\etocifnumbered switch`*); The `\etocthenname`, `\etocthenumber`, and `\etocthepage` commands; The `\etoclink` command; The `\etocthelinkedname`, `\etocthelinkednumber`, `\etocthelinkedpage` and `\etocthelink` commands.

³²Testing the scope; **This is a (pale) red subsection for illustrative purposes.**

³³The command `\etocsettocstyle`; The commands `\etocmulticolstyle`, `\etocmulticol`, and `\etoclocalmulticol` (*The command `\etoc toc style`*); The commands `\etocruledstyle`, `\etocruled` and `\etoclocalruled`; The commands `\etocframedstyle`, `\etocframed`, and `\etoclocalframed`; Headings, titles, `\etocoldpar`, `\etocinnertopsep`; The compatibility mode `\etocstandarddisplaystyle`; The command `\etocinline`.

³⁴Testing the compatibility mode; A framed display; A (crazy) inline display.

³⁵Setting up local styles; Setting up toc display styles; Displaying tables of contents; Labels and references.

³⁶Customizing the **etoc** pre-defined line styles; Customizing the toc display styles.

³⁷Hacking framed parboxes; Inverting the levels; All subsections of this document; Displaying statistics; Using depth tags; Compatibility with other packages; T_EXnical matters; Errors and catastrophes.

³⁸as this new version of the documentation has some sections before the first part, we had to take special measures in the `begin` code for level part.

```

\etocsetstyle{subsubsection}
{ (\itshape\etocskipfirstprefix}{, }{\etocname}{\/\upshape)}
\etocsettocstyle{Here is the inline table of contents. }{.\par}
\tableofcontents
\endgroup

```

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 “26”. The name of the last section is “One more example of colored TOC layout” and its number is “29”. The name of the first subsection is “Setting up local styles” and the corresponding number is “26.1”. The name of the last subsection is “Customizing the toc display styles” and its number is “28.2”.

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

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Labels and references . . .	26.4, p. 38	One more example of colored TOC lay- out	29, p. 44

26. Summary of the main style commands

26.1. Setting up local styles

```

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

```

26.2. Setting up toc display styles

```
\etocmulticolstyle[⟨number_of_columns⟩]{⟨heading⟩}
\etoctocstyle[⟨kind⟩]{⟨number_of_columns⟩}{⟨title⟩}
\etoctocstylewithmarks[⟨kind⟩]{⟨number_of_columns⟩}{⟨title⟩}{⟨mark⟩}
\etoctocstylewithmarksnouc[⟨kind⟩]{⟨number_of_columns⟩}{⟨title⟩}{⟨mark⟩}
\etocruledstyle[⟨number_of_columns⟩]{⟨title⟩}
\etocframedstyle[⟨number_of_columns⟩]{⟨title⟩}
\etocsettocstyle{⟨before_toc⟩}{⟨after_toc⟩}
```

26.3. 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
```

26.4. 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.

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

Activating the use of the package default line styles is done via `\etocdefaultlines`, or `\etoc-toclines` if these 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

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

default.³⁹ On the other hand, used with a one-column layout, and with few sub-sub-sections, the style is a bit more spread out vertically than the L^AT_EX default, sub-sections are not visually much different from sections (especially for document classes with a `\chapter` command), so the result is less hierarchical in appearance than in the L^AT_EX default.

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

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

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

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

1. Foreword

Part I. Overview

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

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3. Line styles and toc display style

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`\etocsettocstyle` for the toc display 3.2, p. 5

Compatibility mode 3.3, p. 5

4. A first example

³⁹and 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).

5. Linked list of the main package commands

Part II. Arbitrarily many TOCs, and local ones too

6. Labeling and reusing elsewhere

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

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29. One more example of colored TOC layout

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31. Timestamp

32. License, installation

33. Change history

34. Implementation

28. Customizing **etoc**

28.1. 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{1ex plus .15ex minus .15ex} % modified in 1.07e
\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.~}
\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**.⁴⁰

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.

⁴⁰with 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.

28.2. 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*\etoctoprulecolorcmd{\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` things are initially set to be `\relax`, so there is no need to do `\usepackage{color}` if the document does not use colors. If the scope of a change to a color command such as `\etocbkgcolorcmd` has not been limited to a group and one then wishes to let it again be `\relax` one must use a `\renewcommand` 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{\etoctoprule}{\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 (horizontal) leaders but as objects of a given specified width. Note that *only* the Plain $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ syntax for rules is accepted here.

29. 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
  \fboxsep0pt % \colorbox uses \fboxsep also when no frame!
  \noindent\colorbox{secbackground}
    {\parbox{\linewidth}{%
      \vskip5pt
```

29. One more example of colored TOC layout

```

{\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}{\hbox to 1.5cm{\hss\etocnumber\hskip.2cm}%
\etocname\hfill\hbox{\etocpage\hskip.2cm}}\vskip6pt}
{}

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

```

I am a twin of that other TOC (click me!)	
23	Specifying the toc display style 30
23.1	The command \etocsettocstyle 31
23.2	The commands \etocmulticolstyle, \etocmulticol, and \etoclocalmulticol 31
23.2.1	The command \etoclocalmulticol 31
23.3	The commands \etocruledstyle, \etocruled and \etoclocalruled 32
23.4	The commands \etocframedstyle, \etocframed, and \etoclocalframed 32
23.5	Headings, titles, \etocoldpar, \etocinnertopsep 32
23.6	The compatibility mode \etocstandarddisplaystyle ... 33
23.7	The command \etocinline 33
24	Starred variants of the \tableofcontents etc... commands 33
25	Table of contents for this part 34
25.1	Testing the compatibility mode 34
25.2	A framed display 34
25.3	A (crazy) inline display 35

The TOC has been put in a `float` which appears on the current page. The coding is a bit involved⁴¹ as it does not use any additional package. Also, it was written at some early stage and I have not

⁴¹and reveals the author's preference for the T_EX syntax...

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.

Part VII.

Tips

Here are some statistics for this part: it contains 1 section and 8 subsections. The name of the first section is “... and tricks” and the corresponding number is “30”. The name of the last section is “... and tricks” and its number is “30”. The name of the first subsection is “Hacking framed parboxes” and the corresponding number is “30.1”. The name of the last subsection is “Errors and catastrophes” and its number is “30.8”.

30. ... and tricks

30.1. Hacking framed parboxes

```
\etocdefaultlines
\renewcommand\etocctorule{\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	The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>
. 23, p. 30	. . . . . 23.4, p. 32
The command <code>\etocsettocstyle</code>	Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>
. 23.1, p. 31	23.5, p. 32
The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulticol</code>	The compatibility mode <code>\etocstandarddisplaystyle</code>
. 23.2, p. 31	23.6, p. 33
The command <code>\etoclocalruled</code>	The command <code>\etocinline</code>
. 23.3, p. 32 23.7, p. 33
The command <code>\etoclocalruled</code>	Starred variants of the <code>\tableofcontents</code> etc... commands
. 23.3, p. 32	24, p. 33
	Table of contents for this part
	. . . . . 25, p. 34

Testing the compatibility mode . . .	A framed display	25.2, p. 34
. 25.1, p. 34	A (crazy) inline display . .	25.3, p. 35

30.2. 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.\sim\etocpage)}
  {\end{enumerate}}
\renewcommand{\etoccolumnsep}{2.75em}
\renewcommand{\columnseprule}{1pt}
\etocmarkbothnouc{List of all subsections}
\etocmulticol[3]{\subsection{All subsections of this document}}
\endgroup
```

30.3. All subsections of this document

i. Limitations in the use of list environments for tables of contents (2.1, p. 5)	x. A TOC with a background color (12.2, p. 14)	xviii. This is a (pale) red subsection for illustrative purposes (21.2, p. 30)
ii. <code>\etocsetstyle</code> for the line styles (3.1, p. 5)	xi. The <code>\etocname</code> and <code>\etocpage</code> commands (19.1, p. 26)	xix. The command <code>\etocsettocstyle</code> (23.1, p. 31)
iii. <code>\etocsettocstyle</code> for the toc display (3.2, p. 5)	xii. The <code>\etocskipfirstprefix</code> command (19.2, p. 27)	xx. The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulticol</code> (23.2, p. 31)
iv. Compatibility mode (3.3, p. 5)	xiii. The <code>\etocnumber</code> command (19.3, p. 27)	xxi. The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code> (23.3, p. 32)
v. The <code>hyperref</code> option <code>bookmarksdepth</code> (8.1, p. 10)	xiv. The <code>\etocthename</code> , <code>\etocthenumber</code> , and <code>\etocthepage</code> commands (19.4, p. 28)	xxii. The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code> (23.4, p. 32)
vi. The commands <code>\etocobeytoctocdepth</code> and <code>\etocignoretoctocdepth</code> (9.1, p. 11)	xv. The <code>\etoclink</code> command (19.5, p. 28)	xxiii. Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code> (23.5, p. 32)
vii. The commands <code>\etocobeydepthtags</code> and <code>\etocignoredepthtags</code> (10.1, p. 11)	xvi. The <code>\etocthelinkedname</code> , <code>\etocthelinkednumber</code> , <code>\etocthelinkedpage</code> and <code>\etocthelink</code> commands (19.6, p. 28)	xxiv. The compatibility mode <code>\etocstandarddisplaystyle</code> (23.6, p. 33)
viii. The <code>hyperref</code> option <code>hidelinks</code> (11.1, p. 12)	xvii. Testing the scope (21.1, p. 29)	
ix. A Beautiful Thesis example (12.1, p. 13)		

xxv. The command <code>\etoc-inline</code> (23.7, p. 33)	xxxi. Displaying tables of contents (26.3, p. 38)	xxxvii. All subsections of this document (30.3, p. 47)
xxvi. Testing the compatibility mode (25.1, p. 34)	xxxii. Labels and references (26.4, p. 38)	xxxviii. Displaying statistics (30.4, p. 48)
xxvii. A framed display (25.2, p. 34)	xxxiii. Customizing the etoc pre-defined line styles (28.1, p. 42)	xxxix. Using depth tags (30.5, p. 49)
xxviii. A (crazy) inline display (25.3, p. 35)	xxxiv. Customizing the toc display styles (28.2, p. 43)	xl. Compatibility with other packages (30.6, p. 52)
xxix. Setting up local styles (26.1, p. 37)	xxxv. Hacking framed parboxes (30.1, p. 46)	xli. T _E Xnical matters (30.7, p. 53)
xxx. Setting up toc display styles (26.2, p. 38)	xxxvi. Interverting the levels (30.2, p. 47)	xl. Errors and catastrophes (30.8, p. 53)

30.4. 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 18](#). We present also this second method.

But first, the coding 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} {} {}
  {\thispartstatsauxii
   \stepcounter{mycountii}%
   \sbox{\lastnameii}{\etocname}%
   \sbox{\lastnumberii}{\etocnumber}} {}%
  \etocsetstyle{section} {} {}
  {\thispartstatsauxi
   \stepcounter{mycounti}%
   \sbox{\lastnamei}{\etocname}%
```


List of all subsections

```
\sbox{\lastnumberi}{\etocnumber}}
{Here are some statistics for this part: it contains \arabic{mycounti}
section\ifnum\value{mycounti}>1 s\fi{} and \arabic{mycountii}
subsection\ifnum\value{mycountii}>1 s\fi. The name of the first section is
\unhbox\firstnamei{} and the corresponding number is \unhbox\firstnumberi.
The name of the last section is \unhbox\lastnamei{} and its number is
\unhbox\lastnumberi. The name of the first subsection is \unhbox\firstnameii{}
and the corresponding number is \unhbox\firstnumberii. The name of the last
subsection is \unhbox\lastnameii{} and its number is \unhbox\lastnumberii.}%
\etocinline % don't do a \par automatically (but this is not used, actually).
\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
```

30.5. 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. So we simply added to this source various `\etocdepthtag.toc` commands, and it is now just a matter to set the levels for each one of these tags (as they were left undefined until now, they were ignored in all previous 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 4](#) (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 4](#)). 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	4
II Arbitrarily many TOCs, and local ones too	8
III Surprising uses of etoc	15
IV Commands for the toc line styles	25
V Commands for the toc display style	30
23 Specifying the toc display style	30
23.1 The command <code>\etocsettocstyle</code>	31
23.2 The commands <code>\etocmulticolstyle</code> , <code>\etocmulticol</code> , and <code>\etoclocalmulticol</code>	31
23.2.1 The command <code>\etocstyle</code>	31
23.2.1.1 <code>\etocstylewithmarks</code>	31
23.2.1.2 Do we really want paragraph entries in the TOC?	31
23.2.1.3 really?	31
23.3 The commands <code>\etocruledstyle</code> , <code>\etocruled</code> and <code>\etoclocalruled</code>	32
23.4 The commands <code>\etocframedstyle</code> , <code>\etocframed</code> , and <code>\etoclocalframed</code>	32
23.5 Headings, titles, <code>\etocoldpar</code> , <code>\etocinnertopsep</code>	32
23.6 The compatibility mode <code>\etocstandarddisplaystyle</code>	33
23.7 The command <code>\etocinline</code>	33
24 Starred variants of the <code>\tableofcontents</code> etc... commands	33
25 Table of contents for this part	34
25.1 Testing the compatibility mode	34
25.2 A framed display	34
25.3 A (crazy) inline display	35
VI Using and customizing etoc	37
VII Tips	46

```

\etocsetnexttocdepth {all}
\begingroup
\parindent 0pt \leftskip 0cm \rightskip .75cm \parfillskip -\rightskip
\newcommand*{\EndParWithPageNoInMargin}
{
  \nobreak\hfill
  \nobreak\makebox[0.75cm][r]{\mdseries\normalsize\etocpage}%
\par}

```

List of all subsections

```

\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\etoctoprule {\hrule height 3pt\relax }
\renewcommand\etoctoprulecolorcmd {\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
```

30.6. Compatibility with other packages

etoc loads the package `multicol`. It is `hyperref` aware and hopefully `hyperref` compatible! It doesn't matter whether **etoc** or `hyperref` is loaded first.

The contents of the `.toc` file (if it already exists) are read into memory by **etoc** once, at the time of `\usepackage{etoc}`. The `.toc` file remains available to other packages for read operations until the location of the first table of contents at which time a write stream is opened by **etoc** and from that point the file is erased until its contents are again written to the disk by `LaTeX` at the end of the compilation.

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 earlier⁴² just before the closing part of the toc display style (and thus still within a group.)

etoc used to be incompatible with package `tocvsec2`⁴³; 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.

etoc expects the document sectioning units to write their data into the file having extension `.toc`, in the form of lines containing the `\contentsline` command and its arguments. The macros `\etocname`, `\etocnumber`, and `\etocpage` contain the `hyperref` links, if present (note that the `linktoc=all` option of `hyperref` tells it to put a link also in the page number corresponding to a given toc entry). For example, the tables of contents of the present document are all fully linked.

It 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.

It is possible to use simultaneously **etoc** and `tableof`⁴⁴. For the advanced uses such as what is done in [section 18](#) it is important to know that `tableof` adds one level of grouping inside the `.toc` file itself. So when one needs to make some information `\global`, one can not wait to be at the level of the second argument of `\etocsettocstyle`, as `tableof` will already have closed the group then. The `\global` things (on volatile data) must be done at the latest in the `\finish` part of the top (or last) sectioning level used. This only applies of course to `\tableofcontents` or `\localtableofcontents` following the `\nexttocwithtags{required}{forbidden}` command from `tableof`.

⁴²contrarily to `\etocaftertochook`, `\etocaftercontentshook` is not executed if the `tocdepth` did not allow the printing of the TOC.

⁴³<http://ctan.org/pkg/tocvsec2>

⁴⁴<http://ctan.org/pkg/tableof>

And when the commands `\tableof` or `\tablenotof` of package `tableof` are used, they typeset the table of contents according to the document class defaults: to benefit from the **etoc** styles, it is mandatory to use either `\tableofcontents`, or `\localtableofcontents` or one of the other **etoc** commands, and `tableof` (v1.1) will influence the outcome only if `\nexttocwithtags{required}{forbidden}` was added before the table of contents typesetting command.

30.7. 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.

On the other hand `\etocthenname`, `\etocthenumber`, `\etocthepage` do not represent `hyperref` links, and are *not* protected against expansion.

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

30.8. Errors and catastrophes

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

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

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

Part VIII.

The code

31. Timestamp

This is the documentation as of 2013/10/21, printed from the source file with the time stamp 21-10-2013 at 18:35:52 CEST. The package version is v1.07i, of 2013/10/21.

32. License, installation

```
% Copyright (C) 2012-2013 by Jean-Francois Burnol <jfbu at free dot fr>
%
% 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
```

33. Change history

```
%      http://www.latex-project.org/lppl/lppl-1-3c.txt
%      and the latest version of this license is in
%      http://www.latex-project.org/lppl.txt
%      and version 1.3 or later is part of all distributions of
%      LaTeX version 2005/12/01 or later.
%
% This Work has the LPPL maintenance status Author-Maintained.
%
% The Author of this Work is
%      Jean-Francois Burnol <jfbu at free dot fr>.
%
% This Work consists of the main source file etoc.dtx and the
% derived files etoc.sty, etoc.dvi, etoc.pdf, etoc.ins, etoc.tex
%
% Extraction of the package (.sty) and driver (.tex) files:
% - if etoc.ins is present:    tex etoc.ins
% - without etoc.ins:         tex etoc.dtx
%
% It is also possible to run latex/pdflatex directly on etoc.dtx
%
% At least three ways to produce etoc.pdf:
% (1) latex etoc.dtx (three times), then dvips, then ps2pdf
% (2) pdflatex etoc.dtx (three times)
% (3) latex etoc.tex (three times), then dvipdfmx
%
% Method (3) produces the smallest pdf files.
% Options can be set in etoc.tex:
% - scrdoc class options (paper size, font size, ...)
% - with or without source code,
% - with dvipdfmx or with latex/pdflatex.
%
% Installation:
%
% etoc.sty->TDS:tex/latex/etoc/etoc.sty
% etoc.dtx->TDS:source/latex/etoc/etoc.dtx
% etoc.pdf->TDS:doc/latex/etoc/etoc.pdf
%
% etoc.tex, etoc.ins, etoc.aux, etoc.toc, etc... may be discarded
%
```

33. Change history

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).

new commands `\etocsettocdepth`, `\etocsettocdepth.toc`, `\etocobeytoctocdepth`, `\etocignoretoctocdepth` which emulate part of `toctvsec2` functionality ; measures to make `toctvsec2` partially compatible with `etoc`.

v1.07h [2013/10/16]

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

new commands `\etocsetnexttocdepth`, `\invisibletableofcontents`, `\invisibleloctableofcontents`.

v1.07g [2013/10/13]

switched from `tikz-qtree` to `forest` for the first 'toc as tree' example.

34. Implementation

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 `\etoclinkedname`, `\etoclinkednumber`, `\etoclinkedpage`, and `\etoclink`.

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`,

`\etoccontentsline`, `\etoccontentsline*`

`\etocnopar`, `\etocaftercontentshook`

modified command: `\etocmulticolstyle`

new documentation section "Surprising uses of `etoc`" which explains how to do "Lists of arbitrary things", in addition to the tables of contents.

v1.06 [2012/12/07]

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

v1.05 [2012/12/01]

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

compatibility with KOMA-script and memoir document classes.

v1.04 [2012/11/24]

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

`\tableofcontents \label{toc:1}`

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

`\tableofcontents \ref{toc:1}`

v1.02 [2012/11/18]

initial version.

34. Implementation

```
1 \ProvidesPackage{etoc}
2 [2013/10/21 v1.07i Completely customisable TOCs (jfb)]
3 \NeedsTeXFormat{LaTeX2e}
4 \RequirePackage{multicol}
5 \DeclareOption*{\PackageWarning{etoc}{Option '\CurrentOption' is unknown.}}
6 \ProcessOptions\relax
```

placeholder for comments

```
7 \newtoks\Etoc@toctoks
8 \def\Etoc@par{\par}
9 \def\etocinline{\def\Etoc@par{}}
10 \let\etocnopar\etocinline
11 \newif\ifEtoc@jj % book
12 \newif\ifEtoc@j % part
13 \newif\ifEtoc@ % chapter
14 \newif\ifEtoc@i % section
15 \newif\ifEtoc@ii % subsection
16 \newif\ifEtoc@iii % subsubsection
17 \newif\ifEtoc@iv % paragraph
```

34. Implementation

```

18 \newif\ifEtoc@v % subparagraph
19 \newif\ifEtoc@number
20 \newif\ifEtoc@hyperref
21 \newif\ifEtoc@parskip % 1.07d
22 \newif\ifEtoc@tocwithid
23 \newif\ifEtoc@standard
24 \newif\ifEtoc@part
placeholder for comments
25 \newif\ifEtoc@localtoc
26 \newif\ifEtoc@skipthisone
27 \newif\ifEtoc@stoptoc
28 \newif\ifEtoc@notactive
29 \newcounter{etoc@tocid}
30 \newif\ifEtoc@mustclosegroup
31 \def\etoc@{\etoc@}

1.07g uses a second counter; this could be avoided, but ok, let's not be that strict.
32 \newcounter{etoc@tocdepth}% 1.07g
placeholder for comments
33 \@ifclassloaded{memoir}{\def\Etoc@minf{-\thr@@}{\def\Etoc@minf{-\tw@}}
34 \def\Etoc@@minustwo@@{-\tw@}
35 \let\Etoc@@minusone@@\m@ne
36 \let\Etoc@@zero@@ \z@
37 \let\Etoc@@one@@ \@ne
38 \let\Etoc@@two@@ \tw@
39 \let\Etoc@@three@@ \thr@@
40 \chardef\Etoc@@four@@ 4
41 \chardef\Etoc@@five@@ 5
42 \chardef\Etoc@@six@@ 6
43 \let\Etoc@localtop\Etoc@@minustwo@@
44 \def\Etoc@@minustwo@{minustwo}
45 \def\Etoc@@minusone@{minusone}
46 \def\Etoc@@zero@ {zero}
47 \def\Etoc@@one@ {one}
48 \def\Etoc@@two@ {two}
49 \def\Etoc@@three@ {three}
50 \def\Etoc@@four@ {four}
51 \def\Etoc@@five@ {five}

1.07g
52 \expandafter\def\csname Etoc@-3@@\endcsname {-\thr@@}
53 \expandafter\let\csname Etoc@-2@@\endcsname \Etoc@@minustwo@@
54 \expandafter\let\csname Etoc@-1@@\endcsname \Etoc@@minusone@@
55 \expandafter\let\csname Etoc@0@@\endcsname \Etoc@@zero@@
56 \expandafter\let\csname Etoc@1@@\endcsname \Etoc@@one@@
57 \expandafter\let\csname Etoc@2@@\endcsname \Etoc@@two@@
58 \expandafter\let\csname Etoc@3@@\endcsname \Etoc@@three@@
59 \expandafter\let\csname Etoc@4@@\endcsname \Etoc@@four@@
60 \expandafter\let\csname Etoc@5@@\endcsname \Etoc@@five@@
61 \expandafter\let\csname Etoc@6@@\endcsname \Etoc@@six@@
62 \let\Etoc@all@@ \Etoc@@five@@
63 \let\Etoc@none@@ \Etoc@minf
placeholder for comments

```


34. Implementation

```

64 \let\Etoc@levellist\@empty
65 \def\Etoc@newlevel#1{%
66     \def\Etoc@levellist@elt{\noexpand\Etoc@levellist@elt\noexpand}%
67     \edef\Etoc@levellist{\Etoc@levellist\Etoc@levellist@elt#1}}
68 \def\etocsetlevel#1#2{%
69     \expandafter\Etoc@newlevel\csname l@#1\endcsname
70     \ifcase#2\relax
71         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@zero@@
72         \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@zero@
73     \or
74         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@one@@
75         \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@one@
76     \or
77         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@two@@
78         \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@two@
79     \or
80         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@three@@
81         \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@three@
82     \or
83         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@four@@
84         \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@four@
85     \or
86         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@five@@
87         \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@five@
88     \or
89         \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@six@@
90     \else
91         \ifnum#2=\m@ne
92             \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@minusone@@
93             \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@minusone@
94         \else
95             \ifnum#2=-\tw@
96                 \expandafter\let \csname Etoc@#1@@\endcsname\Etoc@@minustwo@@
97                 \expandafter\let \csname Etoc@#1@\endcsname\Etoc@@minustwo@
98             \else
99                 \PackageWarning{etoc}
100                 {unexpected value ‘#2’ in \string\etocsetlevel.^J%
101                 Should be -2,-1, 0, 1, 2, 3, 4, 5, or 6. Set to 6 (=ignored)}%
102                 \expandafter\let\csname Etoc@#1@@\endcsname\Etoc@@six@@
103 \fi\fi\fi}
104 \etocsetlevel{book}{-2}
105 \etocsetlevel{part}{-1}
106 \etocsetlevel{chapter}{0}
107 \etocsetlevel{section}{1}
108 \etocsetlevel{subsection}{2}
109 \etocsetlevel{subsubsection}{3}
110 \etocsetlevel{paragraph}{4}
111 \etocsetlevel{subparagraph}{5}
placeholder for comments
112 \def\Etoc@setflags #1{%
113     \ifcase #1\relax
114         \global\Etoc@vfalse

```

34. Implementation

```

115     \global\Etoc@ivfalse
116     \global\Etoc@iiifalse
117     \global\Etoc@iifalse
118     \global\Etoc@ifalse
119     \global\Etoc@true
120 \or
121     \global\Etoc@vfalse
122     \global\Etoc@ivfalse
123     \global\Etoc@iiifalse
124     \global\Etoc@iifalse
125     \global\Etoc@itrue
126 \or
127     \global\Etoc@vfalse
128     \global\Etoc@ivfalse
129     \global\Etoc@iiifalse
130     \global\Etoc@iitrue
131 \or
132     \global\Etoc@vfalse
133     \global\Etoc@ivfalse
134     \global\Etoc@iiitrue
135 \or
136     \global\Etoc@vfalse
137     \global\Etoc@ivtrue
138 \or
139     \global\Etoc@vtrue
140 \else
141     \ifnum#1=\m@ne
142     \global\Etoc@vfalse
143     \global\Etoc@ivfalse
144     \global\Etoc@iiifalse
145     \global\Etoc@iifalse
146     \global\Etoc@ifalse
147     \global\Etoc@false
148     \global\Etoc@jtrue
149 \else
150     \global\Etoc@vfalse
151     \global\Etoc@ivfalse
152     \global\Etoc@iiifalse
153     \global\Etoc@iifalse
154     \global\Etoc@ifalse
155     \global\Etoc@false
156     \global\Etoc@jfalse
157     \global\Etoc@jjtrue
158 \fi
159 \fi}

placeholder for comments
160 \AtBeginDocument{%
161 \ifpackageloaded{parskip}{\Etoc@parskiptrue}{}%
162 \ifpackageloaded{hyperref}{\Etoc@hyperreftrue
163     \def\Etoc@et@hop#1#2#3#4#5{#1{#3}{#4}{#5}#2}%
164     \long\def\Etoc@gobblesixorfive#1#2#3#4#5#6{}}
165 {\def\Etoc@et@hop#1#2#3#4{#1{#3}{#4}#2}%

```

34. Implementation

```
166                                     \long\def\Etoc@gobblesixorfive#1#2#3#4#5{}}}%
167 }
placeholder for comments
168 \def\Etoc@swa#1{%
169     \Etoc@et@hop
170     {\Etoc@savedcontentsline{#1}}
171     {\Etoc@prefix\Etoc@contents}}
172 \def\Etoc@swb#1{%
173     \Etoc@et@hop
174     {\Etoc@savedcontentsline{#1}}
175     {\Etoc@contents}}
176 \let\etocskipfirstprefix\@thirdofthree
placeholder for comments
177 \def\Etoc@etoccontentsline#1{%
178     \global\expandafter\let\expandafter\Etoc@tmp\csname Etoc@#1@\endcsname
179     \Etoc@skipthisonefalse
180     \let\Etoc@next\Etoc@gobblesixorfive
181     \ifnum\Etoc@tmp=\Etoc@@six@@
182         \Etoc@skipthisonetrue
183     \else
184         \ifEtoc@localtoc
185             \let\Etoc@prenext\relax
186             \ifEtoc@stoptoc
187                 \Etoc@skipthisonetrue
188             \fi
189             \ifnum\Etoc@tmp<\Etoc@localtop
190                 \def\Etoc@prenext{\global\Etoc@stoptoctrue}%
191                 \Etoc@skipthisonetrue
192             \fi
193             \ifEtoc@notactive
194                 \def\Etoc@prenext{\Etoc@setflags{\Etoc@tmp}}%
195                 \Etoc@skipthisonetrue
196             \fi
197             \Etoc@prenext
198         \fi
199     \fi
200     \ifnum\c@tocdepth<\Etoc@tmp\relax\else
201         \ifEtoc@skipthisone\else
202             \global\let\Etoc@next\relax
203             \ifcase\Etoc@tmp
204                 \ifEtoc@v \Etoc@end@five\fi
205                 \ifEtoc@iv \Etoc@end@four\fi
206                 \ifEtoc@iii \Etoc@end@three\fi
207                 \ifEtoc@ii \Etoc@end@two\fi
208                 \ifEtoc@i \Etoc@end@one\fi
209                 \ifEtoc@ \else \def\Etoc@next{\Etoc@begin@zero}\fi
210             \def\Etoc@contents{\Etoc@contents@zero}%
211             \def\Etoc@prefix{\Etoc@prefix@zero}%
212         \or
213             \ifEtoc@v \Etoc@end@five\fi
214             \ifEtoc@iv \Etoc@end@four\fi
215             \ifEtoc@iii \Etoc@end@three\fi
```

34. Implementation

```
216     \ifEtoc@ii \Etoc@end@two\fi
217     \ifEtoc@i \else \def\Etoc@next{\Etoc@begin@one}\fi
218     \def\Etoc@contents{\Etoc@contents@one}%
219     \def\Etoc@prefix{\Etoc@prefix@one}%
220 \or
221     \ifEtoc@v \Etoc@end@five\fi
222     \ifEtoc@iv \Etoc@end@four\fi
223     \ifEtoc@iii \Etoc@end@three\fi
224     \ifEtoc@ii \else \def\Etoc@next{\Etoc@begin@two}\fi
225     \def\Etoc@contents{\Etoc@contents@two}%
226     \def\Etoc@prefix{\Etoc@prefix@two}%
227 \or
228     \ifEtoc@v \Etoc@end@five\fi
229     \ifEtoc@iv \Etoc@end@four\fi
230     \ifEtoc@iii \else \def\Etoc@next{\Etoc@begin@three}\fi
231     \def\Etoc@contents{\Etoc@contents@three}%
232     \def\Etoc@prefix{\Etoc@prefix@three}%
233 \or
234     \ifEtoc@v \Etoc@end@five\fi
235     \ifEtoc@iv \else \def\Etoc@next{\Etoc@begin@four}\fi
236     \def\Etoc@contents{\Etoc@contents@four}%
237     \def\Etoc@prefix{\Etoc@prefix@four}%
238 \or
239     \ifEtoc@v \else \def\Etoc@next{\Etoc@begin@five}\fi
240     \def\Etoc@contents{\Etoc@contents@five}%
241     \def\Etoc@prefix{\Etoc@prefix@five}%
242 \else
243     \ifnum\Etoc@tmp=\m@ne
244         \ifEtoc@v \Etoc@end@five\fi
245         \ifEtoc@iv \Etoc@end@four\fi
246         \ifEtoc@iii \Etoc@end@three\fi
247         \ifEtoc@ii \Etoc@end@two\fi
248         \ifEtoc@i \Etoc@end@one\fi
249         \ifEtoc@ \Etoc@end@zero\fi
250         \ifEtoc@j \else \def\Etoc@next{\Etoc@begin@minusone}\fi
251         \def\Etoc@contents{\Etoc@contents@minusone}%
252         \def\Etoc@prefix{\Etoc@prefix@minusone}%
253     \else
254         \ifEtoc@v \Etoc@end@five\fi
255         \ifEtoc@iv \Etoc@end@four\fi
256         \ifEtoc@iii \Etoc@end@three\fi
257         \ifEtoc@ii \Etoc@end@two\fi
258         \ifEtoc@i \Etoc@end@one\fi
259         \ifEtoc@ \Etoc@end@zero\fi
260         \ifEtoc@j \Etoc@end@minusone\fi
261         \ifEtoc@jj \else \def\Etoc@next{\Etoc@begin@minustwo}\fi
262         \def\Etoc@contents{\Etoc@contents@minustwo}%
263         \def\Etoc@prefix{\Etoc@prefix@minustwo}%
264     \fi
265 \fi
266     \ifnum\Etoc@tmp=\m@ne\Etoc@parttrue\else\Etoc@partfalse\fi
267     \Etoc@setflags{\Etoc@tmp}%
```

34. Implementation

```

268 \fi\fi
269 \Etoc@next
270 \@firstoftwo{\Etoc@swa{#1}}{\Etoc@swb{#1}}

```

[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`.

One could now define `\etocname`, etc ... to be the robust versions of `\etocthelinkedname`, etc ..., but the original definitions are kept by sentimentalism. 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.

```

271 \def\Etoc@lxyz #1#2{%
272     \@namedef {etoclink }{\leavevmode}%          fall-back
273     \let\etocthelink      \@empty %              fall-back
274     \@namedef {etocname }{\leavevmode #1}% fall-back (perhaps linked)
275     \def\etocthename      {#1}% (if link, will be removed later)
276     \def\etocthelinkedname {#1}% will probably get redefined
277     \@namedef {etocpage }{\leavevmode #2}%        (perhaps linked)
278     \Etoc@getthepage #2\etoc@ % defines also \etocthelinkedpage (and \etoclink)
279     \Etoc@getnb #1\relax\relax\etoc@ % gets number *and* name, and \etoclink
280     \ifEtoc@number\else
281         \ifEtoc@part
282             \Etoc@getit #1\hspace\relax\etoc@ % additional job for parts
283         \fi
284     \fi}

```

placeholder for comments

```

285 \def\Etoc@getthepage #1{%
286     \let\Etoc@next\Etoc@getthepage@nohyp
287     \ifEtoc@hyperref\ifx #1\hyper@linkstart
288         \let\Etoc@next\Etoc@getthepage@hyp
289     \fi\fi
290     \Etoc@next #1%
291 }
292 \def\Etoc@getthepage@nohyp #1\etoc@ {%
293     \def\etocthepage      {#1}%
294     \def\etocthelinkedpage {#1}%
295 }
296 \def\Etoc@getthepage@hyp #1#2#3#4#5\etoc@ {%
297     \@namedef {etoclink } ##1{\leavevmode #1{#2}{#3}{##1}{#5}%
298     \edef\etocthelink ##1{\noexpand\hyperlink {#3}{##1}}%
299     \def\etocthepage {#4}%

```

34. Implementation

```
300 \toks@ {#4}%
301 \edef\etocthelinkedpage {\noexpand\hyperlink {#3}{\the\toks@}}%
302 }
303 %
304 \def\Etoc@getnb #1{%
305 \let\Etoc@next\Etoc@getnb@nohyp
306 \ifEtoc@hyperref\ifx #1\hyper@linkstart
307 \let\Etoc@next\Etoc@getnb@hyp
308 \fi\fi
309 \Etoc@next #1%
310 }
311 %
312 \def\Etoc@getit #1{%
313 \let\Etoc@next\Etoc@getit@nohyp
314 \ifEtoc@hyperref\ifx #1\hyper@linkstart
315 \let\Etoc@next\Etoc@getit@hyp
316 \fi\fi
317 \Etoc@next #1%
318 }
placeholder for comments
319 \def\Etoc@getnb@nohyp #1#2#3\etoc@ {%
320 \def\Etoc@getname ##1\relax\relax\etoc@ {%
321 \@namedef {etocname }{\leavevmode ##1}%
322 \def\etocthename {##1}%
323 \def\etocthelinkedname {##1}%
324 }%
325 \ifx #1\numberline
326 \@namedef {etocnumber }{\leavevmode #2}%
327 \def\etocthenumber {#2}%
328 \def\etocthelinkednumber {#2}%
329 \Etoc@numbertrue
330 \Etoc@getname #3\etoc@
331 \else % then \etocthename and \etocthelinkedname already defined
332 \@namedef {etocnumber }{\leavevmode}%
333 \let\etocthenumber \@empty
334 \let\etocthelinkednumber \@empty
335 \Etoc@numberfalse
336 \fi
337 }
placeholder for comments
338 \def\Etoc@getnb@hyp #1#2#3#4#5#6\etoc@ {%
339 \def\Etoc@getname ##1\relax\relax\etoc@ {%
340 \@namedef {etocname }{\leavevmode #1{#2}{#3}{##1}#5}%
341 \def\etocthename {##1}%
342 \toks@ {##1}%
343 \edef\etocthelinkedname {\noexpand\hyperlink {#3}{\the\toks@}}%
344 }%
345 \def\Etoc@getnbr ##1##2##3\etoc@ {%
346 \ifx ##1\numberline
347 \@namedef {etocnumber }{\leavevmode #1{#2}{#3}{##2}#5}%
348 \def\etocthenumber {##2}%
349 \toks@ {##2}%
```

34. Implementation

```

350         \edef\etocthelinkednumber {\noexpand\hyperlink {#3}{\the\toks@}}%
351         \Etoc@numbertrue
352         \Etoc@getname ##3\etoc@
353     \else
354         \@namedef {etocnumber }{\leavevmode}%
355         \let\etocthenumber      \@empty
356         \let\etocthelinkednumber \@empty
357         \Etoc@numberfalse
358         \def\etocthename {#4}%
359         \toks@           {#4}%
360         \edef\etocthelinkedname {\noexpand\hyperlink {#3}{\the\toks@}}%
361     \fi
362 }%
363 \@namedef {etoclink }##1{\leavevmode #1{#2}{#3}{##1}#5}%
364 \edef\etocthelink ##1{\noexpand\hyperlink {#3}{##1}}%
365 \Etoc@getnbr #4\relax\relax\etoc@
366 }

placeholder for comments
367 \def\Etoc@getit@nohyp #1\hspace#2#3\etoc@ {%
368     \def\Etoc@getname ##1\hspace\relax\etoc@ {%
369         \@namedef {etocname }{\leavevmode ##1}%
370         \def\etocthename     {##1}%
371         \def\etocthelinkedname {##1}%
372     }%
373     \ifx\relax#2\else
374         \@namedef {etocnumber }{\leavevmode #1}%
375         \def\etocthenumber     {#1}%
376         \def\etocthelinkednumber {#1}%
377         \Etoc@numbertrue
378         \Etoc@getname #3\etoc@
379     \fi
380 }

placeholder for comments
381 \def\Etoc@getit@hyp #1#2#3#4#5#6\etoc@ {%
382     \def\Etoc@getname ##1\hspace\relax\etoc@ {%
383         \@namedef {etocname }{\leavevmode #1{#2}{#3}{##1}#5}%
384         \def\etocthename {##1}%
385         \toks@           {##1}%
386         \edef\etocthelinkedname {\noexpand\hyperlink {#3}{\the\toks@}}%
387     }%
388     \def\Etoc@getnbr ##1\hspace##2##3\etoc@ {%
389         \ifx\relax##2\else
390             \@namedef {etocnumber }{\leavevmode #1{#2}{#3}{##1}#5}%
391             \def\etocthenumber {##1}%
392             \toks@           {##1}%
393             \edef\etocthelinkednumber {\noexpand\hyperlink {#3}{\the\toks@}}%
394             \Etoc@numbertrue
395             \Etoc@getname ##3\etoc@
396         \fi
397     }%
398     \Etoc@getnbr #4\hspace\relax\etoc@
399 }

```

34. Implementation

```

placeholder for comments
400 \let\etocthename \@empty
401 \let\etocthenumber \@empty
402 \let\etocthepage \@empty
403 \let\etocthelinkedname \@empty
404 \let\etocthelinkednumber \@empty
405 \let\etocthelinkedpage \@empty
406 \let\etocthelink \@empty
407 \DeclareRobustCommand*\etocname {}
408 \DeclareRobustCommand*\etocnumber {}
409 \DeclareRobustCommand*\etocpage {}
410 \DeclareRobustCommand*\etoclink {}
411 \DeclareRobustCommand*\etocifnumbered {}
412 {\ifEtoc@number\expandafter\@firstoftwo\else\expandafter\@secondoftwo\fi}
placeholder for comments
413 \def\Etoc@readtoc#1{%
414 \ifEOF #1
415 \let\Etoc@nextread\@gobble
416 \global\Etoc@toctoks=\expandafter{\the\Etoc@toctoks}%
417 \else
418 \let\Etoc@nextread\Etoc@readtoc
419 \read #1 to \Etoc@buffer
420 \Etoc@toctoks=\expandafter\expandafter\expandafter
421 {\expandafter\the\expandafter\Etoc@toctoks\Etoc@buffer}%
422 \fi
423 \Etoc@nextread{#1}%
424 }
425 \IfFileExists{\jobname .toc}
426 {{\endlinechar=-1
427 \makeatletter
428 \newread\Etoc@tf
429 \openin\Etoc@tf\@filef@und
430 \Etoc@readtoc\Etoc@tf
431 \closein\Etoc@tf}}
432 {\typeout{No file \jobname .toc.}}
1.07d: parskip and \@nobreakfalse stuff moved to \Etoc@tableofcontents
433 \def\Etoc@openouttoc{%
434 \ifEtoc@hyperref
435 \ifx\hyper@last\@undefined
436 \IfFileExists{\jobname .toc}
437 {\Hy@WarningNoLine
438 {old toc file detected, not used; run LaTeX again (cheers from etoc)}}%
439 \global\Etoc@toctoks={}
440 }
441 {}%
442 \fi
443 \fi
444 \if@filesw
445 \newwrite \tf@toc
446 \immediate \openout \tf@toc \jobname .toc\relax
447 \fi
448 \gdef\Etoc@openouttoc{}%
```


34. Implementation

```

449 }
placeholder for comments
450 \def\Etoc@toctoc{%
451   \global\Etoc@vfalse
452   \global\Etoc@ivfalse
453   \global\Etoc@iiifalse
454   \global\Etoc@iifalse
455   \global\Etoc@ifalse
456   \global\Etoc@false
457   \global\Etoc@jfalse
458   \global\Etoc@jjfalse
459 \ifEtoc@standard
460   \etoc@setstyle{@minustwo}{}{}{}{}%
461   \etoc@setstyle{@minusone}{}{}{}{}%
462   \etoc@setstyle{@zero}{}{}{}{}%
463   \etoc@setstyle{@one}{}{}{}{}%
464   \etoc@setstyle{@two}{}{}{}{}%
465   \etoc@setstyle{@three}{}{}{}{}%
466   \etoc@setstyle{@four}{}{}{}{}%
467   \etoc@setstyle{@five}{}{}{}{}%
468 \else
469   \def\Etoc@levellist@elt##1{\let##1\Etoc@lxyz}%
470   \Etoc@levellist
471   \let\booknumberline\numberline
472   \let\partnumberline\numberline
473   \let\chapternumberline\numberline
474 \fi
475 \the\Etoc@toctoks
476 \ifEtoc@notactive\else
477   \ifEtoc@v   \Etoc@end@five\fi
478   \ifEtoc@iv  \Etoc@end@four\fi
479   \ifEtoc@iii \Etoc@end@three\fi
480   \ifEtoc@ii  \Etoc@end@two\fi
481   \ifEtoc@i   \Etoc@end@one\fi
482   \ifEtoc@    \Etoc@end@zero\fi
483   \ifEtoc@j   \Etoc@end@minusone\fi
484   \ifEtoc@jj  \Etoc@end@minustwo\fi
485 \fi}
placeholder for comments
486 \def\etoc@@startlocaltoc#1#2{%
487 \let\Etoc@next\relax
488   \ifEtoc@localtoc
489     \ifEtoc@notactive
490       \ifnum #1=#2\relax
491         \ifEtoc@jj \let\Etoc@localtop\Etoc@@minusone@@ \fi
492         \ifEtoc@j  \let\Etoc@localtop\Etoc@@zero@@ \fi
493         \ifEtoc@   \let\Etoc@localtop\Etoc@@one@@ \fi
494         \ifEtoc@i  \let\Etoc@localtop\Etoc@@two@@ \fi
495         \ifEtoc@ii \let\Etoc@localtop\Etoc@@three@@ \fi
496         \ifEtoc@iii \let\Etoc@localtop\Etoc@@four@@ \fi
497         \ifEtoc@iv \let\Etoc@localtop\Etoc@@five@@ \fi
498         \ifEtoc@v  \let\Etoc@localtop\Etoc@@six@@ \fi

```

34. Implementation

```

499      \def\Etoc@next{\global\Etoc@notactivefalse
500                      \global\Etoc@vfalse
501                      \global\Etoc@ivfalse
502                      \global\Etoc@iiiifalse
503                      \global\Etoc@iifalse
504                      \global\Etoc@ifalse
505                      \global\Etoc@false
506                      \global\Etoc@jfalse
507                      \global\Etoc@jjfalse}%
508      \fi
509      \fi\fi
510 \Etoc@next}
511 \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 at any output of text at all even in an intermediate run.

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

```

512 \def\Etoc@localtableofcontents#1{%
513     \edef\Etoc@tmp{#1}%
514     \ifnum\Etoc@tmp<\@ne
515     \PackageWarning{etoc}
516         {Unknown toc id: run LaTeX to get references right}%
517     \let\Etoc@next\@gobble\else\let\Etoc@next\@firstofone\fi
518     \Etoc@next
519     {\edef\etoc@startlocaltoc##1{%
520         \noexpand\etoc@@startlocaltoc{##1}{#1}}
521     \Etoc@localtoctrue
522     \let\Etoc@localtop\Etoc@aminustwo@@
523     \global\Etoc@stoptocfalse
524     \global\Etoc@notactivetrue
525     \Etoc@tableofcontents}%
526     \endgroup\ifEtoc@mustclosegroup\endgroup\fi
527     \Etoc@aftertohook % 1.07h
528     \etocaftertohook % 1.07g
529 }

```

[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.

```

530 \def\Etoc@getrefno #1#2\etoc@ {#1}
531 \def\Etoc@getref #1{\ifundefined{r@#1}{0}{\expandafter\expandafter\expandafter
532     \Etoc@getrefno\csname r@#1\endcsname\relax\etoc@}}
533 \def\Etoc@ref#1{\Etoc@localtableofcontents{\Etoc@getref{#1}}}
534 \def\Etoc@label#1{\label{#1}\futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}
535 \@firstofone{\def\Etoc@again} {\futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}

placeholder for comments
536 \def\Etoc@t@bleofcontents{%
537     \ifx\Etoc@nexttoken\label
538     \def\Etoc@next{\expandafter\Etoc@label\@gobble}\else

```

34. Implementation

```

539 \ifx\Etoc@nexttoken\@sptoken
540   \let\Etoc@next\Etoc@again\else
541 \ifEtoc@tocwithid
542   \def\Etoc@next{\Etoc@localtableofcontents{\c@etoc@tocid}}%
543 \else
544   \ifx\Etoc@nexttoken\ref
545     \def\Etoc@next{\expandafter\Etoc@ref\@gobble}%
546   \else
547     \def\Etoc@next{\Etoc@localtocfalse
548                   \global\Etoc@notactivefalse
549                   \Etoc@tableofcontents
550                   \endgroup
551                   \ifEtoc@mustclosegroup\endgroup\fi
552                   \Etoc@aftertochook % 1.07h
553                   \etocaftertochook % 1.07g
554                   }%
555   \fi
556 \fi\fi\fi\Etoc@next}

1.07g for consistency Etoc@ prefix added.
557 \def\Etoc@table@fcontents{%
558   \refstepcounter{etoc@tocid}%
559   \Etoc@tocwithidfalse
560   \futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}
561 \def\Etoc@localtable@fcontents{%
562   \refstepcounter{etoc@tocid}%
563   \addtocontents{toc}
564     {\string\etoc@startlocaltoc{\arabic{etoc@tocid}}}%
565   \Etoc@tocwithidtrue
566   \futurelet\Etoc@nexttoken\Etoc@t@bleofcontents}

1.07g defines \etoc@tableofcontents to be able to undo the evil and brutal doings of some pack-
ages with \tableofcontents.
567 \let\etocaftertitlehook \@empty
568 \let\etocaftercontentshook \@empty
569 \def\etoc@tableofcontents{%
570   \Etoc@openouttoc
571   \Etoc@par
572   \begingroup % closed in \Etoc@t@bleofcontents or \Etoc@localtableofcontents
573     \def\etoc@startlocaltoc##1{\etoc@@startlocaltoc{##1}{\c@etoc@tocid}}%
574     \@ifstar
575     {\def\Etoc@aftertitlehook{}\Etoc@table@fcontents}
576     {\let\Etoc@aftertitlehook\etocaftertitlehook\Etoc@table@fcontents}}
577 \let\tableofcontents\etoc@tableofcontents
578 \newcommand*\localtableofcontents{%
579   \Etoc@openouttoc
580   \Etoc@par
581   \begingroup % closed in \Etoc@t@bleofcontents or \Etoc@localtableofcontents
582     \@ifstar
583     {\def\Etoc@aftertitlehook{}\Etoc@localtable@fcontents}
584     {\let\Etoc@aftertitlehook\etocaftertitlehook\Etoc@localtable@fcontents}}

placeholder for comments
585 \newcommand\etocsettocstyle[2]{%
586 \def\Etoc@tableofcontents

```

34. Implementation

```

587 {\ifnum\c@tocdepth>\Etoc@minf
588   \let\Etoc@@next\@firstofone\else
589   \let\Etoc@@next\@gobble
590 \fi
591 \Etoc@@next{\Etoc@storetocdepth % 1.07g
592   #1\ifEtoc@parskip\parskip\z@skip\fi %1.07d
593   \Etoc@aftertitlehook
594   \let\Etoc@savedcontentsline\contentsline
595   \let\contentsline\Etoc@etoccontentsline
596   \Etoc@toctoc
597   \let\Etoc@@next\relax
598   \ifEtoc@tocwithid\else
599   \ifEtoc@localtoc
600   \ifEtoc@notactive
601     \def\Etoc@@next{\Etoc@localtocfalse
602       \global\Etoc@notactivefalse
603       \Etoc@toctoc}%
604     \fi\fi
605   \fi
606   \Etoc@@next
607   \Etoc@resettocdepth % 1.07g
608   \etocaftercontentshook
609   #2\nobreakfalse}} % 1.07d: \@nobreakfalse moved here
placeholder for comments
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 {#2}%
614 \long\expandafter\def
615   \csname Etoc@prefix@\csname Etoc@#1@\endcsname\endcsname {#3}%
616 \long\expandafter\def
617   \csname Etoc@contents@\csname Etoc@#1@\endcsname\endcsname {#4}%
618 \long\expandafter\def
619   \csname Etoc@end@\csname Etoc@#1@\endcsname\endcsname {#5}}
placeholder for comments
620 \def\etocfontminustwo {\normalfont \LARGE \bfseries}
621 \def\etocfontminusone {\normalfont \large \bfseries}
622 \def\etocfontzero {\normalfont \large \bfseries}
623 \def\etocfontone {\normalfont \normalsize \bfseries}
624 \def\etocfonttwo {\normalfont \normalsize}
625 \def\etocfontthree {\normalfont \footnotesize}
placeholder for comments
626 \def\etocsepminustwo {4ex \@plus .5ex \@minus .5ex}
627 \def\etocsepminusone {4ex \@plus .5ex \@minus .5ex}
628 \def\etocsepzero {2.5ex \@plus .4ex \@minus .4ex}
629 \def\etocseppone {1.5ex \@plus .3ex \@minus .3ex}
630 \def\etocseptwo {.5ex \@plus .1ex \@minus .1ex}
631 \def\etocseptthree {.25ex \@plus .05ex \@minus .05ex}
placeholder for comments
632 \def\etocbaselinespreadminustwo {1}
633 \def\etocbaselinespreadminusone {1}
634 \def\etocbaselinespreadzero {1}

```

34. Implementation

```

635 \def\etocbaselinespreadone {1}
636 \def\etocbaselinespreadtwo {1}
637 \def\etocbaselinespreadthree {.9}

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

placeholder for comments The macro \etocdefaultlines was initially called \etocclines.
Now \etocclines 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.
647 \def\etocdefaultlines{\Etoc@standardfalse %
648 %% 'book' in memoir class:
649 \etoc@setstyle{@minustwo}
650 {\addpenalty\@M\etocskipfirstprefix}
651 {\addpenalty\@secpenalty}
652 {\begingroup
653 \etocfontminustwo
654 \addvspace{\etocsepminustwo}%
655 \parindent \z@
656 \leftskip \etocminustwoleftmargin
657 \rightskip \etocminustworightmargin
658 \parfillskip \@flushglue
659 \vbox{\etocifnumbered{\etocbookname\enspace\etocnumber:\quad}}{\etocname
660 \baselineskip\etocbaselinespreadminustwo\baselineskip
661 \par}%
662 \addpenalty\@M\addvspace{\etocsepminusone}%
663 \endgroup}
664 {}%
665 %% 'part':
666 \etoc@setstyle{@minusone}
667 {\addpenalty\@M\etocskipfirstprefix}
668 {\addpenalty\@secpenalty}
669 {\begingroup
670 \etocfontminusone
671 \addvspace{\etocsepminusone}%
672 \parindent \z@
673 \leftskip \etocminusoneleftmargin
674 \rightskip \etocminusonerightmargin
675 \parfillskip \@flushglue
676 \vbox{\etocifnumbered{\etocpartname\enspace\etocnumber.\quad}}{\etocname
677 \baselineskip\etocbaselinespreadminusone\baselineskip
678 \par}%
679 \addpenalty\@M\addvspace{\etocsepzero}%
680 \endgroup}

```

34. Implementation

```

681 {}%
682 %% 'chapter':
683 \etoc@setstyle{@zero}
684 {\addpenalty\@M\etocskipfirstprefix}
685 {\addpenalty\@itempenalty}
686 {\begingroup
687   \etocfontzero
688   \addvspace{\etocsepzero}%
689   \parindent \z@ \parfillskip \@flushglue
690   \vbox{\etocifnumbered{\etocnumber.\enspace}{\etocname
691     \baselineskip\etocbaselinespreadzero\baselineskip
692     \par}%
693   \endgroup}
694 {\addpenalty{-\@highpenalty}\addvspace{\etocsepminusone}}%
695 %% 'section':
696 \etoc@setstyle{@one}
697 {\addpenalty\@M\etocskipfirstprefix}
698 {\addpenalty\@itempenalty}
699 {\begingroup
700   \etocfontone
701   \addvspace{\etocsepone}%
702   \parindent \z@ \parfillskip \z@
703   \setbox\z@\vbox{\parfillskip\@flushglue
704     \etocname\par
705     \setbox\tw@\lastbox
706     \global\setbox\@ne\hbox{\unhbox\tw@\ }}%
707   \dimen\z@=\wd\@ne
708   \setbox\z@=\etoclineleaders
709   \advance\dimen\z@\wd\z@
710   \etocifnumbered
711     {\setbox\tw@\hbox{\etocnumber, \etocabbrevpagename\etocpage}}
712     {\setbox\tw@\hbox{\etocabbrevpagename\etocpage}}%
713   \advance\dimen\z@\wd\tw@
714   \ifdim\dimen\z@ < \linewidth
715     \vbox{\etocname~%
716       \leaders\box\z@\hfil\box\tw@
717       \baselineskip\etocbaselinespreadone\baselineskip
718       \par}
719   \else
720     \vbox{\etocname~%
721       \leaders\copy\z@\hfil\break
722       \hbox{\leaders\box\z@\hfil\box\tw@
723       \baselineskip\etocbaselinespreadone\baselineskip
724       \par}
725   \fi
726   \endgroup}
727 {\addpenalty\@secpenalty\addvspace{\etocsepzero}}%
728 %% 'subsection':
729 \etoc@setstyle{@two}
730 {\addpenalty\@medpenalty\etocskipfirstprefix}
731 {\addpenalty\@itempenalty}
732 {\begingroup

```

34. Implementation

```

733 \etocfonttwo
734 \addvspace{\etocsepthtwo}%
735 \parindent \z@ \parfillskip \z@
736 \setbox\z@\vbox{\parfillskip\@flushglue
737 \etocname\par\setbox\tw@\lastbox
738 \global\setbox\@ne\hbox{\unhbox\tw@}}%
739 \dimen\z@=\wd\@ne
740 \setbox\z@=\etocclineleaders
741 \advance\dimen\z@\wd\z@
742 \etocifnumbered
743 {\setbox\tw@\hbox{\etocnumber, \etocabbrevpagename\etocpage}}
744 {\setbox\tw@\hbox{\etocabbrevpagename\etocpage}}%
745 \advance\dimen\z@\wd\tw@
746 \ifdim\dimen\z@ < \linewidth
747 \vbox{\etocname~%
748 \leaders\box\z@\hfil\box\tw@
749 \baselineskip\etocbaselinespreadtwo\baselineskip
750 \par}
751 \else
752 \vbox{\etocname~%
753 \leaders\copy\z@\hfil\break
754 \hbox{} \leaders\box\z@\hfil\box\tw@
755 \baselineskip\etocbaselinespreadtwo\baselineskip
756 \par}
757 \fi
758 \endgroup}
759 {\addpenalty\@secpenalty\addvspace{\etocseppone}}%
760 %% 'subsubsection':
761 \etoc@setstyle{@three}
762 {\addpenalty\@M
763 \etocfontthree
764 \vspace{\etocsepththree}%
765 \noindent
766 \etocskipfirstprefix}
767 {\allowbreak\,--\,}
768 {\etocname}
769 {\hfil
770 \begingroup
771 \baselineskip\etocbaselinespreadthree\baselineskip
772 \par
773 \endgroup
774 \addpenalty{-\@highpenalty}}%

```

placeholder for comments

```

775 \etoc@setstyle{@four}{}{}{}{}%
776 \etoc@setstyle{@five}{}{}{}{}%
777 } % 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.

```

778 \def\etocabovetocskip{3.5ex \@plus 1ex \@minus .2ex}
779 \def\etocbelowtocskip{3.5ex \@plus 1ex \@minus .2ex}
780 \def\etoccolumnsep{2em}

```

34. Implementation

```

781 \def\etocmulticolsep{0ex}
782 \def\etocmulticolpretolerance{-1}
783 \def\etocmulticoltolerance{200}
784 \def\etocdefaultnbcol{2}
785 \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.
786 \newcommand\etocmulticolstyle[2][\etocdefaultnbcol]{%
787 \etocsettocstyle
788   {\let\etocoldpar\par
789    \addvspace{\etocabovetocskip}%
790    \ifnum #1>\@ne\let\Etoc@next\@firstoftwo
791     \else \let\Etoc@next\@secondoftwo\fi
792    \Etoc@next{%
793     \multicolpretolerance\etocmulticolpretolerance
794     \multicoltolerance\etocmulticoltolerance
795     \setlength{\columnsep}{\etoccolumnsep}%
796     \setlength{\multicolsep}{\etocmulticolsep}%
797     \begin{multicols}{#1}[#2\etocoldpar\addvspace{\etocinnertopsep}]}
798     {#2\ifvmode\else\begin{group}\interlinepenalty\@M\parskip\z@skip
799      \@@par\endgroup
800      \fi
801      \nobreak\addvspace{\etocinnertopsep}%
802      \pretolerance\etocmulticolpretolerance
803      \tolerance\etocmulticoltolerance}}
804   {\ifnum #1>\@ne\let\Etoc@next\@firstofone
805    \else \let\Etoc@next\@gobble\fi
806    \Etoc@next{\end{multicols}}}%
807   \addvspace{\etocbelowtocskip}}

placeholder for comments
808 \def\etocinnerbottomsep{3.5ex}
809 \def\etocinnerleftsep{2em}
810 \def\etocinnerrightsep{2em}
811 \def\etoctoprule{\hrule}
812 \def\etoclefttrule{\vrule}
813 \def\etocrighttrule{\vrule}
814 \def\etocbottomrule{\hrule}
815 \def\etoctoprulecolorcmd{\relax}
816 \def\etocbottomrulecolorcmd{\relax}
817 \def\etoclefttrulecolorcmd{\relax}
818 \def\etocrighttrulecolorcmd{\relax}

1.07i moves the \nobreak to before the \vskip\etocinnertopsep (especially important for the
single column case).
819 \def\etoc@ruledheading #1{%
820   \hb@xt@\linewidth{\color@begingroup
821     \hss #1\hss\hskip-\linewidth
822     \etoctoprulecolorcmd\leaders\etoctoprule\hss
823     \phantom{#1}}%
824     \leaders\etoctoprule\hss\color@endgroup}%
825   \nointerlineskip\nobreak\vskip\etocinnertopsep}
826 \newcommand*\etocruledstyle[2][\etocdefaultnbcol]{%
827 \etocsettocstyle

```


34. Implementation

```

828 {\addvspace{\etocabovetocskip}}%
829 \ifnum #1>\@ne\let\Etoc@next\@firstoftwo
830 \else \let\Etoc@next\@secondoftwo\fi
831 \Etoc@next
832 {\multicolpretolerance\etocmulticolpretolerance
833 \multicoltolerance\etocmulticoltolerance
834 \setlength{\columnsep}{\etoccolumnsep}%
835 \setlength{\multicolsep}{\etocmulticolsep}%
836 \begin{multicols}{#1}[\etoc@ruledheading{#2}]}
837 {\etoc@ruledheading{#2}}%
838 \pretolerance\etocmulticolpretolerance
839 \tolerance\etocmulticoltolerance}}
840 {\ifnum #1>\@ne\let\Etoc@next\@firstofone
841 \else \let\Etoc@next\@gobble\fi
842 \Etoc@next\end{multicols}}%
843 \addvspace{\etocbelowtocskip}}}}
placeholder for comments
844 \long\def\etocframedmphook{\relax}
845 \def\etocbkgcolorcmd{\relax}
846 \def\Etoc@relax{\relax}
847 \newbox\etoc@framed@titlebox
848 \newbox\etoc@framed@contentsbox
849 \newcommand*\etocframedstyle[2][\etocdefaultnbcoll]{%
850 \etocsettocstyle{%
851 \addvspace{\etocabovetocskip}}%
852 \sbox\z@{#2}}%
853 \dimen\z@=\dp\z@
854 \ifdim\wd\z@<\linewidth \dp\z@=\z@ \else \dimen\z@=\z@ \fi
855 \setbox\etoc@framed@titlebox=\hb@xt@\linewidth{\color@begingroup
856 \hss
857 \ifx\etocbkgcolorcmd\Etoc@relax\else
858 \sbox\tw@{\color{white}}%
859 \vrule\@width\wd\z@\@height\ht\z@\@depth\dimen\z@}%
860 \ifdim\wd\z@<\linewidth \dp\tw@=\z@\fi
861 \box\tw@
862 \hskip-\wd\z@
863 \fi
864 \copy\z@
865 \hss
866 \hskip-\linewidth
867 \etocoprulcolorcmd\leaders\etocoprul\hss%
868 \hskip\wd\z@
869 \etocoprulcolorcmd\leaders\etocoprul\hss\color@endgroup}}%
870 \setbox\z@\hbox{\etocleftrule\etocrihtrule}%
871 \dimen\tw@=\linewidth\advance\dimen\tw@-\wd\z@
872 \advance\dimen\tw@-\etocinnerleftsep
873 \advance\dimen\tw@-\etocinnerrightsep
874 \setbox\etoc@framed@contentsbox=\vbox\bgroup
875 \hsize\dimen\tw@
876 \kern\dimen\z@
877 \vskip\etocinnertopsep
878 \hbox\bgroup

```

34. Implementation

```

879     \begin{minipage}{\hsize}%
880     \etocframedmphook
881     \ifnum #1>\@ne\let\Etoc@next\@firstoftwo
882     \else \let\Etoc@next\@secondoftwo\fi
883     \Etoc@next
884     {\multicolpretolerance\etocmulticolpretolerance
885     \multicoltolerance\etocmulticoltolerance
886     \setlength{\columnsep}{\etoccolumnsep}%
887     \setlength{\multicolsep}{\etocmulticolsep}%
888     \begin{multicols}{#1}}
889     {\pretolerance\etocmulticolpretolerance
890     \tolerance\etocmulticoltolerance}}
891     {\ifnum #1>\@ne\let\Etoc@next\@firstofone
892     \else \let\Etoc@next\@gobble\fi
893     \Etoc@next\end{multicols}\unskip}%
894     \end{minipage}%
895     \egroup
896     \vskip\etocinnerbottomsep
897     \egroup
898     \vbox{\hsize\linewidth
899         \ifx\etocbkgcolorcmd\Etoc@relax\else
900             \kern\ht\etoc@framed@titlebox
901             \kern\dp\etoc@framed@titlebox
902             \hb@xt@\linewidth{\color@begingroup
903             \etocleftrulecolorcmd\etocleftrule
904             \etocbkgcolorcmd
905             \leaders\vrule
906             \@height\ht\etoc@framed@contentsbox
907             \@depth\dp\etoc@framed@contentsbox
908             \hss
909             \etocrightrulecolorcmd\etocrightrule
910             \color@endgroup}\nointerlineskip
911             \vskip-\dp\etoc@framed@contentsbox
912             \vskip-\ht\etoc@framed@contentsbox
913             \vskip-\dp\etoc@framed@titlebox
914             \vskip-\ht\etoc@framed@titlebox
915             \fi
916             \box\etoc@framed@titlebox\nointerlineskip
917             \hb@xt@\linewidth{\color@begingroup
918             {\etocleftrulecolorcmd\etocleftrule}%
919             \hss\box\etoc@framed@contentsbox\hss
920             \etocrightrulecolorcmd\etocrightrule\color@endgroup}
921             \nointerlineskip
922             \vskip\ht\etoc@framed@contentsbox
923             \vskip\dp\etoc@framed@contentsbox
924             \hb@xt@\linewidth{\color@begingroup\etocbottomrulecolorcmd
925             \leaders\etocbottomrule\hss\color@endgroup}}
926             \addvspace{\etocbelowtocskip}}
placeholder for comments
927 \newcommand\etoc@multicoltoc[2][\etocdefaultnbcoll]{%
928     \etocmulticolstyle[#1]{#2}%
929     \tableofcontents}

```

34. Implementation

```
930 \newcommand\etoc@multicoltoctoci[2][\etocdefaultnbcol]{%
931   \etocmulticolstyle[#1]{#2}%
932   \tableofcontents*}
933 \newcommand\etoc@local@multicoltoctoci[2][\etocdefaultnbcol]{%
934   \etocmulticolstyle[#1]{#2}%
935   \localtableofcontents}
936 \newcommand\etoc@local@multicoltoctoci[2][\etocdefaultnbcol]{%
937   \etocmulticolstyle[#1]{#2}%
938   \localtableofcontents*}
939 \newcommand*{\etoc@ruledtoctoci[2][\etocdefaultnbcol]}{%
940   \etocruledstyle[#1]{#2}%
941   \tableofcontents}
942 \newcommand*{\etoc@ruledtoctoci[2][\etocdefaultnbcol]}{%
943   \etocruledstyle[#1]{#2}%
944   \tableofcontents*}
945 \newcommand*{\etoc@local@ruledtoctoci[2][\etocdefaultnbcol]}{%
946   \etocruledstyle[#1]{#2}%
947   \localtableofcontents}
948 \newcommand*{\etoc@local@ruledtoctoci[2][\etocdefaultnbcol]}{%
949   \etocruledstyle[#1]{#2}%
950   \localtableofcontents*}
951 \newcommand*{\etoc@framedtoctoci[2][\etocdefaultnbcol]}{%
952   \etocframedstyle[#1]{#2}%
953   \tableofcontents}
954 \newcommand*{\etoc@framedtoctoci[2][\etocdefaultnbcol]}{%
955   \etocframedstyle[#1]{#2}%
956   \tableofcontents*}
957 \newcommand*{\etoc@local@framedtoctoci[2][\etocdefaultnbcol]}{%
958   \etocframedstyle[#1]{#2}%
959   \localtableofcontents}
960 \newcommand*{\etoc@local@framedtoctoci[2][\etocdefaultnbcol]}{%
961   \etocframedstyle[#1]{#2}%
962   \localtableofcontents*}
963 \def\etocmulticol{\begingroup
964   \Etoc@mustclosegrouptrue
965   \@ifstar
966   {\etoc@multicoltoctoci}
967   {\etoc@multicoltoctoc}}
968 \def\etocruled{\begingroup
969   \Etoc@mustclosegrouptrue
970   \@ifstar
971   {\etoc@ruledtoctoci}
972   {\etoc@ruledtoctoc}}
973 \def\etocframed{\begingroup
974   \Etoc@mustclosegrouptrue
975   \@ifstar
976   {\etoc@framedtoctoci}
977   {\etoc@framedtoctoc}}
978 \def\etoclocalmulticol{\begingroup
```

34. Implementation

```

979 \Etoc@mustclosegrouptrue
980 \@ifstar
981 {\etoc@local@multicoltoctoci}
982 {\etoc@local@multicoltoctoc}}
983 \def\etoclocalruled{\begingroup
984 \Etoc@mustclosegrouptrue
985 \@ifstar
986 {\etoc@local@ruledtoctoci}
987 {\etoc@local@ruledtoctoc}}
988 \def\etoclocalframed{\begingroup
989 \Etoc@mustclosegrouptrue
990 \@ifstar
991 {\etoc@local@framedtoctoci}
992 {\etoc@local@framedtoctoc}}

placeholder for comments
993 \def\etocarticlestyle{%
994 \etocsettocstyle
995 {\section *{\contentsname
996 \mkboth {\MakeUppercase \contentsname}
997 {\MakeUppercase \contentsname}}}
998 {}}
999 \def\etocarticlestylenomarks{%
1000 \etocsettocstyle
1001 {\section *{\contentsname}}
1002 {}}

placeholder for comments
1003 \def\etocbookstyle{%
1004 \etocsettocstyle
1005 {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
1006 \chapter *{\contentsname
1007 \mkboth {\MakeUppercase \contentsname}
1008 {\MakeUppercase \contentsname}}}
1009 {\if@restonecol \twocolumn \fi}}
1010 \def\etocbookstylenomarks{%
1011 \etocsettocstyle
1012 {\if@twocolumn \@restonecoltrue \onecolumn \else \@restonecolfalse \fi
1013 \chapter *{\contentsname}}
1014 {\if@restonecol \twocolumn \fi}}
1015 \let\etocreportstyle\etocbookstyle
1016 \let\etocreportstylenomarks\etocbookstylenomarks
1017 \def\etocmemoirtocformat #1#2{%
1018 \def\Etoc@addsuitablecontentsline{\addcontentsline {toc}{#1}{#2}}%
1019 \renewcommand*\etocaftertitlehook{%
1020 \ifmem@em@starred@listof
1021 \else\phantomsection\aftergroup\Etoc@addsuitablecontentsline\fi}}
1022 \def\etocmemoirstyle{%
1023 \etocsettocstyle
1024 {\ensureonecol \par \begingroup \@nameuse {@tocmaketitle}
1025 \Etoc@aftertitlehook\let\Etoc@aftertitlehook\relax
1026 \parskip \cftparskip \@nameuse {cfttocbeforelisthook}}
1027 {\@nameuse {cfttocafterlisthook}\endgroup\restorefromonecol}}

placeholder for comments

```

34. Implementation

```

1028 \def\etocscrartclstyle{%
1029   \etocsettocstyle
1030     {\let\if@dynlist\if@tocleft
1031       \iftocfeature {toc}{onecolumn}
1032       {\iftocfeature {toc}{leveldown}
1033        {}
1034        {\if@twocolumn \aftergroup \twocolumn \onecolumn \fi }}
1035     }{%
1036       \tocbasic@listhead {\listoftocname}%
1037       \begingroup \expandafter \expandafter \expandafter
1038       \endgroup \expandafter
1039       \ifx
1040         \csname microtypesetup\endcsname \relax
1041       \else
1042         \iftocfeature {toc}{noptrusion}{%
1043           {\microtypesetup {protrusion=false}%
1044            \PackageInfo {tocbasic}%
1045             {character protrusion at toc deactivated}}%
1046         \fi
1047         \setlength {\parskip }{\z@ }%
1048         \setlength {\parindent }{\z@ }%
1049         \setlength {\parfillskip }{\z@ \@plus 1fil}%
1050         \csname tocbasic@@before@hook\endcsname
1051         \csname tb@toc@before@hook\endcsname}
1052     {\csname tb@toc@after@hook\endcsname
1053      \csname tocbasic@@after@hook\endcsname}}
1054 \let\etocscrbookstyle\etocscrartclstyle
1055 \let\etocscrreprtstyle\etocscrartclstyle

placeholder for comments
1056 \def\etocstandarddisplaystyle{\etocarticlestyle}
1057 \newcommand*\etocmarkboth[1]{%
1058   \@mkboth{\MakeUppercase{#1}}{\MakeUppercase{#1}}}
1059 \newcommand*\etocmarkbothnuc[1]{\@mkboth{#1}{#1}}
1060 \newcommand\etocstyle[3][section]{\etocmulticolstyle[#2]%
1061   {\csname #1\endcsname *{#3}}}
1062 \newcommand\etocstylewithmarks[4][section]{\etocmulticolstyle[#2]%
1063   {\csname #1\endcsname *{#3}\etocmarkboth{#4}}}%
1064 \newcommand\etocstylewithmarksnouc[4][section]{\etocmulticolstyle[#2]%
1065   {\csname #1\endcsname *{#3}\etocmarkbothnouc{#4}}}%

placeholder for comments
1066 \def\Etoc@redefetocstyle#1{%
1067   \renewcommand\etocstylewithmarks[4][#1]
1068     {\etocmulticolstyle[##2]%
1069      {\csname ##1\endcsname *{##3}\etocmarkboth{##4}}}%
1070   \renewcommand\etocstylewithmarksnouc[4][#1]
1071     {\etocmulticolstyle[##2]%
1072      {\csname ##1\endcsname *{##3}\etocmarkbothnouc{##4}}}%
1073   \renewcommand\etocstyle[3][#1]{%
1074     \etocmulticolstyle[##2]{\csname ##1\endcsname *{##3}}}%
1075 \@ifclassloaded{scrartcl}
1076   {\renewcommand*\etocstandarddisplaystyle{\etocscrartclstyle}}%
1077 \@ifclassloaded{book}

```

34. Implementation

```

1078 {\renewcommand*\etocfontone{\normalfont\normalsize}
1079 \renewcommand*\etocstandarddisplaystyle{\etocbookstyle}
1080 \Etoc@redefetocstyle{chapter}}{}
1081 \ifclassloaded{report}
1082 {\renewcommand*\etocfontone{\normalfont\normalsize}
1083 \renewcommand*\etocstandarddisplaystyle{\etocreportstyle}
1084 \Etoc@redefetocstyle{chapter}}{}
1085 \ifclassloaded{scrbook}
1086 {\renewcommand*\etocfontone{\normalfont\normalsize}
1087 \renewcommand*\etocstandarddisplaystyle{\etocscrbookstyle}
1088 \Etoc@redefetocstyle{chapter}}{}
1089 \ifclassloaded{scrreprt}
1090 {\renewcommand*\etocfontone{\normalfont\normalsize}
1091 \renewcommand*\etocstandarddisplaystyle{\etocscrreprtstyle}
1092 \Etoc@redefetocstyle{chapter}}{}
1093 \ifclassloaded{memoir}
1094 {\renewcommand*\etocfontone{\normalfont\normalsize}
1095 \etocmemoirtotocfmt{chapter}{\contentsname}%
1096 \renewcommand*\etocstandarddisplaystyle{\etocmemoirstyle}
1097 \Etoc@redefetocstyle{chapter}}{}

placeholder for comments
1098 \def\Etoc@addtocontents #1#2%
1099 {\ifEtoc@hyperref
1100 \addtocontents {toc}{\protect\contentsline
1101 {#1}{#2}%
1102 {\thepage }{\@currentHref }}%
1103 \else
1104 \addtocontents {toc}{\protect\contentsline
1105 {#1}{#2}{\thepage }}%
1106 \fi}
1107 \def\Etoc@addcontentsline@ #1#2#3%
1108 {\@namedef{toclevel@#1}{#3}%
1109 \addcontentsline {toc}{#1}{#2}}
1110 \DeclareRobustCommand*\etoccontentsline{
1111 {\@ifstar{\Etoc@addcontentsline@}{\Etoc@addtocontents}}

```

All the following added for version 1.07g [2013/10/13]. Motivated by a demand about `tovsec2`. But it is impossible to make `tocvsec2` compatible, if not re-doing all ‘toc’ macros in `tocvsec2` (v1.3, 2011/08/07). I do not retain the stack idea, which does not convince me as useful. The empty line in the .toc file is put there by `tocvsec2` (see its code line 143).

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

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

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

```

1112 \def\Etoc@storetocdepth {\global\c@etoc@tocdepth\c@tocdepth }
1113 \def\Etoc@resettocdepth {\global\c@tocdepth\c@etoc@tocdepth }

```

34. Implementation

```

1114 \def\etocobeytoctocdepth {\def\etoc@settocdepth
1115     {\afterassignment\Etoc@@nottoo deep \global\c@tocdepth}}
1116 \def\Etoc@@nottoo deep {\ifnum\c@tocdepth>\c@etoc@tocdepth
1117     \global\c@tocdepth\c@etoc@tocdepth\fi }
1118 \def\etocignoretoctocdepth {\let\etoc@settocdepth\@gobble }
1119 \def\etocsettocdepth {\futurelet\Etoc@nexttoken\Etoc@set@tocdepth }
1120 \def\Etoc@set@tocdepth {\ifx\Etoc@nexttoken\bgroup
1121     \expandafter\Etoc@set@tocdepth@
1122     \else\expandafter\Etoc@set@toctocdepth
1123     \fi }
1124 \def\Etoc@set@tocdepth@ #1{\@ifundefined {Etoc@#1@@}
1125     {\PackageWarning{etoc}
1126         {Unknown sectioning unit #1, \protect\etocsettocdepth\space ignored}}
1127     {\global\c@tocdepth\csname Etoc@#1@@\endcsname}%
1128 }
1129 \def\Etoc@set@toctocdepth #1#{\Etoc@set@toctocdepth@ }
1130 \def\Etoc@set@toctocdepth@ #1{%
1131     \@ifundefined{Etoc@#1@@}%
1132     {\PackageWarning{etoc}
1133         {Unknown sectioning depth #1, \protect\etocsettocdepth.toc ignored}}%
1134     {\addtocontents {toc}
1135         {\protect\etoc@settocdepth\expandafter\protect\csname Etoc@#1@@\endcsname}}%
1136 }

```

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).

```

1137 \def\etocdepthtag #1#{\Etoc@depthtag } % \etocdepthtag.toc {name}
1138 \def\Etoc@depthtag #1{\addtocontents {toc}{\protect\etoc@depthtag {#1}}}
1139 \def\etocignoredepthtags {\let\etoc@depthtag \@gobble }
1140 \def\etocobeydepthtags {\let\etoc@depthtag \Etoc@depthtag@ }
1141 \def\Etoc@depthtag@ #1{\@ifundefined{Etoc@depthhof@#1}%
1142     {}% ignore in silence if tag has no associated depth
1143     {\afterassignment\Etoc@@nottoo deep
1144         \global\c@tocdepth\csname Etoc@depthhof@#1\endcsname}%
1145 }
1146 \def\etocsettagdepth #1#2{\@ifundefined{Etoc@#2@@}%
1147     {\PackageWarning{etoc}
1148         {Unknown sectioning depth #2, \protect\etocsettagdepth\space ignored}}%
1149     {\@namedef{Etoc@depthhof@#1}{\@nameuse{Etoc@#2@@}}}%
1150 }

```

We must cancel all tocvsec2 toc-related actions.

```

1151 \def\Etoc@tocvsec@err #1{\PackageError {etoc}
1152     {the command \protect#1\space is incompatible with etoc}
1153     {use \protect\etocsettocdepth.toc as replacement (check the manual)}}%
1154 }%
1155 \AtBeginDocument {%
1156     \@ifpackageloaded {tocvsec2}
1157     {\def\maxtocdepth #1{\Etoc@tocvsec@err \maxtocdepth }%
1158     \def\settocdepth #1{\Etoc@tocvsec@err \settocdepth }%
1159     \def\resettocdepth {\@ifstar {\Etoc@tocvsec@err \resettocdepth }%

```

34. Implementation

```

1160                                {\Etoc@tocvsec@err \resettocdepth }%
1161                                }%
1162    \def\save@tocdepth #1#2#3{}%    % if etoc is added to file previously
1163    \let\reset@tocdepth\relax    % using tocvsec2
1164    \let\remax@tocdepth\relax
1165    \let\tableofcontents\etoc\tableofcontents
1166    \PackageWarning {etoc}
1167    {package tocvsec2 detected and its modification of^^J
1168    \protect\tableofcontents\space reverted. Use
1169    \protect\etocsettocdepth.toc as a replacement^^J
1170    for the tocvsec2 toc-related commands}}{}}%
1171 }%

1.07g
1172 \def\invisibletableofcontents {\etocsetnexttocdepth {-3}\tableofcontents }%
1173 \def\invisiblelocaltableofcontents
1174     {\etocsetnexttocdepth {-3}\localtableofcontents }%
1175 \def\etocsetnexttocdepth #1{%
1176     \@ifundefined{Etoc@#1@@}
1177     {\PackageWarning{etoc}
1178     {Unknown sectioning unit #1, \protect\etocsetnexttocdepth\space ignored}}
1179     {\edef\Etoc@aftertochook {\global\c@tocdepth\the\c@tocdepth\space
1180     \let\noexpand\Etoc@aftertochook\noexpand\@empty }%
1181     \global\c@tocdepth\csname Etoc@#1@@\endcsname}%
1182 }%

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.
1183 \addtocontents {toc}{\protect\@ifundefined{etoc\style}%
1184     {\let\protect\etoc@startlocaltoc\protect\@gobble
1185     \let\protect\etoc@settocdepth\protect\@gobble
1186     \let\protect\etoc@depthtag\protect\@gobble }{}}%

Initializations.
1187 \def\etocstandardlines {\Etoc@standardtrue}
1188 \def\etoc\oclines {\Etoc@standardfalse}
1189 \etocdefaultlines
1190 \etocstandardlines
1191 \etocstandarddisplaystyle
1192 \etocobeytocdepth
1193 \etocobeydepthtags
1194 \let\Etoc@aftertochook\@empty % private for \etocsetnexttocdepth
1195 \let\etoc\aftertochook \@empty % public for end user.
1196 \endinput

```