The **multitoc** package[*]

Martin Schröder

https://gitlab.com/TeXhackse/multitoc[†]

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Disclaimer/Warning

This package is maintained to keep compatibility but will not receive any further feature extensions as there are a lot of packages providing by far more functionality.

In case you are looking for methods to modify lists have a look at Markus Kohm's tocbasic Package [6] or the corresponding CTAN Topic https://ctan.org/topic/toc-etc.

Abstract

This package allows setting only the table of contents, list of figures and/or list of tables in two or more columns. The number of columns can be configured via commands; the multicolumn toc(s) can be selected via package options.

Contents

1 Introduction

1.1 The problem

When you want to set only the table of contents of a document in two (or more columns), there is one known way[1]: Add an

```
\addtocontents{toc}{\protect\begin{multicols}{2}}
```

before the `\tableofcontents` and an

```
\addtocontents{toc}{\protect\end{multicols}}
```

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[*]The version number of this file is v2.02, revision #076aba1, last revised 2024-06-13 23:28:21 +0200.
The name multitoc is a tribute to the 8 + 3 file-naming convention of certain "operating systems"; strictly speaking it should be MulticolumnToc.

[†]maintained by Marei Peischl

[1]This was first used in the doc package[4].

at the end of the document. This way your `.toc` will start with `\begin{multicols}{2}` and end with `\end{multicols}`.

This can be automised by using `\AtBeginDocument` and `\AtEndDocument` but this has the drawback that it may collide with other commands inserted using `\AtEndDocument` that try to write information to the auxilary file (like the count1to package[5]). This is because TEX has two ways to write information to files [3, p. 226–228]: immediately (when the `\write` is prefixed by `\immediate`) or deferred till the current page is finished and written out by TEX (at the next `\shipout`). `\addtocontents` does a deferred `\write`, count1to does an immediate.

> Sidenote: `\addtocontents` writes a command to the `.aux` file to write its information to the `.toc` file. The `.aux` is read in and executed by `\end{document}` and at the next run by `\begin{document}`. So the `.toc` is written by `\end{document}` and at the next run by `\begin{document}`.

When you use the automised solution with count1to this may happen:

1. The `\addtocontents{toc}{\protect\end{multicols}}` is inserted using `\AtEndDocument` somewhere in the preamble.

2. count1to inserts this code

   ```
   \clearpage
   \immediate\write\@auxout{\string\newlabel{TotalPages}{{\the\count1}{\the\count1}}}
   ```

   via an `\AtBeginDocument{\AtEndDocument{` so it can be sure that this code is the *last* code executed by `\AtEndDocument`.

3. At the `\end{document}` first the code from step 1 is executed which adds the information to the current page to write the `\@writefile{toc}{\end{multicols}}` to the auxilary file *when the current page is finished*.

   Then the code from step 2 is executed, which lets LATEX clear the page (to force all pending writes to be written) and *immediately* after that write the information for the `TotalPages` to the auxilary file.

   Now suppose that the `\end{document}` is called *just after* LATEX has finished the last page. The code from step 1 is never written to the file (since at the `\clearpage` LATEX has no page to finish and so the code waits for the `\shipout` which won't come), but the code from step 2 is. So you now have an `.aux` which won't write the `\end{multicols}` to the `.toc`. This of course produces an error at the next run.

1.2 A solution

`\@starttoc` An easy way around this is to simply redefine `\@starttoc` from [2] which reads in the `.toc` to wrap a multicol around it.[2,3]

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[2]Thanks to Frank Mittelbach for reminding me of this.

[3]Version 1.00 of this package provided a more elaborate solution to this using `\immediateaddtocontents`; this is no longer needed. But the commands from version 1.00 are still provided (see section **??**).

2   Parameters

\multicolumntoc The number of columns for the table of contens, list of figures and list of tables
\multicolumnlot can be set by redefining the commands \multicolumntoc, \multicolumnlot
\multicolumnlof and \multicolumnlof. The default is two columns.

3   Options

The package has the following options:

toc The table of contents is set in \multicolumntoc columns.

lof The list of figures is set in \multicolumnlof columns.

lot The list of tables is set in \multicolumnlot columns.

4   Required packages

The package requires the multicol and the ifthen packages.

References

[1] Johannes Braams, David Carlisle, Alan Jeffrey, Leslie Lamport, Frank
     Mittelbach, Chris Rowley and Rainer Schöpf. ltfiles.dtx. CTAN:
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[2] Johannes Braams, David Carlisle, Alan Jeffrey, Leslie Lamport, Frank
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[3] Donald E. Knuth. *The TeXBook*, volume A of *Computers and Typesetting*.
     Addison-Wesley, 1986. Eleventh printing, revised, May 1991.

[4] Frank Mittelbach. The doc and shortvrb package.
     CTAN:tex-archive/macros/latex/base/doc.dtx. LaTeX2_ε package.

[5] Martin Schröder. The count1to package.
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[6] Markus Kohm KOMA-Script
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