

The **tableof** package

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Package version: v1.1 (2012/12/13)

Documentation generated from the source file

with timestamp "13-12-2012 at 23:59:02 CET"

Abstract

The **tableof** package allows to tag table of contents entries.

The command `\tableof{comma,separated,list,of,tags}` displays a table of contents containing only the entries having all the listed tags. There is a complementary command `\tablenotof`. They may be used multiple times.

The command `\nexttocwithtags{required_tags}{excluded_tags}` specifies which tags are to be obeyed by the next standard `\tableofcontents` or equivalent command.

1 Commands

1.1 `\toftagstart` and `\toftagstop`

These commands have a mandatory argument which is a comma separated list of tags. The tags need not have been predeclared.

```
\toftagstart{kitchenware,weaponry,gastronomy}
\section{Dealing with knives}
\subsection{This is tagged, too}
\section{Hunting rabbits}
\toftagstop{weaponry}
\section{Eating rabbits}
```

1.2 `\toftagthis` and `\tofuntagthis`

The `\toftagthis` command tags with the values from its argument (a comma separated list) only the next object found in the `.toc` file. The command should be located *before* and not *after* the to-be-tagged TOC entry. The `\tofuntagthis` command untags the next entry.

```
\toftagstart{kitchenware,rabbits}
\section{Knives and rabbits}
  \tofuntagthis{kitchenware}
\subsection{Hunting rabbits}
\subsection{Best knives for cooking}
\subsection{Eating rabbits}
\toftagstart{ecology}
  \toftagthis{climate}
\section{Knives and global climate}
\toftagstop{kitchenware}
\section{The rabbit in the wild}
```

1 Commands

```
\toftagthis{climate}  
\subsection{Impact of the rabbit on global climate}
```

1.3 `\nexttocwithtags`

This command is new with version 1.1. It has two *mandatory* arguments (possibly empty): the first one is a comma separated list of required tags, the second one is a comma separated list of excluded tags. The command has no immediate effect but influences the next `\tableofcontents` (or equivalent command) in the document:¹ the TOC will contain only the entries having been tagged with all the required tags and none of the excluded tags. For example:

```
\nexttocwithtags{A,B}{C,D,E}  
\tableofcontents
```

will print only the division units having both tags A and B and none of C, D, or E.

There are starred variants:

```
\nexttocwithtags{A,B}{C,D,E}    % A and B and neither C nor D nor E  
\nexttocwithtags*{A,B}{C,D,E}  % (A or B) and neither C nor D nor E  
\nexttocwithtags{A,B}*{C,D,E}  % A and B and (not C or not D or not E)  
\nexttocwithtags*{A,B}*{C,D,E} % (A or B) and (not C or not D or not E)
```

1.4 `\tableof`

tableof also provides commands to typeset on its own the tagged entries of the `.toc` file: `\tableof` has a mandatory argument which is a comma separated list of tags. It displays, exactly as would appear in the actual table of contents, the corresponding tagged entries from the `.toc` file. Its title needs to be explicitly set up by additional code.

```
\section*{Table of entries tagged with weaponry AND with hunting}  
\tableof{weaponry,hunting}
```

There is a starred variant:

```
\section*{Table of entries tagged with weaponry OR with hunting}  
\tableof*{weaponry,hunting}
```

1.5 `\tablenotof`

It has a mandatory argument which is a comma separated list of tags. It displays, exactly as would appear in the table of contents, the entries from the `.toc` file which are *not* tagged:

```
\section*{Table of entries NOT tagged with weaponry NEITHER with hunting}  
\tablenotof{weaponry,hunting}
```

¹in documents with a class or package allowing multiple uses of the command `\tableofcontents`, the command `\nexttocwithtags` influences only the next use of `\tableofcontents`.

2 Generating the package file and the test file

There is a starred variant:

```
\section*{Table of entries NOT tagged with weaponry OR NOT tagged with hunting}  
\tablenotof*{weaponry,hunting}
```

Both `\tableof` and `\tablenotof` may be used arbitrarily many times (whether or not the document has somewhere a `\tableofcontents`).

1.6 `\tofOpenTocFileForWrite`

The `.toc` file is read (if it exists) into memory by `tableof` at the `\usepackage`, for use by `\tableof` and `\tablenotof`. But the creation of the `.toc` file is not dealt with by `tableof` itself: either this will be done by a standard `\tableofcontents` command somewhere in the document, or, one may use the package provided command `\tofOpenTocFileForWrite` which does not display anything and just does what its name indicates. This command can be used also in the preamble.²

Again: this command should *not* be used when the document has its own `\tableofcontents` or equivalent.

1.7 Compatibility with other packages

`tableof` checks if `hyperref` is loaded as `hyperref` modifies the format of the `.toc` file. This check is done at the `\begin{document}` so the order of loading is not important.

`tableof` adds the tag data to the `.toc` file, but this data is defined (within the `.toc` file) to do nothing. Hence the generated `.toc` file may be imported for use by other $\text{T}_{\text{E}}\text{X}$ documents.³

1.8 TODO

Create a parser for arbitrary iterated boolean combinations of tags . . . but this kind of thing must have been done a zillion times already, as it belongs to the basics in computer science! . . . and it surely is no easy task in $\text{T}_{\text{E}}\text{X}$! so I cautiously retreated from such an endeavor.

1.9 version history

2012/12/13 v1.1: i. new command `\nexttocwithtags`,
 ii. `.toc` remains usable from other $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ source files.
2012/12/06 v1.0: initial version.

2 Generating the package file and the test file

Running `latex` (or `pdflatex`) on `tableof.dtx` generates: 1) the package file `tableof.sty` (which should be moved to a suitable location within the $\text{T}_{\text{E}}\text{X}$ installation), 2) `tableof.ins` for

²Note to people or packages wanting also to access the `.toc` file: as happens with the standard `\tableofcontents`, the `.toc` file becomes temporarily empty immediately after `\tofOpenTocFileForWrite`.

³this import must do `\makeatletter` and also the new document must use `hyperref` if the original did so.

3 Implementation

T_EX distributions expecting such a file, 3) `tableoftest.tex` which demonstrates the package features (one should run `latex` twice on it), and 4) the documentation itself (run `pdflatex` twice to get the bookmarks.)

3 Implementation

Writing-up source code comments is hopefully for a future release.

```
1 \ProvidesPackage{tableof}
2 [2012/12/13 v1.1 tables of tagged contents (jfb)]
3 \NeedsTeXFormat{LaTeX2e}
4 \DeclareOption*{\PackageWarning{tableof}{Option ‘\CurrentOption’ is unknown.}}
5 \ProcessOptions\relax

6 \newtoks\tof@toctoks

7 \def\tof@readtoc#1{%
8   \ifeof #1
9     \let\tof@nextread\@gobble
10    \global\tof@toctoks=\expandafter{\the\tof@toctoks}%
11  \else
12    \let\tof@nextread\tof@readtoc
13    \read #1 to \tof@buffer
14    \tof@toctoks=\expandafter\expandafter\expandafter
15      {\expandafter\the\expandafter\tof@toctoks\tof@buffer}%
16  \fi
17  \tof@nextread{#1}}

18 \IfFileExists{\jobname .toc}{
19   {% \endlinechar-1
20     \makeatletter
21     \newread\tof@tf
22     \openin\tof@tf\@filef@und
23     \tof@readtoc\tof@tf
24     \closein\tof@tf}}{}

25 \AtBeginDocument{
26   \addtocontents{toc}{\string\@ifundefined\string\tof@begin\string}}
27   \addtocontents{toc}{\string\let\string\tof@begin\string\relax%
28     \string\let\string\tof@finish\string\relax%
29     \string\let\string\tof@starttags\string\@gobble%
30     \string\let\string\tof@stoptags\string\@gobble%
31     \string\let\string\tof@tagthis\string\@gobble%
32     \string\let\string\tof@untagthis\string\@gobble\string\string\string}}
33   \addtocontents{toc}{\string\tof@begin}
34   \@ifpackageloaded{hyperref}{
35     {\def\tof@gobblethree@orfour#1#2#3#4{%
36       \ifx\hyper@last@undefined\tof@toctoks}\fi}
37     {\def\tof@gobblethree@orfour#1#2#3{}}}
38 \AtEndDocument{\addtocontents{toc}{\string\tof@finish}}
```

3 Implementation

```

39 \newcommand\tofOpenTocFileForWrite{%
40 \expandafter\newwrite \csname tf@toc\endcsname
41 \immediate \openout \csname tf@toc\endcsname \jobname .toc\relax}

42 \def\tof@tags{}
43 \def\tof@tags@tmp{}
44 \def\tof@untags@tmp{}
45 \def\tof@true#1{\expandafter\let\csname tofsw@#1\endcsname\iftrue}
46 \def\tof@false#1{\expandafter\let\csname tofsw@#1\endcsname\iffalse}
47 \def\tof@secondiftrue#1{\csname tofsw@#1\endcsname
48 \let\tof@next\@secondoftwo\fi}
49 \def\tof@secondiffalse#1{\csname tofsw@#1\endcsname\else
50 \let\tof@next\@secondoftwo\fi}
51 \def\tof@setflags#1{\let\tof@next\@firstoftwo
52 \@for\@tempa:=#1\do{\tof@true{\@tempa}}}%
53 \@for\@tempa:=\tof@tags\do{\tof@false{\@tempa}}}%
54 \@for\@tempa:=\tof@tags@tmp\do{\tof@false{\@tempa}}}%
55 \@for\@tempa:=\tof@untags@tmp\do{\tof@true{\@tempa}}}%

56 \def\tof@filter#1#2{\ifx#1#2\else
57 \ifx\tof@tmptags\@empty\edef\tof@tmptags{#2}\else
58 \edef\tof@tmptags{\tof@tmptags,#2}\fi\fi}
59 \def\tof@@starttags#1{%
60 \ifx\tof@tags\@empty\edef\tof@tags{#1}\else
61 \edef\tof@tags{\tof@tags,#1}\fi}
62 \def\tof@@stoptags#1{%
63 \@for\@tempa:=#1\do{\def\tof@tmptags{}}%
64 \@for\@tempb:=\tof@tags\do{\tof@filter\@tempa\@tempb}}%
65 \edef\tof@tags{\tof@tmptags}}

66 \def\tof@init#1{%
67 \def\tof@begin{%
68 \begingroup
69 \def\tof@finish{\endgroup\global\let\tof@begin\relax}%
70 \let\tof@savetocline\contentsline
71 \let\tof@starttags\tof@@starttags
72 \let\tof@stoptags\tof@@stoptags
73 \def\tof@tagthis####1{\def\tof@tags@tmp{####1}}%
74 \def\tof@untagthis####1{\def\tof@untags@tmp{####1}}%
75 \def\contentsline{#1}}

76 \def\tof@and#1{%
77 \tof@init{\tof@setflags{#1}\def\tof@tags@tmp{}\def\tof@untags@tmp{}%
78 \@for\@tempa:=#1\do{\tof@secondiftrue{\@tempa}}}%
79 \tof@next\tof@savetocline\tof@gobblethree@orfour}%
80 \the\tof@toctoks}

81 \def\tof@or#1{%
82 \tof@init{\tof@setflags{#1}\def\tof@tags@tmp{}\def\tof@untags@tmp{}%
83 \@for\@tempa:=#1\do{\tof@secondiffalse{\@tempa}}}%
84 \tof@next\tof@gobblethree@orfour\tof@savetocline}%
85 \the\tof@toctoks}

```

3 Implementation

```

86 \def\tof@nor#1{%
87   \tof@init{\tof@setflags{#1}\def\tof@tags@tmp{}\def\tof@untags@tmp{}}%
88   \@for\@tempa:=#1\do{\tof@secondiffalse{\@tempa}}%
89   \tof@next\tof@savetocline\tof@gobblethree@orfour}%
90   \the\tof@toctoks}

91 \def\tof@nand#1{%
92   \tof@init{\tof@setflags{#1}\def\tof@tags@tmp{}\def\tof@untags@tmp{}}%
93   \@for\@tempa:=#1\do{\tof@secondiffalse{\@tempa}}%
94   \tof@next\tof@gobblethree@orfour\tof@savetocline}%
95   \the\tof@toctoks}

96 \newcommand\nexttocwithtags{\@ifstar{\tof@nextof@or}{\tof@nextof@and}}
97 \def\tof@nextof@or#1{\toks\z@{\tof@setflags{#1}%
98   \@for\@tempa:=#1\do{\tof@secondiffalse{\@tempa}}%
99   \tof@next
100   {\def\tof@tags@tmp{}\def\tof@untags@tmp{}\tof@gobblethree@orfour}}}%
101   \@ifstar{\tof@nextof@nand}{\tof@nextof@nor}}
102 \def\tof@nextof@and#1{\toks\z@{\tof@setflags{#1}%
103   \@for\@tempa:=#1\do{\tof@secondiffalse{\@tempa}}%
104   \tof@next\@secondoftwo\@firstoftwo
105   {\def\tof@tags@tmp{}\def\tof@untags@tmp{}\tof@gobblethree@orfour}}}%
106   \@ifstar{\tof@nextof@nand}{\tof@nextof@nor}}
107 \def\tof@nextof@nor#1{%
108   \toks\z@{\expandafter{\the\toks\z@
109     {\tof@setflags{#1}\def\tof@tags@tmp{}\def\tof@untags@tmp{}}%
110     \@for\@tempa:=#1\do{\tof@secondiffalse{\@tempa}}%
111     \tof@next\tof@savetocline\tof@gobblethree@orfour}}}%
112   \expandafter\tof@init\expandafter{\the\toks\z@}}
113 \def\tof@nextof@nand#1{%
114   \toks\z@{\expandafter{\the\toks\z@
115     {\tof@setflags{#1}\def\tof@tags@tmp{}\def\tof@untags@tmp{}}%
116     \@for\@tempa:=#1\do{\tof@secondiffalse{\@tempa}}%
117     \tof@next\tof@gobblethree@orfour\tof@savetocline}}}%
118   \expandafter\tof@init\expandafter{\the\toks\z@}}
119 \newcommand\tableof{\@ifstar{\tof@or}{\tof@and}}
120 \newcommand\tablenotof{\@ifstar{\tof@nand}{\tof@nor}}

121 \newcommand*\toftagthis[1]{\addtocontents{toc}
122   {\string\tof@tagthis\string{#1}\string{}}}
123 \newcommand*\tofuntagthis[1]{\addtocontents{toc}
124   {\string\tof@untagthis\string{#1}\string{}}}
125 \newcommand*\toftagstart[1]{\addtocontents{toc}
126   {\string\tof@starttags\string{#1}\string{}}}
127 \newcommand*\toftagstop[1]{\addtocontents{toc}
128   {\string\tof@stoptags\string{#1}\string{}}}
129 \endinput

```