The hypbmsec package

"Bookmarks in sectioning commands"

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Abstract

This package expands the syntax of the sectioning commands. If the argument of the sectioning commands isn't usable as outline entry, a replacement for the bookmarks can be given.

Contents

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1 Usage

1.1 Bookmarks restrictions

Outline entries (bookmarks) are written to a file and have to obey the pdf specification. Therefore they have several restrictions:

- Bookmarks have to be encoded in PDFDocEncoding[2].
- They should only expand to letters and spaces.
- The result of expansion have to be a valid pdf string.
- Stomach commands like `\relax`, box commands, math, assignments, or definitions aren't allowed.
- Short entries are recommended, which allow a clear view.

1.2 `\texorpdfstring`

The generic way in package `hyperref` is the use of `\texorpdfstring`[3]:

```
\section{Pythagoras:
  \texorpdfstring{$a^2+b^2=c^2}{%
    a\texttwosuperior\ + b\texttwosuperior\ =
    c\texttwosuperior}%
}
```

1.3 Sectioning commands

The package `hyperref` automatically generates bookmarks from the sectioning commands, unless it is suppressed by an option. Commands that structure the text are here called "sectioning commands":

`\part`, `\chapter`,
`\section`, `\subsection`, `\subsubsection`,
`\paragraph`, `\subparagraph`

1.4 Places for sectioning strings

The argument(s) of these commands are used on several places:

text The current text without restrictions.

toc The headlines and the table of contents with the restrictions of "moving arguments".

out The outlines with many restrictions: The outline have to expand to a valid pdf string with PDFDocEncoding (see 1.1).

[2] `hyperref` doesn't support Unicode.
[3] In versions of `hyperref` below 6.54 see `\ifbookmark`.

1.5 Solution with optional arguments

If the user wants to use a footnote within a sectioning command, the LaTeX solution is an optional argument:

```
\section[Title]{Title\footnote{Footnote text}}
```

Now `Title` without the footnote is used in the headlines and the table of contents. Also `hyperref` uses it for the bookmarks.

This package `hypbmsec` offers two possibilities to specify a separate outline entry:

- An additional second optional argument in square brackets.
- An additional optional argument in parentheses (in assoziation with a pdf string that is internally surrounded by parentheses, too).

Because `hypbmsec` stores the original meaning of the sectioning commands and uses them again, there should be no problems with packages that redefine the sectioning commands, if these packages doesn't change the syntax.

1.6 Syntax

The following examples show the syntax of the sectioning commands. For the places the strings appear the abbreviations are used, that are introduced in 1.4.

1.6.1 Star form

The behaviour of the star form isn't changed. The string appears only in the current text:

```
\section*{text}
```

1.6.2 Without optional arguments

The normal case, the string in the mandatory argument is used for all places:

```
\section{text, toc, out}
```

1.6.3 One optional argument

Also the form with one optional parameter in square brackets isn't new; for the bookmarks the optional parameter is used:

```
\section[toc, out]{text}
```

1.6.4 Two optional arguments

The second optional parameter in square brackets is introduced by this package to specify an outline entry:

```
\section[toc][out]{text}
```

1.6.5 Optional argument in parentheses

Often the toc and the text string would be the same. With the method of the two optional arguments in square brackets (see 1.6.4) this string must be given twice, if the user only wants to specify a different outline entry. Therefore this package offers another possibility: In association with the internal representation in the pdf file an outline entry can be given in parentheses. So the package can easily distinguish between the two forms of optional arguments and the order does not matter:

```
\section(out){toc, text}
\section[toc](out){text}
\section(out)[toc]{text}
```

1.7 Without hyperref

Package hypbmsec uses hyperref for support of the bookmarks, but this package is not required. If hyperref isn't loaded, or is called with a driver that doesn't support bookmarks, package hypbmsec shouldn't be removed, because this would lead to a wrong syntax of the sectioning commands. In any cases package hypbmsec supports its syntax and ignores the outline entries, if there are no code for bookmarks. So it is possible to write texts, that are processed with several drivers to get different output formats.

1.8 Protecting parentheses

If the string itself contains parentheses, they have to be hidden from TEX's argument parsing mechanism. The argument should be surrounded by curly braces:

```
\section({outlines(bookmarks)}){text, toc}
```

With version 6.54 of hyperref the other standard method works, too: The closing parenthesis is protected:

```
\section(outlines(bookmarks{)}){text, toc}
```

2 Installation

2.1 Package

Run hypbmsec.ins through TEX to get file hypbmsec.sty:

```
tex hypbmsec.ins
```

Move the file hypbmsec.sty into a directory that is searched by LATEX. As location in a TDS tree I recommend:

```
texmf/tex/latex/oberdiek/hypbmsec.sty     or
texmf/tex/latex/misc/hypbmsec.sty
```

2.2 Documentation

2.2.1 With LATEX

If you have package hyperref installed and want to use another driver than the default, use the configuration file hyperref.cfg to set your driver choice:

```
\hypersetup{⟨your driver⟩}
```

The following commands produce the documentation, don't forget *MakeIndex*'s option `-r`, if you use `hyperref` (eventually you need another cycle with *MakeIndex* and LaTeX):

```
latex hypbmsec.dtx
makeindex -rs gind hypbmsec
latex hypbmsec.dtx
makeindex -rs gind hypbmsec
latex hypbmsec.dtx
```

2.2.2 With pdfLaTeX

Package `hyperref` for hyperlinks and package `thumbpdf` for thumbnails are supported. Generate the pdf file with the following commands (eventually you need another cycle with *MakeIndex* and pdfLaTeX):

```
pdflatex hypbmsec.dtx
makeindex -rs gind hypbmsec
pdflatex hypbmsec.dtx
makeindex -rs gind hypbmsec
pdflatex hypbmsec.dtx
thumbpdf hypbmsec
pdflatex hypbmsec.dtx
hothread hypbmsec.dtx
```

Within the current pdfTeX there are still problems and bugs with the thread support. The perl script `hothread(.pl)` reads the informations of the `.pdf` and the `.log` file and corrects the `.pdf` file by appending an update section.

3 Implementation

```
⟨*package⟩
```

Because of redifining the sectioning commands, it is dangerous to reload the package several times.

```
\@ifundefined{hbs@do}{}{%
  \PackageInfo{hypbmsec}{Package 'hypbmsec' is already loaded}
  \endinput
}
```

`\hbs@do` The redefined sectioning commands calls `\hbs@do`. It does

- handle the star case.
- resets the macros that store the entries for the outlines (`\hbs@bmstring`) and table of contents (`\hbs@tocstring`).
- store the sectioning command `#1` in `\hbs@seccmd` for later reuse.
- at last call `\hbs@checkarg` that scans and interprets the parameters of the redefined sectioning command.

```
\def\hbs@do#1{%
  \@ifstar{#1*}{%
    \let\hbs@tocstring\relax
```

```
    \let\hbs@bmstring\relax
    \let\hbs@seccmd#1%
    \hbs@checkarg
  }%
}
```

`\hbs@checkarg` `\hbs@checkarg` determines the type of the next argument:

- An optional argument in square brackets can be an entry for the table of contents or the bookmarks. It will be read by `\hbs@getsquare`
- An optional argument in parentheses is an outline entry. This is worked off by `\hbs@getbookmark`.
- If there are no more optional arguments, `\hbs@process` reads the mandatory argument and calls the original sectioning commands.

```
\def\hbs@checkarg{%
  \@ifnextchar[\hbs@getsquare{%
    \@ifnextchar(\hbs@getbookmark\hbs@process
  }%
}
```

`\hbs@getsquare` `\hbs@getsquare` reads an optional argument in square brackets and determines, if this is an entry for the table of contents or the bookmarks.

```
\long\def\hbs@getsquare[#1]{%
  \ifx\hbs@tocstring\relax
    \def\hbs@tocstring{#1}%
  \else
    \hbs@bmdef{#1}%
  \fi
  \hbs@checkarg
}
```

`\hbs@getbookmark` `\hbs@getbookmark` reads an outline entry in parentheses.

```
\def\hbs@getbookmark(#1){%
  \hbs@bmdef{#1}%
  \hbs@checkarg
}
```

`\hbs@bmdef` The command `\hbs@bmdef` save the bookmark entry in parameter `#1` in the macro `\hbs@bmstring` and catches the case, if the user has given several outline strings.

```
\def\hbs@bmdef#1{%
  \ifx\hbs@bmstring\relax
    \def\hbs@bmstring{#1}%
  \else
    \PackageError{hypbmsec}{%
      Sectioning command with too many parameters%
    }{%
      You can only give one outline entry.%
    }%
  \fi
}
```

`\hbs@process` The parameter `#1` is the mandatory argument of the sectioning commands. `\hbs@process` calls the original sectioning command stored in `\hbs@seccmd` with arguments that depend of which optional argument are used previously.

```
\long\def\hbs@process#1{%
  \ifx\hbs@tocstring\relax
    \ifx\hbs@bmstring\relax
      \hbs@seccmd{#1}%
    \else
      \hbs@seccmd{\texorpdfstring{#1}\hbs@bmstring}%
    \fi
  \else
    \ifx\hbs@bmstring\relax
      \hbs@seccmd[\hbs@tocstring]{#1}%
    \else
      \hbs@seccmd[\texorpdfstring\hbs@tocstring\hbs@bmstring]{#1}%
    \fi
  \fi
}
```

We have to check, whether package `hyperref` is loaded and have to provide a definition for `\texorpdfstring`. Because `hyperref` can be loaded after this package, we do the work later (`\AtBeginDocument`).

This code only checks versions of `hyperref` that define `\ifbookmark` (v6.4x until v6.53) or `\texorpdfstring` (v6.54 and above). Older versions aren't supported.

```
\AtBeginDocument{%
  \@ifundefined{texorpdfstring}{%
    \@ifundefined{ifbookmark}{%
      \let\texorpdfstring\@firstoftwo
      \@ifpackageloaded{hyperref}{%
        \PackageInfo{hypbmsec}{%
          \ifx\hy@driver\@empty
            Default driver
          \else
            '\hy@driver'
          \fi
          of hyperref not supported,\MessageBreak
          bookmark parameters will be ignored%
        }%
      }{%
        \PackageInfo{hypbmsec}{%
          Package hyperref not loaded,\MessageBreak
          bookmark parameters will be ignored%
        }%
      }%
    }%
    {%
      \newcommand\texorpdfstring[2]{\ifbookmark{#2}{#1}}%
      \PackageWarningNoLine{hypbmsec}{%
        Old hyperref version found,\MessageBreak
        update of hyperref recommended%
      }%
    }%
  }{}%
```

Other packages are allowed to redefine the sectioning commands, if they does not change the syntax. Therefore the redefinitons of this package should be done after the other packages.

```
  \let\hbs@part         \part
  \let\hbs@section      \section
```

```
  \let\hbs@subsection    \subsection
  \let\hbs@subsubsection\subsubsection
  \let\hbs@paragraph     \paragraph
  \let\hbs@subparagraph \subparagraph
  \renewcommand\part          {\hbs@do\hbs@part}
  \renewcommand\section       {\hbs@do\hbs@section}
  \renewcommand\subsection    {\hbs@do\hbs@subsection}
  \renewcommand\subsubsection{\hbs@do\hbs@subsubsection}
  \renewcommand\paragraph     {\hbs@do\hbs@paragraph}
  \renewcommand\subparagraph {\hbs@do\hbs@subparagraph}
  \begingroup\expandafter\expandafter\expandafter\endgroup
  \expandafter\ifx\csname chapter\endcsname\relax\else
    \let\hbs@chapter     \chapter
    \renewcommand\chapter     {\hbs@do\hbs@org@chapter}
  \fi
}
```

⟨/package⟩

4 History

[1998/11/20 v1.0]

- First version.
- It merges package `hysecopt` and package `hypbmpar`.
- Published for the DANTE'99 meating[4].

[1999/04/12 v2.0]

- Adaptation to `hyperref` version 6.54.
- Documentation in dtx format.
- Copyright: LPPL (CTAN:macros/latex/base/lppl.txt[5])
- First CTAN release.

5 Index

Numbers written in italic refer to the page where the corresponding entry is described, the ones underlined to the code line of the definition, the rest to the code lines where the entry is used.

[4] Url: http://dante99.cs.uni-dortmund.de/handouts/oberdiek/hypbmsec.sty
[5] Url: ftp://ftp.dante.de/tex-archive/macros/latex/base/lppl.txt

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