Package `thmbox`

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Abstract

This package defines an environment `thmbox` aimed at presenting theorems, definitions and similar objects in boxes decorated with frames and various aesthetic features. The standard macro `\newtheorem` is redefined to use this format.

1 Documentation

The package is loaded like any other, by writing

```
\usepackage[options]{thmbox}
```

The option `nothm` prevents the command `\newtheorem` from being redefined, so theorems defined with this command keep their traditional aspect. All other options are considered as default formatting options, they can be redefined at any time using the command `\thmboxoptions`. The argument of this macro is a list of `key=value` pairs in the `keyval` style, as defined in section 1.2.

1.1 Examples

The package defines an environment `thmbox` that is used as follows:

```
\begin{thmbox}[L]{The title}
  Some text, some more text, a
  sufficient amount to get a
  full box with several lines.
\end{thmbox}
```

The title

Some text, some more text, a sufficient amout to get a full box with several lines.

The argument `[L]` indicates the style of the box. The two other defined styles are `[M]` and `[S]`, which make respectively:

The title

Some text, some more text, a sufficient amout to get a full box with several lines.

The title

Some text, some more text, a sufficient amout to get a full box with several lines.

Any other option from the previous list can be used in the optional argument.

By default, loading the package `thmbox` replaces the definition of the LaTeX command `\newtheorem`. This feature can be turned off by the option `nothm`. The new version has the same syntax as the standard one with an extra optional argument at the beginning. This argument can be used to specify formatting options for the optional argument of the `thmbox` environment. For instance, saying

```
\newtheorem[L]{thm}{Theorem}[section]
```

will produce the following aspect for the environment `thm`:

```
\begin{thm}
  Any continuous function over
  $\mathbf{R}$ is measurable.
\end{thm}
```

Theorem 1.1

Any continuous function over $\mathbf{R}$ *is measurable.*

And with a title, with the defaut style, we get:

```
\begin{thm}[G\"odel] \label{tg}%
  Any theory that contains first
  order arithmetics is undecidable.
\end{thm}
```

Theorem 1.2 (*Gödel*)

Any theory that contains first order arithmetics is undecidable.

The default style for theorem boxes is "`M`", so writing

```
\newtheorem{cor}[thm]{Corollary}
```

will lead to this:

```
\begin{cor}
  Second order arithmetics
  is undecidable.
\end{cor}
```

Corollary 1.3

Second order arithmetics is undecidable.

The package also redefines the `proof` environment. The text inside such an enivronment is written smaller, with extra margins, with a black square sign at the end. The aspect is the following:

```
\begin{proof}
  This is a consequence of the
  inclusion of PA into AF2,
  since Peano arithmetics is
  undecidable.
\end{proof}
```

Proof: This is a consequence of the inclusion of PA into AF2, since Peano arithmetics is undecidable. ■

The `proof` environment takes an optional argument:

```
\begin{proof}[of \ref{tg}]
  This is a rather technical
  story of encodings.
\end{proof}
```

Proof of 1.2: This is a rather technical story of encodings. ■

The `example` environment has mostly the same behaviour as `proof`:

```
\begin{example}
  An approach consists in
  encoding Turing machines.
\end{example}
```

Bla bla bla.

Example : An approach consists in encoding Turing machines.

Ploum plam.

Its optional argument can be used to write something else than "Example". The alternative method is to redefine `\examplename`.

```
\begin{example}[Idea]
  One could also proceed by
  encoding $\lambda$-calculus.
\end{example}
```

Idea : One could also proceed by encoding λ-calculus.

> As an extra, on the model of the `thmbox` environment, the package provides an environment `leftbar` that formats its contents with an extra margin and a running vertical rule in the left.

1.2 Options

The following general options are available:

`style=`⟨*letter*⟩ indicates which style should be used when drawing the boxes. The letter may be one of the following:

- `S` : a vertical bar on the left of the text
- `M` : a bar on the left and a short horizontal bar at the bottom of the text
- `L` : a vertical bar on each side and a horizontal bar at the bottom

The default value for this parameter is `M`. The options `S`, `M`, `L` are shortcuts for `style=S`, `style=M` and `style=L`.

`cut=`⟨*bool*⟩ indicates if boxes may be cut at page breaks (true by default), `nocut` is equivalent to `cut=false`

The following options are used to change style of the header and contents:

`underline=`⟨*bool*⟩ indicates if the title of boxes should be underlined (true by default), `nounderline` is equivalent to `underline=false`

`headstyle=`⟨*text*⟩ defines how the header of the theorems is formatted. In the text, `#1` represents the environment name (i.e. "Theorem") and `#2` represent the number. The default value is "`\bfseries\boldmath#1 #2`".

`titlestyle=`⟨*text*⟩ defines how the optional title of theorems is formatted. In the text, `#1` represents the title. The default value is "` (\textit{#1})`".

`bodystyle=`⟨*text*⟩ defines how the text of theorems and similar environments is formatted, it is inserted before the text in those environments. The default value is "`\slshape\noindent`".

The following options define the various spacings:

`leftmargin=`⟨*dim*⟩, `rightmargin=`⟨*dim*⟩ defines the horizontal space between the margin of the surrounding text and that of the text inside the box (defaut value is `\parskip` for the left margin and 0pt for the right margin)

`hskip=`⟨*dim*⟩, `vskip=`⟨*dim*⟩ defines the horizontal and vertical space between the frame of the box and its contents (default value is 0.4em for both)

`thickness=`⟨*dim*⟩ defines the thickness of the bars (defaut value is 0.6pt)

1.3 Change log

Version 2.0 (2005/04/24)
- first CTAN release
- replaced `preskip` and `postskip` by `left/rightmargin` and `h/vskip`
- new option `headstyle`

Version 1.91 (2004/06/08)
- translated everything to english
- cleaned interface, switched to `keyval`, added parameters

Version 1.3 (2002/09/09)
- added option `nothm`

Version 1.2 (2002/05/24)
- added option `nocut`

Version 1.1 (2002/03/08)
- proper LaTeX interface with `\newtheorem`

Version 1.0 (around 2001)
- first version as an independent package