key-theorems package

version 0.0.1γ

github.com/mbertucci47/key-theorems

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Abstract

An expl3-implementation of a key-value interface to amsthm, implementing most of the functionality provided by thmtools. Full of bugs and incomplete. Don't use it for anything important!

Warning! In addition to being a completely unreliable package, the documentation is just a skeleton! For full details look at the package code.

1 Load-time Options

`overload` (initially unset)

Redefines `\newtheorem` to internally use the key-theorems machinery. The syntax remains the same.

`thmtools-compat` (initially unset)

For compatibility with thmtools syntax. Currently defines the `\declaretheoremstyle`, `\declaretheorem`, and `\listoftheorems` commands and the `restatable` environment.

`store-all` (initially unset)

Tells key-theorems to grab the body of each theorem so it can later be printed with `\listofkeytheorems[print-body]`. Note that this means a theorem body *cannot* contain verbatim material.

2 Global Options

`\keytheoremset{`⟨*options*⟩`}`

`restate-counters={`⟨*comma-list of counters*⟩`}` (initially `{equation}`)

The counters whose values are preserved when a theorem is restated.

`continues-code=`⟨*code with* `#1`⟩ (initially `continuing from p.\,\pageref{#1}`)

`qed-symbol=`⟨*symbol*⟩ (initially `\openbox`)

Redefines `\qedsymbol` to be ⟨*symbol*⟩.

3 Theorem Styles

`\newkeytheoremstyle{`⟨*name*⟩`}{`⟨*options*⟩`}`

This is key-theorems' version of thmtools' `\declaretheoremstyle[`⟨*options*⟩`]{`⟨*name*⟩`}`. Since it makes little sense to define a style with no keys, we've made the ⟨*options*⟩ argument mandatory.

3.1 Keys inherited from thmtools

The following keys have the same meaning and syntax as the corresponding thmtools keys.

`spaceabove`=⟨*length*⟩ (initially `\topsep`)

`spacebelow`=⟨*length*⟩ (initially `\topsep`)

`bodyfont`=⟨*font declarations*⟩ (initially `\itshape`)

`headindent`=⟨*length*⟩ (initially `0pt`)

`headfont`=⟨*font declarations*⟩ (initially `\bfseries`)

`headpunct`=⟨*code*⟩ (initially `{.}`)

`postheadspace`=⟨*length*⟩ (initially `5pt plus 1pt minus 1pt`)

Do not use this with the `break` key.

`break` (initially unset)

Do not use this with the `postheadspace` key.

`notefont`=⟨*font declarations*⟩ (initially `\fontseries\mddefault\upshape`)

`notebraces`=`{`⟨*left brace*⟩`}{`⟨*right brace*⟩`}` (initially `{(}{)}`)

`headstyle`=`margin`|`swapnumber`|⟨*code using* `\NAME`, `\NUMBER`, *and* `\NOTE`⟩

Alias `headstyle`. Within ⟨*code*⟩, the commands `\NAME`, `\NUMBER`, and `\NOTE` correspond to the formatted parts of the theorem head.

3.2 Keys added by key-theorems

`inherit-style`=⟨*style name*⟩ (initially unset)

Inherit the keys of any style declared with `\newkeytheoremstyle` → P. 1. Additionally, the three styles predefined by amsthm are possible values: `plain`, `definition`, and `remark`.

4 Declaring Theorems

`\newkeytheorem{`⟨*env name*⟩`}[`⟨*options*⟩`]`

Defines a theorem environment ⟨*env name*⟩ which itself takes a few options (see section 5). You can also declare multiple theorems at once by replacing ⟨*env name*⟩ with a comma-list of names, e.g. `\newkeytheorem{theorem,lemma,proposition}[`⟨*options*⟩`]`

```
% preamble
\newkeytheorem{mytheorem}[name=Some Name]

% document
\begin{mytheorem}[a note]
Some text
\end{mytheorem}

\begin{mytheorem}[name=heading,label=foo]
Some more text
\end{mytheorem}

\ref{foo}
```

Some Name 1 (a note)**.** *Some text*

Some Name 2 (heading)**.** *Some more text*

2

4.1 Keys inherited from thmtools

`name=`⟨*display name*⟩ (initially title-cased ⟨*env name*⟩)

Aliases `title` and `heading`.

`numbered=true|false` (default `true`, initially `true`)

For compatibility with thmtools, also accepts the values `yes` and `no`.

`parent=`⟨*counter*⟩ (initially unset)

Aliases `numberwithin` and `within`.

`sibling=`⟨*counter*⟩ (initially unset)

Aliases `numberlike` and `sharenumber`.

`style=`⟨*style name*⟩ (initially unset)

`preheadhook=`⟨*code*⟩ (initially unset)
`postheadhook=`⟨*code*⟩ (initially unset)
`prefoothook=`⟨*code*⟩ (initially unset)
`postfoothook=`⟨*code*⟩ (initially unset)

Details in section 7.

`refname=`⟨*ref name*⟩ `or {`⟨*singular name*⟩`,`⟨*plural name*⟩`}` (initially ⟨*display name*⟩)

If a single string, then the name used by hyperref's `\autoref` and cleveref's `\cref`. If two strings separated by a comma, then the second string is the plural form used by `\cref`.

`Refname=`⟨*ref name*⟩ `or {`⟨*singular name*⟩`,`⟨*plural name*⟩`}` (initially ⟨*display name*⟩)

Same as `refname` but for `\Autoref` (not yet implemented!) and `\Cref`.

`qed=`⟨*symbol*⟩ (default `\openbox`, initially unset)

4.2 Keys added by key-theorems

`tcolorbox={`⟨*tcolorbox options*⟩`}` (initially unset)

5 Keys available to theorem environments

`label=`⟨*label name*⟩ (initially unset)

`note=`⟨*text*⟩ (initially unset)

Alias `name`.

`continues=`⟨*label name*⟩ (initially unset)

`store=`⟨*csname*⟩ (initially unset)

Alias `restate`. Defines a command `\`⟨*csname*⟩ that can be used to restate the theorem, including the body text, later in the document.

6 Listing Theorems

`\listofkeytheorems[`⟨*options*⟩`]`

`\keytheoremlistset{`⟨*options*⟩`}`

6.1 Keys inherited from thmtools

`numwidth=`⟨*length*⟩ (initially `2.3em`)

`ignore={`⟨*comma-list of env names*⟩`}` (initially unset)

`show={`⟨*comma-list of env names*⟩`}` (initially all theorems)

`onlynamed={`⟨*comma-list of env names*⟩`}` (initially unset)

`ignoreall` (initially unset)

`showall` (initially set)

`title=`⟨*text*⟩ (initially `List of Theorems`)

`swapnumber=true|false` (initially `false`)

6.2 Keys added by key-theorems

`title-code=`⟨*code with* `#1`⟩ (initially `\section*{#1}`)

If `\chapter` is defined, then initially this is instead `\chapter*{#1}`.

`no-title` (initially unset)

`print-body` (initially unset)

Instead of listing the theorem headings, the theorems are restated with their body text.

7 Theorem Hooks

`\addtotheoremhook[`⟨*env name*⟩`]{`⟨*hook name*⟩`}{`⟨*code*⟩`}`

⟨*hook name*⟩ can be `prehead`, `posthead`, `prefoot`, or `postfoot`. As in thmtools, the order of hooks is as follows:

⟨*env name*⟩ `prehead` ⇒ generic `prehead` ⇒ `\begin{`⟨*env name*⟩`}` ⇒ ⟨*env name*⟩ `posthead` ⇒ generic `posthead`

⇒ ⟨*theorem body*⟩ ⇒

generic `prefoot` ⇒ ⟨*env name*⟩ `prefoot` ⇒ `\end{`⟨*env name*⟩`}` ⇒ generic `postfoot` ⇒ ⟨*env name*⟩ `postfoot`

In thmtools, the `prefoot` and `postfoot` hooks always prepend code, i.e. the code

```
\addtotheorempostfoothook{A}
\addtotheorempostfoothook{B}
```

results in `BA` after the theorem. With key-theorems, code is added in the order declared, meaning

```
\addtotheoremhook{postfoot}{A}
\addtotheoremhook{postfoot}{B}
```

results in `AB` after the theorem. This is the behavior of the LaTeX kernel hooks that key-theorems uses under the hood.

Right now, code added using the hook keys `preheadhook` → P. 3, etc. is outermost, meaning executed first in `prehead` and `posthead` and last in `prefoot` and `postfoot`. This may change if I think of good reasons to do so...

Index