

key-theorems package

version 0.0.1 γ

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.

<code>spaceabove</code>	<code>=⟨length⟩</code>	(initially <code>\topsep</code>)
<code>spacebelow</code>	<code>=⟨length⟩</code>	(initially <code>\topsep</code>)
<code>bodyfont</code>	<code>=⟨font declarations⟩</code>	(initially <code>\itshape</code>)
<code>headindent</code>	<code>=⟨length⟩</code>	(initially <code>0pt</code>)
<code>headfont</code>	<code>=⟨font declarations⟩</code>	(initially <code>\bfseries</code>)
<code>headpunct</code>	<code>=⟨code⟩</code>	(initially <code>{.}</code>)
<code>postheadspace</code>	<code>=⟨length⟩</code>	(initially <code>5pt</code> plus <code>1pt</code> minus <code>1pt</code>)
Do not use this with the <code>break</code> key.		
<code>break</code>		(initially unset)
Do not use this with the <code>postheadspace</code> key.		
<code>notefont</code>	<code>=⟨font declarations⟩</code>	(initially <code>\fontseries\mddefault\upshape</code>)
<code>notebraces</code>	<code>=⟨left brace⟩⟨right brace⟩</code>	(initially <code>{\{}}</code>)
<code>headstyle</code>	<code>=margin swapnumber ⟨code using \NAME, \NUMBER, and \NOTE⟩</code>	
Alias <code>headstyle</code> . Within <code>⟨code⟩</code> , the commands <code>\NAME</code> , <code>\NUMBER</code> , and <code>\NOTE</code> correspond to the formatted parts of the theorem head.		

3.2 Keys added by key-theorems

<code>inherit-style</code>	<code>=⟨style name⟩</code>	(initially unset)
Inherit the keys of any style declared with <code>\newkeytheoremstyle</code> ^{P.1} . Additionally, the three styles predefined by amsthm are possible values: <code>plain</code> , <code>definition</code> , and <code>remark</code> .		

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*

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4.1 Keys inherited from thmtools

`name`= $\langle display name \rangle$ (initially title-cased $\langle env name \rangle$)
 Aliases `title` and `heading`.

`numbered`=`true`|`false` (default `true`, initially `true`)
 For compatibility with thmtools, also accepts the values `yes` and `no`.

`parent`= $\langle counter \rangle$ (initially unset)
 Aliases `numberwithin` and `within`.

`sibling`= $\langle counter \rangle$ (initially unset)
 Aliases `numberlike` and `sharenumber`.

`style`= $\langle style name \rangle$ (initially unset)

`preheadhook`= $\langle code \rangle$ (initially unset)

`postheadhook`= $\langle code \rangle$ (initially unset)

`prefoothook`= $\langle code \rangle$ (initially unset)

`postfoothook`= $\langle code \rangle$ (initially unset)

Details in [section 7](#).

`refname`= $\langle ref name \rangle$ or $\{\langle singular name \rangle, \langle plural name \rangle\}$ (initially $\langle display name \rangle$)

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`= $\langle ref name \rangle$ or $\{\langle singular name \rangle, \langle plural name \rangle\}$ (initially $\langle display name \rangle$)

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

`qed`= $\langle symbol \rangle$ (default `\openbox`, initially unset)

4.2 Keys added by key-theorems

`tcolorbox`= $\{\langle tcolorbox options \rangle\}$ (initially unset)

5 Keys available to theorem environments

`label`= $\langle label name \rangle$ (initially unset)

`note`= $\langle text \rangle$ (initially unset)

Alias `name`.

`continues`= $\langle label name \rangle$ (initially unset)

`store`= $\langle csnam e \rangle$ (initially unset)

Alias `restate`. Defines a command `\langle csnam e \rangle` that can be used to restate the theorem, including the body text, later in the document.

6 Listing Theorems

`\listofkeytheorems`[$\langle options \rangle$]

`\keytheoremset`{ $\langle options \rangle$ }

6.1 Keys inherited from thmtools

<code>numwidth=<length></code>	(initially 2.3em)
<code>ignore={<comma-list of env names>}</code>	(initially unset)
<code>show={<comma-list of env names>}</code>	(initially all theorems)
<code>onlynamed={<comma-list of env names>}</code>	(initially unset)
<code>ignoreall</code>	(initially unset)
<code>showall</code>	(initially set)
<code>title=<text></code>	(initially List of Theorems)
<code>swapnumber=true false</code>	(initially false)

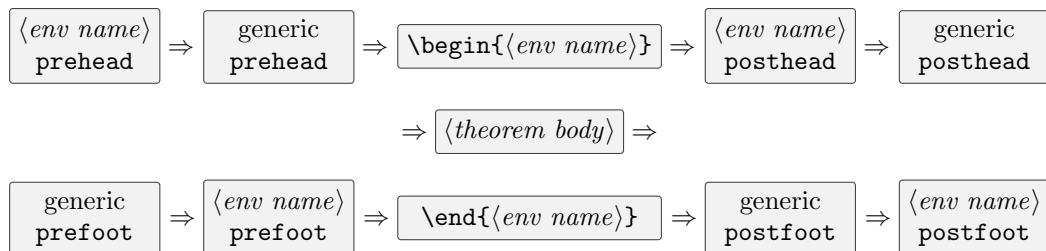
6.2 Keys added by key-theorems

<code>title-code=<code with #1></code>	(initially <code>\section*{#1}</code>)
If <code>\chapter</code> is defined, then initially this is instead <code>\chapter*{#1}</code> .	
<code>no-title</code>	(initially unset)
<code>print-body</code>	(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:



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...

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