

theorem-keys package

version 0.0.1 α

github.com/mbertucci47/theorem-keys

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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 theorem-keys 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.

2 Global Options

`\ThmKeysSet{<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

`\NewThmStyle{<name>}{<options>}`

This is theorem-keys' 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`= $\langle length \rangle$ (initially `\topsep`)

`bodyfont`= $\langle font\ declarations \rangle$ (initially `\itshape`)

`headindent`= $\langle length \rangle$ (initially `0pt`)

`headfont`= $\langle font\ declarations \rangle$ (initially `\bfseries`)

`headpunct`= $\langle code \rangle$ (initially `{.}`)

`postheadspace`= $\langle length \rangle$ (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`= $\langle font\ declarations \rangle$ (initially `\fontseries\mddefault\upshape`)

`notebraces`= $\{ \langle left\ brace \rangle \} \{ \langle right\ brace \rangle \}$ (initially `{\{ }\}`)

`headstyle`=`margin|swapnumber|` $\langle code\ using\ \backslash NAME, \backslash NUMBER, and \backslash NOTE \rangle$
Alias `headstyle`. Within $\langle code \rangle$, the commands `\NAME`, `\NUMBER`, and `\NOTE` correspond to the formatted parts of the theorem head.

3.2 Keys added by `theorem-keys`

`inherit-style`= $\langle style\ name \rangle$ (initially unset)
Inherit the keys of any style declared with `\NewThmStyle`^{P.1}. Additionally, the three styles predefined by `amsthm` are possible values: `plain`, `definition`, and `remark`.

4 Declaring Theorems

`\NewThm` $\{ \langle env\ name \rangle \} [\langle options \rangle]$

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

```
% preamble
\NewThm{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=<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 `theorem-keys`

`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)

`restate=<cname>` (initially unset)

Defines a command `\<cname>` that can be used to restate the theorem, including the body text, later in the document.

6 Listing Theorems

`\ListOfThms[<options>]`

`\ThmKeysListSet{<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)

<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 theorem-keys

<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.	

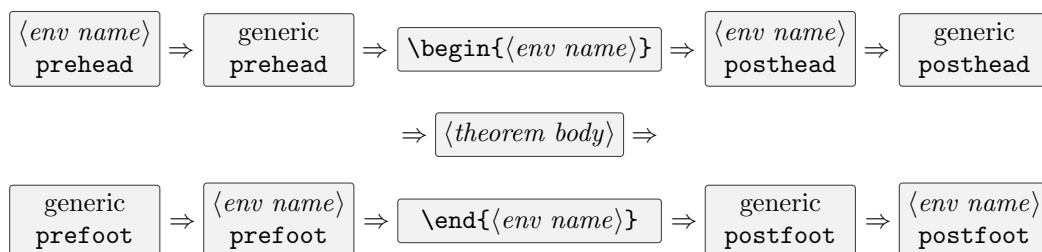
7 Theorem Hooks

```

\AddToTheoremPreHeadHook[⟨env name⟩]{⟨code⟩}
\AddToTheoremPostHeadHook[⟨env name⟩]{⟨code⟩}
\AddToTheoremPreFootHook[⟨env name⟩]{⟨code⟩}
\AddToTheoremPostFootHook[⟨env name⟩]{⟨code⟩}

```

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 `theorem-keys`, code is added in the order declared, meaning

```

\AddToTheoremPostFootHook{A}
\AddToTheoremPostFootHook{B}

```

results in AB after the theorem. This is the behavior of the L^AT_EX kernel hooks that `theorem-keys` 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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