

keytheorems package

version 0.1.0

github.com/mbertucci47/keytheorems

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Abstract

An expl3-implementation of a key-value interface to `amsthm`, implementing most of the functionality provided by `thmtools`. Several issues encountered with `thmtools` are avoided and a few new features are added (see the README).

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1 Dependencies

Without using the `tcolorbox`^{→P.7} or `tcolorbox-no-titlebar`^{→P.7} options, the package loads the `aliascnt`, `amsthm`, `refcount`, and `translations` packages.

2 Global Options

`\keytheoremset{⟨options⟩}`

Every key in this section can be given as a package option with `\usepackage[<options>]{keytheorems}` or in `\keytheoremset{<options>}`, with the exception that `continues-code`^{→P.2} can only be used in the latter.

overload (initially unset)

Redefines `\newtheorem` to internally use the `keytheorems` machinery. The syntax remains the same. This is automatically set by `thmtools-compat`.

thmtools-compat (initially unset)

For compatibility with `thmtools` syntax. Currently defines the commands in the left column below. The right column lists the corresponding `keytheorems` replacement that should be used in new documents.

thmtools command	keytheorems replacement
<code>\declaretheorem</code>	<code>\newkeytheorem</code>
<code>\declaretheoremstyle</code>	<code>\newkeytheoremstyle</code> ^{→P.7}
<code>\listoftheorems</code>	<code>\listofkeytheorems</code> ^{→P.9}
<code>\addtotheoremheadhook</code>	
<code>\addtotheoremheadhook</code>	
<code>\addtotheoremheadhook</code>	<code>\addtotheoremhook</code> ^{→P.11}
<code>\addtotheoremheadhook</code>	
<code>\addtotheoremheadhook</code>	
<code>restatable</code> environment	<code>store</code> ^{→P.3} key

Also defined are the `shaded` and `thmbox` keys, implemented internally with `tcolorbox` rather than the `shadethm` and `thmbox` packages, respectively.

store-all (initially unset)

Tells `keytheorems` to grab the body of each theorem so it can later be printed with the `print-body`^{→P.11} option of `\listofkeytheorems`^{→P.9}. Note that this means a theorem body *cannot* contain verbatim material.

restate-counters=*<comma-list of counters>* (initially `{equation}`)

Additional counters whose values are preserved when a theorem is restated. This key does not reset the list, so you don't need to include `equation` in *<comma-list>*.

continues-code=*<code with #1>* (initially `\GetTranslation{keythms_continues}\pageref{#1}`)

The code used to typeset the note produced by the `continues`^{→P.3} key. If English or an unknown language is used, defaults to `continuing from p.\, \pageref{#1}`. Currently (likely inaccurate!) translations exist for French, German, and Spanish.

qed-symbol=*<symbol>* (initially `\openbox`)

Redefines `\qedsymbol` to be *<symbol>*.

auto-translate=`true|false` (default `true`, initially `true`)

If `false`, `keytheorems` does not automatically translate the title text for `\listofkeytheorems`^{→P.9} and the note produced by the `continues`^{→P.3} key. These texts can be manually customized with the `title`^{→P.10} and `continues-code` keys, respectively.

3 Defining Theorems

\newkeytheorem{*<env name>*}[*<options>*]

Defines a theorem environment *<env name>* which itself takes a few options (see subsection 3.1). 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>]`.

By default, the theorem's printed name is a title-cased *<env name>*. This can be changed with the `name`^{→P.4} key. All *<options>* are described in subsections 3.2 and 3.3.

```
% preamble
\newkeytheorem{theorem}

% document
\begin{theorem}
Some text
\end{theorem}
```

Theorem 1. *Some text*

3.1 Keys available to theorem environments

As in `amsthm`, theorems can take an optional argument that contains a note or heading.

```
\begin{theorem}[some heading]
Some text
\end{theorem}
```

Theorem 2 (some heading). *Some text*

Alternatively, the optional argument may contain any of the following keys.

note=*<text>* (initially unset)

Alias **name**. This is the key-value equivalent of the optional argument described above. This syntax, however, allows the argument to contain other keys.

```
\begin{theorem}[some heading]
Some text
\end{theorem}
\begin{theorem}[note=another heading]
Some more text
\end{theorem}
```

Theorem 3 (some heading). *Some text*

Theorem 4 (another heading). *Some more text*

short-note=*<text>* (initially unset)

Alias **short-name**. This replaces the value of **note** when displayed in `\listofkeytheorems`^{P.9}.

label=*<label name>* (initially unset)

This is the key-value equivalent of `\begin{theorem} \label{<label name>}`.

```
\begin{theorem}[label=foo]
Some text
\end{theorem}
\ref{foo}
```

Theorem 5. *Some text*

5

continues=*<label name>* (initially unset)

Pick up a theorem where you left off. The theorem number remains the same. The printed text can be customized with the `continues-code`^{P.2} option. The starred version also copies the theorem note, if it exists.

```
\begin{theorem}[continues=foo]
\dots and some more text.
\end{theorem}
```

Theorem 5 (continuing from p. 3). *... and some more text.*

store=*<tag>* (initially unset)

Alias **restate**. Stores the the theorem to be restated at any point in the document with `\getkeytheorem`^{P.8}.

```

\begin{theorem}[store=blub]
A theorem worth restating.
\end{theorem}
More brilliant mathematics.
\getkeytheorem{blub}

```

Theorem 6. *A theorem worth restating.*

More brilliant mathematics.

Theorem 6. *A theorem worth restating.*

A theorem given this key *cannot* contain verbatim material or other unexpected catcodes, such as a tikz-cd diagram. The latter issue can be averted with the `ampersand-replacement` key.

```

% preamble
\usepackage{tikz}
\usetikzlibrary{cd}

% document
\begin{lemma}[store=diagram]
Some commutative diagram:
\[\begin{tikzcd}[ampersand
\rightarrow replacement=\&]
X\times_S Y \ar[r] \ar[d] \& X \ar[d]
\rightarrow \\
Y \ar[r] \& S
\end{tikzcd}\]
\end{lemma}
\dots
\getkeytheorem{diagram}

```

Lemma 7. *Some commutative diagram:*

$$\begin{array}{ccc}
 X \times_S Y & \longrightarrow & X \\
 \downarrow & & \downarrow \\
 Y & \longrightarrow & S
 \end{array}$$

...

Lemma 7. *Some commutative diagram:*

$$\begin{array}{ccc}
 X \times_S Y & \longrightarrow & X \\
 \downarrow & & \downarrow \\
 Y & \longrightarrow & S
 \end{array}$$

`listhack=true|false`

(initially false)

Meant only to be used with the `break`^{P.8} style key for a theorem starting with a list. Compare:

```

% preamble
\newkeytheoremstyle{breaksty}{break}
\newkeytheorem{observation}[style=breaksty]

% document
\begin{observation}
\begin{enumerate}
\item First item
\end{enumerate}
\end{observation}

\begin{observation}[listhack=true]
\begin{enumerate}
\item First item
\end{enumerate}
\end{observation}

```

Observation 1. *1. First item*

Observation 2.

1. First item

Note that the value `true` must be explicitly set so that `listhack` is not interpreted as the note text.

`seq=<name>`

(initially unset)

Adds the theorem to a custom sequence `<name>` that can then be listed with `\listofkeytheorems[seq=<name>]`. See `seq`^{P.10} for more details.

3.2 Keys inherited from thmtools

These are the `[<options>]` available to `\newkeytheorem`. Except for `name` and `style`^{P.5}, each key below can also be used in `\newkeytheoremstyle`^{P.7}. For more description, see the `thmtools` package.

`name=<display name>`

(initially title-cased `<env name>`)

Aliases `title` and `heading`.

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

% document
\begin{mythm}
Some text
\end{mythm}
```

Some Name 1. *Some text*

`numbered=true|false|unless-unique`

(default true, initially true)

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

```
% preamble
\newkeytheorem{theorem*}[
  name=Theorem, numbered=false
]

% document
\begin{theorem*}
An unnumbered theorem.
\end{theorem*}
```

Theorem. *An unnumbered theorem.*

`parent=<counter>`

(initially unset)

Aliases `numberwithin` and `within`.

```
% preamble
\newkeytheorem{conjecture}[parent=section]

% document
\begin{conjecture}
The first number is the section.
\end{conjecture}
```

Conjecture 3.1. *The first number is the section.*

`sibling=<counter>`

(initially unset)

Aliases `numberlike` and `sharenumber`.

```
% preamble
\newkeytheorem{lemma}[sibling=theorem]

% document
\begin{lemma}
This shares its counter with
\texttt{theorem}.
\end{lemma}
```

Lemma 8. *This shares its counter with theorem.*

`style=<style name>`

(initially unset)

Accepts any `<style name>` defined by `\newkeytheoremstyle→ P. 7`, as well as any of the predefined amsthm styles: `plain`, `definition`, and `remark`.

```
% preamble
\newkeytheorem{remark}[style=remark]

% document
\begin{remark}
Some text
\end{remark}
```

Remark 1. Some text

`preheadhook=<code>`

(initially unset)

`postheadhook=<code>`

(initially unset)

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

Details in [section 7](#).

<pre>% preamble \newkeytheorem{test}[preheadhook=PREHEAD, postheadhook=POSTHEAD, prefoothook=PREFOOT, postfoothook=POSTFOOT] % document \begin{test} Some text \end{test}</pre>	<pre>PREHEAD Test 1. <i>POSTHEAD</i>Some text <i>PREFOOT</i> POSTFOOT</pre>
--	--

`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` and `\Cref`. Note that `\Autoref` is defined by `keytheorems`, but requires `hyperref` to work.

<pre>% preamble \newkeytheorem{prop}[name=Proposition, refname={proposition,propositions}, Refname={Proposition,Propositions}] % document \begin{prop}[label=abc] Some text \end{prop} \begin{prop}[label=def] Some more text \end{prop} \begin{theorem} Consider \cref{abc,def}. \Autoref{abc} \dots \end{theorem}</pre>	<pre>Proposition 1. <i>Some text</i> Proposition 2. <i>Some more text</i> Theorem 9. <i>Consider propositions 1 and 2. Proposition 1 ...</i></pre>
--	---

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

Adds $\langle symbol \rangle$ to the end of the theorem body. If no value is given, the symbol \square is used.

<pre>% preamble \newkeytheorem{example}[qed] \newkeytheorem{solution}[qed=\$\clubsuit\$] % document \begin{example} Some text \end{example} \begin{solution} Some more text \end{solution}</pre>	<pre>Example 1. <i>Some text</i> \square Solution 1. <i>Some more text</i> \clubsuit</pre>
---	---

3.3 Keys added by `keytheorems`

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

This key specifies that the theorem be placed inside a `tcolorbox` environment with `\langle options \rangle`. The theorem head is typeset as a `tcolorbox` title; to avoid this see `tcolorbox-no-titlebar`.

```
% preamble
\tcbset{
  defstyle/.style={
    arc=0mm,
    colback=blue!5!white,
    colframe=blue!75!black
  },
}
\newkeytheorem{corollary}[tcolorbox]
\newkeytheorem{definition}[
  style=definition,
  tcolorbox={defstyle}
]

% document
\begin{corollary}
Some text
\end{corollary}
\begin{definition}
Some more text
\end{definition}
```

Corollary 1.

Some text

Definition 1.

Some more text

`tcolorbox-no-titlebar={\langle tcolorbox options \rangle}` (initially unset)

Same usage as `tcolorbox` but the theorem head is typeset as usual, not as a `tcolorbox` title.

```
% preamble
\newkeytheorem{boxcor}[
  tcolorbox-no-titlebar={
    colback=red!10
  },
  name=Corollary,sibling=corollary
]

% document
\begin{boxcor}
Some text
\end{boxcor}
```

Corollary 2. *Some text*

4 Theorem Styles

`\newkeytheoremstyle{\langle name \rangle}{\langle options \rangle}`

This is `keytheorems`' version of `thmtools`' `\declaretheoremstyle[\langle options \rangle]{\langle name \rangle}`. Since it makes little sense to define a style with no keys, we've made the `\langle options \rangle` argument mandatory. Note that unlike `amsthm`'s `\newtheoremstyle`, this command will error if a style has already been defined. To overwrite an existing style, there is the analogous `\renewkeytheoremstyle`. For completeness, there is also `\declarekeytheoremstyle` and `\providekeytheoremstyle`.



For the AMS classes `amsart`, `amsbook`, and `amspoc`, as well as the `amsart`-based `acmart`, the initial key values are slightly different than what's below in order to match those class's defaults.

4.1 Keys inherited from thmtools

The following keys have the same meaning and syntax as the corresponding thmtools keys. In addition to the list below, most of the keys available to `\newkeytheorem`^{P.2} can be used in `\newkeytheoremstyle`.

`spaceabove`= $\langle length \rangle$ (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.

4.2 Keys added by keytheorems

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

Inherit the keys of any style declared with `\newkeytheoremstyle`^{P.7}. Additionally, the three styles predefined by amsthm are possible values: `plain`, `definition`, and `remark`.

5 Restating Theorems

When a theorem is given the `store`^{P.3} key, the contents of the theorem are saved and written to a `.thlist` file. At the start of the next run, this file is input at the beginning of the document and allows you to retrieve the stored theorems at any point, before or after the original theorem.

`\getkeytheorem`[$\langle property \rangle$]{ $\langle tag \rangle$ }

Retrieves the theorem given the key `store`= $\langle tag \rangle$. An optional $\langle property \rangle$ can be given to retrieve only the corresponding part of the theorem. Currently only the property `body` is implemented, which retrieves the (unformatted) body of the theorem.

```
\getkeytheorem{mytag}
```

```
\begin{example}[store=mytag]
```

```
Fascinating example.
```

```
\end{example}
```

```
\getkeytheorem[body]{mytag}
```

Example 2. *Fascinating example.* □

Example 2. *Fascinating example.* □

Fascinating example.

`\IfRestatingTF{<true code>}{<false code>}`

Executes `<true code>` if being retrieved with `\getkeytheorem` and `<false code>` if in the original theorem.

```
\begin{example}[store=hmm]
I am the
\IfRestatingTF{restated}{original}
example!
\end{example}

\getkeytheorem{hmm}
```

Example 3. *I am the original example!* □

Example 3. *I am the restated example!* □

6 Listing Theorems

`\listofkeytheorems[<options>]`

`\keytheoremset{<options>}`

`\listofkeytheorems`

List of Theorems

1	Theorem	2
2	Theorem (some heading)	3
3	Theorem (some heading)	3
4	Theorem (another heading) . .	3
5	Theorem	3
5	Theorem (continuing from p. 3)	3
6	Theorem	3
7	Lemma	4
1	Observation	4
2	Observation	4
1	Some Name	4
	Theorem	5
3.1	Conjecture	5
8	Lemma	5
1	Remark	5
1	Test	6
1	Proposition	6
2	Proposition	6
9	Theorem	6
1	Example	6
1	Solution	6
1	Corollary	7
1	Definition	7
2	Corollary	7
2	Example	8
3	Example	8

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)

<pre> \listofkeytheorems[ignoreall,show=theorem] \listofkeytheorems[ignoreall, show=conjecture, title=List of Conjectures] </pre>	<div> <div>List of Theorems</div> <div> 1 Theorem 2 2 Theorem (some heading) . . . 3 3 Theorem (some heading) . . . 3 4 Theorem (another heading) . 3 5 Theorem 3 5 Theorem (continuing from p. 3) 3 6 Theorem 3 9 Theorem 6 </div> </div> <div> <div>List of Conjectures</div> <div> 3.1 Conjecture 5 </div> </div>
---	--

`showall` (initially set)

`title=⟨text⟩` (initially `\GetTranslation{keythms_listof_title}`)

Defaults to “List of Theorems” if English or an unknown language is used. Currently French, German, and Spanish have (likely inaccurate!) translations. A translation can be added with a GitHub pull request or manually with `\DeclareTranslation{⟨lang⟩}{keythms_listof_title}{⟨text⟩}`.

`swapnumber=true|false` (initially false)

6.2 Keys added by `keytheorems`

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

Similar to `onlynamed`, but lists only those theorems which are numbered. This is useful if you’d like to exclude things like unnumbered definitions and remarks from the list of theorems.

`seq=⟨name⟩` (initially unset)

Used to list only the theorems added to the custom sequence `⟨name⟩` with the `seq`^{P.4} theorem key. This is the only way to fully customize which theorems appear in the list of theorems.

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

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

`no-title` (initially unset)

Suppresses the title of the list of theorems. Useful for custom ordering of the list.

<pre> \keytheoremset{ignoreall} \listofkeytheorems[show=example] \listofkeytheorems[show=solution,no-title] </pre>	<div> <div>List of Theorems</div> <div> 1 Example 6 2 Example 8 3 Example 8 1 Solution 6 </div> </div>
--	---

`note-code=⟨code with #1⟩` (initially `{ (#1) }`)

Formats the optional note in the list of theorems.

`print-body` (initially unset)

Instead of listing the theorem headings, the theorems are restated with their body text. Not very useful without the `store-all`^{P.2} load-time option.

`no-continues=true|false` (initially false)

Suppresses the printing of theorems given the `continues`^{P.3} key in the list of theorems.

`no-chapter-skip=true|false` (initially false)

By default a small vertical space is inserted between each chapter's chunk of theorems. Setting this key to `true` removes this space.

`chapter-skip-length=<dimension>` (initially 10pt)

Controls the amount of space inserted between chunks.

6.3 Adding code to list of theorems

There are analogous commands to `\addcontentsline` and `\addtocontents` for adding entries or arbitrary code to the list of theorems.



You *must* use these commands rather than the aforementioned because the `.thlist` file is also used to define restated theorems and cannot contain unexpected code.

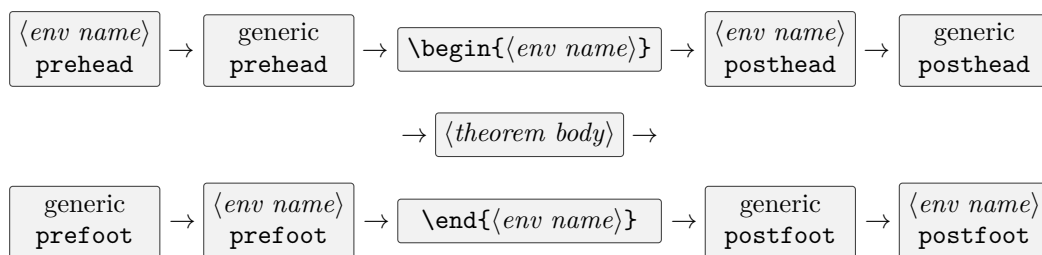
`\addtheoremcontentsline{<level>}{<text>}`

`\addtotheoremcontents{<code>}`

7 Theorem Hooks

`\addtotheoremhook[<env name>]{<hook name>}{<code>}`

`<hook name>` can be `prehead`, `posthead`, `prefoot`, `postfoot`, or `restated`. If no `<env name>` is given, the `<code>` is added to the “generic” hook, i.e. applied to all theorems. As in `thmtools`, the order of hooks is as follows:



The `restated` hook is applied at the start of theorems retrieved with `\getkeytheorem`, before the `prehead` hook. This can be useful for disabling commands such as `\footnote` in the restated theorems, e.g.

```
\addtotheoremhook{restated}{%
  \renewcommand\footnote[2][]{}%
}
```

By default, `keytheorems` disables the `\label` and `\RecordProperties` commands in restated theorems.

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

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

results in BA after the theorem. With `keytheorems`, 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 L^AT_EX kernel hooks that `keytheorems` uses under the hood.

Right now, code added using the hook keys `preheadhook`^{→P.5}, 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...

8 Implementation

```
1 \NeedsTeXFormat{LaTeX2e}[2023/06/01]
2 \ProvidesExplPackage{keytheorems}{2024-09-09}{0.1.0}{l3keys interface to amsthm}
3
4 %% TESTING
5 % \debug_on:n { all }
6 %% END TESTING
7
8 \IfFormatAtLeastTF { 2024-06-01 } { }
9 {
10   \RequirePackage{nameref} % to avoid ltproperties in code below
11   \cs_generate_variant:Nn \iow_shipout:Nn { Ne }
12   \cs_generate_variant:Nn \cs_set:Npn { Npe }
13   \cs_generate_variant:Nn \tl_put_right:Nn { Ne }
14   \ProvideDocumentCommand \IfPackageLoadedT { m m }
15     { \IfPackageLoadedTF{#1}{#2}{ } }
16 }
17 \RequirePackage{aliascnt} % for sibling theorems
18 \RequirePackage{amsthm}
19 % ~ams classes have way of ignoring this so don't need to check if they're loaded
20 \RequirePackage{refcount} % for \getrefnumber
21 \RequirePackage{translations} % for translating "List of Theorems"
22
23 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
24 %% Error Messages %%
25 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
26
27 \msg_new:nnn { keytheorems } { thmtools-before }
28 {
29   keytheorems~is~not~compatible~with~thmtools.~
30   Try~replacing~\protect\usepackage{thmtools}~with~
31   \protect\usepackage{thmtools-compat}[keytheorems].
32 }
33 \msg_new:nnn { keytheorems } { thmtools-after }
34 {
35   keytheorems~is~not~compatible~with~thmtools.~
36   This~will~not~work~as~you~think!~
37   Try~replacing~\protect\usepackage{thmtools}~with~
38   \protect\usepackage{thmtools-compat}[keytheorems].
39 }
40 \msg_new:nnn { keytheorems } { no-stored-theorem }
41 {
42   No~stored~theorem~'#1'~found!~
43   Try~compiling~again.~If~that~doesn't~work,~
44   check~the~spelling~of~'#1'.
45 }
46 \msg_new:nnn { keytheorems } { undefined-thm-hook }
```

```

47 {
48   No~theorem~hook~'#1'.~Check~the~spelling.~
49   Should~be~one~of~'prehead',~'posthead',~'prefoot',~'postfoot',~or~'restated'.
50 }
51 \msg_new:nnn { keytheorems } { hyperref-Autoref }
52 {
53   You~have~not~loaded~hyperref.~The~\protect\Autoref\space command~needs~
54   hyperref~to~work.
55 }
56 \msg_new:nnn { keytheorems } { no-Autorefname }
57 {
58   No~Autoref~name~for~'#1'.~
59   Please~define~\c_backslash_str #1Autorefname.
60 }
61 \msg_new:nnn { keytheorems } { thmstyle-undefined }
62 {
63   Theorem~style~'#1'~undefined.~
64   Use~\protect\newkeytheoremstyle\space instead.
65 }
66 \msg_new:nnn { keytheorems } { thmstyle-defined }
67 {
68   Theorem~style~'#1'~already~defined.~
69   Use~\protect\renewkeytheoremstyle\space instead.
70 }
71
72 % Error if thmtools loaded since compilation hangs.
73 % If thmtools loaded after, produce warning.
74 \IfPackageLoadedTF { thmtools }
75 {
76   \msg_fatal:nn { keytheorems } { thmtools-before }
77 }
78 {
79   \hook_gput_code:nnn { package/thmtools/before } { . }
80   {
81     \msg_warning:nn { keytheorems } { thmtools-after }
82   }
83 }
84
85 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
86 %% Declare Variables %%
87 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
88
89 \tl_new:N \l__keythms_tmpa_tl
90
91 \bool_new:N \g__keythms_listof_writefile_bool
92 \bool_gset_false:N \g__keythms_listof_writefile_bool
93 \bool_new:N \g__keythms_thmtoolscompat_bool
94 \bool_gset_false:N \g__keythms_thmtoolscompat_bool
95 \bool_new:N \l__keythms_thm_numbered_bool
96 \bool_new:N \l__keythms_thm_unlessunique_bool
97 \bool_new:N \l__keythms_thmuse_listhack_bool
98 \bool_new:N \l__keythms_thmuse_restating_bool
99 \clist_new:N \g__keythms_restatecounters_clist
100 \clist_new:N \l__keythms_thmstyle_savedkeys_clist
101 \iow_new:N \g__keythms_listof_stream
102 \prop_new:N \g__keythms_thmnames_prop
103 \prop_new:N \g__keythms_thmuse_othercounters_prop
104 \prop_new:N \l__keythms_restate_counters_prop

```

```

105 \tl_new:N \l__keythms_thm_currentthmstyle_tl
106 \tl_new:N \l__keythms_thm_defaultkeys_tl
107 \tl_new:N \l__keythms_thm_envname_tl
108 \tl_new:N \l__keythms_thmstyle_defaultkeys_tl
109 \tl_new:N \l__keythms_thmstyle_lnotebrace_tl
110 \tl_new:N \l__keythms_thmstyle_rnotebrace_tl
111 \tl_new:N \l__keythms_thmuse_envname_tl
112 \tl_new:N \g__keythms_thmuse_temprestatedata_tl
113
114 \newcounter{keythms_restate_dummyctr}
115 \cs_gset:Npn \theHkeythms_restate_dummyctr
116   { restate.\arabic{keythms_restate_dummyctr} }
117 \cs_gset:Npn \thekeythms_restate_dummyctr { }
118 \newcounter{keythms_continues_dummyctr}
119 \cs_gset:Npn \theHkeythms_continues_dummyctr
120   { continues.\arabic{keythms_continues_dummyctr} }
121 \cs_gset:Npn \thekeythms_continues_dummyctr { }
122 \newcounter{keythms_unnumbered_dummyctr}
123 \cs_gset:Npn \theHkeythms_unnumbered_dummyctr
124   { unnumbered.\arabic{keythms_unnumbered_dummyctr} }
125 \cs_gset:Npn \thekeythms_unnumbered_dummyctr { }
126
127 \cs_generate_variant:Nn \hook_gput_code:nnn { nnV }
128 \cs_generate_variant:Nn \keys_precompile:nnN { nv, nVc }
129
130 % for detecting AMS classes
131 \prg_new_conditional:Npnn \keythms_if_amsclass: { T, TF }
132   {
133     \IfClassLoadedTF { amsart } { \prg_return_true: }
134     {
135       \IfClassLoadedTF { amsbook } { \prg_return_true: }
136       {
137         \IfClassLoadedTF { amsproc } { \prg_return_true: }
138         { \prg_return_false: }
139       }
140     }
141   }
142
143 %%%%%%%%%%%%%%%
144 %% Styles %%
145 %%%%%%%%%%%%%%%
146
147 % \_keythms_thmstyle_setbraces:nn { <left brace> } { <right brace> }
148 \cs_new_protected:Npn \_keythms_thmstyle_setbraces:nn #1#2
149   {
150     \tl_set:Nn \l__keythms_thmstyle_lnotebrace_tl { #1 }
151     \tl_set:Nn \l__keythms_thmstyle_rnotebrace_tl { #2 }
152   }
153 \cs_new_protected:Npn \keythms_thmstyle_savethmkey_reqval:n #1
154   {
155     \clist_put_right:No \l__keythms_thmstyle_savedkeys_clist
156     { \l_keys_key_str = { #1 } }
157   }
158 \cs_new_protected:Npn \keythms_thmstyle_savethmkey_optval:n #1
159   {
160     \tl_if_empty:NTF \l_keys_value_tl
161     {
162       \clist_put_right:No \l__keythms_thmstyle_savedkeys_clist

```

```

163         { \l_keys_key_str }
164     }
165     {
166         \clist_put_right:No \l__keythms_thmstyle_savedkeys_clist
167         { \l_keys_key_str = { #1 } }
168     }
169 }
170
171 \keys_define:nn { keytheorems/thmstyle }
172 {
173     spaceabove .tl_set:N = \l__keythms_thmstyle_spaceabove_tl,
174     spacebelow .tl_set:N = \l__keythms_thmstyle_spacebelow_tl,
175     bodyfont .tl_set:N = \l__keythms_thmstyle_bodyfont_tl,
176     headindent .tl_set:N = \l__keythms_thmstyle_headindent_tl,
177     headfont .tl_set:N = \l__keythms_thmstyle_headfont_tl,
178     headpunct .tl_set:N = \l__keythms_thmstyle_headpunct_tl,
179     postheadspace .tl_set:N = \l__keythms_thmstyle_postheadspace_tl,
180     break .meta:n = { postheadspace = \newline }, % add error if postheadspace set
181     break .value_forbidden:n = true,
182     notefont .tl_set:N = \l__keythms_thmstyle_notefont_tl,
183     notebraces .code:n = \exp_after:wN \l__keythms_thmstyle_setbraces:nn #1,
184     headstyle .choice:,
185     headstyle / margin .code:n =
186     {
187         \cs_set:Nn \keythms_thmstyle_headcmd:nnn
188         { \makebox[Opt][r]{\NUMBER\ }\NAME\NOTE }
189     },
190     headstyle / swapnumber .code:n =
191     {
192         \cs_set:Nn \keythms_thmstyle_headcmd:nnn { \NUMBER\ \NAME\NOTE }
193     },
194     headstyle / unknown .cs_set:Np = \keythms_thmstyle_headcmd:nnn #1#2#3,
195     headformat .meta:n = { headstyle = #1 },
196     inherit-style .choice:,
197     inherit-style / plain .meta:n = {},
198     inherit-style / definition .meta:n = { bodyfont = \normalfont },
199     inherit-style / remark .meta:n =
200     {
201         headfont = \itshape,
202         bodyfont = \normalfont,
203         spaceabove = 0.5\topsep,
204         spacebelow = 0.5\topsep,
205     },
206     % thm keys that are saved for later
207     numbered .code:n = \keythms_thmstyle_savethmkey_optval:n { #1 },
208     parent .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
209     numberwithin .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
210     within .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
211     sibling .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
212     numberlike .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
213     sharenumber .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
214     preheadhook .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
215     postheadhook .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
216     prefoothook .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
217     postfoothook .code:n = \keythms_thmstyle_savethmkey_reqval:n { #1 },
218     qed .code:n = \keythms_thmstyle_savethmkey_optval:n { #1 },
219     tcolorbox .code:n = \keythms_thmstyle_savethmkey_optval:n { #1 },
220     tcolorbox-no-titlebar .code:n = \keythms_thmstyle_savethmkey_optval:n { #1 },

```

```

221 }
222
223 \cs_new_protected:Nn \keythms_thmstyle_thmname:n { \thmname{#1} }
224 \cs_new_protected:Nn \keythms_thmstyle_thmnumber:n { \thmnumber{#1} }
225 \cs_new_protected:Nn \keythms_thmstyle_thmnote:n { \thmnote{#1} }
226
227 %% NOTE: if these are used, user is in charge of spacing with \NAME and \NUMBER
228 %% QUESTION: should these be moved into def of \newkeytheoremstyle?
229 \cs_new:Npn \NAME { \keythms_thmstyle_thmname:n { ##1 } }
230 \cs_new:Npn \NUMBER
231 {
232   \keythms_thmstyle_thmnumber:n { \textup { ##2 } }
233 }
234 \cs_new:Npn \NOTE
235 {
236   \keythms_thmstyle_thmnote:n
237   { ~ \group_begin: % group so notefont doesn't affect headpunct
238     \exp_not:V \l__keythms_thmstyle_notefont_tl
239     \l__keythms_thmstyle_lnotebrace_tl ##3 \l__keythms_thmstyle_rnotebrace_tl
240     \group_end:
241   }
242 }
243
244 \cs_new:Npn \keythms_thmstyle_headcmd_default:nnn #1#2#3
245 {
246   \keythms_thmstyle_thmname:n { #1 }
247   \keythms_thmstyle_thmnumber:n
248   { \tl_if_empty:nF { #1 } { ~ } \exp_not:N \textup { #2 } }
249   % ~ this \tl_if_empty has no effect...
250   \keythms_thmstyle_thmnote:n
251   { ~ \group_begin: % group so notefont doesn't affect headpunct
252     \exp_not:V \l__keythms_thmstyle_notefont_tl
253     \l__keythms_thmstyle_lnotebrace_tl #3 \l__keythms_thmstyle_rnotebrace_tl
254     \group_end:
255   }
256 }
257
258 %%% <SURELY A BETTER WAY>
259 \cs_new_protected:Npn \__keythms_thmstyle_definekeylist:nn #1#2
260 {
261   \clist_const:cn { c__keythms_thmstyle_defaultkeys_ #1 _clist } { #2 }
262 }
263
264 \cs_new_protected:Npn \__keythms_thmstyle_setdefaultkeys:n #1
265 {
266   \keys_precompile:nvN { keytheorems/thmstyle }
267   { c__keythms_thmstyle_defaultkeys_ #1 _clist }
268   \l__keythms_thmstyle_defaultkeys_tl
269 }
270
271 \__keythms_thmstyle_definekeylist:nn { default }
272 {
273   spaceabove = \topsep,
274   spacebelow = \topsep,
275   bodyfont = \itshape,
276   headindent = 0pt,
277   headfont = \bfseries,
278   headpunct = {.,},

```



```

279     postheadspace = 5pt plus 1pt minus 1pt,
280     notefont       = \fontseries\mddefault\upshape,
281     notebraces     = {\{ }\},
282     headstyle      = \keythms_thmstyle_headcmd_default:nnn{#1}{#2}{#3},
283 }
284 \__keythms_thmstyle_definekeylist:nn { amsart }
285 {
286     spaceabove     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
287     spacebelow     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
288     bodyfont       = \itshape,
289     headindent     = 0pt,
290     headfont       = \bfseries,
291     headpunct      = {\.},
292     postheadspace  = 5pt plus 1pt minus 1pt,
293     notefont       = \fontseries\mddefault\upshape,
294     notebraces     = {\{ }\},
295     headstyle      = \keythms_thmstyle_headcmd_default:nnn{#1}{#2}{#3},
296 }
297 \__keythms_thmstyle_definekeylist:nn { amsproc }
298 {
299     spaceabove     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
300     spacebelow     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
301     bodyfont       = \itshape,
302     headindent     = \parindent,
303     headfont       = \scshape,
304     headpunct      = {\.},
305     postheadspace  = 5pt plus 1pt minus 1pt,
306     notefont       = \fontseries\mddefault\upshape,
307     notebraces     = {\{ }\},
308     headstyle      = \keythms_thmstyle_headcmd_default:nnn{#1}{#2}{#3},
309 }
310 \__keythms_thmstyle_definekeylist:nn { amsbook }
311 {
312     spaceabove     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
313     spacebelow     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
314     bodyfont       = \itshape,
315     headindent     = \parindent,
316     headfont       = \scshape,
317     headpunct      = {\.},
318     postheadspace  = 5pt plus 1pt minus 1pt,
319     notefont       = \fontseries\mddefault\upshape,
320     notebraces     = {\{ }\},
321     headstyle      = \keythms_thmstyle_headcmd_default:nnn{#1}{#2}{#3},
322 }
323 \__keythms_thmstyle_definekeylist:nn { acmart }
324 {
325     spaceabove     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
326     spacebelow     = .5\baselineskip plus .2\baselineskip minus .2\baselineskip,
327     bodyfont       = \@acmplainbodyfont,
328     headindent     = \@acmplainindent,
329     headfont       = \@acmplainheadfont,
330     headpunct      = {\.},
331     postheadspace  = .5em,
332     notefont       = \@acmplainnotefont,
333     notebraces     = {\{ }\},
334     headstyle      = \keythms_thmstyle_headcmd_default:nnn{#1}{#2}{#3},
335 }
336

```

```

337 \IfClassLoadedTF { amsart }
338 {
339   \IfClassLoadedTF { acmart } % acmart loads amsart
340   {
341     \__keythms_thmstyle_setdefaultkeys:n { acmart }
342   }
343   {
344     \__keythms_thmstyle_setdefaultkeys:n { amsart }
345     \keys_define:nn { keytheorems/thmstyle }
346     {
347       inherit-style / remark .meta:n =
348       {
349         headfont = \itshape,
350         bodyfont = \normalfont,
351       }
352     }
353   }
354 }
355 {
356   \IfClassLoadedTF { amsbook }
357   {
358     \__keythms_thmstyle_setdefaultkeys:n { amsbook }
359     \keys_define:nn { keytheorems/thmstyle }
360     {
361       inherit-style / remark .meta:n =
362       {
363         bodyfont = \normalfont,
364       },
365     }
366   }
367   {
368     \IfClassLoadedTF { amsproc }
369     {
370       \__keythms_thmstyle_setdefaultkeys:n { amsproc }
371       \keys_define:nn { keytheorems/thmstyle }
372       {
373         inherit-style / remark .meta:n =
374         {
375           bodyfont = \normalfont,
376         },
377       }
378     }
379     { \__keythms_thmstyle_setdefaultkeys:n { default } }
380   }
381 }
382 %%% </SURELY A BETTER WAY>
383
384 \NewDocumentCommand \newkeytheoremstyle { m m }
385 {
386   \cs_if_free:cTF { th@ #1 }
387   { \keythms_thmstyle_declarestyle:nn { #1 } { #2 } }
388   { \msg_error:nnn { keytheorems } { thmstyle-defined } { #1 } }
389 }
390 \NewDocumentCommand \renewkeytheoremstyle { m m }
391 {
392   \cs_if_free:cTF { th@ #1 }
393   { \msg_error:nnn { keytheorems } { thmstyle-undefined } { #1 } }
394   { \keythms_thmstyle_declarestyle:nn { #1 } { #2 } }

```

```

395 }
396 \NewDocumentCommand \providekeytheoremstyle { m m }
397 {
398   \cs_if_free:cT { th@ #1 }
399   { \keythms_thmstyle_declarestyle:nn { #1 } { #2 } }
400 }
401 \NewDocumentCommand \declarekeytheoremstyle { m m }
402 {
403   \keythms_thmstyle_declarestyle:nn { #1 } { #2 }
404 }
405
406 \@onlypreamble \newkeytheoremstyle
407 \@onlypreamble \renewkeytheoremstyle
408 \@onlypreamble \providekeytheoremstyle
409 \@onlypreamble \declarekeytheoremstyle
410
411 \cs_new_eq:NN \keythms_thmstyle_new:nnnnnnnnn \newtheoremstyle
412 \cs_generate_variant:Nn \keythms_thmstyle_new:nnnnnnnnn { nVVVVVVVe }
413
414 \cs_new_protected:Npn \keythms_thmstyle_declarestyle:nn #1#2
415 {
416   \clist_clear:N \l__keythms_thmstyle_savedkeys_clist
417   \tl_use:N \l__keythms_thmstyle_defaultkeys_tl
418   \keys_set:nn { keytheorems/thmstyle } { #2 }
419   \keythms_thmstyle_new:nVVVVVVVe { #1 }
420   \l__keythms_thmstyle_spaceabove_tl
421   \l__keythms_thmstyle_spacebelow_tl
422   \l__keythms_thmstyle_bodyfont_tl
423   \l__keythms_thmstyle_headindent_tl
424   \l__keythms_thmstyle_headfont_tl
425   \l__keythms_thmstyle_headpunct_tl
426   \l__keythms_thmstyle_postheadspace_tl
427   { \text_expand:n { \keythms_thmstyle_headcmd:nnn{##1}{##2}{##3} } }
428   % Define new inherit-style key
429   \keys_define:nn { keytheorems/thmstyle }
430   { inherit-style / #1 .meta:n = { #2 } }
431   \tl_if_exist:cF { l__keythms_thmstyle_ #1 _savedkeys_tl }
432   { \tl_new:c { l__keythms_thmstyle_ #1 _savedkeys_tl } }
433   \keys_precompile:nVc { keytheorems/thm }
434   \l__keythms_thmstyle_savedkeys_clist
435   { l__keythms_thmstyle_ #1 _savedkeys_tl }
436 }
437
438 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
439 %%% Defining Theorems %%%
440 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
441
442 % FIX: reimplement these without \NewDocumentCommand and \SplitArgument
443
444 % \keythms_thm_setrefnames:n { <envname> } { <refname> or <sing,plural> }
445 \NewDocumentCommand \keythms_thm_setrefnames:nn
446 { m >{\SplitArgument{1}{,}} m }
447 { \__keythms_thm_setrefnames_aux:nnn{#1}#2 }
448 \cs_new_protected:Npn \__keythms_thm_setrefnames_aux:nnn #1#2#3
449 {
450   \cs_set:cpn { #1 autorefname } { #2 }
451   \IfPackageLoadedT { cleveref }
452   {

```

```

453     \tl_if_novalue:nTF { #3 }
454     { \crefname{#1}{#2}{\textbf{??~(pl.~#2)}} }
455     { \crefname{#1}{#2}{#3} }
456   }
457 }
458 \cs_generate_variant:Nn \keythms_thm_setrefnames:nn { nV }
459
460 % \keythms_thm_setRefnames:n { <envname> } { <refname> or <sing,plural> }
461 \NewDocumentCommand \keythms_thm_setRefnames:nn
462 { m >{\SplitArgument{1}{,}} m }
463 { \__keythms_thm_setRefnames_aux:nnn{#1}#2 }
464 \cs_new_protected:Npn \__keythms_thm_setRefnames_aux:nnn #1#2#3
465 {
466   \cs_set:cpn { #1 Autorefname } { #2 }
467   \IfPackageLoadedT { cleveref }
468   {
469     \tl_if_novalue:nTF { #3 }
470     { \Crefname{#1}{#2}{\textbf{??~(pl.~#2)}} }
471     { \Crefname{#1}{#2}{#3} }
472   }
473 }
474 \cs_generate_variant:Nn \keythms_thm_setRefnames:nn { nV }
475
476 \keys_define:nn { keytheorems/thm }
477 {
478   name          .tl_set:N = \l__keythms_thm_name_tl,
479   title          .meta:n   = { name = #1 },
480   heading        .meta:n   = { name = #1 },
481   refname        .tl_set:N = \l__keythms_thm_refname_tl,
482   Refname        .tl_set:N = \l__keythms_thm_Refname_tl,
483   numbered       .choice:,
484   numbered / true .code:n   = \bool_set_true:N \l__keythms_thm_numbered_bool,
485   numbered / false .code:n  = \bool_set_false:N \l__keythms_thm_numbered_bool,
486   numbered / yes .meta:n    = { numbered = true },
487   numbered / no .meta:n     = { numbered = false },
488   numbered / unless-unique .code:n =
489   {
490     \bool_set_true:N \l__keythms_thm_unlessunique_bool
491   },
492   numbered / unless-unique .meta:n = { numbered = unless-unique },
493   numbered          .default:n = true,
494   parent           .tl_set:N = \l__keythms_thm_parent_tl,
495   numberwithin     .meta:n    = { parent = #1 },
496   within           .meta:n    = { parent = #1 },
497   sibling           .tl_set:N = \l__keythms_thm_sibling_tl,
498   numberlike       .meta:n    = { sibling = #1 },
499   sharenumber      .meta:n    = { sibling = #1 },
500   style            .tl_set:N = \l__keythms_thm_style_tl,
501   style            .groups:n  = { style-comes-first },
502   preheadhook      .tl_set:N = \l__keythms_thm_preheadhook_tl,
503   postheadhook     .tl_set:N = \l__keythms_thm_postheadhook_tl,
504   prefoothook      .tl_set:N = \l__keythms_thm_prefoothook_tl,
505   postfoothook     .tl_set:N = \l__keythms_thm_postfoothook_tl,
506   qed              .tl_set:N = \l__keythms_thm_qed_tl,
507   qed              .default:n = \c_novalue_tl,
508   % ^ distinguish between 'qed' and 'qed={}'
509   tcolorbox        .tl_set:N = \l__keythms_thm_tcbkeys_tl,
510   tcolorbox        .default:n = {},

```

```

511 tcolorbox-no-titlebar .meta:n =
512 {
513     tcolorbox={
514         notitle,
515         before~upper={
516             \group_begin:
517             \__keythms_thm_tcbxtemphead:
518             \group_end:
519         },
520         #1
521     }
522 },
523 tcolorbox-no-titlebar .default:n = {},
524 }
525
526 % what below is unnecessary? I really don't understand this code.
527 \cs_new_protected:Npn \__keythms_thm_storedeferredthmhead:n #1
528 {
529     \if@inlabel \indent \par \fi % eject a section head if one is pending
530     \if@nobreak
531         \adjust@parskip@nobreak
532     \else
533         \addpenalty\@beginparpenalty
534         \addvspace\@topsep
535         \addvspace{-\parskip}
536     \fi
537     % \global\@inlabeltrue % MY COMMENT: if this is uncommented then spacing after sections is wrong
538     \everypar\@dth@everypar
539     \cs_set:Npn \__keythms_thm_tcbxtemphead: { \normalfont #1 }
540     \ignorespaces
541 }
542
543 \keys_precompile:nnN { keytheorems/thm }
544 {
545     name          = \q_no_value,
546     refname       = \q_no_value,
547     Refname       = \q_no_value,
548     numbered      = true,
549     parent        = {},
550     sibling        = {},
551     style         = {},
552     preheadhook   = {},
553     postheadhook  = {},
554     prefoothook   = {},
555     postfoothook  = {},
556     qed           = \q_no_value,
557     tcolorbox     = \q_no_value,
558 }
559 \l__keythms_thm_defaultkeys_tl
560
561 \cs_new_protected:Npn \__keythms_thm_makethmhooks:n #1
562 {
563     \hook_new:n { keytheorems/#1/prehead }
564     \hook_new:n { keytheorems/#1/posthead }
565     \hook_new_reversed:n { keytheorems/#1/prefoot }
566     \hook_new_reversed:n { keytheorems/#1/postfoot }
567     \hook_new:n { keytheorems/#1/restated }
568 }

```

```

569
570 % Make generic theorem hooks
571 \__keythms_thm_makethmhooks:n { allthms }
572
573 % \newkeytheorem{<name>}{<keys>}
574 \NewDocumentCommand \newkeytheorem { m O{} }
575 {
576   \clist_map_inline:nn { #1 } % define multiple theorems at once
577   { \keythms_thm_newkeythm:nn { ##1 } { #2 } }
578 }
579
580 \@onlypreamble \newkeytheorem
581
582 % to prevent error when plain, remark, or definition style used
583 \tl_new:N \l__keythms_thmstyle_plain_savedkeys_tl
584 \tl_new:N \l__keythms_thmstyle_remark_savedkeys_tl
585 \tl_new:N \l__keythms_thmstyle_definition_savedkeys_tl
586
587 % \keythms_thm_newkeythm:nn { <envname> } { <keys> }
588 \cs_new_protected:Npn \keythms_thm_newkeythm:nn #1#2
589 {
590   % Store envname
591   \tl_set:Nn \l__keythms_thm_envname_tl { #1 }
592   % Make unless-unique false by default (can't precompile this)
593   \bool_set_false:N \l__keythms_thm_unlessunique_bool
594   % Set default keys
595   \tl_use:N \l__keythms_thm_defaultkeys_tl
596   % First set style so we can pick up additional thm keys, then overwrite if necessary
597   \keys_set:groups:nnn { keytheorems/thm } { style-comes-first } { #2 }
598   \tl_if_empty:NF \l__keythms_thm_style_tl
599   {
600     % Store theorem style
601     \tl_set:Nn \l__keythms_thm_currentthmstyle_tl { \the\thm@style }
602     % Temporarily set theorem style
603     \__keythms_theoremstyle:n { \l__keythms_thm_style_tl }
604     % If thm keys given in style, call now (possibly overwritten in next step)
605     % but don't error if user uses a style defined with just \newtheoremstyle
606     \tl_if_exist:cT { l__keythms_thmstyle_ \l__keythms_thm_style_tl _savedkeys_tl }
607     { \tl_use:c { l__keythms_thmstyle_ \l__keythms_thm_style_tl _savedkeys_tl } }
608   }
609   % Set env-specific keys
610   \keys_set:nn { keytheorems/thm } { #2 }
611   % Set up env-specific hooks
612   \__keythms_thm_makethmhooks:n { #1 }
613   % Add to env-specific hooks (use label so code given in keys is outermost)
614   % NOTE: faster to check if empty than add empty code to hook
615   \tl_if_empty:NF \l__keythms_thm_preheadhook_tl
616   {
617     \hook_gput_code:nnV { keytheorems/#1/prehead }
618     { \keythms_hook_keys } \l__keythms_thm_preheadhook_tl
619   }
620   \tl_if_empty:NF \l__keythms_thm_postheadhook_tl
621   {
622     \hook_gput_code:nnV { keytheorems/#1/posthead }
623     { \keythms_hook_keys } \l__keythms_thm_postheadhook_tl
624   }
625   \tl_if_empty:NF \l__keythms_thm_prefoothook_tl
626   {

```

```

627     \hook_gput_code:nnV { keytheorems/#1/prefoot }
628     { keythms_hook_keys } \l__keythms_thm_prefoothook_tl
629   }
630 \tl_if_empty:NF \l__keythms_thm_postfoothook_tl
631 {
632     \hook_gput_code:nnV { keytheorems/#1/postfoot }
633     { keythms_hook_keys } \l__keythms_thm_postfoothook_tl
634 }
635 % Set name if none given
636 \quark_if_no_value:NT \l__keythms_thm_name_tl % use quark so name={} is valid
637 {
638     % use e so \text_titlecase called only once per theorem definition,
639     % not each time the theorem is used
640     \tl_set:Ne \l__keythms_thm_name_tl
641     { \text_titlecase_first:n { #1 } }
642 }
643 % associate formatted name with envname in prop list
644 \prop_gput:NnV \g__keythms_thmnames_prop { #1 } \l__keythms_thm_name_tl
645 % Call correct \newtheorem variant
646 \bool_if:NTF \l__keythms_thm_unlessunique_bool
647 {
648     % [unq] is required since aux is read at begindocument
649     % (technically right before) which is after theorem is defined
650     \RequirePackage[unq]{unique}
651     \tl_if_empty:NTF \l__keythms_thm_parent_tl
652     {
653         \hook_gput_code:nnn { keytheorems/#1/prehead }
654         { keythms_hook_keys } { \setuniqmark { #1 } }
655         \ifuniq{ #1 }
656         { \bool_set_false:N \l__keythms_thm_numbered_bool }
657         { \bool_set_true:N \l__keythms_thm_numbered_bool }
658         \bool_if:NTF \l__keythms_thm_numbered_bool
659         {
660             \tl_if_empty:NTF \l__keythms_thm_sibling_tl
661             {
662                 \__keythms_thm_new_numbered:nV { #1 } \l__keythms_thm_name_tl
663             }
664             {
665                 \exp_args:NnV \newaliascnt { #1 } \l__keythms_thm_sibling_tl
666                 \__keythms_thm_new_sibling:nVn { #1 }
667                 \l__keythms_thm_name_tl { #1 }
668                 \aliascntresetthe { #1 }
669             }
670         }
671         {
672             \__keythms_thm_new_unnumbered:nV { #1 } \l__keythms_thm_name_tl
673             \hook_gput_code:nnn { keytheorems/#1/prehead } { keythms_hook_keys }
674             {
675                 \keythms_if_restating:F
676                 { \refstepcounter{ keythms_unnumbered_dummyctr } }
677             }
678         }
679     }
680     {
681         \__keythms_thm_new_uuwithparent:nVV { #1 }
682         \l__keythms_thm_name_tl \l__keythms_thm_parent_tl
683     }
684 }

```

```

685 {
686   \bool_if:NTF \l__keythms_thm_numbered_bool
687   {
688     \tl_if_empty:NTF \l__keythms_thm_parent_tl
689     {
690       \tl_if_empty:NTF \l__keythms_thm_sibling_tl
691       {
692         \__keythms_thm_new_numbered:nV { #1 } \l__keythms_thm_name_tl
693       }
694       {
695         \exp_args:NnV \newaliascnt { #1 } \l__keythms_thm_sibling_tl
696         \__keythms_thm_new_sibling:nVn { #1 }
697         \l__keythms_thm_name_tl { #1 }
698         \aliascntresetthe { #1 }
699       }
700     }
701     {
702       \__keythms_thm_new_parent:nVV { #1 }
703       \l__keythms_thm_name_tl \l__keythms_thm_parent_tl
704     }
705   }
706   {
707     \__keythms_thm_new_unnumbered:nV { #1 } \l__keythms_thm_name_tl
708     \hook_gput_code:nnn { keytheorems/#1/prehead } { keythms_hook_keys }
709     {
710       \keythms_if_restating:F
711       { \refstepcounter{ keythms_unnumbered_dummyctr } }
712     }
713   }
714 }
715 % Store theorem def and redefine it with keys
716 \keythms_keyify_theorem:n { #1 }
717 % define \<env>autorefname and \<env>Autorefname, might be redefined next
718 \exp_args:NnV \cs_set:cpn { #1 autorefname } \l__keythms_thm_name_tl
719 \exp_args:NnV \cs_set:cpn { #1 Autorefname } \l__keythms_thm_name_tl
720 % Set ref names
721 \quark_if_no_value:NF \l__keythms_thm_refname_tl
722 { \keythms_thm_setrefnames:nV { #1 } \l__keythms_thm_refname_tl }
723 \quark_if_no_value:NF \l__keythms_thm_Refname_tl
724 { \keythms_thm_setRefnames:nV { #1 } \l__keythms_thm_Refname_tl }
725 % Set up qed if needed
726 \quark_if_no_value:NF \l__keythms_thm_qed_tl
727 {
728   \exp_args:Nno \__keythms_thm_qedcode:nn { #1 } { \l__keythms_thm_qed_tl }
729 }
730 % Set up tcolorbox if needed
731 \quark_if_no_value:NF \l__keythms_thm_tcbkeys_tl
732 {
733   \exp_args:Nno \__keythms_thm_tcbboxcode:nn { #1 }
734   { \l__keythms_thm_tcbkeys_tl }
735 }
736 % Set default list-of display command
737 \__keythms_listof_show_aux:n { #1 }
738 % Set theorem style back to original state if needed
739 \tl_if_empty:NF \l__keythms_thm_style_tl
740 {
741   \__keythms_theoremstyle:V \l__keythms_thm_currentthmstyle_tl
742 }

```



```

743 }
744
745 \cs_new_protected:Npn \__keythms_thm_tcboboxcode:nn #1#2
746 {
747   \RequirePackage{tcolorbox}
748   \hook_gput_code:nnn { keytheorems/#1/prehead }
749     { keythms_tcbox }
750   {
751     \cs_set_eq:NN \deferred@thm@head \__keythms_thm_storedeferredthmhead:n
752     \cs_set_eq:NN \Hy@theorem@makelinktarget \use_none:n
753     % ~ don't like playing with hyperref internals... but don't see around
754     %   it because hyperref tries to add to para hook which doesn't work
755     %   when title set up the way we do it
756     \cs_set_protected:Npn \thm@space@setup { \thm@preskip=Opt \thm@postskip=Opt }
757     % ~ to match tcolorbox defaults; shouldn't interfere with user styles
758   }
759   \hook_gset_rule:nnnn { keytheorems/#1/posthead }
760     { keythms_tcbox } { before } { keythms_hook_keys }
761   \hook_gset_rule:nnnn { keytheorems/#1/prefoot }
762     { keythms_tcbox } { after } { keythms_hook_keys }
763   \hook_gset_rule:nnnn { keytheorems/#1/prefoot }
764     { keythms_tcbox } { after } { keythms_qed }
765   \bool_if:NTF \l__keythms_thm_numbered_bool
766     {
767       \hook_gput_code:nnn { begindocument } { { . }
768         {
769           \IfPackageLoadedTF{cleveref}
770             { % hyperref doesn't patch \@thm if cleveref loaded
771               \hook_gput_code:nnn { keytheorems/#1/posthead }
772                 { keythms_tcbox }
773               {
774                 \begin{tcolorbox}[
775                   savedelimiter=#1,
776                   title={ \__keythms_thm_tcboxtemphead: },
777                   #2]
778               }
779             }
780           {
781             \hook_gput_code:nnn { keytheorems/#1/posthead }
782               { keythms_tcbox }
783             {
784               \begin{tcolorbox}[
785                 savedelimiter=#1,
786                 title={ \__keythms_thm_tcboxtemphead: },
787                 phantom={ \MakeLinkTarget*{\@currentHref} }, % fix hyperlinking
788                 #2]
789             }
790           }
791         }
792       }
793     {
794       \hook_gput_code:nnn { keytheorems/#1/posthead }
795         { keythms_tcbox }
796       {
797         \begin{tcolorbox}[
798           savedelimiter=#1,
799           title={ \__keythms_thm_tcboxtemphead: },
800           #2]

```

```

801     }
802   }
803   \hook_gput_code:nnn { keytheorems/#1/prefoot }
804   { keythms_tcbox } { \end{tcolorbox} }
805 }
806 \cs_new_protected:Npn \__keythms_thm_qedcode:nn #1#2
807 {
808   \hook_gput_code:nnn { keytheorems/#1/posthead }
809   { keythms_qed }
810   {
811     \exp_args:No \tl_if_novalue:nF { #2 } { \protected@edef\qedsymbol{#2} }
812     \pushQED{\qed}
813   }
814   \hook_gput_code:nnn { keytheorems/#1/prefoot }
815   { keythms_qed }
816   {
817     \exp_args:No \tl_if_novalue:nF { #2 } { \protected@edef\qedsymbol{#2} }
818     \popQED
819   }
820 }
821
822 \cs_new_eq:NN \__keythms_theoremstyle:n \theoremstyle
823 \cs_generate_variant:Nn \__keythms_theoremstyle:n { V }
824
825 % \newtheorem variants
826 \cs_new_eq:NN \__keythms_thm_new:w \newtheorem
827
828 \cs_new_protected:Npn \__keythms_thm_new_numbered:nn #1#2
829 { \__keythms_thm_new:w { #1 } { #2 } }
830 \cs_generate_variant:Nn \__keythms_thm_new_numbered:nn { nV }
831
832 \cs_new_protected:Npn \__keythms_thm_new_unnumbered:nn #1#2
833 { \__keythms_thm_new:w* { #1 } { #2 } }
834 \cs_generate_variant:Nn \__keythms_thm_new_unnumbered:nn { nV }
835
836 \cs_new_protected:Npn \__keythms_thm_new_parent:nnn #1#2#3
837 { \__keythms_thm_new:w { #1 } { #2 } [ #3 ] }
838 \cs_generate_variant:Nn \__keythms_thm_new_parent:nnn { nVV }
839
840 \cs_new_protected:Npn \__keythms_thm_new_sibling:nnn #1#2#3
841 { \__keythms_thm_new:w { #1 } [ #3 ] { #2 } }
842 \cs_generate_variant:Nn \__keythms_thm_new_sibling:nnn { nV }
843
844 \cs_new_protected:Npn \__keythms_thm_new_uuwithparent:nnn #1#2#3
845 {
846   \cs_undefine:c { keythms_orig_nonumber_#1 } % for renew, declare
847   \__keythms_thm_new_unnumbered:nn { keythms_orig_nonumber_#1 } { #2 }
848   \__keythms_thm_new_parent:nnn { #1 } { #2 } { #3 }
849   \DeclareEnvironmentCopy { keythms_orig_withparent_#1 } { #1 }
850   \renewenvironment { #1 } % opt arg is implicit
851   {
852     \setuniqmark{ #1. \use:c {the #3} }
853     \ifuniq{ #1. \use:c {the #3} }
854     {
855       \keythms_if_restating:F
856       { \refstepcounter{ keythms_unnumbered_dummyctr } }
857       \begin{keythms_orig_nonumber_#1}
858     }

```

```

859         {
860         \begin{keythms_orig_withparent_#1}
861         }
862     }
863     {
864     \ifuniq{ #1. \use:c {the #3} }
865     { \end{keythms_orig_nonumber_#1} }
866     { \end{keythms_orig_withparent_#1} }
867     }
868 }
869 \cs_generate_variant:Nn \__keythms_thm_new_uuwithparent:nnn { nVV }
870
871 % for getting notes with continues*, use nameref if available, otherwise ltproperties
872 \hook_gput_code:nnn { begindocument } { . }
873 {
874     \IfPackageLoadedTF { nameref }
875     {
876         \cs_new:Npn \__keythms_thmuse_recordnote: { } % nameref takes care of this
877         \cs_new:Npn \__keythms_getrecordednote:n #1
878         {
879             \getrefbykeydefault{ #1 }{ name }{ }
880         }
881     }
882     { % needs https://github.com/latex3/latex2e/issues/1200 fixed
883     \property_new:nnnn { keytheorems/recordednote } { now } { }
884     { \l__keythms_thmuse_note_tl }
885     \cs_new:Npn \__keythms_getrecordednote:n #1
886     {
887         \property_ref:nn { keythms_recordednote_#1 }
888         { keytheorems/recordednote }
889     }
890     \cs_new:Npn \__keythms_thmuse_recordnote:
891     {
892         \tl_if_empty:NF \l__keythms_thmuse_note_tl
893         {
894             \RecordProperties
895             { keythms_recordednote_\l__keythms_thmuse_label_tl }
896             { keytheorems/recordednote }
897         }
898     }
899 }
900 }
901
902 \keys_define:nn { keytheorems/thmuse }
903 {
904     label      .tl_set:N = \l__keythms_thmuse_label_tl,
905     note       .tl_set:N = \l__keythms_thmuse_note_tl,
906     name       .meta:n   = { note = #1 },
907     % ^ for compatibility. "name" is ambiguous and doesn't match amsthm language
908     short-note .code:n   = {}, % these do nothing at point of use
909     short-name .code:n   = {}, % ^ worthwhile compatibility?
910     continues  .tl_set:N = \l__keythms_thmuse_contlabel_tl,
911     continues* .code:n   =
912     {
913         \keys_set:nn { keytheorems/thmuse } { continues = #1 }
914         \protected@edef \l__keythms_tmpa_tl { \__keythms_getrecordednote:n{#1} }
915         \tl_if_empty:NF \l__keythms_tmpa_tl
916         {

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917         \keys_set:nn { keytheorems/thmuse }
918         { note = \l__keythms_tmpa_tl }
919     }
920 },
921 store      .tl_set:N = \l__keythms_thmuse_store_tl,
922 %store     .default:n = \q_no_value, % = {name} causes issues
923 restate    .meta:n = { store = #1 },
924 % ^ thmtools compatibility
925 listhack   .choice:, % need equals sign
926 listhack / true .code:n = \bool_set_true:N \l__keythms_thmuse_listhack_bool,
927 listhack / false .code:n = \bool_set_false:N \l__keythms_thmuse_listhack_bool,
928 listhack   .initial:n = false,
929 seq        .code:n = {},
930 }
931
932 \cs_new_protected:Npn \keythms_keyify_theorem:n #1
933 { % #1 = theorem name
934     \DeclareEnvironmentCopy { keythms_orig_#1 } { #1 }
935     \DeclareDocumentEnvironment { keythms_grab_#1 } { m O{} +b }
936     { % ##1 = keys, ##2 = note, ##3 = theorem body
937         \__keythms_thm_prehead_code:n { #1 }
938         \begin{keythms_orig_#1}[{##2}]
939         \clist_map_inline:Nn \g__keythms_restatecounters_clist
940             {
941                 \prop_gput:Nne \g__keythms_thmuse_othercounters_prop { ####1 }
942                 { \the\value{####1} }
943             }
944         \__keythms_thm_posthead_code:n { #1 }
945         % below needs to come after posthead so that correct \@currentHref
946         % is stored for tcolorbox theorems
947         \__keythms_thm_addcontentsdata:nnnn { #1 }
948         { \prop_to_keyval:N \g__keythms_thmuse_othercounters_prop }
949         { ##1 } { ##3 }
950         \__keythms_thm_tempstorerebasedata:nnn { #1 } { ##1 } { ##3 }
951         ##3
952         \__keythms_thm_prefoot_code:n { #1 }
953         \end{keythms_orig_#1}
954         \__keythms_thm_postfoot_code:n { #1 }
955     }
956     {}
957     % NOTE: have to do a lot of shenanigans to make sure the begin/end of grabbed
958     % theorem env captures only the body and no package code.
959     % This is the price of on-the-fly redefining the env to grab body
960     \RenewDocumentEnvironment { #1 } { = {note} O{} }
961     {
962         \keys_set:nn { keytheorems/thmuse } { ##1 }
963         \tl_if_empty:NF \l__keythms_thmuse_store_tl
964         {
965             \bool_gset_true:N \g__keythms_listof_writefile_bool
966             \cs_set_eq:NN \__keythms_withhooks_begin:nn \__keythms_grab_begin:nn
967             \cs_set_eq:NN \__keythms_withhooks_begin:nnn \__keythms_grab_begin:nnn
968             \cs_set_eq:NN \__keythms_withhooks_begin:nnV \__keythms_grab_begin:nnV
969             \cs_set_eq:NN \__keythms_withhooks_end:n \__keythms_grab_end:n
970         }
971         \__keythms_thm_prehead_continues_code:n { #1 }
972         \tl_if_empty:NTF \l__keythms_thmuse_note_tl
973         { \__keythms_withhooks_begin:nn { #1 } { ##1 } }
974         {

```

```

975         \__keythms_withhooks_begin:nnV { #1 } { ##1 }
976         \l__keythms_thmuse_note_tl
977     }
978 }
979 {
980     \__keythms_withhooks_end:n { #1 }
981     \tl_if_empty:NF \l__keythms_thmuse_store_tl
982     {
983         \cs_if_exist:cF
984         { __keythms_getthm_ \l__keythms_thmuse_store_tl _theorem }
985         {
986             \cs_new:cpe
987             { __keythms_getthm_ \l__keythms_thmuse_store_tl _theorem }
988             {
989                 \exp_not:N \__keythms_getthm_theorem:nnnnn
990                 \exp_not:o { \g__keythms_thmuse_temprestatedata_tl }
991             }
992             \cs_new:cpe
993             { __keythms_getthm_ \l__keythms_thmuse_store_tl _body }
994             {
995                 \exp_not:N \__keythms_getthm_body:nn
996                 \exp_args:No \exp_not:o
997                 {
998                     \exp_after:wN \__keythms_use_iii_v_braced:nnnnn
999                     \g__keythms_thmuse_temprestatedata_tl
1000                 }
1001             }
1002         }
1003     }
1004 }
1005 }
1006 \cs_new:Npn \__keythms_use_iii_v_braced:nnnnn #1#2#3#4#5 { {#3}{#5} }
1007
1008 \cs_new_protected:Npn \__keythms_withhooks_begin:nn #1#2
1009 { % #1 = theorem name, #2 = keys
1010     \__keythms_thm_prehead_code:n { #1 }
1011     \begin{keythms_orig_#1}
1012     \__keythms_thm_posthead_code:n { #1 }
1013     \__keythms_thm_addcontentsdata:nnnn { #1 } { } { #2 } { }
1014     \ignorespaces % I hope this is alright
1015 }
1016 \cs_new_protected:Npn \__keythms_withhooks_begin:nnn #1#2#3
1017 { % #1 = theorem name, #2 = keys, #3 = note
1018     \__keythms_thm_prehead_code:n { #1 }
1019     \begin{keythms_orig_#1}[{#3}]
1020     \__keythms_thm_posthead_code:n { #1 }
1021     \__keythms_thm_addcontentsdata:nnnn { #1 } { } { #2 } { }
1022     \ignorespaces % I hope this is alright
1023 }
1024 \cs_generate_variant:Nn \__keythms_withhooks_begin:nnn { nnV }
1025 \cs_new_protected:Npn \__keythms_withhooks_end:n #1
1026 {
1027     \__keythms_thm_prefoot_code:n { #1 }
1028     \end{keythms_orig_#1}
1029     \__keythms_thm_postfoot_code:n { #1 }
1030 }
1031 \cs_new_protected:Npn \__keythms_grab_begin:nn #1#2
1032 { % #1 = theorem name, #2 = keys

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```

1033     \begin{keythms_grab_#1}{#2}
1034   }
1035   \cs_new_protected:Npn \__keythms_grab_begin:nnn #1#2#3
1036     { % #1 = theorem name, #2 = keys, #3 = note
1037       \begin{keythms_grab_#1}{#2}[{#3}]
1038     }
1039   \cs_generate_variant:Nn \__keythms_grab_begin:nnn { nnV }
1040   \cs_new_protected:Npn \__keythms_grab_end:n #1 { \end{keythms_grab_#1} }
1041
1042   \cs_new_protected:Npn \__keythms_orig_begin:n #1 { \begin{keythms_orig_#1} }
1043   \cs_new_protected:Npn \__keythms_orig_begin:nn #1#2
1044     { \begin{keythms_orig_#1}[{#2}] }
1045   \cs_generate_variant:Nn \__keythms_orig_begin:nn { nV }
1046   \cs_new_protected:Npn \__keythms_orig_end:n #1 { \end{keythms_orig_#1} }
1047
1048   \cs_new_protected:Npn \__keythms_thm_prehead_code:n #1
1049     { % #1 = theorem name
1050       \tl_set:Nn \l__keythms_thmuse_envname_tl { #1 }
1051       \hook_use:n { keytheorems/#1/prehead }
1052       \hook_use:n { keytheorems/allthms/prehead }
1053     }
1054   %% this below has to be separate from prehead_code above since we need to add
1055   %% continues-code to note before retrieving it in \__keythms_withhooks_begin:nnV
1056   \cs_new_protected:Npn \__keythms_thm_prehead_continues_code:n #1
1057     { % #1 = theorem name
1058       \tl_if_empty:NF \l__keythms_thmuse_contlabel_tl
1059       {
1060         \tl_if_empty:NF \l__keythms_thmuse_note_tl
1061         { \tl_put_right:Nn \l__keythms_thmuse_note_tl { , ~ } }
1062         \tl_put_right:Ne \l__keythms_thmuse_note_tl
1063         { \__keythms_thmuse_continues:V \l__keythms_thmuse_contlabel_tl }
1064         \cs_set:cpn { the #1 }
1065         {
1066           \getrefnumber { \l__keythms_thmuse_contlabel_tl }
1067         }
1068         \cs_set_eq:cN { c@ #1 } \c@keythms_continues_dummyctr
1069         \cs_set_eq:cN { theH #1 } \theHkeythms_continues_dummyctr
1070         %\cs_set_eq:NN \setuniqmark \use_none:n % not the right fix
1071       }
1072     }
1073   \cs_new_protected:Npn \__keythms_thm_posthead_code:n #1
1074     { % #1 = theorem name
1075       \hook_use:n { keytheorems/#1/posthead }
1076       \hook_use:n { keytheorems/allthms/posthead }
1077       \tl_if_empty:NF \l__keythms_thmuse_label_tl
1078       {
1079         \label{ \l__keythms_thmuse_label_tl }
1080         \__keythms_thmuse_recordnote:
1081       }
1082       \bool_if:NT \l__keythms_thmuse_listhack_bool
1083       { % straight from thm-amsthm.sty
1084         \leavevmode
1085         \vspace{-\baselineskip}%
1086         \par
1087         \everypar{\setbox\z@\lastbox\everypar{}}%
1088       }
1089     }
1090   \cs_new_protected:Npn \__keythms_thm_prefoot_code:n #1

```

```

1091 { % #1 = theorem name
1092   \hook_use:n { keytheorems/allthms/prefoot }
1093   \hook_use:n { keytheorems/#1/prefoot }
1094 }
1095 \cs_new_protected:Npn \__keythms_thm_postfoot_code:n #1
1096 { % #1 = theorem name
1097   \hook_use:n { keytheorems/allthms/postfoot }
1098   \hook_use:n { keytheorems/#1/postfoot }
1099 }
1100 \cs_new_protected:Npn \__keythms_thm_addcontentsdata:nnnn #1#2#3#4
1101 { % #1 = theorem name, #2 = stored counters, #3 = keys, #4 = body
1102   \keythms_listof_chaptervspacehack:
1103   \iow_shipout:Ne \@auxout
1104   {
1105     \exp_not:N \@writefile { thlist }
1106     {
1107       \KeyThmsSavedTheorem{ #1 }
1108       { \@currentlabel }
1109       { \@currentHref }
1110       { \thepage }
1111       { #2 }
1112       { \exp_not:n { #3 } } % do we want any expansion here, perhaps
1113       { \exp_not:n { #4 } } % with \text_expand:n ?
1114     }
1115   }
1116 }
1117 \cs_new_protected:Npn \__keythms_thm_tempstorerebasedata:nnn #1#2#3
1118 { % #1 = theorem name, #2 = keys, #3 = body
1119   \tl_gset:Ne \g__keythms_thmuse_temprebasedata_tl % needs to be global to get out of env
1120   {
1121     { #1 }
1122     { \@currentlabel }
1123     { \prop_to_keyval:N \g__keythms_thmuse_othercounters_prop }
1124     { \exp_not:n { #2 } } % do we want any expansion here, perhaps
1125     { \exp_not:n { #3 } } % with \text_expand:n ?
1126   }
1127 }
1128
1129 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1130 %% Retrieving Theorem Data %%
1131 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1132
1133 \cs_new_protected:Npn \KeyThmsSavedTheorem #1#2#3#4#5#6#7 % 7th arg is body
1134 { \use:c { __keythms_thmitem_#1:nnnnnn } {#2}{#3}{#4}{#5}{#6}{#7} }
1135
1136 \keys_define:nn { keytheorems/storeatbegin }
1137 {
1138   store .tl_set:N = \l__keythms_storeatbegin_store_tl,
1139   restate .meta:n = { store=#1 },
1140   unknown .code:n = { } % do nothing with unknown keys
1141 }
1142
1143 \cs_new_protected:Npn \KeyThmsContentsLine #1 { #1 }
1144 \NewDocumentCommand \addtheoremcontentsline { m m }
1145 {
1146   \addtocontents { thlist }
1147   {
1148     \KeyThmsContentsLine

```

```

1149      { % copied from def of \addcontentsline
1150        \protect\contentsline{#1}{#2}{\thepage}{ }
1151        \protected@file@percent
1152      }
1153    }
1154  }
1155  \NewDocumentCommand \addtotheoremcontents { m }
1156  {
1157    \addtocontents { thlist }
1158    {
1159      \KeyThmsContentsLine { #1 }
1160    }
1161  }
1162
1163  \hook_gput_code:nnn { begindocument } { . }
1164  {
1165    \group_begin:
1166    \cs_set_eq:NN \KeyThmsContentsLine \use_none:n
1167    \cs_set_eq:NN \KeyThmsAddvspace \use_none:n
1168    \cs_set_protected:Npn \KeyThmsSavedTheorem #1#2#3#4#5#6#7
1169    {
1170      \group_begin:
1171      \keys_set:nn { keytheorems/storeatbegin } { #6 }
1172      \tl_if_empty:NF \l__keythms_storeatbegin_store_tl
1173      {
1174        \cs_new_protected:cpn
1175        { __keythms_getthm_ \l__keythms_storeatbegin_store_tl _theorem }
1176        {
1177          \__keythms_getthm_theorem:nnnnn
1178          {#1}{#2}{#5}{#6}{#7}
1179        }
1180        \cs_new_protected:cpn
1181        { __keythms_getthm_ \l__keythms_storeatbegin_store_tl _body }
1182        {
1183          \__keythms_getthm_body:nn {#5}{#7}
1184        }
1185      }
1186      \group_end:
1187    }
1188    \file_if_exist_input:n { \c_sys_jobname_str.thlist }
1189    \group_end:
1190  }
1191
1192  \prg_new_conditional:Npnn \keythms_if_restating: { T, F, TF }
1193  {
1194    \bool_if:NTF \l__keythms_thmuse_restating_bool
1195    { \prg_return_true: }
1196    { \prg_return_false: }
1197  }
1198  \NewDocumentCommand \IfRestatingTF { } { \keythms_if_restating:TF }
1199
1200  \cs_new_protected:Npn \__keythms_getthm_theorem:nnnnn #1#2#3#4#5
1201  { % #1 = name, #2 = number, #3 = restate counters, #4 = keys, #5 = theorem body
1202    \group_begin:
1203    \bool_set_true:N \l__keythms_thmuse_restating_bool
1204    \prop_set_from_keyval:Nn \l__keythms_restate_counters_prop { #3 }
1205    \prop_map_inline:Nn \l__keythms_restate_counters_prop
1206    {

```



```

1207     \tl_set:ce { l_keythms_restate_current_##1_tl } { \the\value{##1} }
1208     \setcounter { ##1 } { ##2 }
1209     % ^ FIX: what if eq's numbered by section, theorem, etc.? The
1210     %       thmtools code is opaque.... Or maybe should be up to the
1211     %       user to say "restate-counters={section,chapter,...}".
1212     \cs_set:cpn { theH ##1 } { \use:c { the ##1 } . \theHkeythms_restate_dummyctr }
1213   }
1214   \tl_if_empty:nTF { #2 }
1215   { \refstepcounter{keythms_restate_dummyctr} } % for unnumbered theorems
1216   {
1217     \cs_set:cpn { the #1 } { #2 }
1218     \cs_set_eq:cn { c@ #1 } \c@keythms_restate_dummyctr
1219     \cs_set_eq:cn { theH #1 } \theHkeythms_restate_dummyctr
1220     % ^ why are the last two line here? We shouldn't be referencing
1221     %   restated theorems. Think it's a remnant of thmtools
1222     % WRONG: needed to make numbering correct after restated theorem.
1223     % not sure about theH. <- this is needed to prevent duplicate anchors
1224   }
1225   \renewcommand\label[2][{}]{ % disable \label (opt arg in case cleveref loaded)
1226     \cs_set_eq:NN \ltx@label \use_none:n % disable \ltx@label
1227     \cs_set_eq:NN \property_record:nn \use_none:nn % disable \RecordProperties
1228     \cs_set_eq:NN \setuniqmark \use_none:n % work with numbered=unless-unique
1229     % QUESTION: also disable \hyper@@anchor? \MakeLinkTarget?
1230     \keys_set:nn { keytheorems/thmuse } { #4 }
1231     \hook_use:n { keytheorems/#1/restated }
1232     \hook_use:n { keytheorems/allthms/restated }
1233     \__keythms_thm_prehead_continues_code:n { #1 }
1234     \__keythms_thm_prehead_code:n { #1 }
1235     \tl_if_empty:NTF \l__keythms_thmuse_note_tl
1236     { \__keythms_orig_begin:n { #1 } }
1237     { \__keythms_orig_begin:nV { #1 } \l__keythms_thmuse_note_tl }
1238     \__keythms_thm_posthead_code:n { #1 }
1239     #5
1240     \__keythms_thm_prefoot_code:n { #1 }
1241     \__keythms_orig_end:n { #1 }
1242     \__keythms_thm_postfoot_code:n { #1 }
1243     \prop_map_inline:Nn \l__keythms_restate_counters_prop
1244     {
1245       \exp_args:Nnc \setcounter { ##1 }
1246       { l_keythms_restate_current_##1_tl }
1247     }
1248     \group_end:
1249   }
1250
1251   \cs_new_protected:Npn \__keythms_getthm_body:nn #1#2
1252   { % #1 = restate counters, #2 = theorem body
1253     \group_begin:
1254     \bool_set_true:N \l__keythms_thmuse_restating_bool
1255     \prop_set_from_keyval:Nn \l__keythms_restate_counters_prop { #1 }
1256     \prop_map_inline:Nn \l__keythms_restate_counters_prop
1257     {
1258       \tl_set:ce { l_keythms_restate_current_##1_tl } { \the\value{##1} }
1259       \setcounter { ##1 } { ##2 }
1260       % ^ FIX: what if eq's numbered by section, theorem, etc.? The
1261       %       thmtools code is opaque.... Or maybe should be up to the
1262       %       user to say "restate-counters={section,chapter,...}".
1263       \cs_set:cpn { theH ##1 } { \use:c { the ##1 } . \theHkeythms_restate_dummyctr }
1264     }

```

```

1265 \refstepcounter{keythms_restate_dummyctr}
1266 \renewcommand\label[2][{}]{% disable \label (opt arg in case cleveref loaded)
1267 \cs_set_eq:NN \ltx@label \use_none:n % disable \ltx@label
1268 \cs_set_eq:NN \property_record:nn \use_none:nn % disable \RecordProperties
1269 \hook_use:n { keytheorems/#1/restated }
1270 \hook_use:n { keytheorems/allthms/restated }
1271 #2
1272 \prop_map_inline:Nn \l__keythms_restate_counters_prop
1273 {
1274 \exp_args:Nnc \setcounter { ##1 }
1275 { l_keythms_restate_current_##1_tl }
1276 }
1277 \group_end:
1278 }
1279
1280 % \getkeytheorem[<property>]{<tag>}
1281 \NewDocumentCommand \getkeytheorem { o m }
1282 {
1283 \cs_if_exist:cTF { __keythms_getthm_#2_theorem }
1284 {
1285 \IfNoValueTF { #1 }
1286 { \use:c { __keythms_getthm_#2_theorem } }
1287 { \use:c { __keythms_getthm_#2_#1 } }
1288 }
1289 {
1290 \textbf{??}
1291 \msg_warning:nnn { keytheorems } { no-stored-theorem } { #2 }
1292 }
1293 }
1294
1295 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1296 %%% Theorem Hooks %%%
1297 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1298
1299 %%% \addtotheoremhook[<envname>]{<hook>}{<code>}
1300 \NewDocumentCommand \addtotheoremhook { o m +m }
1301 {
1302 \__hook_if_declared:nTF { keytheorems/allthms/#2 }
1303 {
1304 \IfNoValueTF { #1 }
1305 { \hook_gput_code:nnn { keytheorems/allthms/#2 } { . } { #3 } }
1306 { \hook_gput_code:nnn { keytheorems/#1/#2 } { . } { #3 } }
1307 }
1308 {
1309 \msg_error:nnn { keytheorems } { undefined-thm-hook } { #2 }
1310 }
1311 }
1312
1313 % NOTE: I think it's OK we use the internal \__hook_if_declared:nTF above
1314 % since we don't need to worry about the user creating new theorem hooks
1315 % so, as we're only checking the existence of hooks created by us, it's OK.
1316
1317 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1318 %%% List of Theorems %%%
1319 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1320
1321 \keys_define:nn { keytheorems/listof }
1322 {

```

```

1323 numwidth .dim_set:N = \l__keythms_listof_numwidth_dim,
1324 numwidth .initial:n = 2.3em,
1325 ignore .code:n =
1326 {
1327     \hook_gput_code:nnn { begindocument/before } { keytheorems }
1328     { \keythms_listof_ignore:n { #1 } }
1329 },
1330 show .code:n =
1331 {
1332     \hook_gput_code:nnn { begindocument/before } { keytheorems }
1333     { \keythms_listof_show:n { #1 } }
1334 },
1335 onlynamed .code:n =
1336 {
1337     \hook_gput_code:nnn { begindocument/before } { keytheorems }
1338     { \keythms_listof_onlynamed:n { #1 } }
1339 },
1340 onlynamed .default:n = \q_no_value,
1341 onlynumbered .code:n =
1342 {
1343     \hook_gput_code:nnn { begindocument/before } { keytheorems }
1344     { \keythms_listof_onlynumbered:n { #1 } }
1345 },
1346 onlynumbered .default:n = \q_no_value,
1347 ignoreall .code:n =
1348 {
1349     \hook_gput_code:nnn { begindocument/before } { keytheorems } % in case called before theorem
1350     {
1351         \prop_map_inline:Nn \g__keythms_thmnames_prop
1352         { \__keythms_listof_ignore_aux:n { ##1 } }
1353     }
1354 },
1355 showall .code:n =
1356 {
1357     \hook_gput_code:nnn { begindocument/before } { keytheorems } % in case called before theorem
1358     {
1359         \prop_map_inline:Nn \g__keythms_thmnames_prop
1360         { \__keythms_listof_show_aux:n { ##1 } }
1361     }
1362 },
1363 title .tl_set:N = \l__keythms_listof_title_tl,
1364 title .initial:n = \GetTranslation{keythms_listof_title},
1365 swapnumber .bool_set:N = \l__keythms_listof_swapnumber_bool,
1366 swapnumber .initial:n = false,
1367 title-code .cs_set:Np = \__keythms_listof_titlecmd:n #1,
1368 no-title .bool_set:N = \l__keythms_listof_notitle_bool,
1369 no-title .initial:n = false,
1370 print-body .code:n =
1371 {
1372     \cs_set_protected:Nn \keythms_listof_listcmd:nnnnnnn
1373     {
1374         \tl_if_empty:nF { ##7 }
1375         {
1376             \__keythms_getthm_theorem:nnnnn
1377             {##1}{##2}{##5}{##6}{##7}
1378         }
1379     }
1380     \cs_set_eq:NN \KeyThmsContentsLine \use_none:n

```

```

1381      % ~ I assume we want this?
1382      \cs_set_eq:NN \KeyThmsAddvspace \use_none:n
1383    },
1384    note-code .cs_set:Np = \__keythms_listof_notecmd:n #1,
1385    note-code .initial:n = { ~ (#1) },
1386    no-continues .bool_set:N = \l__keythms_listof_nocont_bool,
1387    no-continues .initial:n = false,
1388    no-chapter-skip .bool_set:N = \l__keythms_listof_nochapskip_bool,
1389    no-chapter-skip .initial:n = false,
1390    chapter-skip-length .dim_set:N = \keythms@listof@chaptervspace@dim,
1391    chapter-skip-length .initial:n = 10pt,
1392  }
1393
1394  \hook_gput_code:nnn { begindocument } { . } % redefine these keys at begindocument
1395  {
1396    \keys_define:nn { keytheorems/listof }
1397    {
1398      ignore .code:n = \keythms_listof_ignore:n { #1 },
1399      show .code:n = \keythms_listof_show:n { #1 },
1400      onlynamed .code:n = \keythms_listof_onlynamed:n { #1 },
1401      onlynamed .default:n = \q_no_value,
1402      onlynumbered .code:n = \keythms_listof_onlynumbered:n { #1 },
1403      onlynumbered .default:n = \q_no_value,
1404      ignoreall .code:n =
1405      {
1406        \prop_map_inline:Nn \g__keythms_thmnames_prop
1407        { \__keythms_listof_ignore_aux:n { ##1 } }
1408      },
1409      showall .code:n =
1410      {
1411        \prop_map_inline:Nn \g__keythms_thmnames_prop
1412        { \__keythms_listof_show_aux:n { ##1 } }
1413      },
1414      seq .code:n = \keythms_listof_showseq:n { #1 },
1415    }
1416  }
1417
1418  \NewDocumentCommand \keytheoremset { m }
1419  {
1420    \keys_set:nn { keytheorems/listof } { #1 }
1421  }
1422
1423  \cs_new_protected:Npn \keythms_listof_ignore:n #1
1424  {
1425    \clist_map_inline:nn { #1 } { \__keythms_listof_ignore_aux:n { ##1 } }
1426  }
1427  \cs_new_protected:Npn \__keythms_listof_ignore_aux:n #1
1428  {
1429    \cs_set_protected:cpn { __keythms_thmitem_#1:nnnnnn } ##1##2##3##4##5##6
1430    { }
1431  }
1432
1433  \cs_new_protected:Npn \keythms_listof_show:n #1
1434  {
1435    \clist_map_inline:nn { #1 } { \__keythms_listof_show_aux:n { ##1 } }
1436  }
1437  \cs_new_protected:Npn \__keythms_listof_show_aux:n #1
1438  {

```

```

1439 \cs_set_protected:cpn { __keythms_thmitem_#1:nnnnnn } ##1##2##3##4##5##6
1440 {
1441   \__keythms_listof_listcmd_setup:nn { ##5 }
1442   {
1443     \keythms_listof_listcmd:nnnnnnn
1444     {#1}{##1}{##2}{##3}{##4}{##5}{##6}
1445   }
1446 }
1447 }
1448
1449 \cs_new_protected:Npn \keythms_listof_onlynamed:n #1
1450 {
1451   \quark_if_no_value:nTF { #1 }
1452   {
1453     \prop_map_inline:Nn \g__keythms_thmnames_prop
1454     { \__keythms_listof_onlynamed_aux:n { ##1 } }
1455   }
1456   {
1457     \clist_map_inline:nn { #1 }
1458     { \__keythms_listof_onlynamed_aux:n { ##1 } }
1459   }
1460 }
1461 \cs_new_protected:Npn \__keythms_listof_onlynamed_aux:n #1
1462 {
1463   \cs_set_protected:cpn { __keythms_thmitem_#1:nnnnnn } ##1##2##3##4##5##6
1464   {
1465     \__keythms_listof_listcmd_setup:nn { ##5 }
1466     {
1467       \tl_if_empty:NF \l__keythms_listofheading_note_tl
1468       {
1469         \keythms_listof_listcmd:nnnnnnn
1470         {#1}{##1}{##2}{##3}{##4}{##5}{##6}
1471       }
1472     }
1473   }
1474 }
1475
1476 \cs_new_protected:Npn \keythms_listof_onlynumbered:n #1
1477 {
1478   \quark_if_no_value:nTF { #1 }
1479   {
1480     \prop_map_inline:Nn \g__keythms_thmnames_prop
1481     { \__keythms_listof_onlynumbered_aux:n { ##1 } }
1482   }
1483   {
1484     \clist_map_inline:nn { #1 }
1485     { \__keythms_listof_onlynumbered_aux:n { ##1 } }
1486   }
1487 }
1488 \cs_new_protected:Npn \__keythms_listof_onlynumbered_aux:n #1
1489 {
1490   \cs_set_protected:cpn { __keythms_thmitem_#1:nnnnnn } ##1##2##3##4##5##6
1491   {
1492     \__keythms_listof_listcmd_setup:nn { ##5 }
1493     {
1494       \tl_if_empty:nF { ##1 }
1495       {
1496         \keythms_listof_listcmd:nnnnnnn

```

```

1497         {#1}{##1}{##2}{##3}{##4}{##5}{##6}
1498     }
1499 }
1500 }
1501 }
1502
1503 \cs_new_protected:Npn \keythms_listof_showseq:n #1
1504 {
1505     \prop_map_inline:Nn \g__keythms_thmnames_prop
1506     { \__keythms_listof_showseq_aux:nn { #1 } { ##1 } }
1507 }
1508 \cs_new_protected:Npn \__keythms_listof_showseq_aux:nn #1#2
1509 { % #1 = seq name, #2 = theorem name
1510     \cs_set_protected:cpn { __keythms_thmitem_#2:nnnnnn } ##1##2##3##4##5##6
1511     {
1512         \__keythms_listof_listcmd_setup:nn { ##5 }
1513         {
1514             \tl_if_eq:NnT \l__keythms_listofheading_seq_tl { #1 }
1515             {
1516                 \keythms_listof_listcmd:nnnnnnn
1517                 {#2}{##1}{##2}{##3}{##4}{##5}{##6}
1518             }
1519         }
1520     }
1521 }
1522
1523 % Seems unnecessary to repeat all this for reading the keyvals from seq.
1524 % In thmtools they just hook the "thmitem" definition into the theorem declaration.
1525 %% NOTE ON ABOVE: this gives more flexibility to define different kinds of lists.
1526 %% See acro.sty for template idea.
1527 \keys_define:nn { keytheorems/listofheading }
1528 {
1529     note .tl_set:N = \l__keythms_listofheading_note_tl,
1530     name .meta:n = { note = #1 },
1531     short-note .tl_set:N = \l__keythms_listofheading_shortnote_tl,
1532     short-name .meta:n = { short-note = #1 },
1533     continues .tl_set:N = \l__keythms_listofheading_contlabel_tl,
1534     continues* .code:n =
1535     {
1536         \keys_set:nn { keytheorems/listofheading } { continues = #1 }
1537         \protected@edef \l__keythms_tmpa_tl { \__keythms_getrecordednote:n{#1} }
1538         \tl_if_empty:NF \l__keythms_tmpa_tl
1539         {
1540             \keys_set:nn { keytheorems/listofheading }
1541             { note = \l__keythms_tmpa_tl }
1542         }
1543     },
1544     seq .tl_set:N = \l__keythms_listofheading_seq_tl,
1545     unknown .code:n = { } % do nothing with unknown keys
1546     % ^ this is OK because we have total control over possible keys; if invalid
1547     % key is given to theorem then an error will be raised there
1548 }
1549
1550 \cs_new:Npn \__keythms_listof_printhead:
1551 {
1552     \tl_if_empty:NTF \l__keythms_listofheading_shortnote_tl
1553     {
1554         \tl_if_empty:NF \l__keythms_listofheading_note_tl

```

```

1555         { \_keythms_listof_notecmd:n { \l\_keythms_listofheading_note_tl } }
1556     }
1557     {
1558         \_keythms_listof_notecmd:n { \l\_keythms_listofheading_shortnote_tl }
1559     }
1560 }
1561
1562 \cs_new:Npn \_keythms_listof_default_listcmd:nnnnnnn #1#2#3#4#5#6#7
1563 {
1564     \contentsline{ #1 }
1565     {
1566         \bool_if:NTF \l\_keythms_listof_swapnumber_bool
1567         {
1568             \prop_item:Nn \g\_keythms_thmnames_prop { #1 } ~ #2
1569         }
1570         {
1571             \numberline{ #2 }
1572             \prop_item:Nn \g\_keythms_thmnames_prop { #1 }
1573         }
1574         \_keythms_listof_printheadings:
1575     }
1576     { #4 }{ #3 }
1577 }
1578
1579 % NOTE: We still need to do this setup for [print-body] so that onlynamed works
1580 \cs_new_protected:Npn \_keythms_listof_listcmd_setup:nn #1#2
1581 { % #1 = keys, #2 = list command
1582     \group_begin:
1583     \keys_set:nn { keytheorems/listofheading } { #1 }
1584     \tl_if_empty:NTF \l\_keythms_listofheading_contlabel_tl
1585     { #2 }
1586     {
1587         \bool_if:NF \l\_keythms_listof_nocont_bool
1588         {
1589             \tl_if_empty:NF \l\_keythms_listofheading_note_tl
1590             {
1591                 \tl_put_right:Nn \l\_keythms_listofheading_note_tl { , ~ }
1592             }
1593             \tl_put_right:Nn \l\_keythms_listofheading_note_tl
1594             {
1595                 \_keythms_thmuse_continues:V \l\_keythms_listofheading_contlabel_tl
1596             }
1597             #2
1598         }
1599     }
1600     \group_end:
1601 }
1602
1603 % set default listcmd
1604 \cs_new_eq:NN \keythms_listof_listcmd:nnnnnnn
1605     \_keythms_listof_default_listcmd:nnnnnnn
1606
1607 \cs_if_exist:NTF \chapter
1608 { \cs_set_protected:Npn \_keythms_listof_titlecmd:n #1 { \chapter*{#1} } }
1609 { \cs_set_protected:Npn \_keythms_listof_titlecmd:n #1 { \section*{#1} } }
1610
1611 \hook_gput_code:nnn { begindocument } { . }
1612 { % try to detect ams classes

```

```

1613 \keythms_if_amsclass:TF
1614 {
1615     \prop_map_inline:Nn \g__keythms_thmnames_prop
1616     {
1617         \cs_set:cpn { l@ #1 }
1618         {
1619             \@tocline{ 0 }{ 3pt plus 2pt }{ 0pt }
1620             { \l__keythms_listof_numwidth_dim }{ }
1621         }
1622     }
1623 }
1624 {
1625     \prop_map_inline:Nn \g__keythms_thmnames_prop
1626     {
1627         \cs_set:cpn { l@ #1 }
1628         {
1629             \@dottedtocline{ 1 }{ 1.5em }
1630             { \l__keythms_listof_numwidth_dim }
1631         }
1632     }
1633 }
1634 }
1635
1636 \keythms_if_amsclass:TF
1637 {
1638     \keys_define:nn { keytheorems/listof } % adjust to class
1639     {
1640         numwidth .initial:n = 1.5pc,
1641     }
1642     \NewDocumentCommand \listofkeytheorems { 0{} }
1643     { % title command not customizable here
1644         \bool_gset_true:N \g__keythms_listof_writefile_bool
1645         \group_begin:
1646         \keys_set:nn { keytheorems/listof } { #1 }
1647         \bool_if:NT \l__keythms_listof_nochapskip_bool
1648         {
1649             \cs_set_eq:NN \KeyThmsAddvspace \use_none:n
1650         }
1651         \legacy_if_set_false:n { @filesw }
1652         \bool_if:NTF \l__keythms_listof_notitle_bool
1653         {
1654             \@starttoc{ thlist }{ }
1655         }
1656         { % ams classes don't expand title enough
1657             \protected@edef \l__keythms_tmpa_tl { \l__keythms_listof_title_tl }
1658             \@starttoc{ thlist }{ \l__keythms_tmpa_tl }
1659         }
1660         \group_end:
1661     }
1662 }
1663 {
1664     \NewDocumentCommand \listofkeytheorems { 0{} }
1665     {
1666         \bool_gset_true:N \g__keythms_listof_writefile_bool
1667         \group_begin:
1668         \keys_set:nn { keytheorems/listof } { #1 }
1669         \bool_if:NT \l__keythms_listof_nochapskip_bool
1670         {

```



```

1671         \cs_set_eq:NN \KeyThmsAddvspace \use_none:n
1672     }
1673     \bool_if:NF \l__keythms_listof_notitle_bool
1674     {
1675         \__keythms_listof_titlecmd:n { \l__keythms_listof_title_tl }
1676         \@mkboth % QUESTION: should this go in titlecmd ?
1677         { \MakeUppercase \l__keythms_listof_title_tl }
1678         { \MakeUppercase \l__keythms_listof_title_tl }
1679     }
1680     \legacy_if_set_false:n { @files }
1681     \@starttoc{ thlist }
1682     \group_end:
1683 }
1684 }
1685 % ~ unlike thmtools we don't use the class's style of \listoffigures because
1686 % we want control over title-code, no-title, etc. But this means we have to guess
1687 % things like marks, sectioning command, etc.
1688
1689 \hook_gput_code:nnn { enddocument } { . }
1690 {
1691     \bool_if:NTF \g__keythms_listof_writefile_bool
1692     {
1693         \legacy_if:nT { @files }
1694         {
1695             \iow_new:N \tf@thlist
1696             \iow_open:Nn \tf@thlist { \c_sys_jobname_str.thlist }
1697         }
1698     }
1699     { % if .thlist file left over from previous run but not needed, clear it
1700         \file_if_exist:nT { \c_sys_jobname_str.thlist }
1701         {
1702             \iow_open:Nn \g_tmpa_iow { \c_sys_jobname_str.thlist }
1703             \iow_close:N \g_tmpa_iow
1704         }
1705     }
1706 }
1707
1708 % chapterospacehack (code translated from thmtools)
1709 \cs_new_eq:NN \KeyThmsAddvspace \addvspace
1710 \int_new:N \g_keythms_listof_prevchapter_int
1711 \int_gset:Nn \g_keythms_listof_prevchapter_int { 1 }
1712 % ~ if this is zero, bad things happen if title-code is changed; anyways don't
1713 % need addvspace at top
1714 \cs_new_protected:Npn \keythms_listof_chapterospacehack: { }
1715 \cs_if_exist:cT { c@chapter }
1716 {
1717     \cs_if_eq:NNT \c@chapter \relax
1718     {
1719         \cs_set_protected:Npn \keythms_listof_chapterospacehack:
1720         {
1721             \int_compare:nNnF { \value{chapter} } = { \g_keythms_listof_prevchapter_int }
1722             {
1723                 \addtocontents{ thlist }
1724                 {
1725                     \protect\KeyThmsAddvspace
1726                     { \keythms@listof@chapterospace@dim }
1727                 }
1728                 \int_gset:Nn \g_keythms_listof_prevchapter_int { \value{chapter} }

```

```

1729     }
1730   }
1731 }
1732 }
1733
1734 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1735 %%% \Autoref %%%
1736 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1737
1738 \ProvideDocumentCommand { \Autoref } { s m }
1739 {
1740   \IfPackageLoadedTF { hyperref }
1741   {
1742     \group_begin:
1743     \cs_set_eq:NN \HyRef@testreftype \__keythms_Autoref_testreftype:w
1744     \IfBooleanTF { #1 } { \autoref*{#2} } { \autoref{#2} }
1745     \group_end:
1746   }
1747   { \msg_error:nn { keytheorems } { hyperref-Autoref } }
1748 }
1749
1750 \cs_new_protected:Npn \__keythms_Autoref_testreftype:w #1.#2\
1751 {
1752   \cs_if_exist:cTF { #1 Autorefname }
1753   {
1754     \cs_set:Npe \HyRef@currentHtag
1755     {
1756       \exp_not:N \use:c { #1 Autorefname }
1757       \exp_not:N \c_space_token
1758     }
1759   }
1760   { \msg_warning:nnn { keytheorems } { no-Autorefname } { #1 } }
1761 }
1762
1763 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1764 %%% Global Keys %%%
1765 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1766
1767 \keys_define:nn { keytheorems }
1768 {
1769   restate-counters .code:n =
1770   {
1771     \clist_map_inline:nn { #1 }
1772     { \tl_new:c { l_keythms_restate_current_#1_tl } }
1773     \clist_gput_right:Nn \g__keythms_restatecounters_clist { #1 }
1774   },
1775   restate-counters .initial:n = equation,
1776   continues-code .cs_set:Np = \__keythms_thmuse_continues:n #1,
1777   continues-code .initial:n =
1778   { % not sure how best to handle this translation
1779     \GetTranslation{keythms_continues}\pageref{#1}
1780   },
1781   qed-symbol .cs_set_protected:Np = \qedsymbol,
1782   overload .code:n = \__keythms_overload_code:,
1783   overload .value_forbidden:n = true,
1784   overload .usage:n = preamble,
1785   thmtools-compat .code:n =
1786   { % prevent loading the code again if key called twice

```

```

1787     \bool_if:NF \g__keythms_thmtoolscompat_bool
1788     { \__keythms_thmtoolscompat_code: }
1789   },
1790   thmtools-compat .value_forbidden:n = true,
1791   thmtools-compat .usage:n = preamble,
1792   store-all .code:n = \__keythms_storeall_code:,
1793   store-all .value_forbidden:n = true,
1794   store-all .usage:n = preamble,
1795   auto-translate .bool_gset:N = \g__keythms_autotranslate_bool,
1796   auto-translate .initial:n = true,
1797 }
1798
1799 \cs_generate_variant:Nn \__keythms_thmuse_continues:n { V }
1800
1801 % \keytheoremset{<options>}
1802 \NewDocumentCommand \keytheoremset { m }
1803 {
1804   \keys_set:nn { keytheorems } { #1 }
1805 }
1806
1807 \cs_new_protected:Npn \__keythms_overload_code:
1808 {
1809   \RenewDocumentCommand { \newtheorem } { smomo }
1810   {
1811     \IfBooleanTF { ##1 }
1812     { \keythms_thm_newkeythm:nn { ##2 } { name=##4, numbered=no } }
1813     {
1814       \IfNoValueTF { ##3 }
1815       {
1816         \IfNoValueTF { ##5 }
1817         { \keythms_thm_newkeythm:nn { ##2 } { name=##4 } }
1818         { \keythms_thm_newkeythm:nn { ##2 } { name=##4, parent=##5 } }
1819       }
1820       { \keythms_thm_newkeythm:nn { ##2 } { name=##4, sibling=##3 } }
1821     }
1822   }
1823 }
1824
1825 \cs_new_protected:Npn \__keythms_thmtoolscompat_code:
1826 {
1827   \bool_gset_true:N \g__keythms_thmtoolscompat_bool
1828   \__keythms_overload_code: % since thmtools overwrites \newtheorem
1829   \ProvideDocumentCommand { \declaretheoremstyle } { 0{} m }
1830   {
1831     \declarekeytheoremstyle { ##2 } { ##1 }
1832   }
1833   \ProvideDocumentCommand { \declaretheorem } { 0{} m }
1834   {
1835     \newkeytheorem { ##2 } [ ##1 ]
1836   }
1837   \ProvideDocumentEnvironment { restatable } { 0{} m m }
1838   { % set store outside [] so keyless note is recognized
1839     \keys_set:nn { keytheorems/thmuse } { store=##3 }
1840     \begin{##2}[##1]
1841   }
1842   {
1843     \end{##2}
1844   }
1845   \cs_new_protected:cpn { ##3 }

```

```

1845     { % make \foo and \foo* identical
1846       \peek_meaning_remove:NTF *
1847       { \use:c { __keythms_getthm_ ##3 _theorem } }
1848       { \use:c { __keythms_getthm_ ##3 _theorem } }
1849     }
1850   }
1851   \ProvideDocumentCommand { \listoftheorems } { } { \listofkeytheorems }
1852   \ProvideDocumentCommand { \addtotheorempreheadhook } { o m }
1853   {
1854     \IfNoValueTF { ##1 }
1855     { \addtotheoremhooke { prehead } { ##2 } }
1856     { \addtotheoremhooke [ ##1 ] { prehead } { ##2 } }
1857   }
1858   \ProvideDocumentCommand { \addtotheorempostheadhook } { o m }
1859   {
1860     \IfNoValueTF { ##1 }
1861     { \addtotheoremhooke { posthead } { ##2 } }
1862     { \addtotheoremhooke [ ##1 ] { posthead } { ##2 } }
1863   }
1864   \ProvideDocumentCommand { \addtotheoremprefoothook } { o m }
1865   {
1866     \IfNoValueTF { ##1 }
1867     { \addtotheoremhooke { prefoot } { ##2 } }
1868     { \addtotheoremhooke [ ##1 ] { prefoot } { ##2 } }
1869   }
1870   \ProvideDocumentCommand { \addtotheorempostfoothook } { o m }
1871   {
1872     \IfNoValueTF { ##1 }
1873     { \addtotheoremhooke { postfoot } { ##2 } }
1874     { \addtotheoremhooke [ ##1 ] { postfoot } { ##2 } }
1875   }
1876   \clist_new:N \l__keythms_tcbshaded_keys_clist
1877   \clist_new:N \l__keythms_tcbthmbox_keys_clist
1878   \keys_define:nn { keytheorems/thm/shaded }
1879   {
1880     textwidth .code:n = \clist_put_right:Nn \l__keythms_tcbshaded_keys_clist { width=##1 },
1881     bgcolor .code:n = \clist_put_right:Nn \l__keythms_tcbshaded_keys_clist { colback=##1 },
1882     rulewidth .code:n = \clist_put_right:Nn \l__keythms_tcbshaded_keys_clist { boxrule=##1 },
1883     rulecolor .code:n = \clist_put_right:Nn \l__keythms_tcbshaded_keys_clist { colframe=##1 },
1884     margin .code:n = \clist_put_right:Nn \l__keythms_tcbshaded_keys_clist { boxsep=##1 },
1885     padding .meta:n = { margin=##1 },
1886     leftmargin .code:n = \clist_put_right:Nn \l__keythms_tcbshaded_keys_clist { left~skip=##1 },
1887     rightmargin .code:n = \clist_put_right:Nn \l__keythms_tcbshaded_keys_clist { right~skip=##1 }
1888   }
1889   \keys_define:nn { keytheorems/thm/thmbox }
1890   {
1891     L .code:n =
1892     {
1893       \clist_put_right:Nn \l__keythms_tcbthmbox_keys_clist
1894       { keythms_tcbthmbox_L }
1895     },
1896     M .code:n =
1897     {
1898       \clist_put_right:Nn \l__keythms_tcbthmbox_keys_clist
1899       { keythms_tcbthmbox_M }
1900     },
1901     S .code:n =
1902     {

```

```

1903     \clist_put_right:Nn \l__keythms_tcbthmbox_keys_clist
1904     { keythms_tcbthmbox_S }
1905   },
1906   underline .choice:,
1907   underline / true .code:n = {},
1908   underline / false .code:n =
1909     {
1910       \clist_put_right:Nn \l__keythms_tcbthmbox_keys_clist
1911       { boxed~title~style={bottomrule=0pt} }
1912     },
1913   underline .default:n = true,
1914   nounderline .meta:n = { underline=false },
1915   cut .choice:,
1916   cut / true .code:n = {},
1917   cut / false .code:n =
1918     {
1919       \clist_put_right:Nn \l__keythms_tcbthmbox_keys_clist { unbreakable }
1920     },
1921   cut .default:n = true,
1922   nocut .meta:n = { cut=false },
1923   thickness .code:n = % could also add keys to clist with changed dimens; which is better?
1924     {
1925       \hook_gput_code:nnn { keytheorems/\l__keythms_thm_envname_tl/prehead }
1926       { keythms_tcbbox }
1927       { \dim_set:Nn \l_keythms_tcbthmbox_thickness_dim { ##1 } }
1928     },
1929   leftmargin .code:n =
1930     {
1931       \hook_gput_code:nnn { keytheorems/\l__keythms_thm_envname_tl/prehead }
1932       { keythms_tcbbox }
1933       { \dim_set:Nn \l_keythms_tcbthmbox_leftmargin_dim { ##1 } }
1934     },
1935   rightmargin .code:n =
1936     {
1937       \hook_gput_code:nnn { keytheorems/\l__keythms_thm_envname_tl/prehead }
1938       { keythms_tcbbox }
1939       { \dim_set:Nn \l_keythms_tcbthmbox_rightmargin_dim { ##1 } }
1940     },
1941   hskip .code:n =
1942     {
1943       \hook_gput_code:nnn { keytheorems/\l__keythms_thm_envname_tl/prehead }
1944       { keythms_tcbbox }
1945       { \dim_set:Nn \l_keythms_tcbthmbox_hskip_dim { ##1 } }
1946     },
1947   vskip .code:n =
1948     {
1949       \hook_gput_code:nnn { keytheorems/\l__keythms_thm_envname_tl/prehead }
1950       { keythms_tcbbox }
1951       { \dim_set:Nn \l_keythms_tcbthmbox_vskip_dim { ##1 } }
1952     },
1953   }
1954   \dim_new:N \l_keythms_tcbthmbox_thickness_dim
1955   \dim_set:Nn \l_keythms_tcbthmbox_thickness_dim { 0.6pt }
1956   \dim_new:N \l_keythms_tcbthmbox_leftmargin_dim
1957   \dim_set:Nn \l_keythms_tcbthmbox_leftmargin_dim { 0.7\parindent } % use \parindent? thmbox does
1958   \dim_new:N \l_keythms_tcbthmbox_rightmargin_dim
1959   \dim_set:Nn \l_keythms_tcbthmbox_rightmargin_dim { 0pt }
1960   \dim_new:N \l_keythms_tcbthmbox_hskip_dim

```

```

1961 \dim_set:Nn \l_keythms_tcbthmbox_hskip_dim { 0.2em }
1962 \dim_new:N \l_keythms_tcbthmbox_vskip_dim
1963 \dim_set:Nn \l_keythms_tcbthmbox_vskip_dim { 0.2em }
1964 \msg_new:nnn { keytheorems } { mdframed-undefined }
1965 {
1966   keytheorems~does~not~define~the~'mdframed'~key.~
1967   Consider~using~the~'tcolorbox'~key~instead.
1968 }
1969 \keys_define:nn { keytheorems/thm }
1970 {
1971   shaded .code:n =
1972   {
1973     \clist_clear:N \l__keythms_tcbshaded_keys_clist
1974     \keys_set:nn { keytheorems/thm/shaded } { ##1 }
1975     % FIX: surely a better way to do this
1976     \RequirePackage{tcolorbox}
1977     \pgfkeysifdefined{/tcb/keythms_tcbshaded_default/.@cmd} % even worth it?
1978     {}
1979     {
1980       \tcbset % wish I could do this outside of key but can't assume tcb loaded
1981       {
1982         keythms_tcbshaded_default/.style=
1983         {
1984           sharp~corners = all,
1985           boxrule = Opt,
1986           left = Opt, right = Opt,
1987           top = Opt, bottom = Opt,
1988           parbox = false,
1989         }
1990       }
1991     }
1992     \keys_set:ne { keytheorems/thm }
1993     {
1994       tcolorbox-no-titlebar =
1995       {
1996         keythms_tcbshaded_default,
1997         \l__keythms_tcbshaded_keys_clist
1998       }
1999     }
2000   },
2001   thmbox .code:n = % adapted from https://tex.stackexchange.com/a/236230/208544
2002   {
2003     \clist_clear:N \l__keythms_tcbthmbox_keys_clist
2004     \keys_set:nn { keytheorems/thm/thmbox } { ##1 }
2005     % FIX: surely a better way to do this
2006     \RequirePackage{tcolorbox}
2007     \tcbuselibrary{skins,breakable}
2008     \pgfkeysifdefined{/tcb/keythms_tcbthmbox_default/.@cmd} % even worth it?
2009     {}
2010     {
2011       \tcbset{
2012         keythms_tcbthmbox_default/.style={
2013           enhanced,
2014           breakable,
2015           sharp~corners=all,
2016           right=\l_keythms_tcbthmbox_hskip_dim,
2017           left=\l_keythms_tcbthmbox_hskip_dim,
2018           top=\l_keythms_tcbthmbox_vskip_dim,

```

```

2019 bottom=\l_keythms_tcbthmbox_vskip_dim,
2020 coltitle=black,
2021 frame~engine=empty,
2022 interior~titled~engine=empty,
2023 interior~engine=empty,
2024 extras~broken={
2025     frame~engine=empty,
2026     interior~titled~engine=empty,
2027     interior~engine=empty
2028 },
2029 parbox=false,
2030 % even though frame isn't drawn, makes spacing correct
2031 boxrule=0.5\l_keythms_tcbthmbox_thickness_dim,
2032 attach~boxed~title~to~top~left={
2033     xshift=-\l_keythms_tcbthmbox_leftmargin_dim,
2034 },
2035 boxed~title~style={
2036     empty,
2037     size=minimal,
2038     bottom=0.7ex,
2039     top=0ex,
2040     % ditto
2041     bottomrule=0.5\l_keythms_tcbthmbox_thickness_dim,
2042 },
2043 left~skip=\l_keythms_tcbthmbox_leftmargin_dim,
2044 right~skip=\l_keythms_tcbthmbox_rightmargin_dim,
2045 overlay~unbroken={
2046     \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2047         (title.south~west)
2048         --
2049         (title.south~east);
2050     \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2051         (frame.north~west)
2052         |-
2053         ([xshift=10mm]frame.south~west);
2054 },
2055 overlay~first={
2056     \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2057         (title.south~west)
2058         --
2059         (title.south~east);
2060     \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2061         (frame.north~west)
2062         --
2063         (frame.south~west);
2064 },
2065 overlay~middle={
2066     \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2067         (frame.north~west)
2068         --
2069         (frame.south~west);
2070 },
2071 overlay~last={
2072     \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2073         (frame.north~west)
2074         |-
2075         ([xshift=10mm]frame.south~west);
2076 }

```

```

2077     },
2078     keythms_tcbthmbox_L/.style={
2079         overlay~unbroken={
2080             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2081                 (title.south~west)
2082                 --
2083                 (title.south~east);
2084             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2085                 (frame.north~west)
2086                 |-
2087                 (frame.south~east)
2088                 -|
2089                 (frame.north~east);
2090         },
2091         overlay~first={
2092             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2093                 (title.south~west)
2094                 --
2095                 (title.south~east);
2096             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2097                 (frame.north~west)
2098                 --
2099                 (frame.south~west);
2100             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2101                 (frame.north~east)
2102                 --
2103                 (frame.south~east);
2104         },
2105         overlay~middle={
2106             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2107                 (frame.north~west)
2108                 --
2109                 (frame.south~west);
2110             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2111                 (frame.north~east)
2112                 --
2113                 (frame.south~east);
2114         },
2115         overlay~last={
2116             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2117                 (frame.north~west)
2118                 |-
2119                 (frame.south~east)
2120                 -|
2121                 (frame.north~east);
2122         }
2123     },
2124     keythms_tcbthmbox_M/.style={},
2125     keythms_tcbthmbox_S/.style={ % first and middle same as M
2126         overlay~unbroken={
2127             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2128                 (title.south~west)
2129                 --
2130                 (title.south~east);
2131             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2132                 (frame.north~west)
2133                 --
2134                 (frame.south~west);

```



```

2135         },
2136         overlay~last={
2137             \draw[line~width=\l_keythms_tcbthmbox_thickness_dim]
2138                 (frame.north~west)
2139                 --
2140                 (frame.south~west);
2141         }
2142     },
2143 }
2144 }
2145 \keys_set:ne { keytheorems/thm }
2146 {
2147     tcolorbox =
2148     {
2149         keythms_tcbthmbox_default,
2150         \l__keythms_tcbthmbox_keys_clist
2151     }
2152 }
2153 },
2154 thmbox .default:n = M,
2155 mdframed .code:n = \msg_error:nn { keytheorems } { mdframed-undefined },
2156 }
2157 }
2158
2159 \cs_new_protected:Npn \__keythms_storeall_code:
2160 {
2161     \cs_set_eq:NN \__keythms_withhooks_begin:nn \__keythms_grab_begin:nn
2162     \cs_set_eq:NN \__keythms_withhooks_begin:nnn \__keythms_grab_begin:nnn
2163     \cs_set_eq:NN \__keythms_withhooks_begin:nnV \__keythms_grab_begin:nnV
2164     \cs_set_eq:NN \__keythms_withhooks_end:n \__keythms_grab_end:n
2165 }
2166
2167 \hook_gput_code:nnn { begindocument/before } { . }
2168 { % use 'provide' in case user defines their own translation in preamble
2169     \ProvideTranslationFallback { keythms_listof_title } { List~of~Theorems }
2170     \ProvideTranslationFallback { keythms_continues } { continuing~from~p.\, }
2171     \bool_if:NT \g__keythms_autotranslate_bool
2172     {
2173         \ProvideTranslation { English } { keythms_listof_title } { List~of~Theorems }
2174         \ProvideTranslation { English } { keythms_continues } { continuing~from~p.\, }
2175         % from DeepL; I don't know these languages!
2176         \ProvideTranslation { French } { keythms_listof_title } { Liste~des~théorèmes }
2177         \ProvideTranslation { French } { keythms_continues } { suite~de~la~p.\, }
2178         \ProvideTranslation { German } { keythms_listof_title } { Liste~der~Theoreme }
2179         \ProvideTranslation { German } { keythms_continues } { weiter~von~Seite~ }
2180         \ProvideTranslation { Spanish } { keythms_listof_title } { Lista~de~teoremas }
2181         \ProvideTranslation { Spanish } { keythms_continues } { continúa~de~la~p.\, }
2182     }
2183 }
2184
2185 \ProcessKeyOptions[keytheorems]
2186
2187 \file_input_stop:

```

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