

The makerobust package

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Abstract

Package makerobust provides `\MakeRobustCommand` that converts an existing macro to a robust one.

Contents

1 User interface	1
1.1 Example	2
2 Implementation	2
3 Installation	3
3.1 Some details for the interested	3
4 History	4
[2006/03/18 v1.0]	4
5 Index	4

1 User interface

L^AT_EX offers `\DeclareRobustCommand` to define a robust macro that does not break if it is used in moving arguments. Sometimes a macro is already defined, but not robust. For example, `\(` and `\)` are not robust, inside `\section` the user must use `\protect` explicitly. This could be avoided by making `\(` and `\)` robust.

`\MakeRobustCommand{⟨cmd⟩}`

`\MakeRobustCommand` redefines the macro `⟨cmd⟩` by using `\DeclareRobustCommand` and the existing definition of the macro `⟨cmd⟩`.

- It is an error if `⟨cmd⟩` is undefined. If you want to define a robust command, then you can use `\DeclareRobustCommand` directly.
- If the macro has previously been defined by `\DeclareRobustCommand` then the redefinition of `\MakeRobustCommand` is omitted, because the macro is already robust. Only an information entry is written to the `.log` file. Thus you do not get a warning or an error if the macro is already robust because of an updated L^AT_EX or package that defines the macro.
- Two macros are defined for a macro, defined by `\DeclareRobustCommand`. Example:

```
\DeclareRobustCommand{\foobar}{definition text}
```

Then the macro “\foobar” contains the protection code and, depending on the protection mode, calls the internal macro “\foobar ”. Notice the space at the end of the macro name. This internal macro “\foobar ” now contains the definition “definition text”, given in \DeclareRobustCommand.

Sometimes it can happen, that the internal macro already exists. This can be caused by a previous \DeclareRobustCommand followed by \renewcommand. Then the redefinition by \MakeRobustCommand would be safe.

However, it can also be possible that the macro is already robust, using the internal macro, but with a different protection code. The redefinition by \MakeRobustCommand would then generate an infinite loop.

Therefore \MakeRobustCommand raises an error message, if the internal macro (with space at the end) already exists.

1.1 Example

```

1 <*example>
2 \documentclass{article}
3 \usepackage{makerobust}
4 \MakeRobustCommand\(  
5 \MakeRobustCommand\  
6 \pagestyle{headings}  
7 \begin{document}  
8 \tableofcontents  
9 \section{Einstein: \((E=mc^2)\)}  
10 \newpage  
11 Second page.  
12 \end{document}  
13 </example>

```

2 Implementation

```

14 <*package>
15 \NeedsTeXFormat{LaTeX2e}
16 \ProvidesPackage{makerobust}%
17 [2006/03/18 v1.0 Making a macro robust (HO)]
18 \def\MakeRobustCommand#1{%
19   \begingroup
20   \@ifundefined{\expandafter\@gobble\string#1}{%
21     \endgroup
22     \PackageError{makerobust}{%
23       Macro \string'\string#1\string' is not defined%
24     }\@ehc
25   }{%
26     \global\let\MR@gtemp#1%
27     \let#1\@undefined
28     \expandafter\let\expandafter\MR@temp
29       \csname\expandafter\@gobble\string#1 \endcsname
30     \DeclareRobustCommand#1{%
31       \ifx#1\MR@gtemp
32         \endgroup
33         \PackageInfo{makerobust}{%
34           \string'\string#1\string' is already robust%
35         }%
36       \else
37         \@ifundefined{MR@temp}{%
38           \global\let\MR@gtemp#1%
39         \endgroup
40         \expandafter\let\csname\expandafter\@gobble\string#1 \endcsname#1%
41         \let#1\MR@gtemp
42       }{%

```

```

43     \endgroup
44     \PackageError{makerobust}{%
45         Internal macro \string'\string#1 \string' already exists%
46     }\@ehc
47 }%
48 \fi
49 }%
50 }
51 \</package>

```

3 Installation

CTAN. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/makerobust.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/makerobust.pdf](#) Documentation.

Unpacking. The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain- \TeX :

```
tex makerobust.dtx
```

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```

makerobust.sty      → tex/latex/oberdiek/makerobust.sty
makerobust.pdf      → doc/latex/oberdiek/makerobust.pdf
makerobust-example.tex → doc/latex/oberdiek/makerobust-example.tex
makerobust.dtx      → source/latex/oberdiek/makerobust.dtx

```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

Refresh file databases. If your \TeX distribution (`te \TeX` , `mik \TeX` , ...) rely on file databases, you must refresh these. For example, `te \TeX` users run `texhash` or `mktextlsr`.

3.1 Some details for the interested

Attached source. The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk makerobust.pdf unpack_files output .
```

Unpacking with \LaTeX . The `.dtx` chooses its action depending on the format:

plain- \TeX : Run `docstrip` and extract the files.

\LaTeX : Generate the documentation.

If you insist on using \LaTeX for `docstrip` (really, `docstrip` does not need \LaTeX), then inform the autodetect routine about your intension:

```
latex \install=y\input{makerobust.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

¹<http://ftp.ctan.org/tex-archive/>

Generating the documentation. You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL^AT_EX:

```
pdflatex makerobust.dtx
makeindex -s gind.ist makerobust.idx
pdflatex makerobust.dtx
makeindex -s gind.ist makerobust.idx
pdflatex makerobust.dtx
```

4 History

[2006/03/18 v1.0]

- First version.

5 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols		M	
\(4, 9	\MakeRobustCommand	<i>1, 4, 5, 18</i>
\)	5, 9	\MR@gtemp	<i>26, 31, 38, 41</i>
\@ehc	<i>24, 46</i>	\MR@temp	<i>28</i>
\@gobble	<i>20, 29, 40</i>	N	
\@ifundefined	<i>20, 37</i>	\NeedsTeXFormat	<i>15</i>
\@undefined	<i>27</i>	\newpage	<i>10</i>
B		P	
\begin	<i>7</i>	\PackageError	<i>22, 44</i>
C		\PackageInfo	<i>33</i>
\csname	<i>29, 40</i>	\pagestyle	<i>6</i>
D		\ProvidesPackage	<i>16</i>
\DeclareRobustCommand	<i>30</i>	S	
\documentclass	<i>2</i>	\section	<i>9</i>
E		T	
\end	<i>12</i>	\tableofcontents	<i>8</i>
\endcsname	<i>29, 40</i>	U	
I		\usepackage	<i>3</i>
\ifx	<i>31</i>		