The makerobust package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

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Abstract

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

Contents

1 User interface

LaTeX 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 LaTeX 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

```
⟨*example⟩
\documentclass{article}
\usepackage{makerobust}
\MakeRobustCommand\(
\MakeRobustCommand\)
\pagestyle{headings}
\begin{document}
\tableofcontents
\section{Einstein: \(E=mc^2\)}
\newpage
Second page.
\end{document}
⟨/example⟩
```

2 Implementation

```
⟨*package⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{makerobust}%
  [2006/03/18 v1.0 Making a macro robust (HO)]%
```

```
\def\MakeRobustCommand#1{%
  \begingroup
  \@ifundefined{\expandafter\@gobble\string#1}{%
    \endgroup
    \PackageError{makerobust}{%
      Macro \string`\string#1\string' is not defined%
    }\@ehc
  }{%
    \global\let\MR@gtemp#1%
    \let#1\@undefined
    \expandafter\let\expandafter\MR@temp
        \csname\expandafter\@gobble\string#1 \endcsname
    \DeclareRobustCommand#1{}%
    \ifx#1\MR@gtemp
      \endgroup
      \PackageInfo{makerobust}{%
        \string`\string#1\string' is already robust%
      }%
    \else
      \@ifundefined{MR@temp}{%
```

```
        \global\let\MR@gtemp#1%
        \endgroup
        \expandafter\let\csname\expandafter\@gobble\string#1 \endcsname#1%
        \let#1\MR@gtemp
      }{%
        \endgroup
        \PackageError{makerobust}{%
          Internal macro \string‘\string#1 \string’ already exists%
        }\@ehc
      }%
    \fi
  }%
}
```

⟨/package⟩

3 Installation

3.1 Download

Package. This package is available on CTAN[1]:

CTAN:macros/latex/contrib/oberdiek/makerobust.dtx The source file.

CTAN:macros/latex/contrib/oberdiek/makerobust.pdf Documentation.

Bundle. All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

CTAN:install/macros/latex/contrib/oberdiek.tds.zip

TDS refers to the standard “A Directory Structure for TEX Files” (CTAN:tds/tds.pdf). Directories with `texmf` in their name are usually organized this way.

3.2 Bundle installation

Unpacking. Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

Script installation. Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package attachfile2 comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

3.3 Package installation

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

```
tex makerobust.dtx
```

[1] ftp://ftp.ctan.org/tex-archive/

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.

3.4 Refresh file name databases

If your TeX distribution (teTeX, mikTeX, ...) relies on file name databases, you must refresh these. For example, teTeX users run `texhash` or `mktexlsr`.

3.5 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 intention:

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

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

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 pdfLaTeX:

```
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.