The uniquecounter package

Heiko Oberdiek*

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Abstract

This package provides a kind of counter that provides unique number values. Several counters can be created by different names. The numeric values are not limited.

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1 Documentation

\texttt{\textbackslash UniqueCounterNew \{\textit{name}\}}

Macro \texttt{\textbackslash UniqueCounterNew} creates a new unique counter \textit{(name)}. An error is thrown, if the counter already exists.

*Please report any issues at \url{https://github.com/ho-tex/uniquecounter/issues}
\textbf{\texttt{\UniqueCounterCall}{\langle name\rangle}{\langle code\rangle}}

Macro \texttt{\UniqueCounterCall} calls the given \texttt{\langle code\rangle} with a new value of counter \texttt{\langle name\rangle} as argument.

\textbf{\texttt{\UniqueCounterIncrement}{\langle name\rangle}}

Macro \texttt{\UniqueCounterIncrement} generates a new value for the counter \texttt{\langle name\rangle} by incrementing by one (globally).

\textbf{\texttt{\UniqueCounterGet}{\langle name\rangle}}

Expandable macro \texttt{\UniqueCounterGet} returns the current value of counter \texttt{\langle name\rangle}.

\subsection{Example}

\begin{verbatim}
\documentclass{minimal}
\usepackage{uniquecounter}
\UniqueCounterNew{anchor}
\makeatletter
\newcommand*{\DefNewAnchorName}[2]{% #1 is unique counter value
  \@namedef{anchor@#2}{a#1}% #2 is name of anchor
\}
\newcommand*{\NewAnchorName}[1]{% \UniqueCounterCall{anchor}\DefNewAnchorName{#1}%
  \UniqueCounterCall{anchor}\DefNewAnchorName{#1}%
}\newcommand*{\PrintAnchorName}[1]{% \@nameuse{anchor@#1}%
  \@nameuse{anchor@#1}%
}\begin{document}
\NewAnchorName{Top}%
\NewAnchorName{Left}%
\noindent
Top: \PrintAnchorName{Top}\%\ Left: \PrintAnchorName{Left}\%
\end{document}
\end{verbatim}

\section{Implementation}

\subsection{Reload check and package identification}

Reload check, especially if the package is not used with L\LaTeX{}.

\begin{verbatim}
\begingroup\catcode61\catcode48\catcode32=10\relax%
  \catcode13=5 % ^^M
  \endlinechar=13 %
  \catcode35=6 % #
  \catcode39=12 % '
  \catcode44=12 % ,
  \catcode45=12 % -
  \catcode46=12 % .
\endgroup
\end{verbatim}
2.2 Catcodes

\begingroup\catcode61\catcode48\catcode32=10\relax
\catcode13=5 % ^^M
\catcode32=13 %
\catcode123=1 % {
\catcode125=2 % }
\catcode64=11 % @
\def\x{\endgroup
\expandafter\edef\csname uqc@AtEnd\endcsname{\endlinechar=\the\endlinechar\relax
\catcode13=\the\catcode13\relax
\catcode32=\the\catcode32\relax
\catcode35=\the\catcode35\relax
\catcode61=\the\catcode61\relax
\catcode64=\the\catcode64\relax
\catcode123=\the\catcode123\relax
\catcode125=\the\catcode125\relax
}\x\catcode61\catcode48\catcode32=10\relax
\catcode13=5 % ^^M
\endlinechar=13 %
\catcode35=6 % #
\catcode64=11 % @
\catcode123=1 % {
\catcode125=2 % }
\def\TMP@EnsureCode#1#2{%
\edef\uqc@AtEnd{\uqc@AtEnd\noexpand\endinput}
}\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname RequirePackage\endcsname\relax
\def\TMP@RequirePackage#1[#2]{\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname ver@#1.sty\endcsname\relax
\input #1.sty\relax
\fi}
\else
\fi\edef\uqc@AtEnd{\uqc@AtEnd\noexpand\endinput}
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname RequirePackage\endcsname\relax
\def\TMP@RequirePackage#1[#2]{\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname ver@#1.sty\endcsname\relax
\input #1.sty\relax
\fi}
\else
\fi\edef\uqc@AtEnd{\uqc@AtEnd\noexpand\endinput}
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname RequirePackage\endcsname\relax
\def\TMP@RequirePackage#1[#2]{\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname ver@#1.sty\endcsname\relax
\input #1.sty\relax
\fi}
\else
\fi\edef\uqc@AtEnd{\uqc@AtEnd\noexpand\endinput}
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname RequirePackage\endcsname\relax
\def\TMP@RequirePackage#1[#2]{\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname ver@#1.sty\endcsname\relax
\input #1.sty\relax
\fi}
\else
\fi\edef\uqc@AtEnd{\uqc@AtEnd\noexpand\endinput}
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname RequirePackage\endcsname\relax
\def\TMP@RequirePackage#1[#2]{\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname ver@#1.sty\endcsname\relax
\input #1.sty\relax
\fi}
\else
\fi\edef\uqc@AtEnd{\uqc@AtEnd\noexpand\endinput}
146 \RequirePackage{bigintcalc}[2007/11/11]\
147 \RequirePackage{infwarerr}[2007/09/09]\
148 \fi

\uqc@IncNum

149 \begingroup\expandafter\expandafter\expandafter\endgroup
150 \expandafter\ifx\csname numexpr\endcsname\relax
151 \def\uqc@IncNum#1{%
152 \begingroup
153 \count@=\csname uqc@cnt@#1\endcsname\relax
154 \advance\count@\@ne
155 \expandafter\xdef\csname uqc@cnt@#1\endcsname{%
156 \number\count@
157 }%
158 \ifnum\count@=2147483647%
159 \global\expandafter\let\csname uqc@inc@#1\endcsname\uqc@IncBig
160 \fi
161 \fi
162 \endgroup
163 }%
164 \else
165 \def\uqc@IncNum#1{%
166 \expandafter\xdef\csname uqc@cnt@#1\endcsname{%
167 \number\numexpr\csname uqc@cnt@#1\endcsname+1%
168 }%
169 \ifnum\csname uqc@cnt@#1\endcsname=2147483647%
170 \global\expandafter\let\csname uqc@inc@#1\endcsname\uqc@IncBig
171 \fi
172 \fi
173 }%
174 \fi

\uqc@IncBig

175 \def\uqc@IncBig#1{%
176 \expandafter\xdef\csname uqc@cnt@#1\endcsname{%
177 \expandafter\expandafter\expandafter
178 \BigIntCalcInc\csname uqc@cnt@#1\endcsname!%
179 }%
180 }

\uqc@Def

181 \begingroup\expandafter\expandafter\expandafter\endgroup
182 \expandafter\ifx\csname newcommand\endcsname\relax
183 \def\uqc@Def#1{%\def#1##1}%
184 \else
185 \def\uqc@Def#1{%\newcommand*{#1}[1]}%
186 \fi

\UniqueCounterNew

187 \uqc@Def\UniqueCounterNew{%
188 \expandafter\ifx\csname uqc@cnt@#1\endcsname\relax
189 \expandafter\def\csname uqc@cnt@#1\endcsname{%}
190 \global\expandafter\let\csname uqc@inc@#1\endcsname\uqc@IncNum
191 \@PackageInfo{uniquecounter}{New unique counter ‘#1’}%
192 \else
193 \@PackageError{uniquecounter}{Unique counter ‘#1’ is already defined}\@ehc
194 \fi
195 }
3 Installation

3.1 Download

Package. This package is available on CTAN:


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/uniquecounter.tds.zip

TDS refers to the standard “A Directory Structure for T\LaTeX\ Files” (CTAN:pkg/tds). Directories with \texttt{texmf} in their name are usually organized this way.

\footnote{CTAN:pkg/uniquecounter}
3.2 Bundle installation

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

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

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
tex uniquecounter.dtx
```

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

```
uniquecounter.sty → tex/generic/uniquecounter/uniquecounter.sty
uniquecounter.pdf → doc/latex/uniquecounter/uniquecounter.pdf
uniquecounter-example.tex → doc/latex/uniquecounter/uniquecounter-example.tex
uniquecounter.dtx → source/latex/uniquecounter/uniquecounter.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 (\TeX Live, MiK\TeX, ...) relies on file name databases, you must refresh these. For example, \TeX Live users run texhash or mktexlsr.

3.5 Some details for the interested

**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
latex \let\install=y\input{uniquecounter.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:

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

An example follows how to generate the documentation with pdf\LaTeX:

```
pdflatex uniquecounter.dtx
makeindex -s gind.ist uniquecounter.idx
pdflatex uniquecounter.dtx
makeindex -s gind.ist uniquecounter.idx
pdflatex uniquecounter.dtx
```
4 History

[2009/09/11 v1.0]  
• First public version.

[2009/12/18 v1.1]  
• Bug fix in \UniqueCounterCall for values > 9 (bug report of Lev Bishop).

[2011/01/30 v1.2]  
• Already loaded package files are not input in plain \TeX.

[2016/05/16 v1.3]  
• Documentation updates.

[2019/12/15 v1.4]  
• Documentation updates.

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