The \texttt{WTRRef} Package (v0.4.0)

Takuto ASAKURA (wtsnjp)

June 15, 2020

\textbf{Abstract}

\textit{WT Series} collects macros which are useful to create \LaTeX{} documents.\textit{WTRRef} package is a part of this WT Series that extends cross-reference system of \LaTeX{}. It makes enable to divide namespace and scope, further arrows users to customise reference formats. \LaTeX{} \texttt{2ε} on any kind of \TeX{} engine is supported. The package requires Package \texttt{xparse} and \texttt{xkeyval}.

\section{System Requirements}

System requirements of \textit{WTRRef} are shown bellow:

\begin{itemize}
  \item \TeX{} engine: any engine
  \item \TeX{} format: \LaTeX{} \texttt{2ε}
  \item Document class: any class
  \item Required packages: \texttt{xparse} and \texttt{xkeyval}
\end{itemize}

\section{Loading the WTRRef Package}

To use \textit{WTRRef} package, load \texttt{wtref.sty} file with \texttt{\usepackage} command in preamble. No package option is available.

\texttt{\usepackage{wtref}}

\section{Cross-Reference Commands}

\subsection{Definition of New Cross-Reference Commands}

\texttt{\newref} command creates a set of cross-reference commands. This command can only be used in preamble.

\texttt{\newref\{(options)\}\{(ref types)\}}

\texttt{(ref types)} are comma-separated list of \texttt{(ref type)}. All characters of \texttt{(ref type)} must be able to use in control sequence (only ordinary alphabet is recommended) and can not be empty. Notice that leading and trailing spaces and successive spaces arround commas are ignored.
\texttt{\newref} command defines two commands: \texttt{\langle ref type\rangle label}, \texttt{\langle ref type\rangle ref}. In this document, the former are called \textbf{label commands} and the latter are called \textbf{reference commands}. \texttt{\newref} command overwrites existing commands, so \texttt{(ref name)} should be decided carefully.

In \texttt{(options)}, you can set following parameters by key-value list:

\begin{itemize}
  \item \texttt{namespace=\langle string\rangle} Set \texttt{(namespace)} to \textquote{\langle string\rangle}. If neither \texttt{namespace} nor \texttt{nonamespace} are specified, or in case \texttt{(string)} of \texttt{namespace} is empty, \texttt{(namespace)} is set to \textquote{(ref type)}.
  \item \texttt{nonamespace} Set \texttt{(namespace)} to empty. That is to say, invalidation of function that dividing \texttt{namespace}. It should be noted that you can specify value for \texttt{nonamespace} and that will not make any errors, but the value will simply be ignored.
  \item \texttt{scope=\langle counter\rangle} Specify counter which used as scope. You can specify any \LaTeX{} counter to \texttt{\langle counter\rangle} but one which has uniqueness in a document is desirable. This key sets \texttt{(scope)} to \textquote{\the\langle counter\rangle}.
\end{itemize}

These optional settings apply to all cross-reference commands relate to \texttt{(ref type)} in specified \texttt{(ref types)}.

Identically, if any keys do not specified in \texttt{(options)}, \texttt{(namespace)} is set to \textquote{(ref type)} and \texttt{(scope)} is set to empty. In other words, the function of \texttt{namespace} is active and function of \texttt{scope} is inactive as default.

### 3.2 Label Commands

#### 3.2.1 Function and Usage

Label commands are used to create new labels. Usage of those are same to \texttt{\label} command of standard \LaTeX{}. Usage of \texttt{\exlabel} is shown bellow as an example:

\begin{verbatim}
\exlabel{(label)}
\end{verbatim}

#### 3.2.2 Internal Processing

Label commands finally are expanded to following format:

\begin{verbatim}
\label{(namespace)(scope)(label)}
\end{verbatim}

### 3.3 Reference Commands

Reference commands print contents of counters which labeled by label commands in specified formats. Usage of \texttt{\exref} is shown bellow as an example:

\begin{verbatim}
\exref[(the scope)]{(label list)}
\end{verbatim}

The option argument \texttt{(the scope)} can be ommited when refering label exists in the same scope. You can refer outside of scope by writing down the output of proper \texttt{\the(counter)}. Notice that if the function of scope is inactive (i.e. in case \texttt{scope} key does not specified in \texttt{(options)} of \texttt{\newref}), this argument is always unnecessary, and in other words it will be ignored all the time.
In argument \( \langle \text{label list} \rangle \), plural labels can be written in comma-separated. Note that leading and trailing spaces and successive spaces around commas are ignored. If actually plural labels are filled in, pertinent counters should be printed out in comma-separate form in default. You can change this format flexibly with \texttt{\setrefstyle} command.

4 Setting Reference Style

The output format of reference commands can be customised with \texttt{\setrefstyle} command. The syntax of \texttt{\setrefstyle} is shown below:

\begin{verbatim}
\setrefstyle{\langle ref types \rangle}{\langle options \rangle}
\end{verbatim}

The \texttt{\setrefstyle} command can be used any place of \LaTeX{} document (not only preamble), and change reference format locally.

In \langle \langle options \rangle \rangle, you can set following parameters by key-value list:

- **refcmd**=\langle \langle command \rangle \rangle: Specified \langle \langle command \rangle \rangle repeated for the number of labels which filled in \langle \langle label list \rangle \rangle time. String \#1 in \langle \langle command \rangle \rangle may be replaced into appropriate label name. The default value is \texttt{\ref{\#1}}.

- **sep**=\langle \langle command \rangle \rangle: Specified \langle \langle command \rangle \rangle is output as a separator of each refcmd when more than three labels filled in \langle \langle label list \rangle \rangle. Notice that last one separator is given by \texttt{last sep}. The default value is \{, \space\}.

- **last sep**=\langle \langle command \rangle \rangle: Specified \langle \langle command \rangle \rangle is output as a last separator when plural labels filled in \langle \langle label list \rangle \rangle. Behind the = can be omitted, and in that case \texttt{last sep} is set to identical value of \texttt{sep} (and this is the default).

- **prefix**=\langle \langle command \rangle \rangle: Specified \langle \langle command \rangle \rangle put out first when reference command used. The default value is \{\}.

- **suffix**=\langle \langle command \rangle \rangle: Specified \langle \langle command \rangle \rangle put out last when reference command used. The default value is \{\}.

Parameters which do not set explicitly will not be changed.