The **WTRef** Package (v1.0.0)

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**Abstract**

Package **WTRef** is a small extension for \LaTeX\’s cross-referencing. It enables you to divide namespace and scope. It also provides a few ways to customise referencing formats. \LaTeX\ on any kind of \TeX\ engine is supported. The package requires Package \texttt{xparse} and \texttt{xkeyval}.

1 System requirements

**WTRef** requires the following.

- \TeX\ engine: any engine
- \TeX\ format: \LaTeX\2\ε
- Document class: any class
- Required packages: \texttt{xparse} and \texttt{xkeyval}

2 Loading the package

The package should be loaded in the usual \LaTeX\2\ε way. No package option is available.

\begin{verbatim}
\usepackage{wtref}
\end{verbatim}

3 Cross-reference commands

3.1 Declaring new cross-reference commands

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

\begin{verbatim}
\newref[(options)]{(ref types)}
\end{verbatim}

Herein, \texttt{(ref types)} is a comma-separated list of \texttt{(ref type)}. All characters consisting of \texttt{(ref type)} must be ‘letter’ so that they can be used for control sequences (recommended to use ASCII alphabets only) and may not be empty. Notice that leading and trailing spaces and successive spaces around commas are ignored.

The \texttt{\newref} command defines pairs of cross-referencing commands, \texttt{\(\texttt{\{ref type\}\texttt{label}\)}} and \texttt{\(\texttt{\{ref type\}\texttt{ref}\)} for each given \texttt{(ref type)}. In this document,
we call the former label commands and the latter reference commands. Notice that the \newref command may overwrites existing commands (with warning messages), so \refname should be decided carefully.

In \options, you can set the following parameters with key-value list:

\namespace=\string sets \namespace to "\string". In case neither \namespace nor \nonamespace is specified, or \string of \namespace is empty, the \namespace parts in labels are set to "\refname".

\nonamespace sets \namespace to empty. That is to say, the namespace function for the package is disabled. You can give a value for the \nonamespace key without any error, but the value will be simply ignored.

\scope=\counter sets counter which used as scope. Though you can specify arbitrary L\TeX counter for \counter, normally those which have uniqueness in a document are useful. The \scope parts in labels are set to "the(counter)". These optional settings apply to all pairs of cross-reference commands corresponding to \refname.s in specified \reftypes.

Identically, if any keys do not specified in \options, \namespace is set to "\refname", and \scope is set to empty. In other words, while the namespace function is enabled by default, the scope function is not.

3.2 Label commands

Label commands are used for making new labels. The usage of them are the same as the standard \label command of L\TeX 2ε, e.g.,

\exlabel{\langle label \rangle}

The label commands are equivalent to the following after a full-expansion:

\label{\langle namespace \rangle\langle scope \rangle\langle label \rangle}

3.3 Reference commands

Reference commands print contents of counters which labeled by label commands in specified formats. The following is the syntax of an example reference command \exref:

\exref{\langle the \scope \rangle\langle label list \rangle}

The option argument \langle the \scope \rangle can be omitted when the specified label exists in the same scope. You can refer to labels outside a scope by specifying the target scope explicitly, that is the output of proper \the\langle counter \rangle, in the option argument. Notice that if the function of scope is inactive (i.e., in case \scope key does not specified in \options of \newref), this argument is always unnecessary, and it will be ignored all the time.

In argument \langle label list \rangle, you can specify multiple labels in a form of comma-separated list. Note that leading and trailing spaces and successive spaces around commas are ignored. In the case, pertinent counters should be printed in comma-separate form by default. You can change this format flexibly with the \setrefstyle command.
4 Setting referencing style

The output format of reference commands can be customised with the \setrefstyle command. The syntax of the command is as follows:

\setrefstyle{(ref types)}{(options)}

The \setrefstyle command can be used anywhere in \LaTeX documents, not limited to preambles, and sets the reference format locally.

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

\texttt{refcmd=\langle ref command\rangle} sets the \langle ref command\rangle to used for actual referencing functionality. Herein, \#1 in the \langle command\rangle may be replaced into suitable label name. The default value is \texttt{\ref\{#1\}}. The \langle command\rangle may be used repeatedly for the number of labels in the given \langle label list\rangle.

\texttt{sep=\langle separator\rangle} sets the \langle separator\rangle, which used between each \langle ref command\rangle, in case more than three labels are given for a \langle label list\rangle. Notice that last one separator is set by \texttt{last sep}. The default value is \{, \texttt{space}\}.

\texttt{last sep=(last separator)} sets \langle last separator\rangle to used for the last separator between the \langle ref command\rangles, in case multiple labels are given in \langle label list\rangle. The part after = can be omitted. In that case, \texttt{last sep} is set to identical value of \texttt{sep}, and this is the default behavior.

\texttt{prefix=\langle prefix\rangle} sets \langle prefix\rangle to be put in front of the first \langle ref command\rangle when the reference commands are used. The default value is \texttt{\{\}}.

\texttt{suffix=\langle suffix\rangle} sets \langle suffix\rangle to be put behind the last \langle ref command\rangle when reference commands are used. The default value is \texttt{\{\}}.

Values of the keys which do not set explicitly in the \langle options\rangle are left unchanged.