The \texttt{namespc} package\textsuperscript{*}

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Abstract

The \texttt{namespc} package adds rudimentary \texttt{c++}-like namespace functionality to \LaTeX. It may be used to declare local \LaTeX\ commands, which can be made accessible in a later context without defining them globally.

1 Introduction

This package can be used to declare local \LaTeX\ commands, which may be reused in a later context without polluting the global namespace, as an equivalent to \texttt{c++}-like namespaces.

2 Usage

This command is used to instantiate and reuse a certain namespace. The \texttt{namespace} command has the following syntax:

\begin{verbatim}
namespace{spcname}{before}{body}
\end{verbatim}

The first parameter corresponds to the name of the namespace to be started or used. The \texttt{before} arguments of the current call of \texttt{namespace} are appended to the preamble of namespace \texttt{spcname}, which is processed before the text in \texttt{body} gets processed.

\texttt{spcname}

With the first call of \texttt{namespace{spcname}{...}{...}} the corresponding environment \texttt{spcname} is defined which processes all \texttt{before} arguments within its preamble.

\texttt{namespace*}

Essentially the same as the \texttt{namespace} command but without generation of the corresponding environment.

\texttt{usingnamespace}

By using \texttt{usingnamespace{spcname}} one can force \LaTeX\ to process the namespace preamble of \texttt{spcname}.

3 Implementation

We first make \texttt{@} to a character in order to use and define internal commands:

\begin{verbatim}
1 \makeatletter
\@defnamespace@ifundef
2 \def\@defnamespace@ifundef#1{
\end{verbatim}

\texttt{\@defnamespace@ifundef} First we define an internal macro which will be used to instantiate the (internal) namespace preamble macro \texttt{\@namespace}\texttt{spcname}

\texttt{\def\@defnamespace@ifundef#1{}

\textsuperscript{*}This document corresponds to \texttt{namespc} namespace, dated 2003/10/03.
Now we are able to define the internal version of the starred `\namespace` command.

\begin{verbatim}
\newcommand{\onamespacestar}[3]{
  \@defnamespace@ifundef{@namespace@#1}
  \expandafter\g@addto@macro\csname @namespace@#1\endcsname{#2}{\relax\csname @namespace@#1\endcsname #3}
}
\end{verbatim}

The user command `\usingnamespace` just forces initiation and processing of the namespace preamble.

\begin{verbatim}
\newcommand{\usingnamespace}[1]{
  \@defnamespace@ifundef{@namespace@#1}
  \csname @namespace@#1\endcsname
}
\end{verbatim}

This is an internal command which provides the corresponding environment.

\begin{verbatim}
\def\@provide@namespace@env#1{
  \@ifundefined{#1} {
    \newenvironment{#1}{\usingnamespace{#1}}{}
  }{}
}
\end{verbatim}

The double colon notation may be used to access commands defined within a namespace preamble once. Note that the command’s arguments have to be surrounded by colons:

\begin{verbatim}
\def\::#1::#2:#3:{
  {\csname @namespace@#1\endcsname \csname#2\endcsname#3}
}
\end{verbatim}

Next we just add the definition of the respective environment to `\namespace*` in order to obtain the internal version of `\namespace`:

\begin{verbatim}
\newcommand{\onamespacece}[3]{
  \@provide@namespace@env{#1}
  \@namespace{#1}{#2}{#3}
}
\end{verbatim}

Finally we use the `\@ifstar` macro to define the user commands `\namespace` and `\namespace*`:

\begin{verbatim}
\newcommand*(\namespace){\@ifstar\onamespacece\onamespacestar}\makeatother
\end{verbatim}

\@ is made special character again:
4 Example

This is example code for the use of the \namespc package:

\begin{verbatim}
\namespace{spcname}{
  \newcommand{\spcwidecmd}{\emph{command}\xspace}{
    Using \spcwidecmd for the first time.
  } % end of namespace

  % not defined here: \spcwidecmd

\namespace{spcname}{{}
  \spcwidecmd may be used again later.
} % end of namespace

\begin{spcname}
  We can also use \spcwidecmd within the corresponding environment\ldots
\end{spcname}

  Alternatively we may use the double colon notation: \::spcname::spcwidecmd::

\usingnamespace{spcname}
\ldots{} or globally: \spcwidecmd.
\end{verbatim}

And here’s the corresponding \LaTeX output:

Using command for the first time.
command may be used again later.
We can also use command within the corresponding environment\ldots
Alternatively we may use the double colon notation: command
\ldots or globally: command

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