The \texttt{delarray} package*

David Carlisle

2014/10/28

This file is maintained by the \LaTeX\ Project team. Bug reports can be opened (category \texttt{tools}) at \url{https://latex-project.org/bugs.html}.

1 Examples

The addition to \texttt{array.sty} added in \texttt{delarray.sty} is a system of implicit \texttt{\left} \texttt{\right} pairs. If you want an array surrounded by parentheses, you can enter:
\begin{verbatim}
\begin{array}{{cc}}
  a & b \\
  c & d \\
\end{array}
\end{verbatim}

Similarly if an environment equivalent to \LaTeX\’s \texttt{\cases} could be defined by:
\begin{verbatim}
\begin{array}\{lL}
\end{verbatim}

\[ f(x) = \begin{cases} 
  0 & \text{if } x = 0 \\
  \sin(x)/x & \text{otherwise} 
\end{cases} \]

Here \texttt{L} is supposed to denote a column of left aligned L-R text. It may be defined via: \texttt{\newcolumntype{L}\{\$\}$\{\$\}}\}, as discussed in \texttt{array.sty}. Note that as the delimiters must always be used in pairs, the ‘.’ must be used to denote a ‘null delimiter’.

This feature is especially useful if the \texttt{[t]} or \texttt{[b]} arguments are also used. In these cases the result is not equivalent to surrounding the environment by \texttt{\left}...\texttt{\right}, as can be seen from the following example:

\begin{verbatim}
\begin{array}\{t\}{c}\{c\}
  1 & 2 & 3 \\
  1 & 2 & 3 \\
\end{array}
\end{verbatim}

\begin{verbatim}
\begin{array}\{c\}{c}\{c\}
  1 & 2 & 3 \\
  1 & 2 & 3 \\
\end{array}
\end{verbatim}

\begin{verbatim}
\begin{array}\{b\}{c}\{c\}
  1 & 2 & 3 \\
  1 & 2 & 3 \\
\end{array}
\end{verbatim}

\end{verbatim}

\*This file has version number v1.01, last revised 2014/10/28.
2 The Macros

1 \{∗package\}
2 \RequirePackage{array}[1994/02/03]
3 \@tabarray
   This macro tests for an optional bracket and then calls up \@@array or
   \@@array[c] (as default).
4 \def\@tabarray{\@ifnextchar[{{\@array}{\@array}[c]}}
5 \@@array
   This macro tests for an optional delimiter before the left brace of the main pream-
   ble argument. If there is no delimiter, \@arrayleft and \@arrayright are made
   a no-ops, and \@array is called with the positional argument. Otherwise call
   \@del@array.
6 \def\@@array[#1]{\@ifnextchar\bgroup
7 \let\@arrayleft\relax\let\@arrayright\relax\@array[#1]}
8 \@del@array
   We now know that we have an array (or tabular) with delimiters.
9 \def\@del@array[#1]#2#3#4{%
10 \textbf{The following line is completely redundant but it does catch errors involving de-
11 limiters before the processing of the alignment begins. A common error is likely to be omitting the ‘.’ in a \texttt{cases}-type construction. This causes the first token of the alignment to be gobbled, possibly causing lots of spurious errors before the cause of the error, the missing delimiter, is discovered as \@arrayright puts the
12 alignment and the delimiters together.}
13 \setbox\z@\hbox{$\left#2\right#4$}%
14 \if#1c\def\@arrayleft{\left#2}
15 \def\@arrayright{\right#4}%
16 \else\def\@arrayleft{\setbox\z@}%
17 \def\@arrayright{%
18 Calculate the amount the box needs to be lowered (this will be negative in the case of \texttt{[b]}). A little bit of arithmetic cf. the \texttt{TeX}Book, Appendix G, rule 8. We calculate the amount this way, rather than just taking the difference between the depth of box\z@ and the depth of the box defined below, as the depth of that box may be affected by the delimiters if \texttt{delimitershortfall} or \texttt{delimiterfactor}
19 have non-standard values.
20 \dimen@=\dp\z@
21 \advance\dimen@-\ht\z@
22 \divide \dimen@ by \tw@
23 \advance\dimen@ by\fontdimen22 \textfont\tw@
24 \else\def\@arrayleft{\setbox\z@}%
25 \def\@arrayright{%
26 Then after the alignment is finished:
27 \def\@arrayright{%
28 Calculate the amount the box needs to be lowered (this will be negative in the case of \texttt{[b]}). A little bit of arithmetic cf. the \texttt{TeX}Book, Appendix G, rule 8. We calculate the amount this way, rather than just taking the difference between the depth of box\z@ and the depth of the box defined below, as the depth of that box may be affected by the delimiters if \texttt{delimitershortfall} or \texttt{delimiterfactor}
29 have non-standard values.
30 \dimen@=\dp\z@
31 \advance\dimen@-\ht\z@
32 \divide \dimen@ by \tw@
33 \advance\dimen@ by\fontdimen22 \textfont\tw@
Now lower the alignment and the delimiters into place.

\lower\dimen\hbox{$\left#2\vcenter\unvbox\z@\right#4$}]

End the \if#1c

\fi

Now that we have defined \@arrayleft and \@arrayright, call \@array.

\@array[#1]{#3}}

(\text{\textsc{package}})

\section{newarray.sty}

All the features of the old newarray style option have been merged into the array or delarray options.