On-line Tutorial on \LaTeX

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8 \textbf{Color tables in \LaTeX{}}

8.1 The \texttt{colortbl} package

In the previous chapters we learnt how to construct tables in \LaTeX{} that could span even to a number of pages. Here we shall see how to obtain color cells in tables, using David Carlisle’s \texttt{colortbl} package. This package requires the \texttt{color} and \texttt{array} packages.

The \texttt{colortbl} package provides a number of commands using which one can obtain \textit{really} colorful tables. We shall demonstrate each of these with the help of simple examples in the following sections.

8.1.1 The \texttt{\textbackslash columncolor} command

The format for the \texttt{\textbackslash columncolor} command is

\begin{verbatim}
\texttt{\textbackslash columncolor\{color model\}\{color\}\{left overhang\}\{right overhang\}}
\end{verbatim}

\textbf{Color model} \quad It changes the current color to the argument specified until the end of the current group or the environment. The colors \texttt{black}, \texttt{white}, \texttt{red}, \texttt{green}, \texttt{blue}, \texttt{cyan}, \texttt{magenta}, and \texttt{yellow} should be predefined by any driver. Colors can also be defined by a package, as well as by the use of \texttt{\textbackslash definecolor} command\footnote{For instance, by using the command \texttt{\textbackslash definecolor\{myblue\}\{rgb\}\{0.8,0.85,1\}}, you can have the color \textit{myblue}.}.

\textbf{Color} \quad It is an optional argument, and is like a specification to the color model given. This is particularly convenient if one wants to use a color without defining it initially.

\textbf{Left overhang} \quad It controls the width of the panel past the widest entry in the column. It is also an optional argument, and takes the value \texttt{\textbackslash tabcolsep} (in \texttt{tabular}) and \texttt{\textbackslash arraycolsep} (in \texttt{array}).

\textbf{Right overhang} \quad If omitted it defaults to the \texttt{left overhang}.

We have a few different tables below that will demonstrate a few possibilities using the \texttt{\textbackslash columncolor} command.

\begin{verbatim}
\begin{tabular}{|l|l|}
\hline
\{one\} & \{two\} \\
\{three\} & \{four\} \\
\hline
\end{tabular}
\end{verbatim}

In the following table both the overhangs are set to 0pt.
8.2 More colors and tricks

The default overhang of \tabcolsep produces:

\begin{tabular}{|l|l|}
\hline
one & two \\
\hline
three & four \\
\end{tabular}

\begin{tabular}{|l|l|}
\hline
one & two \\
\hline
three & four \\
\end{tabular}

It is also possible to have colors like the one below! Using \multicolumn it is possible to change the color of specified rows of a table.

\begin{tabular}{|l|l|}
\hline
one & two \\
\hline
three & four \\
\end{tabular}

8.1.2 The \rowcolor command

The \rowcolor command is helpful in case a table is made principally by rows. The arguments in \rowcolor are of the form as in \columncolor. Here’s an example:

A \multicolumn command overrides the default colors for both the current row and column.

\begin{tabular}{|l|l|}
\hline
\rowcolor{lightturquoise} {one} & {two} \\
\rowcolor{honeydew} {three} & {four} \\
\end{tabular}

\begin{tabular}{|l|l|}
\hline
\rowcolor{lightturquoise} {one} & {two} \\
\rowcolor{honeydew} {three} & {four} \\
\end{tabular}

8.2 More colors and tricks

In this section we’ll see how to obtain even more colors: colored rules, colored space between two rules, and more.

- Colored rules can be easily obtained wherever desired by replacing the | with something like \color{green} \vline.
- The above trick still leaves the spaces between || white. In order to obtain colored space one can remove the inter glue, and replace it by a colored rule. For instance,

\begin{tabular}{|l|l|}
\hline
\rowcolor{green} \vline \\
\rowcolor{yellow} \vrule width \doublerulesep \vline \\
\rowcolor{green} \vline \\
\end{tabular}

would change the color of the rules to green, and there would be another yellow rule of thickness equal to \doublerulesep between the two.

- \arrayrulewidth specifies the ‘thickness’ of the rules. The default is set to 0.4pt and can be changed by using, for instance, \setwidth\arrayrulewidth{1pt} to a value of 1pt.
\\arrayrulecolor takes the same arguments as \color. It can be specified at any point in the table. However, if given in the mid table it affects only the rules that are specified after that point, and any vertical rules in the table ‘preamble’ keep their original colors. For example, the command
\begin{verbatim}
\setlength{arrayrulewidth}{1pt}\arrayrulecolor{blue}
\end{verbatim}
would set the \arrayrulewidth to 1pt and the rule color to blue.

\\doublerulesep specifies the space between the double rules.

\\doublerulesepcolor works in the same way as \arrayrulecolor, and refers to the color between double rules.

\\minrowclearance is used for inserting space at any desired row.

8.3 Color tables with \hhline

There are many advantages of using \hhline (hhline package) to draw horizontal rules instead of \cline. Firstly, \hhline provides more flexibility in producing the rules particularly because of the way it interacts with the vertical lines. Moreover, sometimes the color of the lines produced by \cline doesn’t appear (rather it’s covered up by the color panels in the following row). So it becomes more appropriate if one uses the – rule type in a \hhline argument.

The \hhline command can be used to produce a single rule, or a double rule. \hhline has arguments very similar to those in the ‘preamble’ of an array or tabular.

= A double hline equal to the column width.
– A single hline equal to the column width.
∼ A column with no hline.
| A vline which cuts through a double (or single) hline.
: A vline which is broken by a double line.
# A double hline segment between two vlines.
t The top half of a double hline segment.
b The bottom half of a double hline segment.
∗ *{3}{==#} expands to ==###==#, as in the *-form for the preamble.

We now demonstrate an example of the \hhline command in the following table:

\begin{verbatim}
A table using hhline
S.No. Col. 1 Col. 2
\hline
1 abc def
\hline
2 pqr lmn
\hline
3 uvw xyz
\hline
n pqr lmn
\end{verbatim}
### 8.4 More Examples of Color Table

All these examples are taken from the `T\TeX Live` CDROM. The first example is not a table, but a horizontally packed colorboxes.

```latex
\begin{tabular}{|c|c|}
\hline
\textbf{\cellcolor{white}S.No.} & \cellcolor{honeydew}\textbf{Col. 1} & \textbf{Col. 2} \\
\hline
1 & abc & def \\
\hline
2 & pqr & lmn \\
\hline
3 & uvw & xyz \\
\hline
\end{tabular}
```

<table>
<thead>
<tr>
<th></th>
<th>LONDON</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>OG4G</td>
<td>Thu Oct 10</td>
</tr>
<tr>
<td></td>
<td>OG7A</td>
<td>Thu Oct 17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sun Oct 13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sun Oct 20</td>
</tr>
</tbody>
</table>
This is a column colored table. The same table is made row coloured in the next one.

\setlength{\extrarowheight}{2mm}
\begin{tabular}{|l|c|c|>{\columncolor{yellow}}c|c|>{\columncolor{red}\bfseries}c<{\textsc{GBP}}|}
\hline
\multicolumn{3}{>{\columncolor{red}}l}{\color{white}\textsf{LONDON}} & \multicolumn{3}{>{\columncolor{red}}r}{\color{white}\textsf{Price}} \\[1pt\]
\hline
Sydney & OG4G & Thu Oct 10 & Mon Oct 21 or 28 & 11 or 18 days & 999 \& Thu Oct 17 & Mon Oct 21 or 28 & 4 or 11 days & 999 \& OG7A & Sun Oct 13 & Mon Oct 21 or 28 & 8 or 15 days & 999 \& & Sun Oct 20 & Mon Oct 28 & 8 days & 999 \hline
\end{tabular}

Sydney & OG4G & Thu Oct 10 & Mon Oct 21 or 28 & 11 or 18 days & 999
\rowcolor{gray}
OG7A & Sun Oct 13 & Mon Oct 21 or 28 & 8 or 15 days & 999
\rowcolor{gray}
Sun Oct 20 & Mon Oct 28 & 8 days & 999

See the rule colours have different ones in the following example.

\setlength{\extrarowheight}{2mm}
\begin{tabular}{|l|c|r|}
\arrayrulecolor{green}
\hline
United Kingdom & London & Thames \hline
France & Paris & Seine \hline
Russia & Moscow & Moskva \hline
\end{tabular}

\setlength{\arrayrulewidth}{2pt}
\arrayrulecolor{green}
\begin{tabular}{|l|c|r|}
\arrayrulecolor{black}\hline
United Kingdom & London & Thames \\hline
France & Paris & Seine \\hline
Russia & Moscow & Moskva \hline
\end{tabular}

It is possible to keep some cells of a table in white while keeping the whole table in a
8.4 More Examples of Color Table

Different colour.

<table>
<thead>
<tr>
<th>Table title</th>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row one</td>
<td>mmmmm</td>
<td>mmmm</td>
</tr>
<tr>
<td>Row two</td>
<td>mmm</td>
<td>mmm</td>
</tr>
<tr>
<td>Row three</td>
<td>mmmmm</td>
<td>mmmmm</td>
</tr>
<tr>
<td>Row four</td>
<td>mmmmm</td>
<td>mmmmm</td>
</tr>
<tr>
<td>Totals</td>
<td>mmmmm</td>
<td>mmmmm</td>
</tr>
</tbody>
</table>

\newcommand{\CTPanel}[1][]{\multicolumn{1}{>{\columncolor{white}}r|}{#1}}
\setlength\fboxsep{3mm}
\colorbox[cmyk]{.40,0,0,0}{\begin{tabular}{l|r|r}
\multicolumn{1}{l|}{\large\textbf{Table title}}\[2mm\]
\textbf{Description} & \textbf{Column 1} & \textbf{Column 2} \\
\hline
Row one & \CTPanel{mmmmm} & \CTPanel{mmmm} \\
Row two & \CTPanel{mmmm} & \CTPanel{mmm} \\
Row three & \CTPanel{mmmmm} & \CTPanel{mmmmm} \\
Row four & \CTPanel{mmmmm} & \CTPanel{mmmm} \\
Totals & mmmmm & mmmmm
\end{tabular}}
\definecolor{Blueb}{cmyk}{.40,0,0,0}
\definecolor{Blued}{cmyk}{.80,0,0,0}
\definecolor{Bluede}{cmyk}{1.0,0,0,0}
\arrayrulecolor{black}
\setlength{\arrayrulewidth}{1mm}
\begin{tabular}{llrrl}
\rowcolor{Blueb} & \multicolumn{3}{>{\columncolor{Blueb}}l}{\large\textbf{Table title}}& \rowcolor{Bluede} \\
\rowcolor{Bluede} \textbf{Description} & \textbf{Column 1} & \textbf{Column 2} & \rowcolor{Bluede} \\
\hline
\rowcolor{Bluede} Row one & mmmmm & mmmm & \rowcolor{Bluede} \\
\rowcolor{Bluede} Row two & mmmm & mmm & \rowcolor{Bluede} \\
\rowcolor{Bluede} Row three & mmmmm & mmmmm & \rowcolor{Bluede} \\
\rowcolor{Bluede} Row four & mmmmm & mmmm & \rowcolor{Bluede} \\
\cline{2-3}
\rowcolor{Bluede} Totals & mmmmm & mmmmm & \\
\end{tabular}

\definecolor{Blueb}{cmyk}{.40,0,0,0}
\definecolor{Blued}{cmyk}{.80,0,0,0}
\definecolor{Bluede}{cmyk}{1.0,0,0,0}
\arrayrulecolor{black}
\setlength{\arrayrulewidth}{1mm}
\begin{tabular}{>{\columncolor{Blueb}}l>{\columncolor{Blueb}}l|>{\columncolor{Blueb}}r}
\multicolumn{3}{>{\columncolor{Blued}}l}{\large\textbf{Table title}}\\[2mm]
\rowcolor{white} & \textbf{Description} & \textbf{Column 1} & \textbf{Column 2} \\
\arrayrulecolor{black}
\rowcolor{Blued} \rowcolor{Blued} & \rowcolor{Blued} \\
Row one & & & \rowcolor{Blued} \hline
Row one & & & \rowcolor{Blued} \hline
Row two & & & \rowcolor{Blued} \hline
Row three & & & \rowcolor{Blued} \hline
Row four & & & \rowcolor{Blued} \hline
\rowcolor{white} Totals & & &
\end{tabular}