MANIPAL UNIVERSITY
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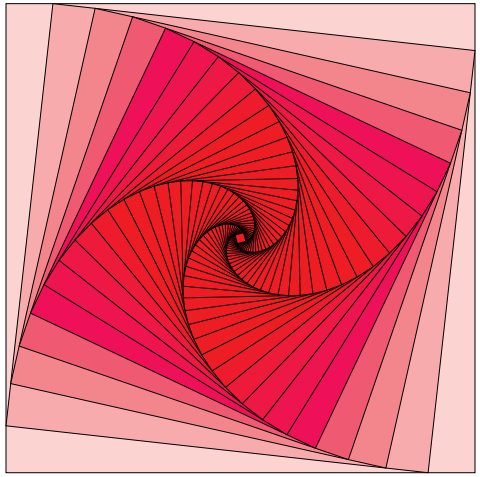
Workshop on Document typesetting and Processing using LaTeX

Session: Tables in LaTeX



The rotated square

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Motivation

1. Tables are a common feature in academic writing, often used to summarise research results.
2. Mastering the art of table construction in LaTeX is therefore necessary to produce quality document.
3. LaTeX is not a spreadsheet, so designing a table may be time taking in the beginning.
4. Customization of table can be done with several packages, e.g. tabularx, tabu, colortbl, booktabtabularx, and several others.

The Table environment I

Very similar to the figure environment.

The Table Environment

```
\begin{table}[Position]
\begin{tabular}[Position]{table spec}

        Table rows separated by & ...

\caption{table}
\end{tabular}[Position][pos]{table spec}
\end{table}[Position]
```

We will learn about all of these codes.

The Table Environment II

Next the `\begin{table}[Position]`

The Position specifier in the table environment is exactly the same as was in the figure environment.

Position specification

h	where the table is declared (here)
t	at the top of the page
b	at the bottom of the page
p	on the dedicate page
!	override the default float restrictions

The combination of position specifier, e.g. **htb**, can also be used.

The Table Environment III

We start with `\begin{tabular}[Position]{table spec.}`

Here we have the **tabular** environment that requires **table specs** argument and an optional argument **position**.

The table spec. specifier identifies the number of column and the format of the separation between columns.

The table spec.

l	left-justified column
c	centered column
r	right-justified column
p{'width'}	specified column width
|	vertical line separation between columns
||	double vertical line separation between columns

The Table Environment IV

The **POSITION** specifier of the Tabular environment is only rarely used. We focus on the specifications required within the table body.

Table row/columns specifier

&	column separator
\\	start new row
\hline	horizontal line
\newline	start a new line within a cell
\cline{i-j}	partial horizontal line from column *i* and end of column *j*

We will use these specifiers in examples.

Examples of LaTeX tables I

Lastly the **caption** code, which is exactly as it was with Figure Environment, only that \caption{ Table Title} is placed after the \end{ tabular}.

```
\begin{table}[b]
%\centering
\begin{tabular}{lcr}
 1 & 2 & 3 \\
  4 & 5 & 6 \\
  7 & 8 & 9 \\
\end{tabular}
\caption{The first table}
\end{table}
```

A Simple Table

1	2	3
4	5	6
7	8	9

Table 1: The first table

Examples of LaTeX tables II

Next we add vertical and horizontal lines to the table.

```
\begin{table}[b]
%\centering
\begin{tabular}{|l||c|r|}
\hline
 A & B & C \\
 \hline\hline
  1 & 2 & 3 \\
  \hline
  7 & 8 & 9 \\
  \hline
\end{tabular}
\caption{The first table}
\end{table}
```

A Simple Table

A	B	C
1	2	3
7	8	9

Table 2: A simple table

Examples of LaTeX tables III

Next we use `\cline{i-j}`. In order to create an empty row we simply & to all columns.

```
\begin{table}[t]
\begin{tabular}{|r|c|r|}
  \hline
  A & B & C\\
  \hline
  2 & 4 & Y\\ \cline{2-3}
   & 8 & N  \\
  \hline \hline
  8 &  7 & Y \\
  \hline
\end{tabular}
\caption{More table}
\end{table}
```

More Table

A	B	C
2	4	Y
	8	N
8	7	Y

Table 3: More table

Examples of LaTeX tables IV

Multicolumn table can be created using specifier
`\multicolumn{'num_cols'}{'alignment'}{'contents'}`
`num_cols` is the number of subsequent columns to merge;
alignment is `l`, `c`, `r`, , and `content` is the actual data.

```
\begin{table}[h]
\begin{tabular}{ |l|l| }
  \hline
  \multicolumn{2}{|c|}{Team sheet} \\
  \hline
  C  & M. Dhoni \\
  BM & V. Kohli \\
  BR & Z. Khan \\
  BR & I. Sharma \\
  \hline
\end{tabular}
\caption{A slightly complex table}
\end{table}
```

More Table

Team sheet	
C	M. Dhoni
BM	V. Kohli
BR	Z. Khan
BR	I. Sharma

Table 4: A slightly complex table

Examples of LaTeX tables V

Colorful table can first by adding `\usepackage[table]{xcolor}` in the preamble, and then using command:
`\rowcolors{‘‘starting row’’}{‘‘odd color’’}{‘‘even color’’}`

```
\begin{table}[h]
\rowcolors{1}{green}{pink}
\begin{tabular}{lll}
odd      & odd   & odd \\
even     & even  & even\\
odd      & odd   & odd \\
even     & even  & even\\
\end{tabular}
\caption{A colorful table}
\end{table}
```

More Table

odd	odd	odd
even	even	even
odd	odd	odd
even	even	even

Table 5: A colorful table

Conclusion

- Tables in LaTeX requires practice.
- There exist several free software that let you convert spreadsheet to LaTeX table, e.g. excel2latex, matrix2latex. Details can be found here: Using Spreadsheet.
- There are several packages that facilitates the design of complex tables, e.g. tables spanning several pages, footnotes in table, margin formatting. More details can be found here and here.
- A handy tool that can be used to make tables can be found here, here and here (online).

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Equations, Bibliography... further improve our LaTeX document.