Writing a Scientific Research Paper using LaTeX
Part 2

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Table with LaTeX

LaTeX has a command to make a table with

```
\begin{tabular}[pos]{colspec}
        ⋮
\end{tabular}
```

where **[*pos*]** is position of the table relative to text

{*colspec*} is alignment of text in a column

Table with LaTeX

- The parameter **[*pos*]** could be either

t	the top of the table is on the baseline
b	the bottom of the table is on the baseline
c	the center of the table is on the baseline

[t] baseline

Head 1	Head 2

Table with LaTeX

[b] baseline

Head 1	Head 2

[c] baseline

Head 1	Head 2

Table with LaTeX

- The parameter **{*colspec*}** could be either

l	left-justified column
r	centered column
c	right-justified column
p{*width*}	paragraph column with fixed width
|	vertical line

Table with LaTeX

colspec = l

Text in cell

colspec = c

Text in cell

colspec = r

Text in cell

See example2-1.tex

Table with LaTeX

Other related commands

\hline	horizontal line
\cline{*i*-*j*}	horizontal line from column *i*th to *j*th

https://en.wikibooks.org/wiki/LaTeX/Tables

See example2-2.tex

Environment Table

The table environment will normally enclose tabular environment to enhance its capabilities such as captioning and referencing.

```
\begin{table}
{\caption{description}}
\begin{tabular}
      ⋮
\end{tabular}
\end{table}
```

See example2-3.tex

Advanced table with LaTeX

For table with multiple columns, LaTeX has a command

\multicolumn**{*num*}{*colspec*}**

where **{*num*}** is the number of merged columns

{*colspec*} is the column specification

See example2-4.tex

Advanced table with LaTeX

For table with multiple rows, LaTeX has the command \multirow which is in the package multirow

\usepackage{multirow}

Advanced table with LaTeX

\multirow{***numrow***}{**width**}{*text*}

where ***numrow*** is the number of merged rows

width is the width of the row * if unspecified

See example2-5.tex and example2-6.tex

Referencing Tables

- Referencing a table can be done only with table environment command \begin{table} … \end{table}

- Referencing use \label{*name*} for naming the table and \ref{*name*} to refer to table with \label{*name*}

See example2-7.tex

Inserting Figure in LaTeX

LaTeX has commands that can insert figures in many formats i.e. .jpg .pdf .png etc. with

\usepackage{graphicx}

\includegraphics[*options*]{*filename*}

https://en.wikibooks.org/wiki/LaTeX/Importing_Graphics

See example2-8.tex

Environment Figure

LaTeX has environment figure that allows us to add caption and reference to the figure.

```
\begin{figure}[pos]
   {\caption{\label{tagname}description}}
   \includegraphics[options]{filename}
\end{figure}
```

Environment Figure

Specifier	Permission
`h`	Place the float *here*, i.e., *approximately* at the same point it occurs in the source text (however, not *exactly* at the spot)
`t`	Position at the *top* of the page.
`b`	Position at the *bottom* of the page.
`p`	Put on a special *page* for floats only.
`!`	Override internal parameters LaTeX uses for determining "good" float positions.
`H`	Places the float at precisely the location in the LaTeX code. Requires the `float` package,[1] i.e., `\usepackage{float}`.

https://en.wikibooks.org/wiki/LaTeX/Floats,_Figures_and_Captions

Referencing Figures

- Referencing a figure can be done only with figure environment command \begin{figure} … \end{figure}

- Referencing use \label{*name*} for naming the table and \ref{*name*} to refer to table with \label{*name*}

See example2-9.tex