

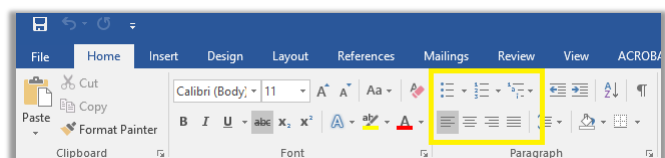
Introduction to LaTeX

text layout



Contents

- Alignment
- Lists
- Columns etc.



Text alignment

- Default: LaTeX justifies text.
- Encapsulate the text to align in an environment
 - `left` (`flushleft`): left align
 - `center` (`center`): center
 - `right` (`flushright`): right align
 - Create an additional spacing between the paragraphs
- *File: demo_justif_1.tex*



Text alignment

- Use switch commands `raggedright`, `raggedleft`, `centering`
- `\raggedright` will produce left-aligned text, but the behaviour is different; in this case the text will be left-aligned from the point where the command is declared till another switch command is used. This is more suitable to align long blocks of text or the whole document.
- *File: demo_justif_2.tex*
- LaTeX default text alignment is fully-justified, but often left-justified text may be a more suitable format. This left-alignment can be easily accomplished by importing the `ragged2e` package
- *File: demo_ragged2e.tex*



Hands-on

- Use *handson_justif.tex*
- Play around with the justification options and check the result.



Lists

- Different possibilities to make a list in LaTeX:
 - unnumbered list.
 - numbered items.
 - A list with labeled items.
- The corresponding environments are:
 - `itemize`
 - `enumerate`
 - `description`
- Lists can be nested (up to 4 levels)



itemize

- `\begin{itemize}`
 `\item ...`
 `\end{itemize}`
- Each entry must be preceded by the control sequence `\item`.
- Can be nested (4 levels)
- Bullets can be changed for each level using the following command:
 - `\renewcommand{\labelitemi}{\bullet}`
 - `\renewcommand{\labelitemii}{\cdot}`
 - `\renewcommand{\labelitemiii}{\diamond}`
 - `\renewcommand{\labelitemiv}{\ast}`
- File: *demo_itemize.tex*



enumerate

- `\begin{enumerate}`
 `\item ...`
 `\end{enumerate}`
- File: *demo_enumerate.tex*
- Changing the format of the numbering can be done with the `enumerate` package or `enumitem`
- - `\usepackage{enumerate}`
 - ...
 - `\begin{enumerate}[I]` %for capital roman numbers.
 - `\item`
 - `\end{enumerate}`
 - `\begin{enumerate}[(a)]` %for small alpha-characters within brackets.
 - `\item`
 - `\end{enumerate}`
- File: *demo_enumerate_2.tex*



description

- `\begin{description}`
 `\item[] ...`
 `\end{description}`
- Very handy when explaining notations or terms.
- `\begin{description}`
 `\item[Cost] Freeware.`
 `\item[Implementation] Easy: download the executable and`
 `click on it.`
 `\item[Maintenance] None.`
 `\end{description}`
- *File: demo_description.tex*



Hands-on

- Generate some text, and use the different list commands:
 - `itemize`
 - `enumerate`
 - `description`
- Try to build a nested list
- *File: handson_lists.tex*



Fills and spaces

- `\hspace{width}`: Insert a horizontal space *width*; has no effect at the end of the line
- `\hspace*{width}`: Insert a horizontal white space *width*; even at the end of the line
- `\enspace`, `\quad`, `\qquad`: Insert a horizontal space of 1/2em, 1em, or 2em. The em is a length defined by a font designer, often thought of as being the width of a capital M.
- `\hfill`: Inserts a blank space that will stretch accordingly to fill the space available.
- `\hrulefill` and `\dotfill` do the same as `\hfill` but instead of blank spaces they insert a horizontal ruler and a string of dots, respectively.

Fills and spaces

- `\vspace{height}`: Creates a vertical white space with the chosen height; has no effect at the beginning and at the end of a page
- `\vspace*{height}`: Creates a vertical white space with the chosen height; even at the beginning and at the end of a page
- `\vfill`: Inserts a blank space that will stretch accordingly to fill the vertical space available.
- Other commands to insert vertical blank spaces
 - `\smallskip`
 - `\medskip`
 - `\bigskip`
- File: *demo_space_1.tex*
- File: *demo_space_3.tex*

Text in columns

- use `twocolumn` option to your document class, which splits everything in two
- Package `multicol`: flexible tool to handle multicolumn documents
- Environment: enclosed inside the tags `\begin{multicols}` and `\end{multicols}`
- Parameters:
 - Number of columns
 - Header text, in between []. This is optional and will be displayed on top of the multicolumn text.
- *File:column_layout.tex*
- See also: https://www.overleaf.com/learn/latex/Multiple_columns