Guide to LaTeX

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Contents

1 General LaTeX

1.1 Structure

The general layout of a LaTeXdocument is:

```
\documentclass{article}
% Preamble with \usepackage{...} statements.
\begin{document}
\section{Introduction}
\subsection{Introduction subsection}
\end{document}
```

1.2 Spacing

- Multiple spaces are treated as a single space.
- A new line is treated as a space; a blank line is treated as a new line character.

1.3 Comments

1.3.1 Single line comments

Single line comments can be inserted using the % character. For example:

```
This is a normal line
% This is a commented line
This is another normal line.
```

1.3.2 Long comments

You can enclose long comments as follows:

```
\begin{comment}
This is a long comment.
\end{comment}
```

2 Commands

Command	Description

`documentclass`	The argument of this command indicates the class of the document. The different options are: **Article** for articles in scientific journals, presentations, short reports, program documentation, invitations, ... **Proc** a class for proceedings based on the article class. **Minima** is as small as it can get. It only sets a page size and a base font. It is mainly used for debugging purposes. **Report** for longer reports containing several chapters, small books, PhD theses, ... **Book** for real books Slides for slides. The class uses big sans serif letters. You might want to consider using the Beamer class instead. **Options** **10pt, 11pt, 12pt** Sets the size of the main font in the document. 10pt by default. PAPER-SIZE **a4paper** **a5paper** **letterpaper** **b5paper** **executivepaper** **legalpaper** **fleqn** Typesets displayed formulae left-aligned instead of centred. **leqno** Places the numbering of formulae on the left hand side instead of the right. **titlepage, notitlepage** Specifies whether a new page should be started after the document title or not. **onecolumn, twocolumn** **twoside, oneside** **landscape** **openright, openany** Makes chapters begin either on a right-hand page or the next page available.

`pagestyle`	The argument of this command indicates the page numbering style. *plain* is the default, *headings* prints the current chapter heading and the page number in the header on each page, while the footer remains empty. *empty* for empty footer and header.
`thispagestyle`	The argument of this command indicates the page numbering style for the current page.
`input`	By giving this command a LaTeXfile as an argument, it will put the content of this file directly where the command is called, e.g. \input{FILENAME}.
`hline`	This inserts a horizontal line.
`textbackslash`	This inserts a backslash in the document.
`textbf`	Makes the argument bold.
`emph`	*Emphasises* the argument.
`textit`	*Italicises* the argument.
`ldots`	Inserts ...
`\\`	Forces a line break
`newline`	Forces a line break.
`newpage`	Starts a new page.
`fussy`	Makes LaTeXfussy about warnings (underfull/overfull hbox etc.)
`hyphenation`	This takes a space-separated list of arguments indicating the hyphenation that can take place for new lines. For example: \hyphenationFORTRAN super-cali-fra-gi-lis-tic-ex-pi-a-li-do-cious indicates that FORTRAN should not be hyphenated across a new line, but super-cali-fra-gi-lis-tic-ex-pi-a-li-do-cious can be hyphenated at any of the specified points.
`mbox`	Causes its arguments to be kept together under all circumstances, i.e. not split across lines.

`fbox`	Similar to mbox, but in addition there will be a visible box drawn around the content.
`today`	Gets today's date.
`chapter`	Creates a new chaper with the title given as an argument. An optional argument indicates the name for the chapter in the table of contents.
`frontmatter`	(For books). This should be the first command after the start of the document body. It will switch page numbering to roman numerals and sections will be non-enumerated.
`mainmatter`	(For books). This comes right before the first chapter. It turns on Arabic page numbering and restarts the page counter.
`label`	Creates a referencable label, with the argument specifying the name for this label.
`ref`	LaTeXreplaces \reflabel by the number of the section, subsection, figure, table, or theorem after which the corresponding \label command was issued.
`pageref`	LaTeXreplaces \pageref by the page number of the specified label.
`footnote`	Inserts a footnote with the specified text.
`underline`	Underlines the argument.
`flushleft`	Left-aligns the following content.
`flushright`	Right-aligns the following content.
`center`	Centers the following content.

3 Environments

Environment	Description
`equation`	The content of this environment will be a numbered equation.
`enumerate`	Each \item will be enumerated.
`itemize`	Each \item will be bullet-pointed
`description`	The first word of each \item is in bold.
`flushleft`	Left-aligns the content.
`flushright`	Right-aligns the content.
`center`	Centers the content.
`quote`	Represents the content as a quote.
`quotation`	This is useful for longer quotes going over several paragraphs, because it indents the first line of each paragraph.
`verse`	This is useful for poems where the line breaks are important. The lines are separated by issuing a \\ at the end of a line and an empty line after each verse.
`verbatim`	The content is displayed exactly as in the editor. This can be replicated in paragraph by using the command `\verb`. For example: `\verb#This is in verbatim#` Will print `This in in verbatim`.

4 Special Characters

4.1 Quotation marks

Quotations must be started by opening back-ticks and closing apostrophes.

4.2 Dashes and hyphens

- - produces a single hyphen: -
- -- produces an 'en-dash': –
- --- produces an 'em-dash': —

4.3 Tildes

- A tilde can be placed over a character by using \~{x}: $\tilde{x}$
- A tilde can be placed as a normal character using $\sim$