

# L<sup>A</sup>T<sub>E</sub>X Cheatsheet

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A latex cheatsheet.

## 1 Characters and Commands

### 1.1 Latex special characters

`$ % & # - { } \ ~ ^` are special characters and has special meaning to latex. You can use a leading `\` to use them. To print `$`, write `\$`

### 1.2 Latex commands

Each latex command starts with a `\` and contains only letters. Example: `\maketitle`, `\tableofcontents` etc. Parameters to a command are specified inside `{}` and optional parameters are specified inside `[ ]`. For example `\documentclass[10pt]{article}`.

## 2 Writing

### 2.1 Modes in L<sup>A</sup>T<sub>E</sub>X

**Paragraph mode** Normal mode

**Math Mode** For mathematical equation. Text inside `\(...\)` or `$...$` or

`$$...$$` or `\begin{equation}...\end{equation}` or `\begin{displaymath}...\end{displaymath}`

**Left to right mode** Text are displayed from left to right without line breaks. text inside `\mbox{}`

### 2.2 Creating a New Paragraph

A blank line creates a new paragraph.

### 2.3 Spaces

#### 2.3.1 Inserting Spaces

`\,` is used for inserting a space.

### 2.3.2 Space after a period

Latex assumes end of sentence if it found period after small case later. In that case it puts extra space after period. But for the cases like “etc.” a space followed by \ should be used after period like `etc.\` . A space followed by \ means inter word space.

If ending of a sentence contains a uppercase letter to end the sentence use \@ before period.

### 2.3.3 Space after a latex command

All spaces are ignored after a latex command like `\LaTeX` command. To make a space after `\LaTeX` a space followed by \ should be used like `\LaTeX\` . Another way to do this is to use empty {} after a command like `\LaTeX{}`.

## 2.4 Dashes

- - A intra-word dash or hyphene. Example: X-ray.
- -- A number range dash. Example: 1–10
- --- A punctuation dash. Example: —

## 2.5 Quotations

``` is used for single quotation start (‘).

`'` is used for single quotation end (’).

```` is used for double quotation start (“).

`”` is used for double quotation end (”).

### 2.5.1 Putting Quotation in a Quotation

```\,`Ah!`\,``` She said produces “ ‘Ah!’ ” She said

## 2.6 Commenting

`%` is used for commenting. Latex ignore all character after `%` to the end of the line. Also ignores space in the beginig of the next line.

### 3 $\LaTeX$ Commands List

- `\documentclass[]{} —` To specify document type. Arguments can be book, article, report etc. Options<sup>1</sup> are:
  1. 11pt — 10% larger than 10pt.
  2. 12pt — 20% larger than 10pt.
  3. twoside — to print in both sides.
  4. twocolumn — two column in a single page.
- `\usepackage{}` — To use external packages.
- `\title{}` — To specify document title.
- `\author{}` — To specify document author. Multiple authors can be specified using `\and` command.
- `\begin{}` — To begin any block. like `\begin{document}` to begin any document, `\begin{quote}` begins a long quotation, `\begin{math}` begins a math block etc.
- `\end{}` — ends any block that begins with `\begin{}`
- Argument of `\begin` and `\end` are called environments. They create different display environments. Every declaration or command can be environment like `\emph` can also be written as environment like `\begin{emph} ... \end{emph}` Here is a list of different environments:

**document** Document environment.

**quote** Short quotation environment.

**quotation** Long quotation environment.

**itemize** Unordered list environment.

**enumerate** Ordered list environment.

**description** Description list environment like this one.

**displaymath** Display math equations in separate line but without equation number.

**equation** Display equation in separate line with equation number for further reference.

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<sup>1</sup>Options are specified inside the square brackets

- `\maketitle` — To create title. It must be inside `\begin{document}`.
- `\part` — Create parts of a document. Doesn't effect document numbering.
- `\chapter` — Create chapters. No applicable for article document class.
- `\section` — Specify a section.
- `\subsection` — Specify a sub-section of a section.
- `\subsubsection` — Specify a sub-section of a sub-section.
- `\appendix` — Specify an appendix.
- `{ }` — Curly braces can be used for defining scope. Example — Input: Hello, `{\em aagontuk}` Output: Hello, *aagontuk*
- `\today` — Current date December 19, 2019
- `\TeX` — Shows  $\TeX$
- `\LaTeX` — Shows  $\LaTeX$
- `\ldots` — Produces ...
- `\emph{ }` — To emphasize text. Example: I will *emphasize* it.
- `\mbox{TEXT}` — Never breaks TEXT.
- `\footnote{footnote}` — To create a footnote. Example: Footnote<sup>2</sup>
- `\\` — New line.
- `\\*` — New line but prevents a new page.
- `\newline` — New line.
- `\hfill \break` — New line.
- `\newpage` — New Page.
- `\hspace{xmm}` — x mm horizontal space.
- `\vspace{xmm}` — x mm vertical space.

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<sup>2</sup>Please find the footnote here

## 4 Useful Tricks

### 4.1 Centered section header without number

In latex usually section are left aligned and numbered. If a starred version of the section command is used it doesn't generate number. To make the section header center aligned 'sectsty' package can be used.

```
\documentclass[11pt]{article}
\usepackage{sectsty}
\sectionfont{\centering}

\begin{document}
\section*{Statement of Purpose}
\end{document}
```