



LaTeX Tutorial

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Introduction



- LaTeX is a high-quality typesetting system; it includes features designed for the production of technical and scientific documentation.
- TeX & LaTeX

L^AT_EX

Introduction



- TeX Release Versions
 - MiKTeX
 - TeX Live
 - MacTeX
- Editors
 - TexStudio (for Windows, Linux, and Mac)
 - TeXworks (TeX Live)
 - WinEdt
 - Sublime Text (LatexTool)
 - ShareLaTeX

Introduction



- Suites
 - Windows:
 - MiKTeX2.9+TexStudio
 - CTeX Chinese Suites (MiKTeX2.9+WinEdt+Chinese Expansion)
 - Linux:
 - Tex Live (containing TeXwork) / Sublime Text (+LatexTools plug-in)
 - Mac:
 - MacTeX / Tex Live for Mac
- CTeX Download: <https://mirrors.ustc.edu.cn/ctex/legacy/2.9/>
- TeX Release Download: <https://www.latex-project.org/get/>

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Files



- .tex Source File
- .cls Library File
- .bib Bibliography
- .pdf PDF Document
- Figures
 - Vectorgraph: .pdf .eps
 - Bitmap: .png .jpg
- Intermediate Files:
 - .aux .log .out .synctex.gz

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Commands



- Basic Commands
 - `\documentclass{...}` Determining the type of source file
 - `\usepackage{...}` Loading packages
 - Common packages : algorithm、hyperref etc.
 - `\begin{...}` ... `\end{...}` Setting environment
 - Common environments : document、enumerate etc.
- Texts & Paragraphs
 - `\textbf{...}`、`\emph{...}`、`\underline{...}`、...
 - `\noindent`、`\centering`、`\quad`、...
 - `\newpage`、`\newline`、...

Commands



- Formulas
 - In-line Formula
 - $\$...\$$
 - Display Formula
 - $\$...\$$
 - $\backslash\mathrm{begin}\{\mathrm{displaymath}\} \quad \dots \quad \backslash\mathrm{end}\{\mathrm{displaymath}\}$
 - $\backslash\mathrm{begin}\{\mathrm{equation}\} \quad \dots \quad \backslash\mathrm{end}\{\mathrm{equation}\}$
 - Plugging display formula inside in-line formula
 - $\$ \backslash\mathrm{displaystyle} \dots \$$ $\$ \backslash\mathrm{dfrac}\{\dots\}\{\dots\} \$$
 - Plugging in-line formula inside display formula
 - $\$ \backslash\mathrm{textstyle} \dots \$$ $\$ \backslash\mathrm{tfrac}\{\dots\}\{\dots\} \$$
 - Eqnarray

Commands



- Tables
 - array (environment)
 - table、tabular (environment)
- Figures
 - minipage (environment)
 - subfigure (command)
- Algorithms (Pseudo Codes)
 - algorithm2e (package)

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References



- .bib file (bibtex)
- \bibitem
- \cite

Citations



- `\label{}` : Setting labels for citations
- Citing the Labels:
 - `\ref{}`: Figures, Tables, Sections, Algorithms...
 - `\eqref{}`: Formulas...

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Notes

Notes



- Do not use `\\`, `\newline` to start a new line
- Primes : ``` Left, `'` Right
- `\left(` and `\right)` make the brackets match to height of the formula
- Carefully use `\vspace`, `\hspace`
-

Thanks !

