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Webinar 4: Getting started with L^AT_EX

L^AT_EX Basics



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Document structure

```
% This is a comment
% This is another comment

%This is the document preamble
\documentclass[11pt,oneside,a4paper]{article}

\usepackage[english]{babel}
\usepackage{amsmath}

%This is the document body
\begin{document}
  \title{This is my title}
  \author{My name}
  \maketitle      %this is the command to actually draw the title

  \section{Introduction}
  ...
  \begin{equation}
    \mathnormal{E = mc^2}
  \end{equation}
\end{document}
```

- ↪ Command: an instruction used for producing something new or to change the form of an existing item, e.g., producing the symbol α or printing italic as *italic*.
- ↪ Environment: a logical structure established by a pair of commands `\begin{}`...`\end{}` to perform a particular task or render the output in a particular way.
- ↪ Document Class: general structure of the document.
- ↪ Package: additional code to extend core L^AT_EX functionalities.

Syntax

Commands

```
\command[options]{argument}
```

`\documentclass` command`\documentclass[options]{argument}`

Argument		Options	
<code>book</code>	Default is two-sided.	<code>10pt/11pt/12pt</code>	Font size.
<code>report</code>	No <code>\part</code> divisions.	<code>letterpaper/a4paper</code>	Paper size.
<code>article</code>	No <code>\part</code> or <code>\chapter</code> divisions.	<code>twocolumn</code>	Use two columns.
<code>letter</code>	Letter.	<code>twoside</code>	Set margins for two-sided.
<code>slides</code>	Large sans-serif font.	<code>landscape</code>	Landscape orientation.
<code>beamer</code>	Presentations.	<code>draft</code>	Figures not loaded.

Syntax

`\usepackage command`

`\usepackage [options] {package_name}`

Package	Use	Options
babel	Internationalization	english, german
amsmath	Math writing	sumlimits, nosumlimits, leqno, reqno
hyperref	Hypertext links	draft, final, debug
graphicx	Graphics inclusion	draft, final, hiderotate

<https://www.ctan.org>

Syntax

Sectioning

```
\begin{document}
  \title{Title}
  \author{Author's name}
  \maketitle      %this is the command to actually draw the title

  \begin{abstract}
    Your abstract goes here...
    ...
  \end{abstract}

  \part{title}
  \chapter{title}
  \section{title}
  \subsection{title}
  \subsubsection{title}
  \paragraph{title}
  \subparagraph{title}

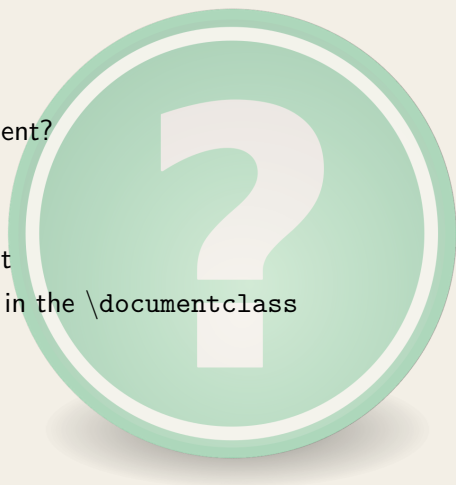
  \bibliographystyle{style}
  \bibliography{source}
\tableofcontents
\end{document}
```


<code>\begin{enumerate}</code>	Numbered list.
<code>\begin{itemize}</code>	Bulleted list.
<code>\begin{description}</code>	Description list.
<code>\item text</code>	Add an item.
<code>\item[x] text</code>	Use x instead of normal bullet or number. Required for descriptions.

```
\begin{itemize}
  \item item 1
  \item item 2
\end{itemize}
```

How to set a two columns document?

1. Using the proper command
2. Using the proper environment
3. Specifying the proper option in the `\documentclass` command



Reserved and special characters

<code>&</code>	<code>\&</code>	<code>-</code>	<code>_</code>	<code>...</code>	<code>\ldots</code>	<code>•</code>	<code>\textbullet</code>
<code>\$</code>	<code>\\$</code>	<code>^</code>	<code>\^{}{}</code>	<code> </code>	<code>\textbar</code>	<code>\</code>	<code>\textbackslash</code>
<code>%</code>	<code>\%</code>	<code>~</code>	<code>\~{}{}</code>	<code>#</code>	<code>\#</code>	<code>§</code>	<code>\S</code>

<code>ò</code>	<code>\'o</code>	<code>ó</code>	<code>\'o</code>	<code>ô</code>	<code>\^o</code>	<code>õ</code>	<code>\~o</code>	<code>ō</code>	<code>\=o</code>
<code>ó</code>	<code>\.o</code>	<code>ö</code>	<code>\"o</code>	<code>ø</code>	<code>\c o</code>	<code>ő</code>	<code>\v o</code>	<code>ő</code>	<code>\H o</code>
<code>ç</code>	<code>\c c</code>	<code>ø</code>	<code>\d o</code>	<code>ø</code>	<code>\b o</code>	<code>ö</code>	<code>\t oo</code>	<code>œ</code>	<code>\oe</code>
<code>Œ</code>	<code>\OE</code>	<code>æ</code>	<code>\ae</code>	<code>Æ</code>	<code>\AE</code>	<code>å</code>	<code>\aa</code>	<code>Å</code>	<code>\AA</code>
<code>ø</code>	<code>\o</code>	<code>Ø</code>	<code>\O</code>	<code>†</code>	<code>\l</code>	<code>‡</code>	<code>\L</code>	<code>ı</code>	<code>\i</code>
<code>J</code>	<code>\j</code>	<code>i</code>	<code>~'</code>	<code>ı</code>	<code>?'</code>				

<code>'</code>	<code>'</code>	<code>"</code>	<code>"</code>	<code>{</code>	<code>\{</code>	<code>[</code>	<code>[</code>	<code>(</code>	<code>(</code>	<code><</code>	<code>\textless</code>
<code>,</code>	<code>,</code>	<code>"</code>	<code>"</code>	<code>}</code>	<code>\}</code>	<code>]</code>	<code>]</code>	<code>)</code>	<code>)</code>	<code>></code>	<code>\textgreater</code>

Reserved and special characters

hyphen		-		X-ray
en-dash		--		1-5
em-dash		---		Yes—or no?

`\\` | Begin new line without new paragraph.
`\pagebreak` | Start new page.

`\today` | 26th April 2021.

Syntax

Font size

<code>\tiny</code>	<code>tiny</code>	<code>\scriptsize</code>	<code>scriptsize</code>
<code>\footnotesize</code>	<code>footnotesize</code>	<code>\small</code>	<code>small</code>
<code>\normalsize</code>	<code>normalsize</code>	<code>\large</code>	<code>large</code>
<code>\Large</code>	<code>large</code>	<code>\LARGE</code>	<code>large</code>
<code>\huge</code>	<code>huge</code>	<code>\Huge</code>	<code>huge</code>

Paragraph alignment

Alignment	Environment	Switch
Left justified	<code>flushleft</code>	<code>\raggedright</code>
Right justified	<code>flushright</code>	<code>\raggedleft</code>
Center	<code>center</code>	<code>\centering</code>

Syntax

Font face

<i>Command</i>	<i>Switch</i>	<i>Effect</i>
<code>\textrm{text}</code>	<code>{\rmfamily text}</code>	Roman family
<code>\textsf{text}</code>	<code>{\sffamily text}</code>	Sans serif family
<code>\texttt{text}</code>	<code>{\ttfamily text}</code>	Typewriter family
<code>\textmd{text}</code>	<code>{\mdseries text}</code>	Medium series
<code>\textbf{text}</code>	<code>{\bfseries text}</code>	Bold series
<code>\textup{text}</code>	<code>{\upshape text}</code>	Upright shape
<code>\textit{text}</code>	<code>{\itshape text}</code>	<i>Italic shape</i>
<code>\textsl{text}</code>	<code>{\slshape text}</code>	<i>Slanted shape</i>
<code>\textsc{text}</code>	<code>{\scshape text}</code>	SMALL CAPS SHAPE
<code>\emph{text}</code>	<code>{\em text}</code>	<i>Emphasized</i>
<code>\textnormal{text}</code>	<code>{\normalfont text}</code>	Document font
<code>\underline{text}</code>		<u>Underline</u>

```
\usepackage[language1, language2]{babel}
```

Place it soon after `\documentclass`

```
\selectlanguage{language1}
```

```
\foreignlanguage{language1}{Text in another language.}
```

No spell checking!


```
\usepackage[utf8]{inputenc}
```

Footnotes

```
\footnote{text}
```

```
Creating a footnote is easy.\footnote{An example footnote.}
```

```
Creating a footnote is easy.1
```

¹An example footnote.

Author's affiliation

```
\usepackage[options]{authblk}
```

```
\documentclass{article}
\usepackage{authblk}

\title{Multiple Affiliation for Multiple Author}
\date{\today}

\author[1, 2]{Author1}
\author[3, 5]{Author2}
\author[1, 2, 4]{Author3}
\author[1, 2, 4]{Author4}

\affil[1]{Affiliation1}
\affil[2]{Affiliation2}
\affil[3]{Affiliation3}
\affil[4]{Affiliation4}
\affil[5]{Affiliation5}

\begin{document}
\maketitle
\end{document}
```

Common file extensions

- `.tex` L^AT_EX or T_EX input file
- `.aux` Transport info from one compilation run to another (cross-references)
- `.log` Compilation run log
- `.toc` Stores section headers. Used to generate the table of contents
- `.lof` As `.toc` for the list of figures
- `.lot` As `.toc` for the list of tables
- `.bib` Bibliography database file
- `.bbl` Generated by BiB_TE_X to be used by L^AT_EX
- `.blg` BiB_TE_X log file
- `.bst` BiB_TE_X style file
- `.cls` Document class definition
- `.sty` Macro package
- `.pdf` The output document