

L^AT_EX WORKSHOP

AN INTRODUCTION TO L^AT_EX

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1. What is \LaTeX ?
2. First \LaTeX document
3. Text & Paragraph Format

WHAT IS L^AT_EX?

- Takes worry out of **typesetting** a document and allows you to just worry about **content**.
- Gives a good **Focus** on the contents.
- Professionally crafted **layouts** are available.
- Typesetting **mathematical** formulae is supported in a convenient way.
- Complex structure such as **footnotes**, **references**, **table of contents** and **bibliographies** can be generated easily.
- Add-on packages exist for many tasks not supported by basic \LaTeX .
- \LaTeX is highly portable and free. It can run on almost any hardware platform.

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Disadvantages:

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In this lecture we will explore more benefits of using Beamer for your presentation

FIRST L^AT_EX DOCUMENT

Let's start with the simplest working example:

Example

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```
\documentclass{article}
```

```
\begin{document}
```

```
This is my First document.
```

```
This is a simple example, with no  
extra parameters or packages included.
```

```
\end{document}
```

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```
\end{document}
```

Your \LaTeX code must
consist with

```
\documentclass[•]{•}
```

```
\begin{document}
```

```
\end{document}
```

See `1-start.tex`

Document Structure

– Preamble of Document –

```
\begin{document}
```

– Body of Document –

```
\end{document}
```

Document Structure

- Preamble of Document -

`\begin{document}`

- Body of Document -

`\end{document}`

In the preamble you define the type of document you are writing, the language and several other elements.

The contents which you want to display have to write here.

Everything included inside the `\begin{document}` `\end{document}` commands will be rendered in the final document.

Example

To display the *title* of your document you have to declare its components in the `preamble`

Example

To display the *title* of your document you have to declare its components in the preamble

```
\documentclass[12pt, letterpaper, twoside]{article}
\usepackage[utf8]{inputenc}

\title{First document}
\author{Rakesh Jana \thanks{funded by the IEEE team}}
\date{March 2018}

\begin{document}
    \maketitle
    In this document some extra packages and parameters
    were added. There is a encoding package
    an a pagesize and fontsize parameters.
\end{document}
```

In previous document add following just after `\maketitle`

In previous document add following just after maketitle

```
\begin{abstract}
    This is a simple paragraph at the beginning of the
    document. A brief introduction about the main subject.
\end{abstract}
```

documentclass Options

```
\documentclass[option1,option2,..]{document_class}
```

Table: Document Class

<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> , <code>\chapter</code> divisions.	<code>twocolumn</code>	Use two columns.
<code>letter</code>	Letter (?).	<code>twoside</code>	Set margins.
<code>slides</code>	Large sans-serif font.	<code>landscape</code>	Landscape.
<code>beamer</code>	To make slide.	<code>draft</code>	Double-spaced.

Usage:

```
\documentclass[opt,opt]{class}.
```

Used at the very beginning of a document:

```
\documentclass{class}.
```

TEXT & PARAGRAPH FORMAT

How to write

Some of the **greatest** discoveries in science were made by students of *Indian* INSTITUTE of Techonlogy, Guwahati.

How to write

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Code:

How to write

Some of the **greatest** discoveries in science were made by students of *Indian* INSTITUTE of Techonlogy, Guwahati.

Code:

```
Some of the \textbf{greatest} discoveries in
\underline{science} were made by students of \textit{Indian}
\textsc{Institute} of Techonlogy, \textrm{Guwahati}.
```

Text Format

<i>Command</i>	<i>Declaration</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>

RSF EEE
RSF EEE
RSF EEE
RSF EEE
RSF EEE

RSF EEE
RSF EEE
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RSF EEE

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

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<code>\Large</code>	Large
<code>\LARGE</code>	LARGE
<code>\huge</code>	huge
<code>\Huge</code>	Huge

These are declarations and should be used in the form `{\small Some Text}`, or `\small{Some Text}`.

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<code>\huge</code>	huge
<code>\Huge</code>	Huge

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<code>\LARGE</code>	LARGE
<code>\huge</code>	huge
<code>\Huge</code>	Huge

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Paragraph Formatting

`\par`

To make a new paragraph

`\setlength{\parindent}{width}`

To specify paragraph indent

`\noindent`

To start a paragraph without indentation.

`\setlength{\parskip}{width}`

To specify gap between two consecutive paragraphs

`\\` or `\newline`

To start new line

`\hfill`

Horizontally fill respective line

`\vfill`

vertically fill respective page

`\hspace{length}`

Specify horizontally fill length

`\vspace{length}`

Specify vertically fill length

Paragraph Formatting (Contd.)

<code>\smallskip</code>	Adds a small skip (3pt)
<code>\medskip</code>	Add a medium skip (6pt)
<code>\bigskip</code>	12pt skip.
<code>\break</code>	breaks the line without filling the current line.
<code>\linebreak[number]</code>	It breaks the line at that point. <code>number</code> ranges from 0 to 4. (0 means it will be easily ignored and 4 means do it anyway)
<code>\hspace*{length}</code>	Specify horizontally fill length with linebreak
<code>\vspace*{length}</code>	Specify vertically fill with linebreak

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`\hspace{length}`

Specify horizontally fill length

`\vspace{length}`

Specify vertically fill length

Justify

Environment

```
\begin{center}
```

```
\begin{flushleft}
```

```
\begin{flushright}
```

Declaration

```
\centering
```

```
\raggedright
```

```
\raggedleft
```

Justify

center-justifies the paragraph

right-justifies the paragraph

left-justifies the paragraph

THANK
YOU