A Beginner-Friendly Introduction to LaTeX

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1 Introduction

LaTeX is a document preparation system that allows you to create professional-looking documents easily. This guide introduces basic LaTeX features.

2 Document Class and Structure

Every LaTeX document begins with defining its document class.

2.1 Example

Rendered:

This document itself uses the `article` class.

Code:

```
\documentclass{article}
\begin{document}
Your content here.
\end{document}
```

3 Sections and Subsections

Sections structure your document.

3.1 Example

Rendered:

Section Title

Subsection Title

Code:

```
\section{Section Title}
\subsection{Subsection Title}
```

4 Text Formatting

You can format text as bold, italic, or underline easily.

4.1 Example

Rendered:
Bold Text, *Italic Text*, <u>Underlined Text</u>
Code:

```
\textbf{Bold Text}, \textit{Italic Text}, \underline{Underlined Text}
```

5 Lists

Lists organize information.

5.1 Itemized List Example

Rendered:

- First item
- Second item
- Third item

Code:

```
\begin{itemize}
    \item First item
    \item Second item
    \item Third item
\end{itemize}
```

5.2 Enumerated List Example

Rendered:

1. First item
2. Second item
3. Third item

Code:

```
\begin{enumerate}
    \item First item
    \item Second item
    \item Third item
\end{enumerate}
```

6 Mathematical Expressions

Math is one of LaTeX's strong suits.

6.1 Inline Math Example

Rendered:

Euler's formula is $e^{i\pi} + 1 = 0$.

Code:

```
Euler's formula is $e^{i\pi} + 1 = 0$.
```

6.2 Displayed Math Example

Rendered:

$$\int_0^\infty e^{-x} dx = 1$$

Code:

```
\[
\int_0^\infty e^{-x} dx = 1
\]
```

7 Tables

Tables present data clearly.

7.1 Example

Rendered:

Name	Age
Alice	30
Bob	25
Carol	28

Code:

```
\begin{tabular}{|c|c|}
\hline
\textbf{Name} & \textbf{Age} \\
\hline
Alice & 30 \\
Bob & 25 \\
Carol & 28 \\
\hline
\end{tabular}
```

8 References

For further learning:

- Overleaf Documentation: `https://www.overleaf.com/learn`

- LaTeX Wikibooks: `https://en.wikibooks.org/wiki/LaTeX`

- CTAN (Comprehensive TeX Archive Network): `https://ctan.org`