

A Beginner's Guide to LaTeX

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1 Introduction

LaTeX is a powerful typesetting system, especially useful for academic writing, research papers, and presentations. This document showcases key features you should know as a beginner.

2 Text Formatting

Here is how to use basic text formatting in LaTeX:

- **Bold text**
- *Italic text*
- Underlined text

Line breaks can be added with

. Paragraphs are separated by leaving a blank line.

3 Math in LaTeX

You can include math inline, like $E = mc^2$, or display it on a separate line:

$$a^2 + b^2 = c^2$$

3.1 Aligned Equations

Aligned equations are useful for multi-line expressions:

$$F = ma \tag{1}$$

$$E = mc^2 \tag{2}$$

3.2 Common Math Symbols

Here are some common mathematical symbols:

- Greek letters: α, β, π
- Fractions: $\frac{a}{b}$
- Summation: $\sum_{i=1}^n i$
- Integral: $\int_0^1 x^2 dx$

4 Tables

Tables help organize data neatly:

Item	Quantity
Apples	5
Oranges	3
Bananas	7

Table 1: A simple table

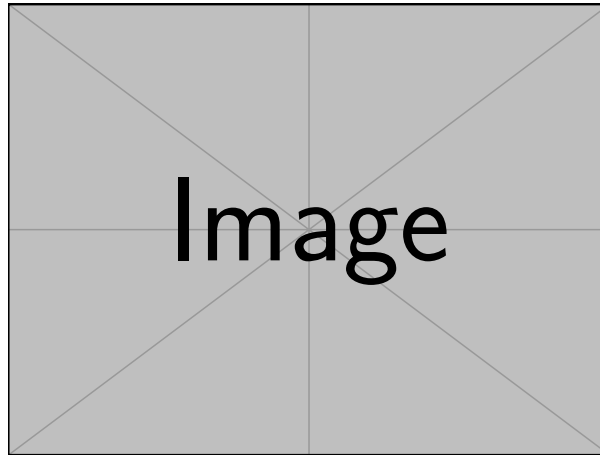


Figure 1: An example image

5 Figures

You can include figures using the `graphicx` package. Make sure the image is in the same folder as your LaTeX file.

Refer to Table 1 and Figure 1 in the text.

6 Cross-Referencing

Sections, equations, and tables can be referenced with labels. For example, Equation 3 is Newton's second law:

$$F = ma \tag{3}$$

7 Citations

Here's a citation example from Donald Knuth's book [1]. The bibliography is placed at the end of the document.

8 Page Layout

You can customize the page layout with the `geometry` package to control margins, and use the `fancyhdr` package for custom headers and footers.

9 Conclusion

This document introduced you to the basic concepts of LaTeX. Practice these examples to become comfortable with the system.

References

- [1] Donald E. Knuth. *The T_EXbook*. Addison-Wesley, 1984.