

ST306 LaTeX demo

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1 Introduction

LaTeX is a powerful document preparation system that allows you to create beautifully formatted documents with ease. It is particularly useful for documents with complex structures like research papers, theses, and reports.

1.1 Document Structure

A \LaTeX document is structured into different sections, including chapters, sections, subsections, and so on. You can create a table of contents automatically, and \LaTeX will handle the numbering and formatting for you.

2 Formatting Text

LaTeX provides various ways to format text. For example, you can make text **bold**, *italic*, or underlined.

You can also control the text size.

This text is tiny.

This text is scriptsize.

This text is footnotesize.

This text is small.

This text is normalsize (default).

This text is large.

This text is Large.

This text is HUGE.

This text is HUGER.

3 Text Alignment

3.1 Left Alignment

This is a simple example of left-aligned text. This text is aligned to the left margin of the page.

3.2 Center Alignment

This is a simple example of centered text. This text is aligned to the center of the page.

3.3 Right Alignment

This is a simple example of right-aligned text. This text is aligned to the right margin of the page.

4 Lists

You can create both ordered and unordered lists:

4.1 Unordered list

- Unordered item 1
- Unordered item 2
- * change the bullet point

4.2 Ordered list

1. Ordered item 1
2. Ordered item 2

5 Mathematics

LaTeX is known for its exceptional support for mathematical notation. You can write mathematical expressions like $E = mc^2$ inline, or you can display equations in a separate format:

$$y = \beta_0 + \beta_1 x$$

$$y = \beta_0 + \beta_1 x$$

$$y = \beta_0 + \beta_1 x \tag{1}$$

You can also use the ‘equation’ environment to number your equations:

$$\int_0^\infty e^{-x^2} = \frac{\sqrt{\pi}}{2} \tag{2}$$

You can refer the equation in text, as Equation 1.

6 Tables

6.1 Basic Table

Table 1 shows a simple table.

| Header 1 | Header 2 | Header 3 |
|---------------|---------------|---------------|
| Row 1, Cell 1 | Row 1, Cell 2 | Row 1, Cell 3 |
| Row 2, Cell 1 | Row 2, Cell 2 | Row 2, Cell 3 |
| Row 3, Cell 1 | Row 3, Cell 2 | Row 3, Cell 3 |

Table 1: A Basic Table

6.2 Custom Column Widths

If you’re looking for random paragraphs, you’ve come to the right place. When a random word or a random sentence isn’t quite enough, the next logical step is to find a random paragraph. We created the Random Paragraph Generator with you in mind. The process is quite simple. Choose the number of random paragraphs you’d like to see and click the button. Your chosen number of paragraphs will instantly appear.

Table 2 demonstrates custom column widths.

| Left-aligned | Center-aligned with fixed width | |
|---|--|-------------|
| This is a long text that should wrap within the cell. | Centered text with a fixed width column. | A paragraph |

Table 2: Table with Custom Column Widths