Intro to LaTeX

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Abstract

This is a simple paragraph at the beginning of the document. A brief introduction about the main subject. The document contains the very basics of LaTeX documentations. The tutorial is gratefully followed from Overleaf docs.

Chapter 1

LaTeX 101

1.1 Preamble, Paragraphs and Emphasis

First document. This is a simple example, with no extra parameters or packages included. We have now added a title, author and date to our first LaTeX document!

This line will start a second Paragraph.

Some of the **greatest** discoveries in science were made by ***accident***.

Some of the greatest *discoveries* in science were made by accident.

Some of the greatest discoveries *in science were made by accident.*

1.2 Images and Figures

1.2.1 Image

The universe is immense and it seems to be homogeneous, in a large scale, everywhere we look at.

There's a picture of a galaxy above.

1.2.2 Figure

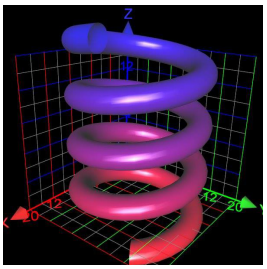

Figure 1.1: 3D Circular Pipe

As you can see in the figure 1.1, the function equivalent around 0. Also, in the page 2 is the same example.

1.3 Lists

Some unordered lists

- The individual entries are indicated with a black dot, a so-called bullet.
- The text in the entires may be of any length.

Some ordered lists

1. This is the first entry of the list
2. The list number increases
3. As each entry is added

1.4 Math in LaTeX

In physics, the mass-energy equivalence is stated by the equation $E = mc^2$ discovered in 1905 by Albert Einstein. In natural units ($c = 1$) the formula expresses the identity

$$E = m$$

In mathematics the most beautiful equation is stated as

$$e^{i\pi} + 1 = 0 \tag{1.1}$$

Subscripts in mathematics are written as a_b and superscripts are written as a^b. These can be combined and nested to write equations such as:

$$T^{i_1 i_2 \ldots i_p}_{j_1 j_2 \ldots j_q} = T(x^{i_1}, \ldots, x^{i_p}, e_{j_1}, \ldots, e_{j_q})$$

We write integral using using $\int$ and fractions using $\frac{a}{b}$. Limits are placed on integral using subscripts and superscripts.

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

Lower case Greek letters are written as ω δ etc. while upper case Greek letters are written as Ω Δ.

Mathematical operators are prefixed with a backslash as $\sin(\beta)$, $\cos(\alpha)$, $\log(x)$ etc.

Unnumbered Section

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