Lessons taken from the `sample2e.tex` file

juanantonio284

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This is an example input file. Comparing it with the output it generates can show you how to produce a simple document of your own.

1 Ordinary Text

Since any number of consecutive spaces are treated like a single one, the formatting of the input file makes no difference to LaTeX, but it makes a difference to you ...

Because printing is different from typewriting, there are a number of things that you have to do differently when preparing an input file than if you were just typing the document directly.

Quotation Marks Quotation marks like "this" have to be handled specially, as do quotes within quotes: " 'this' is what I just wrote, not 'that' ". single quote.

Dashes Dashes come in three sizes: an intra-word dash, a medium dash for number ranges like 1–2, and a punctuation dash—like this. The "punctuation dash" is the em-rule (unicode 2014)—to make it, you can directly enter the unicode symbol, or use three regular hyphens one after another `---`.

Sentence ending space vs. intra-word space In traditional typesetting, sentence-ending space should be larger than the space between words within a sentence. TeX also follows this custom. But how does TeX know whether a period ends a sentence or not? It assumes that every period not following an upper case letter ends a sentence[1].

- In instances where a period following a lowercase letter does not end a sentence **enter an escaped space (\␣) to avoid a larger space**. [The compiler focuses on the space not on the period, and thus does not add the larger space].

[1] The logic is: if it follows an upper case letter then it's likely an abbreviation and not the end of a sentence.

- In instances where a sentence ends in an upper case letter **add an extra space after the period with `\@`**.
- *Example*: The words 'gnat', 'gnus', 'gnome', etc. all begin with G.

You should check the spaces after periods when reading your output to make sure you haven't forgotten any special cases.

Ellipsis Generating an ellipsis … with the right spacing around the periods requires a special command.

Characters that need escaping LaTeX interprets some common characters as commands, so you must type special commands to generate them. These characters include the following: $ & % # { and }.

Emphasizing text In printing, text is usually emphasized with an *italic* type style.

A long segment of text can also be emphasized in this way. Text within such a segment can be given additional *emphasis.*

Prevent line breaks It is sometimes necessary to prevent LaTeX from breaking a line where it might otherwise do so. This may be at a space, as between the "Mr." and "Jones" in "Mr. Jones", or within a word—especially when the word is a symbol like *itemnum* that makes little sense when hyphenated across lines.

Footnotes Footnotes[2] pose no problem.

Formulas LaTeX is good at typesetting mathematical formulas like $x-3y+z = 7$ or $a_1 > x^{2n} + y^{2n} > x'$ or $(A, B) = \sum_i a_i b_i$.

The spaces you type in a formula are ignored. Remember that a letter like x is a formula when it denotes a mathematical symbol, and it should be typed as one.

2 Displayed Text

2.1 Quotations with the *quote* and *quotation* environments

Text is displayed by indenting it from the left margin. Quotations are commonly displayed. There are short quotations

> This is a short quotation. It consists of a single paragraph of text. See how it is formatted.

[2] This is an example of a footnote.

and longer ones.

> This is a longer quotation. It consists of two paragraphs of text, neither of which are particularly interesting.
>
> This is the second paragraph of the quotation. It is just as dull as the first paragraph.

2.2 Lists with the *itemize* and *enumerate* environments

Another frequently-displayed structure is a list. The following is an example of an *itemized* list.

- This is the first item of an itemized list. Each item in the list is marked with a "tick"—usually a bullet ($\bullet$), but you don't have to worry about what kind of tick mark is used.
- This is the second item of the list. It contains another list nested inside it. The inner list is an *enumerated* list.
  1. This is the first item of an enumerated list that is nested within the itemized list.
  2. This is the second item of the inner list. LaTeX allows you to nest lists deeper than you really should.

  This is the rest of the second item of the outer list. It is no more interesting than any other part of the item.
- This is the third item of the list.

2.3 Poetry with the *verse* environment

You can even display poetry.

> There is an environment for verse
> Whose features some poets will curse.
>
> For instead of making
> Them do *all* line breaking,
> It allows them to put too many words on a line when they'd rather
> be forced to be terse.

2.4 Mathematical formulas

Mathematical formulas may also be displayed. A displayed formula is one-line long; multiline formulas require special formatting instructions.

$$(\Gamma, \psi') = x'' + y^2 + z_i^n$$

Don't start a paragraph with a displayed equation, nor make one a paragraph by itself.

Here is an example of an unnumbered displayed equation:

$$x' + y^2 = z_i^2$$

It can be made with either the `displaymath` environment, or with the `[ ... ]` shorthand.

Here is the same equation numbered:

$$x' + y^2 = z_i^2 \tag{1}$$

It can be made with the `equation` environment