CS Club Presents:

Getting Started with LaTeX

Calvin Li

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Why Latex ?

- Looks pretty by default
- Easy and flexible way to do:
  - Graphs
  - Figures
  - Lists (like this one!)
  - Equations
  - Bibliographies

Installation

If you're using Linux, you can use the `pdflatex` command to compile a `.tex` file into a PDF. Otherwise, save yourself some headache and use an online editor like `sharelatex.com`. Either way, setup should be trivial.

The Tex file

Tex files are the "source code" of the document. It consists of two parts, the preamble and the body.

Preamble

Think of this as the pre-processing code or header for the documents. This is where you can import packages, set document-wide parameters like font size or margin, and define custom commands. Most of it, like `usepackage` and `newcommand`, is pretty self-explanatory; if anything else needs to be put in the preamble, it'll tell you. Just start with a `documentclass` (e.g., `article`) and go from there.

Body

Sectioning

The body is where the actual content of the document lies. Latex documents are organized into sections and subsections (and subsubsections). They tell Latex that pieces of text belong together, helping it put page break placement.

Paragraphs

Within sections, start a new paragraph by skipping a line. Insert an indent anywhere with `\indent`, and a line break using \\. Comment lines with %. Any keywords (commands, special symbols, etc) are preceded by a backslash (\).

Math Mode

Math (equations) in Latex are put between a pair of `\(` and `\)`, so `\(X+Y=10\)` becomes $X + Y = 10$ rather than X+Y=10. Use `\(<math>\)` to inline math, and `\[ <math> \]` to put the math

in its own line.

In math mode you can also use mathematical symbols, superscripts, subscripts, sigma notations, fractions, etc, basically anything you need to create formatted equations.

Resources

At this point, you should understand the basic workings of Latex and have almost all the knowledge needed to write simple documents, like homework or lab reports. Inserting figures, graph, or lists can and should be looked up, as there are too many things to memorize. Get into the habit of Googling anything you don't know. Also, feel free to include lots of packages in your preamble; they generally will not slow down compilation.

StackOverflow[1] and the Latex Wikibook[3] are good sources for looking up how to do things. For simple examples, you can also look at the source[2] for this guide, which has examples of lists, equations, and newcommands.

Here are some links to examples. They should be enough to do anything basic:

1. Formatting text
2. Equations
3. Figures
4. Lists
5. Macros (newcommands)
6. Bibliographies
7. BibTex (Advanced bibliography system)

References

[1] http://tex.stackexchange.com/.

[2] https://www.sharelatex.com/project/553fd5615b7540575c138105.

[3] Wikibooks/latex. http://en.wikibooks.org/wiki/LaTeX.