LaTeX Starter Pack

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1 Introduction

LaTeX (most popularly pronounced lay-tech; sometimes laa-tech) is an incredibly efficient office tool to typeset professional looking documents and reports. You will certainly find it useful to write assignments, format your resume, and more generally, to make everything you do look cooler.

LaTeX like HTML, is a **markup language.** Is's part of the TeX typesetting system created by the immortal Donald Knuth. The presentation of the content depends on the properties of the tags it is wrapped in. For more involved typesetting purposes, thius gives it a clear edge over mainstream word processors like MS-Word: in Word, *what you see is what you get,* and getting what you want can be insanely tough.

Here's how it works: you write your markup commands in the source file, which has a `.tex` extension. You need "software", or formally, a TeX distribution, to actually typeset them into a format suitable for distribution, which is generally a pdf. The most popular distribution to install on your machine is TeX Live; MikTeX is an alternative. You could also work online with Overleaf-no installations, and a ridiculously straightforward workflow. This is ideal for smaller projects. Weigh your options here. Yes, a hyperlink!

2 Basic Document Formatting

In STEM, brevity is highly valued. You want to put forth your arguments as crisply as possible. Of course, sometimes a rather long clarification may be in order[1], however, it is better to stick to the central theme and not disrupt the flow. In order to make your point, lists are often the cleanest option.

Features we demonstrate

- Making a title and table of contents
- Organising the document into sections
- Setting up the page layout
- Designing our custom header and footer
- Formatting text
- Making (nested) lists
    1. itemize
    2. enumerate
    3. description
- Footnotes
- Typesetting mathematics
- Theorem and Proof environments
- Hyperlinks and cross references within the document
- Custom environments
- Algorithms and code
- Inserting images
- Drawing tables
- Citations †

In order to make your lists appear more concise, you can specify the `itemsep` parameter as am optional argument to the environment. You will need the `enumitem` package for that.

Descriptive lists are sometimes handy:

CS 207 Discrete Structures
CS 213 Data Structures and Algorithms
CS 215 Data Analysis and Interpretation
CS 251 Software Systems Lab
CS 293 Data Structures and Algorithms Lab

The Page Layout

[1] Footnotes are a classy way to do that. Making footnotes is fairly simple in LaTeX .
† using BibTeX which automatically takes care of the bibliography formatting

The paper size for this document is A4. The left and right margins are 1.2 inches each; the lower margin is 1.5 inches. The `geometry` package is very convenient to set up and manipulate these dimensions.

3 Mathematics

4 Computer Science

4.1 Algorithms

4.2 Environments & Code

5 Utilities

5.1 Images

5.2 Tables