LaTeX & BibTeX

An Introduction

Anna Sackmann

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University of California, Berkeley

INTRODUCTION

LaTeX is a typesetting system that allows you to focus on your content instead of formatting - formatting is done separately from entry.

You tell LaTeX “what it is” not “how it looks.”

HOW DOES IT WORK?

LaTeX vs. TeX

- TeX was developed in 1978 as a way for scientists and mathematicians to have better control over their typesetting. LaTeX came along in the 1980s and takes TeX to the next level through the use of packages and environments.
- Download LaTeX distribution packages based on their operating systems along with an editor (TeXstudio, TeXmaker, or TeXworks).

OUTLINE FOR TODAY

OUTLINE

- Structure of a document
- A few basics
- Creating Sections
- Math
- Bibliographies with BibTeX

STRUCTURE

Items

- Preamble
- Document Class
- Arguments

```
1 \documentclass{article}
2 \usepackage[utf8]{inputenc}
3 \usepackage{natbib}
4 \title{\LaTeX Workshop Outline}
5 \author{Anna Sackmann}
6 \date{25 August 2016}
7 \begin{document}
```

Tools & what we'll use today

Overleaf - please visit overleaf.com to create an account

ShareLaTeX

Authorea

GET YOUR FEET WET

- For the most part, type normally.
- Words are separated by one or more spaces and paragraphs are separated by one or more lines and are naturally indented.
- Certain symbols require a backslash to appear, like $ & # and %.
- A % without a backslash allows you to comment directly in the document.
- EXERCISE 1

TYPESETTING MATHEMATICS

The real advantage of learning LaTeX is your ability to typeset mathematics.

$$
\begin{aligned}
\bullet \int_V G(\mathbf{x},\mathbf{x}')\rho(\mathbf{x}')\ \mathrm{d}^3x &= \sum_{l=0}^{\infty} \frac{Q}{8\pi^2 R^2(2l+1)} \cdot \left(\int_a^b \left[r_<^l - \frac{a^{2l+1}}{r_<^{l+1}} \right] \left[\frac{1}{r_<} - \frac{r_<^l}{b^{2l+1}} \right] \delta(r-R)\ \mathrm{d}r \right) \\
&\quad \cdot \left(\int_0^{\pi} P_l(\cos\theta') P_l(\cos\theta) \cos\theta\ \mathrm{d}\theta \right) \cdot \underbrace{\left(\int_0^{2\pi} \mathrm{d}\phi \right)}_{2\pi} \\
&= \sum_{l=0}^{\infty} \frac{Q}{4\pi R^2(2l+1)} \cdot \left(\int_a^R \left[r_<^l - \frac{a^{2l+1}}{r_<^{l+1}} \right] \left[\frac{1}{r_<} - \frac{r_<^l}{b^{2l+1}} \right] \delta(r-R)\ \mathrm{d}r_< \right. \\
&\quad \left. + \int_R^b \left[r_<^l - \frac{a^{2l+1}}{r_<^{l+1}} \right] \left[\frac{1}{r_<} - \frac{r_<^l}{b^{2l+1}} \right] \delta(r-R)\ \mathrm{d}r_> \right)
\end{aligned}
$$

MATH TIPS

- The $ sign tells the editor when an equation begins and ends
- Other crucial notations: ^for superscripts; _ for subscripts; { curly braces to group superscripts and subscripts
- You can also place an equation on its own line if it's large and needs space.
- AMSMath Package
- EXERCISE 2

BIBLIOGRAPHIES WITH BIBTEX

- Your references need to be in a .bib database
- each .bib entry has a key
- call in the package “natbib” and use “citet” and “citep” for citing in the text or at the end of a paragraph
- When working in “natbib” package, the compatible styles are plainnat, unsrtnat, and abbrnat.
- EXERCISE 3

CONCLUSION

SUMMARY

Get the source of this theme and the demo presentation from

`github.com/matze/mtheme`