Introduction to Latex

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Contents

Today we are going to learn how to use a new typesetting program. The best way to learn is to create a template with commands. LaTeX can be annoying at first, but then it becomes something that helps you to organize your own writing and your own research.

We are going to cover the following things:

- Creating bulleted lists
- Changing fonts
- Spacing, centering, and indentation
- Typing equations
- Including figures
- Building a basic table

1 Basic Formatting

1.1 Changing Fonts

Sometimes when we write we want to put things in *italics* or **bold**.If you are old-fashioned, you can use <u>underline</u>, but that is ugly.

Other times we would like to change the size of our fonts. Here is how you write really small text. Here is how you write really large text.

1.2 Spacing, Centering, and Indentation

At any time, you can insert vertical space.

I like to put space before my section headers.   I want horizontal space.

[Figure 1 About Here]

Now things are doublespaced. I put this at the beginning of my papers.
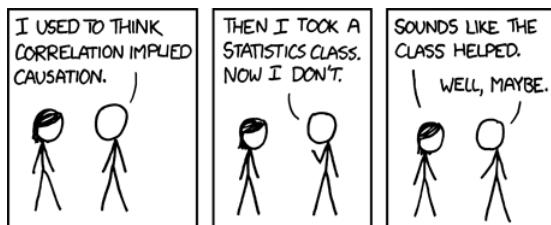
2 Advanced Environments

Any time you type math, you can always just it in dollars signs. Our estimate of β is $(X'X)^{-1}X'Y$.

$$\beta = (X'X)^{-1}X'Y \tag{1}$$

2.1 Figures

You use figures with the figure environment.

Figure 1: Everyone's favorite cartoon

2.2 Tables

Tables are the worst thing about LaTeX by far.

Table 1: My First Table

Low numbers	1	2	3
High numbers	10	20	0

3 Common mistakes

Quotes

Quotation marks in LaTeX files begin with two back ticks, ", and end with two single quotes, ". Not intuitive.

Right: "Yes."

Wrong: "No."

Failure to use math mode

LaTeX uses math mode to distinguish variables from ordinary letters. Variables are typeset in math italic, a special style that is not the same as ordinary italic prose.

Right: Given a matrix A and vector b, solve $Ax = b$. and the second as

Wrong: Given a matrix A and vector b, solve Ax = b.

Ellipses

This ... is wrong, but this ... is better.

Foreign languages

¡Adiós! ¡Cumpleaños!

4 Acknowledgments and where to learn more:

This practice is based on Rory Truex's materials as well as John Cook's blog posts.

The not so short introduction to LaTeX

Wikibook is your best friend.