Introduction to LaTeX

A better way of typesetting documents

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Outline

What is LaTeX?

Why use it?

LaTeX basics

Resources

–Break–

Helpful commands

Using packages

Math in LaTeX

Other useful features

What is LaTeX?

- A system/markup language for typesetting documents
- Originally geared towards scientific/technical documents
- Free software
- Very customizable
- Part of the greater TeX family (TeX, XeLaTeX, LuaLaTeX...)

Use cases

- Scholarly articles (vastly superior to Word etc.)
- Theses, dissertations
- Slides & posters
- . . . and more!

Pros and cons

Pros

- The de facto standard for academic articles
- Many journals, conferences, etc. have style files
- Very easy to include formulas, symbols, etc.
- Version-control your documents!
- Pre-existing packages for pretty much anything;
  If you really can't find one for feature X, write your own!
- Huge, active community of users

Cons:

- Learning curve; can be overwhelming at first
- The perfect document set-up can take a while
- You *will* get weird errors (see slide 4)

To see how a basic article works, take a look at `example/simple-example.tex`!

Editing and compiling

Simplest option:

1. Create and edit a `.tex` file in your favorite editor
2. At the command line run `pdflatex filename.tex`
3. View the beautiful `.pdf` file it generated and rejoice!

Other compilation/editing options:

- Sublime Text plugin (plugins also exist for other editors)
- TeXmaker (cross-platform):
  `http://www.xm1math.net/texmaker/`
- Other GUIs for Windows, Mac, Linux
- Online collaborative editor: https://www.sharelatex.com/

Resources

Documentation/guides:

- Wikibooks manual:
  `https://en.wikibooks.org/wiki/LaTeX`
- ShareLaTeX documentation:
  `https://www.sharelatex.com/learn`

Getting help:

- TEX/LATEX Stack Exchange:
  `http://tex.stackexchange.com/`
- Google is your friend!
  Someone else has definitely had problem X.

Break point!

If you need to leave, now's a good time!
More details after the break.

Helpful commands

Take a look at `cheatsheet/cheatsheet.pdf`!

Using packages

In preamble: `\usepackage{packagename}`

- Page layout: `\usepackage[margin=1.5in]{geometry}`
- Include image files: `graphicx`
- Include web links: `hyperref`
- Display code: `verbatim` or `listings`
- Control line spacing more easily: `setspace`
- Customize headers/footers: `fancyhdr`
- Customize figure/table captions: `caption`
- More control over lists: `enumitem`

Math in LaTeX

Figures and captions

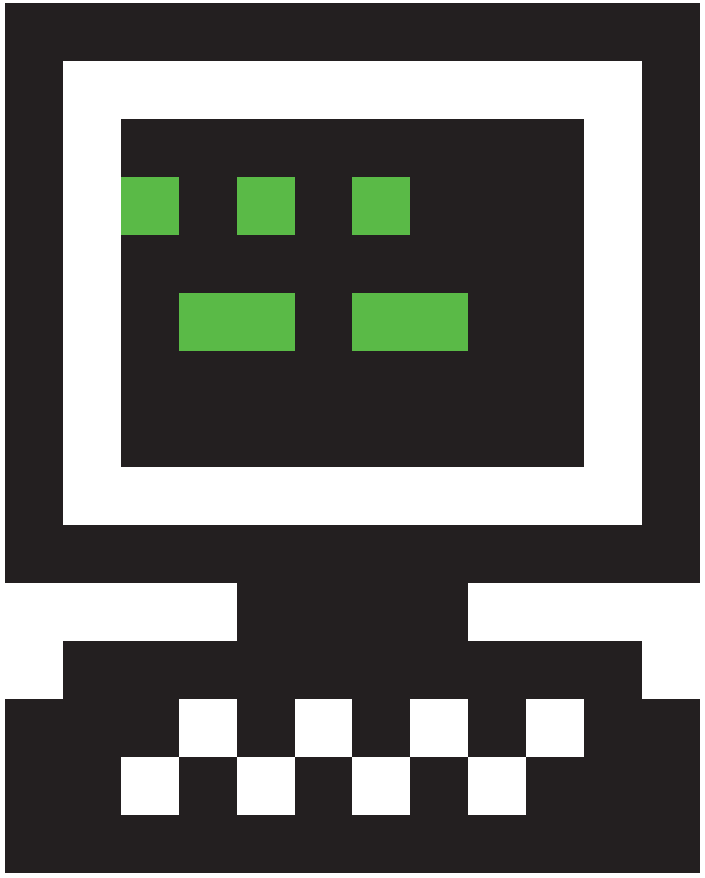

Figure 1: The RC logo

Tables

Table 1: Recursers

Name	Pseudonym	Batch
Veronica Hanus	Flight Witch	Fall 2
Anjana Vakil	Spandex Governor	Fall 2

Useful packages:

- Controlling table widths: `tabularx`
- Multi-row cells: `multirow`
- Better formatting: `booktabs`

Slides with `beamer`

Meta-example: You're looking at it! Whoaaa!

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Tip:

The `beamer` class can be used for posters as well.

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Pitfalls:

- Standard themes are uuuugly
- Setting up a template you like can be a headache
- Many academics who use LaTeX for articles still use PowerPoint etc. for slides/posters

Bibliographies

`.bib` files

List all your sources in bibtex format.
Many citation systems (e.g. Google scholar, Mendeley) offer an "export to bibtex" option.

`biblatex` Package

Allows you to fully customize citation and bibliography styles.