Intro to LaTeX

Sherman Centre for Digital Scholarship workshop

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Overview

1. What can you do with LaTeX?

2. Tools for writing in LaTeX

3. Structural elements and formatting

4. Environments

5. Troubleshooting and resources

What is LaTeX?

- A document preparation system for creating high-quality documents
- It takes care of the document formatting so that you can focus on content
- Excellent for typesetting mathematics and other specialized symbols

What can you create with LaTeX?

- Articles
- Book chapters
- Theses and dissertations
- Presentations
- Posters
- Assignments and problem sets
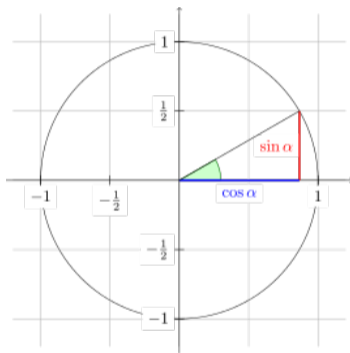- Resumes and CVs

Writing math with LaTeX

$$ax^2 + bx + c = 0 \tag{1}$$

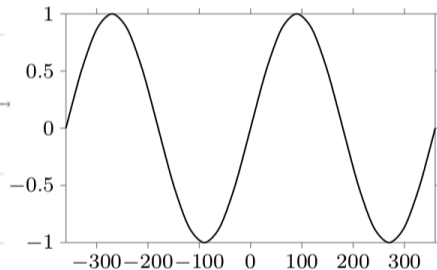$$\sum_{n=1}^{\infty} \frac{1}{n} = 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots \tag{2}$$

$$f(x) = \int_a^b K(x,t)\phi(t)dt \tag{3}$$

The universal law of gravitation can be expressed with the equation $F = \frac{Gm_1 m_2}{r^2}$.

Creating figures with LATEXand tikz

(a) Source: Wikipedia
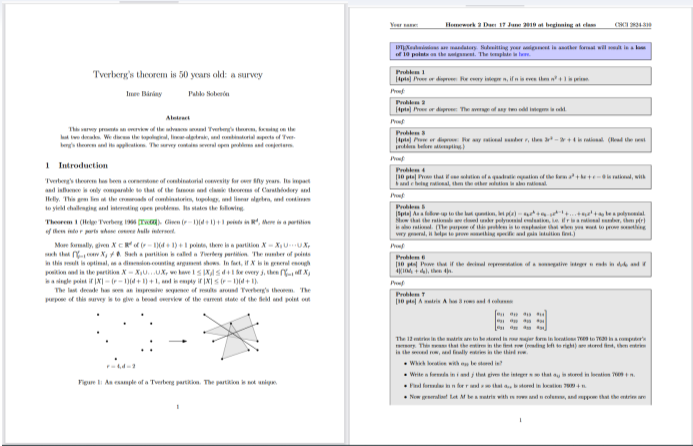
(b) Source: Wikipedia

Figure: Figures created with tikz

LaTeX documents

Figure: Documents created in LaTeX

Tools for writing in LaTeX

- Editor: TeXMaker
- Distributions/Compilers: MikTeX(Windows), MacTeX(Mac) TeXLive (Linux)
- Online Editor: Overleaf

Overleaf

- Online tool for writing in LaTeX
- Compiles automatically
- No software to install
- Lots of templates and example documents
- Free basic account

Create your Overleaf account

1. Go to www.overleaf.com/register
2. Sign up for an account (use whatever email you prefer)
3. Create a new blank project.
4. Type "done" in the chat.

Structural elements and formatting

- Preamble and body
- Title page
- Sections, subsections, paragraphs
- Fonts and formatting
- In-line math

Environments

- Bulleted and numbered lists
- Figures
- Equations

Troubleshooting and Resources

- **LaTeX Stack Exchange** https://tex.stackexchange.com
- **LaTeX wikibook** https://en.wikibooks.org/wiki/LaTeX
- **CTAN (Comprehensive TeX Archive Network)** https://ctan.org/
- **The Comprehensive LaTeX Symbols List**
  http://tug.ctan.org/info/symbols/comprehensive/symbols-a4.pdf
- **Detexify** https://detexify.kirelabs.org/classify.html

Other stuff!

- References - BibTeX, BibLaTeX, natbib
- More environments e.g. Tables, matrices
- New command
- Multi-part documents
- Posters and presentations

The End

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