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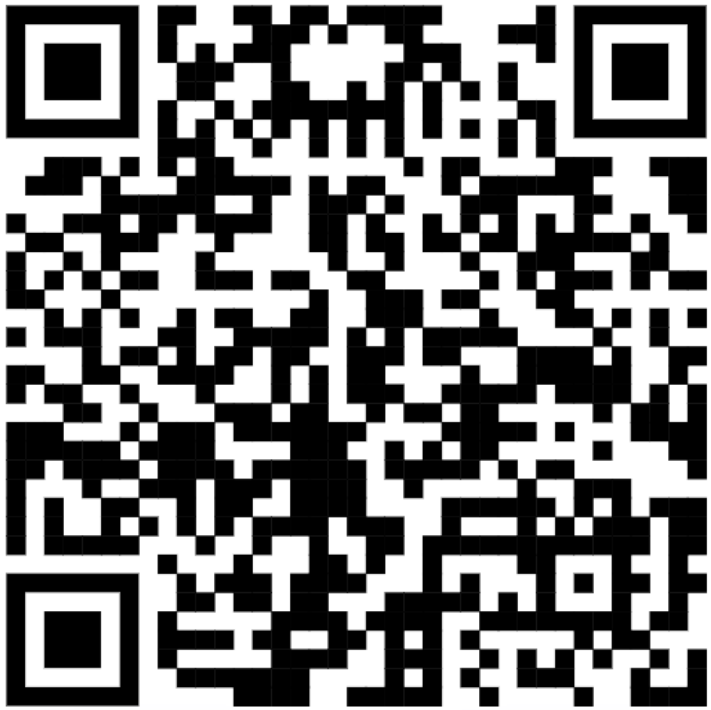

Presentations in Beamer

The basics

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Columbia University

Computing Club, April 2024

Outline

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What is LaTeX?

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- Once you have the software, you can write LaTeX scripts in Overleaf, RMarkdown, text files, and other environments

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- Typically, the "article" class is used for creating papers and "beamer" is used for presentations

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- This means that once you understand how to use LaTeX, you don't have to worry about formatting your slides
- Presentation creation goes much faster if you have a lot of mathematical symbols in your content
- Many people in our field and adjacent ones use Beamer to create their presentations

Why not use Beamer?

- When you want to create a flashy presentation

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- When you want to create a flashy presentation
- When you want a lot of control over the formatting and don't want it to be uniform across slides
- When you don't have many equations
- When you're in a rush and you haven't yet mastered Beamer

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Tips for getting started

- It's always faster to start with a pre-made template; there's no need to begin with a blank document

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- Leave yourself time to make your presentation if you are new to LaTeX; there is a learning curve
- For this presentation, I started with this template

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What can we do in Beamer?

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I'll show what the last 3 things look like in the presentation.

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I'll show what the last 3 things look like in the presentation. The first few functions I've already used throughout, but I'll show you what "coding" it looks like in a **.tex** file.

Inserting equations

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Another way is by using the equation environment:

$$f(x|\mu,\sigma) = \frac{1}{\sqrt{2\pi}\sigma} \exp\{-\frac{1}{2}(\frac{x-\mu}{\sigma})^2\} \tag{1}$$

Inserting equations

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$$f(x|\mu,\sigma) = \frac{1}{\sqrt{2\pi}\sigma}\exp\{-\frac{1}{2}(\frac{x-\mu}{\sigma})^2\}$$

or in multiple lines:

$$\begin{aligned} f(x|\mu,\sigma) &= \frac{1}{\sqrt{2\pi}\sigma}\exp\{-\frac{1}{2}(\frac{x-\mu}{\sigma})^2\} \\ &= \frac{1}{\sqrt{2\pi}}\exp\left\{-\frac{(x-\mu)^2}{2\sigma^2}\right\} \end{aligned}$$

Inserting equations

Normal block

Finally, to make equations stand out, you can use these special blocks.

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Examples

$$f(x|\mu,\sigma) = \frac{1}{\sqrt{2\pi}} \exp\left\{-\frac{(x-\mu)^2}{2\sigma^2}\right\}$$

Embedding images

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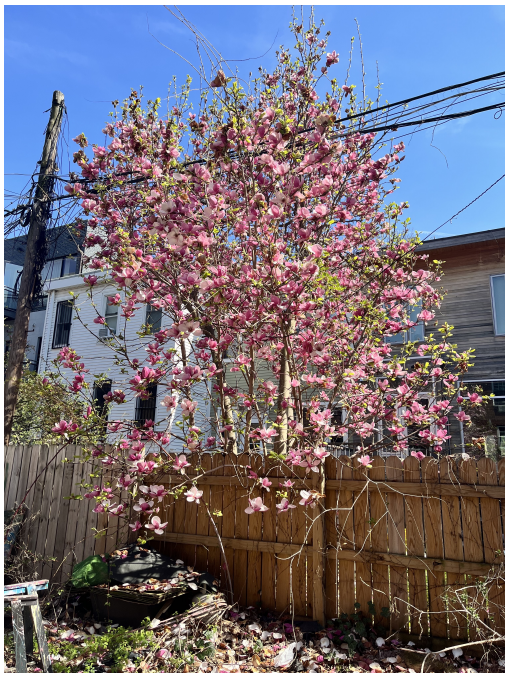

Figure: Tree in my backyard

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- Luckily, you can do this in LaTeX as well.
- This is a slide with 2 columns

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Now let's try a slide with 3 columns. The first column here just has a text block.

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- This column here has a couple of bullet points

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- The next column will have a picture

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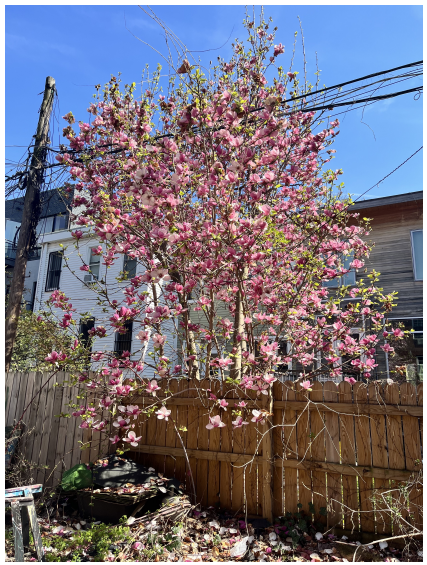

Outline

What does the **.tex** file look like?

Now, I'll show you what everything looks like when written in a **.tex** file in Overleaf!

Outline

Using RMarkdown

Now, I'll show you very briefly what setting up a Beamer presentation in RMarkdown looks like.