A Brief Introduction to LaTeX

Paul Gustafson (shamelessly stolen from Robert Williams)

Texas A&M University

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Downloading and Installing LaTeX

`http://latex-project.org/ftp.html`

I'm new to LaTeX I'm familiar with LaTeX Take me to the resources slide

Article example

We'll go over two types of LaTeX files today: articles and beamer files. The article document format is used for writing papers. The beamer format is used for writing presentations.

Let's look at an example of an article.

Outline of a beamer file

```
\documentclass[handout]{beamer} %handout collapses frames into
1 slide
\usetheme{theme}
\usecolortheme{color}

\usepackage{amsmath, amsfonts, amssymb}
\usepackage{tikz}

\title{My Informative Title}
\author{My Name}
\institute{My Institution}
\date{Date of presentation} or \date{\today}
```

```
\begin{document}

\begin{frame}
\maketitle
\end{frame}

\begin{frame}{Frame Title}
Contents of paper or presentation
\end{frame}

\end{document}
```

Beamer vs Article

Inside of each frame, you can write as you would in a normal LaTeX file. There is also a little bit of extra functionality present in beamer:

- You can give individual frames titles

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- You can separate a slide into multiple columns using the columns environment
- You can create hyperlinks to other parts of your presentation

Beamer example

The best way to learn beamer is to use it. Let's recreate the example beamer file.

Basic Tex Reference

Symbols for type-setting commands:

- % is used for comments
- \ tells LaTeX you are writing a command
  - some commands have {inputs contained in curly brackets} or [options contained in square braces]
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Common unintuitive commands:

- \\ is a line return
- $$ enters or exits display math mode
  - Alternatively, \[math goes here \] also uses display math mode

When in math mode, use ^ to write superscripts and _ to write subscripts. Enclose the (super-)subscript in {} if it is more than 1 character long.

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Creating Lists

```
\begin{itemize}
\item Item 1
\item Item 2
\end{itemize}
```

- Item 1
- Item 2

```
\begin{enumerate}
\item Item 1
\item Item 2
\end{enumerate}
```

1. Item 1
2. Item 2

Tables and Matrices

```
\begin{tabular}{c|cc}
a & b & c \\
\hline
d & e & f \\
g & h & i
\end{tabular}
```

a	b	c
d	e	f
g	h	i

```
$
\begin{bmatrix}
a & b & c \\
d & e & f \\
g & h & i
\end{bmatrix}
$
```

$$\begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

```
\begin{theorem}[Name/Attribution of Theorem]
X iff Y
\end{theorem}
```

Theorem (Name/Attribution of Theorem)

X iff Y

```
\begin{proof}
This is trivial.
\end{proof}
```

Proof.

This is trivial. □

back to beamer

Additional Resources

LaTeX has an active community with many resources to help you along the way.

- LaTeX Wikibooks: `https://en.wikibooks.org/wiki/LaTeX`
- TeX Stack Exchange: `http://tex.stackexchange.com`
- The Not So Short Introduction to LaTeX 2_ε: `http://tobi.oetiker.ch/lshort/lshort.pdf`
- Detexify: `http://detexify.kirelabs.org/classify.html`
- A collection of beamer themes and colors: `http://hartwork.org/beamer-theme-matrix/`