Introduction to LATEX A Quick Crash Course

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What is LATEX?

- A document typesetting markup language
- A tool that can save you a lot of time
- Commonly used to write research papers, but useful for many other things too (resumes, calendars, posters, books, letters, notes, this slideshow...)

Setup

■ Windows: <u>MiKTeX</u>

■ Mac: <u>MacTeX</u>

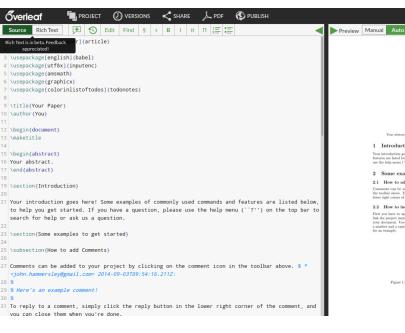
■ Linux: apt-get install texlive

Online:

Overleaf

■ ShareLatex

Using Overleaf



Your Paper You April 12, 2016

Your abstract.

1 Introduction

for an example

Your introduction goes here! Some examples of commonly used commar features are listed below, to help you get started. If you have a question use the help menu ("?") on the top bar to search for help or ask us a qu

2 Some examples to get started

2.1 How to add Comments

Comments can be added to your project by clicking on the comment the toolbar above. To reply to a comment, simply click the reply buttor lower right corner of the comment, and you can close them when you're

2.2 How to include Figures

First you have to upload the image file from your computer using the link the project menu. Then use the includewraphics command to inclu your document. Use the figure environment and the caption command a number and a caption to your figure. See the code for Figure 1 in this



Figure 1: This frog was uploaded via the project menu.

"Hello, World!"
Making our first LATEX document

A LATEX document has two main parts (called environments):

- Preamble Environment
 - Set up the rules for how your document will look
- Document Environment
 - The place where you write your document

The Code for helloworld.tex Making our first MTFX document

```
% this is our preamble
\documentclass[11pt]{ article}

% this is our document environment
\begin{document}
    Hello, world!
\end{document}
```

Let's add a Title! Making our first LATEX document

```
\documentclass[11pt]{ article}
% title information goes here:
\title{Hello, World!}
\author{your name goes here}
\date{\today}
\begin { document }
    % title gets made here:
    \ maketitle
    Hello, world!
\end{document}
```

Adding Graphics from Mathematica Making our first LaTeX document

First add the graphicx package in your documents preamble:

```
\usepackage{graphicx}
```

Then add the following code to your document's body:

```
% include a picture shrunk to half its size
\includegraphics[scale=0.5]{mathematicapic}
```

Adding a table Making our first LaTEX document

```
\begin{center} % center the table
   % tabular environment makes tables
   % adjacent cells are separated by '&'
   % '\ hline' makes a horizontal line
   % '\\' ends a row
   \begin{tabular}{||||||||
      \ hline
       a1 & b1 & c1 \\
       a2 & b2 & c2 \\
       a3 & b3 & c3 \\
       \ hline
       a4 & b4 & c4 \\
       \ hline
   \end{tabular}
```

The Math Environment

- LATEX was originally designed to make it easy to write nice looking mathematical notation.
- If you want to write math, use the amsmath package.
- Since math formulas need to look different than normal text, they go in their own special math environment.

Adding Math

Making our first LATEX document

```
First add the amsmath package in your document's preamble:
\usepackage{amsmath}
Then add the following code to your document's body:
    \section { Inline Math }
    % Here we use \( ( and \) to write math
       inline with normal text.
    One of the trigonometric sum identities is
    \{2\}) \cos (\frac{x-v}{2}) \).
    \section { Separate Math }
    % Here we use \[ and \] to write math
       separate from normal text.
    \[ \] \ \forall x \in X, \quad \exists y \leq \
       epsilon \1
    \subsection { Product Rule }
    % Here we use both techniques
    If \backslash (f \backslash) and \backslash (g \backslash) are differentiable at
       (x), then
    [ frac{d}{dx}(f(x)g(x)) = f'(x)g(x) + f(
       x)g'(x) \setminus 1
```

A More Advanced Example

Start a new project and load basic-example.tex from the examples folder

Look at the code. There are some things we've already covered

Look at the code. There are some things we've already covered, and some other things we haven't.

Resources

Learning LATEX takes time. These resources will help:

- Templates!
- More Templates!
- Even More Templates!
- LATEX Wikibook
- A quick introduction
- Mini Tutorial
- Question and Answer Community

Google is your friend: How do I make an integral symbol in latex?