Introduction to \LaTeX

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Outline

- Introduction
- A Simple Document
- Previewing and Printing
- Warnings and Errors
- Getting Fancy
- Math Mode
- New Definitions
- Beamer
- Resources
Why \LaTeX?
\documentclass[11pt]{article}
\usepackage{fullpage}

\title{Mmmm... \LaTeX}
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\date{9 January 2008}

\begin{document}
\maketitle

So professional looking with hardly any work!

\end{document}
Some other useful packages:

\usepackage{amssymb}
\usepackage{multicol}
\usepackage{graphicx}
\usepackage[left=1cm,top=2cm,right=1cm,nohead,nofoot]{geometry}
\usepackage[doublespacing]{setspace}
A Simple Document

Document basics:

- Add comments with `%`
- Use `\` to end a line
- Use `\noindent` to suppress the indentation for a new paragraph
- Use `\indent` to force indentation
- But what if I want an actual percent sign or backslash? You must escape them!

A succinct summary of commonly used escape characters can be found here:
http://noodle.med.yale.edu/latex/latex2e-html/ltx-164.html
Quotation marks:
"Test" - using normal quotes for both; looks bad, and a common thing to forget so check your work!
“Test” - using two back-ticks for the left. Much better.

\begin{center}
Center me please!
\end{center}

produces...

Center me please!
A Simple Document

For **boldface**, use `\textbf{<text>}`
For *italics*, use `\textit{<text>}`
For typewriter, use `\texttt{<text>}`

Font Size:
`\\Large text` → test
`\\LARGE text` → test
`\\Huge text` → test
Creating divisions:

- Using `\section`, `\subsection`, `\subsubsection`, and `\paragraph` will automatically generate the appropriately sized headings, numbering, and entry in a table of contents.
- Suppress the section number with an asterix
  
  eg
  
  \section*{No Numbers for Me Please}
\documentclass[11pt]{article}
\usepackage{fullpage}

\begin{document}
\section{The Story of My Life}
\subsection{The Baby Years}
I'll spare you the embarrassing baby photos
\subsection{Life at MIT}
\subsubsection{Dorm Life}
\textit{Oh, East Campus}
\subsubsection{All Play and No Work}
Maslab counts as play, right?
\subsection{Friends and Family}

\end{document}

1 The Story of My Life

1.1 The Baby Years
I'll spare you the embarrassing baby photos

1.2 Life at MIT
1.2.1 Dorm Life
\textit{Oh, East Campus}

1.2.2 All Play and No Work
Maslab counts as play, right?

1.3 Friends and Family
Previewing and Printing

Two choices:

- `pdflatex`
- `elatex + dvips`

What’s the difference?

- `pdflatex <file>.tex` runs a special version of the \LaTeX\ interpreter that will generate `<file>.pdf` from your `.tex` file. **Upside:** Supports lots of image types. **Downside:** doesn’t support inclusion of PostScript images, slower for checking output.
- `elatex + dvips`. **Upside:** Faster. **Downside:** more steps; supports a different set of image types
  1. `elatex <file>.tex`
  2. `xdvi <file>.dvi`
  3. `dvips <file>.dvi` to print
Previewing and Printing

Useful flags:

- `-C num`; prints *num* collated copies
  
dvips -C 4 -Pceline testfile.dvi

- `-o name`; prints to file *name*
  
dvips -h -o classpaper.ps -PPhomer2 testfile.dvi
They happen! The only way to get good at producing fewer errors and spotting them quickly is to use \LaTeX for a while.

Ignoring errors will probably lead to a mis-typset document, even if it’s subtle.

Ignoring warnings (eg “overfull \hbox”) is frequently fine.
Getting Fancy

Take a look at
web.mit.edu/jesstess/Public/Intro-LaTeX/getting-fancy.tex.
In particular typsetting examples include:

- Images
- Footnotes
- Tables
- Lists: enumerated, itemized
- Bibliographies
Math Mode

- For in-line math mode, put $ \ldots $ around the expression
- To escape text within a mathematical expression, use \mbox
- for centered, numbered expressions, use equation
- for centered, unnumbered expressions, use \[ \ldots \]
\newcommand{name of command}{definition}

\documentclass[11pt]{article}
\usepackage{fullpage}
\begin{document}
\newcommand{\be}{\begin{enumerate}}
\newcommand{\ee}{\end{enumerate}}

% now use the new command
\be
\item Item 1
\item Item 2
\ee

% You can also have arguments!
\newcommand{\bi}[1]{\textbf{\textit{#1}}}

% now use the new command
\bi{O HAI} what are you up to?

\newcommand{\pd}[2]{\frac{\partial #1}{\partial #2}}

% now use the new command
\dot{\ldots} we see that \pd{1}{x} approaches 0 as x approaches infinity\dot{\ldots}
\end{document}

1. Item 1
2. Item 2

\textit{O HAI} what are you up to?

\ldots we see that \frac{\partial 1}{\partial x} approaches 0 as x approaches infinity \ldots
SIPB’s *Inessential Guide to \LaTeX*, available in hardcopy in the office (W20-557) or online ([http://stuff.mit.edu/sipb/ilatex](http://stuff.mit.edu/sipb/ilatex))