

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 $\text{\LaTeX}$?

A Simple Document

```
\documentclass[11pt]{article}  
\usepackage{fullpage}
```

```
\title{Mmmm...LaTeX}  
\author{Jessica}  
\date{9 January 2008}
```

```
\begin{document}
```

```
\maketitle
```

```
So professional looking with hardly any work!\
```

```
\end{document}
```

Mmmm...LaTeX

Jessica

9 January 2008

So professional looking with hardly any work!

A Simple 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>

A Simple Document

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

A Simple Document

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}`

A Simple Document

```
\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

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 $\text{\LaTeX}$ 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

Useful flags:

- -C *num*; prints *num* collated copies
dvips -C 4 -Pcpline testfile.dvi
- -o *name*; prints to file *name*
dvips -h -o classpaper.ps -Phomer2 testfile.dvi

- They happen! The only way to get good at producing fewer errors and spotting them quickly is to use $\text{\LaTeX}$ for a while.
- Ignoring errors will probably lead to a mis-typset document, even if it's subtle.
- Ignoring warnings (eg “overfull $\backslash$ hbox”) is frequently fine.

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

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

- For in-line math mode, put $\dots$ around the expression
- To escape text within a mathematical expression, use `\mbox`
- for centered, numbered expressions, use *equation*
- for centered, unnumbered expressions, use `\[ \dots \]`

\newcommand

`\newcommand{name of command}[num. arguments]{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
```

1. Item 1

2. Item 2

O HAI what are you up to?

```
% You can also have arguments!
```

```
\newcommand{\bi}[1]{\textbf{\textit{#1}}}
```

... we see that $\frac{\partial 1}{\partial x}$ approaches 0 as x approaches infinity...

```
% 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
```

```
\pd{1}{x} approaches 0 as x approaches infinity\pd{}
```

```
\end{document}
```

- SIPB's *Inessential Guide to L^AT_EX*, available in hardcopy in the office (W20-557) or online (<http://stuff.mit.edu/sipb/latex>)