Introduction

How LaTeX Works

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This Presentation

- The process of making a LATEX document.

- Files that you will encounter.

- LATEX editors.

Making a Document

- Making a document in a Word Processor (i.e. Word, OpenOffice, etc.) usually consists of one file that you use for editing and viewing.

- Making a document in LaTeX consists of two main files.
    - A "source file" that the author edits (.tex).
    - A viewable output file meant for viewing and distribution (PDF, PostScript (.ps), DVI(.dvi)).

- Almost any text editor or word processor can be a LaTeX editor, which can be seamlessly converted to an output file.

Making a Document

- The (.tex) file is edited and "compiled" to make a readable output.

- Below is the list of file formats:

Source File
(.tex)
DeVice Independent File
(.dvi)
Readable Output
(PDF, PostScript)

- Compiling the source file into .dvi and PostScript/PDF is rather easy. (Lecture 2.3)

Making a Document

- Below is a basic layout of a LaTeX source file:

```
\documentclass[pdf]{article}
\usepackage{hhref}
\title{The Dogma of Cultural Relativity}
\author{Scott Belcher}
\begin{document}
\maketitle
\section{Introduction}
```
Introductory Material...
```
\section{Body}
```
The body of the document...
```
\end{document}
```

Making a Document

- When you compile the document, LATEX feeds the document through line-by-line.

- Likewise, commands in LATEX take the following format: `\command{`*`argument`*`}`.

- As the document is fed through, LATEX recognizes \ is the beginning of the command and { is the beginning of the argument.

- As a consequence, we will have to get use to some small quarks for making paragraphs and new lines. (Lecture 2.2.2)

- Likewise, we will have to use some commands to format text (i.e. *italics*,**bolding**) (Lecture 2.2.2)

Files You May Encounter

- Editing a LaTeX document means editing the .tex document.

- There are three output formats: DeVice Independent (.dvi), PostScript (.ps), and Portable Document Format (.pdf).

- Other than these four file types, there are auxiliary files that are either created while compiling a document or needed for more advanced features (e.g. bibliographies.

- The next slide explicates some file formats you may encounter.

Files You May Encounter

Extension	Description
.tex	The LaTeX input file.
.log	A log of messages from compiling a .tex file.
.bib	Contains all of our bibliography information.
.aux	Contains formatting setting for the bibliography.
.blg	A log of messages from compiling a .bib file.
.dvi	An output file viewable with a special viewer.
.ps	PostScript format viewable with a viewer (e.g. GhostViewer)
.pdf	Portable Document Format (Acrobat)

Editors

- LaTeX input files (.tex) are ASCII files.

- This means they are highly portable and can be edited on almost any text editor. Some editors are easier than others.

- Generic editors are able to open any document and save using ASCII.
  - Notepad, Wordpad for Windows and TextEditor for MacOS.

- Specific editors are geared toward LaTeX with syntax highlighting: TeXnicCenter for Windows and AlphaX for MacOS.

- We will discuss different editors in more detail later in the tutorial (Lecture 1.3).

Editors

- Word Processors sometimes have trouble saving in another format (i.e. Works→Word).

- LaTeX is namely concerned about two things: ASCII format and correct syntax.

- This means making the same document on different operating systems is fairly easy.

- In some ways, LaTeX is meant to be device independent.

Review

- A LaTeX document differentiates between an editable input file and a viewable output file.

- .tex file is the file that is edited.

- Basically any text editor can make a LaTeX document.

- It is very easily to switch between PC/Mac/Linux/Unix/Solaris while making a document.

- NEXT: Installing LaTeX