

Introduction to L^AT_EX

Nobel Khandaker
knobel@cse.unl.edu

01/11/2010



Outline

- 1 Introduction
- 2 Basic Typesetting
- 3 Advanced Typesetting
- 4 References

What is \LaTeX ?

- \LaTeX is a document preparation system for high-quality typesetting

What is \LaTeX ?

- \LaTeX is a document preparation system for high-quality typesetting
- \LaTeX is pronounced “lay-tech” or “lah-tech”, *not* “la-teks”

What is \LaTeX ?

- \LaTeX is a document preparation system for high-quality typesetting
- \LaTeX is pronounced “lay-tech” or “lah-tech”, *not* “la-teks”
- \LaTeX is most often used to produce technical or scientific documents, but it can be used for almost any form of publishing

Why use \LaTeX ?

- Professional result

Why use \LaTeX ?

- Professional result
- Platform, version independent (Unix, Windows ...)

Why use L^AT_EX ?

- Professional result
- Platform, version independent (Unix, Windows ...)
- Pre-set standard formats (for paper, thesis ...)

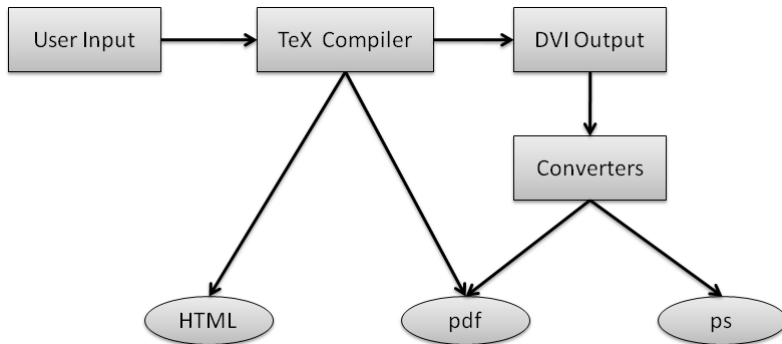
Why use \LaTeX ?

- Professional result
- Platform, version independent (Unix, Windows ...)
- Pre-set standard formats (for paper, thesis ...)
- Fast, professional math equations typesetting

Why use \LaTeX ?

- Professional result
- Platform, version independent (Unix, Windows ...)
- Pre-set standard formats (for paper, thesis ...)
- Fast, professional math equations typesetting
- Freely available

Basic \LaTeX Work Flow I



What Do You Need to Process a \LaTeX Document?

- \LaTeX Editor
 - Linux: Kile, Emacs
 - Windows: WinEdt, LyX
 - Mac: LyX, Emacs

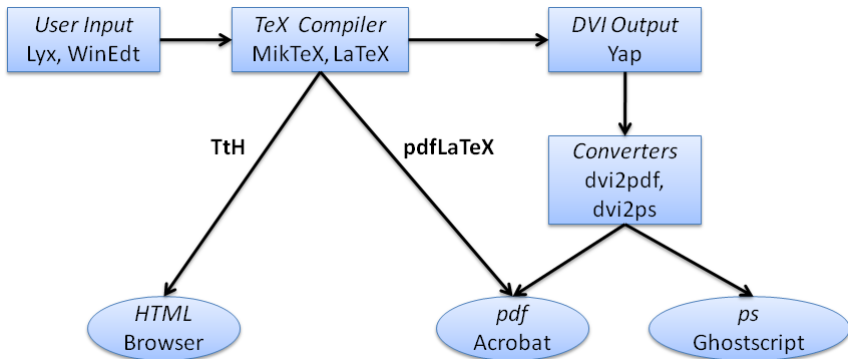
What Do You Need to Process a \LaTeX Document?

- \LaTeX Editor
 - Linux: Kile, Emacs
 - Windows: WinEdt, LyX
 - Mac: LyX, Emacs
- \LaTeX Compiler
 - Linux: LaTeX, TexLive
 - Windows: MikTeX
 - Mac: TeXshop

What Do You Need to Process a \LaTeX Document?

- \LaTeX Editor
 - Linux: Kile, Emacs
 - Windows: WinEdt, LyX
 - Mac: LyX, Emacs
- \LaTeX Compiler
 - Linux: LaTeX, TexLive
 - Windows: MikTeX
 - Mac: TeXshop
- \LaTeX Output Viewer
 - PDF: xpdf, Foxit (*better than Acrobat!*)
 - PS: Ghostscript, GhostView
 - HTML: Web Browser

Basic L^AT_EX Work Flow II



Hello World in L^AT_EX

Example

```
\documentclass[12pt,letterpaper]{article}
%include packages here
%\usepackage{package}
\begin{document}
Hello world!
\end{document}
```


Basic Formatting in L^AT_EX

- **Bold Text:** `\textbf{Bold Text }`
- *Italic Text:* `\emph{Italic Text }`
- Spacing:
 - Many spaces = one space
 - Use `\\` for newline
 - Hit return *twice* for a new paragraph
 - `\newpage`
- Comments: `% ... your comments here ...`
- Reserved Symbols: `# $ % ^ & _ { } ~ \`

Mathematical Equations in \LaTeX

- Use $\$ \dots \$$ or $\backslash\text{begin}\{\text{math}\} \dots \backslash\text{end}\{\text{math}\}$ for include mathematical symbols, equations, etc.
- Subscript and superscripts — x^2 : x^2 and x_2 : x_2
- Fractions— $\text{\frac}\{a\}\{b\}$: $\frac{a}{b}$
- Radical— $\text{\sqrt}\{x\}$: \sqrt{x}
- Many more symbols and operators are available

Images and Figures in \LaTeX

- Include .eps (postscript) images in \LaTeX for **dvi** output
- Include .jpg, .png, and .gif images in \LaTeX for **pdf** output
- Software: **gimp**: for converting images, **DIA** and **xfig**: for drawing figures
- graphicx package is required: `\usepackage{graphicx}`

Example

```
\begin{figure}  
\includegraphics[height=50%,width=50%]{filename.eps}  
\end{figure}
```

Bibliography in L^AT_EX I

- Bibliography information is stored in a *.bib file, in Bibtex format
- To include and reference Bibliography:
 - Set referencing style
`\bibliographystyle{plain}`
 - Create reference section by `\bibliography{bibfile with no extension}`
 - Cite reference inside the text by `\cite{bibliography item}`

Bibliography in L^AT_EX II

- `@book{Come95,`
 `author="D. E. Comer",`
 `title={Internetworking with TCP/IP: Principles, Protocols`
 `and Architecture},`
 `publisher="Prentice-Hall",`
 `year=1995,`
 `volume=1,`
 `edition="Third" }`

Other Useful Tools/Topics for L^AT_EX

- Bibliography Management: JabRef, Zotero

Other Useful Tools/Topics for L^AT_EX

- Bibliography Management: JabRef, Zotero
- Very Helpful References for creating: Tables, Equation Arrays, Lists, etc.
 - Not So Short Introduction to LaTeX
 - Simplified Introduction to LaTeX
 - LaTeX Wikibook

Other Useful Tools/Topics for L^AT_EX

- Bibliography Management: JabRef, Zotero
- Very Helpful References for creating: Tables, Equation Arrays, Lists, etc.
 - Not So Short Introduction to LaTeX
 - Simplified Introduction to LaTeX
 - LaTeX Wikibook
- Google is your friend