# Introduction to LaTeX

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# Outline

# What is LaTeX ?

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- LaTeX is most often used to produce technical or scientific documents, but it can be used for almost any form of publishing

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- Freely available

# Basic LATEX Work Flow I
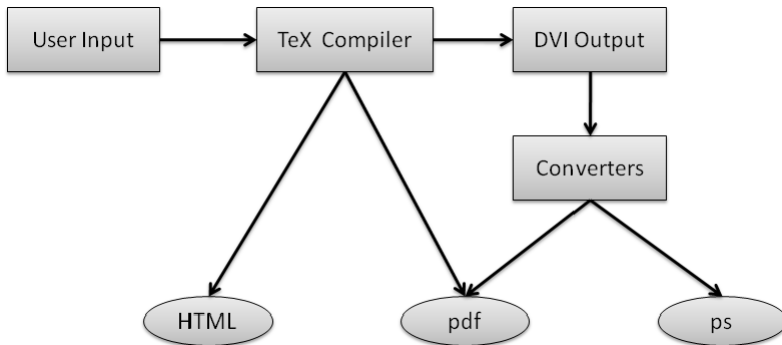
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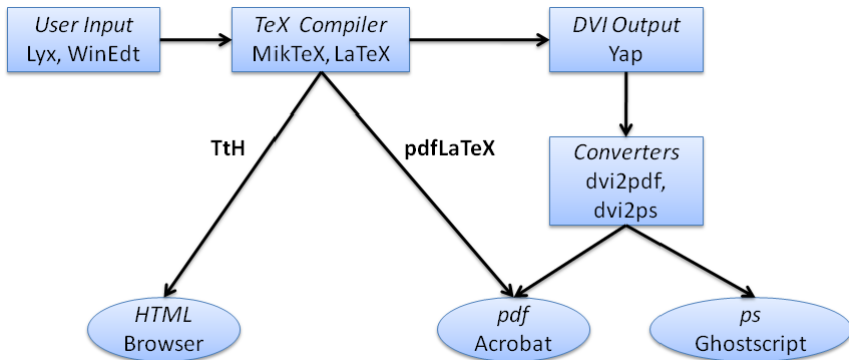  - Windows: MikTeX
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- LaTeX Output Viewer
    - PDF: xpdf, Foxit, Adobe Reader
    - PS: Ghostscript, GhostView
    - HTML: Web Browser

# Basic LaTeX Work Flow II

# Hello World in LaTeX

### Example

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

# Basic Formatting in LaTeX

- **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 $ ... $ or \begin{math} ... \end{math} for include mathematical symbols, equations, etc.
- Subscript and superscripts — x^2: $x^2$ and x_2: $x_2$
- Fractions— \frac{a}{b} or $a \over b$: $\frac{a}{b}$
- Radical— \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 **PowerPoint**: for drawing figures
- graphicx package is required: \usepackage{graphicx}

### Example

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

## Making Tables in LaTeX Using Excel

- Download Excel2LaTeX
  - Available for download at
    http://www.ctan.org/tex-archive/support/excel2latex/
- Extract the files and double click on the Excel Add-In file
  (Excel2LaTeX.xla)
- Create the table in Excel which you want in your
  LaTeX document and highlight the cells
- Click on the Macro, an error might occur, just click "End"
  - Most likely you will want to un-check "Create table
    environment" and "Booktabs-style formatting"
- Copy the table to your LaTeX file!

# Bibliography in LaTeX 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 LaTeX 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" }

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