

Toledo Area Linux Users Group

L^AT_EX for the Allergic

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What is Latex?

\LaTeX , pronounced “lay-tek”, is a typesetting system regularly used by mathematicians, linguists, logicians, computer scientists, etc... to typeset papers, books, and articles.

Why use Latex?

- ▶ Open source

¹See <http://nitens.org/taraborelli/latex> for a typographical comparison between Word and \LaTeX .

Why use Latex?

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- ▶ Easy to use

Let's look at each of these more closely

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- ▶ Produces high quality documents ¹

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- ▶ Text based
- ▶ Bibtex

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Easier to Use

Let's see how long it takes to type a math equation (the quadratic equation) in open office vs. \LaTeX . Recall the quadratic formula is

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

It's All Text Base

The advantages of going with text-based are:

- ▶ You can open and edit your document *anywhere*. Note: you will not be able to compile your document.
- ▶ You will always have the content of you document, since ASCII is not going away.
- ▶ Any one can read your content, smaller file size, etc...

The Ultimate Bibliography — Bibtex

Bibtex is one way to create a bibliography in \LaTeX . It separates your bibliography from your actual text, figures out the referencing order, and the citing style (MPA, APA, etc...)

Here is a couple of references to different articles [2, 1, 3].

Questions

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Hello World

```
\documentclass{article}
\begin{document}
    Hello World
\end{document}
```

Compile the Document

There are two ways to compile a \LaTeX file. Which one to use depends on whether you want your output to be a *.ps* or a *.pdf* file. If *.ps* is your desired output then you will use the following method:

```
latex doc.tex  
dvips doc.dvi
```

If you want a *.pdf* output then

```
pdflatex doc.tex
```

The Paper title

```
\documentclass{article}
\author{Joe Somebody}
\title{My First \LaTeX Document}
\date{\today}
\begin{document}
  \maketitle
  {\Huge Hello World}
\end{document}
```

Sections

```
\documentclass{article}
...
\begin{document}
\maketitle
\section{I'm Section $1$}
    Some text in the section
\subsection{I'm Subsection $1$}
\subsubsection{I'm Subsection of a Subsection}
\subsection{I'm Subsection $2$}
\section{I'm Section $2$}
    etc...
\end{document}
```

Lists

```
\documentclass{article}
...
\begin{document}
\begin{itemize}
\item item 1
\item item 2
\end{itemize}

\begin{enumerate}
\item item 1
\item item 2
\end{enumerate}
\end{document}
```

Formating Styles

Some text can be `{\it italics}` or `\textit{italics}`.

Some text can be `{\bf bold}` or `\textbf{bold}`.

Some text can be `{\em emphasized}`.

Some text can be `{\tt teletyped}` or monospaced.

Questions

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Deborah R. Fowler, Hans Meinhardt, and Przemyslaw Prusinkiewicz.

Modeling seashells.

Computer Graphics, 26(2):379–387, 1992.



Helmut Kopka.

A guide to LATEX: Document preparation for beginners and advanced users.

Addison-Wesley Professional, December 1998.



William Venables and B. D. Ripley.

S Programming.

Springer, January 2004.