Simple introduction to LaTeX

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February 26, 2013

Outline

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LaTeX vs Word

- Don't go to LaTeXif
  - you really need track changes
  - word count
  - compatibility with powerpoint
- stable, fast for long manuscripts, proper typesetting, Math, compatible versions, cross referencing, ...
- COOLER

What is LaTeX?

- LaTeX (pronounced either "Lay-tech" or "Lah-tech")
  - based on TeX
  - a programming and typesetting language
- You need a compiler for it
  - Windows → MiKTex
  - Unix → TexLive
  - write your own code
  - generate PDF → `PDFLaTex`
  - options...

Just begin with it!

- Take a template
- Go to `http://people.mech.kuleuven.be/~u0065837/Latex/templates`
  - article template
    - report, book, thesis...
  - presentation template
- write your own file
  - you can also find different TeX editors
    - TexMaker, Kile, TeXnic Center, WinEdt, Gummi, etc.
    - LatexLab, a web based LaTeX editor
    - LyX, What you see is what you mean

Simple structure / syntax

Document

```
\documentclass[options]{article}
```

LaTEX commands (preamble)

```
\begin{document}
```

Document text (with embedded LATEX commands)

```
\end{document}
```

want to use more commands?

In the preamble

```
\usepackage{Package Name}
```

Simple structure / syntax

chapters, sections, ...

```
\section{Introduction}
```

1. Introduction

```
\subsection{goal}
```

1.1. Goal

```
\subsubsection{minor}
```

1.1.1. Minor

```
\chapter{}, \paragraph{}, \subparagraph{}
```

Simple structure / syntax

- Some characters have special meaning
  - `&  #  $  %  _  \`
- All commands start with backslash
- All commands are in small letter unless...
  - In mathmode: `\delta \Delta`
- Some commands take argument
  - **BOLD TEXT**
  - `\textbf{BOLD TEXT}`

What else you need to know - environment

- Mathmode
  - Inline `$...$`
  - Equation environment

    `\begin{equation*}...\end{equation*}`
- Tables
  - `tabular` environment
  - there is a simple one in the article template
  - more help: `http://en.wikibooks.org/wiki/LaTeX/Tables`
- you see what an `environment` is

What else you need to know - math

- `\usepackage{amsmath}` or `\usepackage{mathtools}`
- A simple formula: $\forall x \in X, \quad \exists y \leq \epsilon$

```
$\forall x \in X, \quad \exists y \leq \epsilon$
```

- More info http://en.wikibooks.org/wiki/LaTeX/Mathematics
- Take a look at the manual

What else you need to know - figures

Document

- caption, cross refrencing
-
```
\begin{figure}
\begin{center}
   \includegraphics[]{image}
\end{center}
\caption{}
\label{fig1}
\end{figure}
```
- refer to it `\ref{fig1}`

What else you need to know - bibliography

- Make a file called `myref.bib`
- Write the cited article in bibtex format
- Inside your document call it `\cite{ref1}`
- Before `\end{document}` add
  - `\bibliographystyle{plain}` $\rightarrow$ style

    `\bibliography{myref}`

What else you need to know

- Download BibTeX format of your reference or write it yourself
  - ```
    @ARTICLE{ref1,
    author={The great PhD student on Mars},
    journal={Best Journal},
    title={Best paper ever},
    year={2013}, month={Jan.},
    volume={58}, number={1}, pages={1-40}, }
    ```
- Run `BibTeX`
- More info http://en.wikipedia.org/wiki/BibTeX
    ```

Next session

- Making presentations with LaTeX
- How to include pictures, drawings, etc.

P.S.

- Don't miss http://en.wikibooks.org/wiki/LaTeX/
- There are some more documents available on

  http://people.mech.kuleuven.be/~u0065837/Latex/manuals