Text Formatting with LATEX, Eclipse and SVN

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Outline

Formatting Text
LATEX
DEMO
LATEX beamer

Text Editor vs. Word Processor
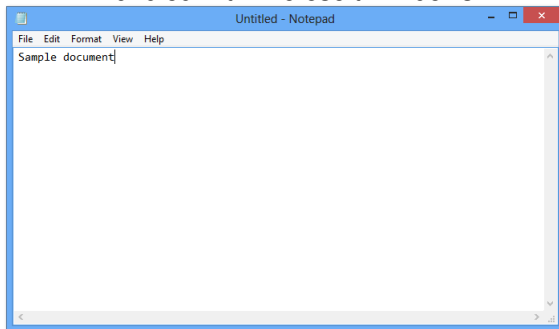What You See Is What You Get

Text Editor vs. Word Processor

Text Editors

- used to handle plain text (a simple character set, such as ASCII, is used to represent numbers, letters, and a small number of symbols)
- the only non-printing characters they support are: newline, tab, and form feed
- http://en.wikipedia.org/wiki/Comparison_of_text_editors

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Text Editors

Notepad

Bundled with Microsoft Windows

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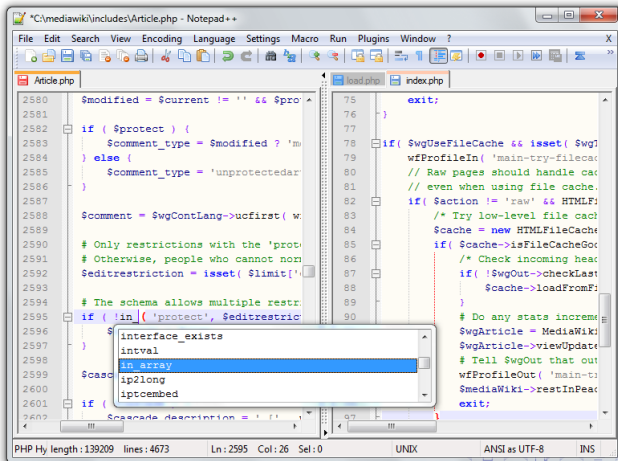
Text Editor vs. Word Processor

Word Processor

- developed to aid in formatting text
- contains formatted text (e.g. boldface, italics, can use multiple fonts in a document or structures, such as columns and tables)
- saving a plain text file with a word processor will add formatting information that prohibits the machine-readability of the text

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Word Processors

Working on your thesis surely opts for more formatting!!!

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Working on your thesis surely opts for more formatting!!!
$\implies$ Word Processor

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What You See Is What You Get

Word Processors

- early word processors used tag-based markup for document formatting
- most modern word processors use GUIs that enable what-you-see-is-what-you-get editing

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Text Editor vs. Word Processor
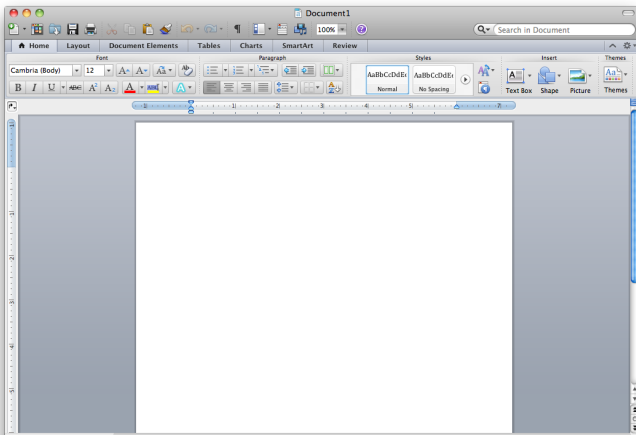What You See Is What You Get

Word Processors

- early word processors used tag-based markup for document formatting
- most modern word processors use GUIs that enable what-you-see-is-what-you-get editing

However, what-you-see-is-what-you-get is one of the most common misconceptions about Word Processors.

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Text Editor vs. Word Processor
What You See Is What You Get

Word Processors

One of the most widely used Word Processors nowadays is:

Microsoft Word

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Word Processors

Microsoft Word under Windows 8

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Text Editor vs. Word Processor
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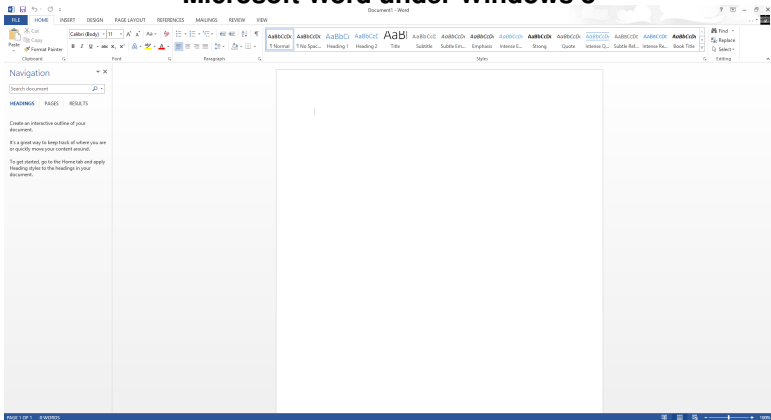
Microsoft Word

- tries to aid you so excessively that it becomes too much
- a lot of things just happen, because Word assumes you wanted it this way
- rearranging parts of a document, moving figures and tables, etc. can become increasingly difficult

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Text Editor vs. Word Processor
What You See Is What You Get

Microsoft Word

Microsoft Word is very helpful if you want:

- relatively short and simple documents
- to use only basic formatting features
- to produce a document for its content, but not for its layout

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Text Editor vs. Word Processor
What You See Is What You Get

Microsoft Word

Microsoft Word is excruciatingly bad in several cases:

- increase in document length and number of graphics lead to drastic decrease in speed
- scientific features, such as citation utilities are not included
- compatibility is seldom good between OSs, foreign programs or even between MS Word versions

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Text Editor vs. Word Processor
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Microsoft Word

Microsoft Word just can not handle:

- collaborative work - How do you work on a single document with more than 1 person simultaneously?

- version control - How do you keep track of all the changes in the document?

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What is LATEX?
Microsoft Word vs LATEX
Eclipse & SVN

The solution to all your problems - LATEX

LATEX is not:

- text processor
- word processor

LATEX:

- is a document preparation system
- provides high-quality typesetting
- uses markup to define the document formatting
- is structured around the concept what-you-see-is-what-you-mean
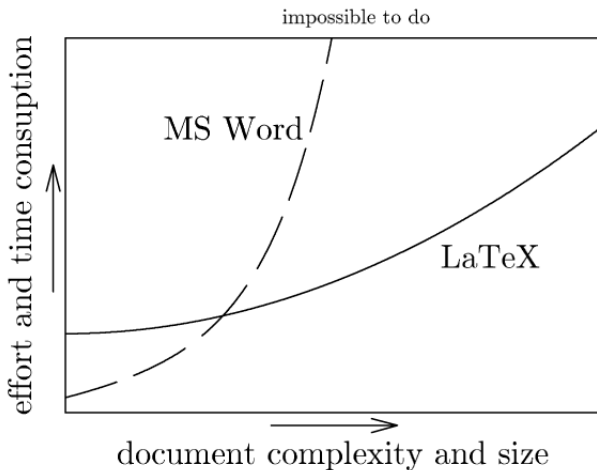
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Microsoft Word vs LATEX

LATEX is good where Microsoft Word is excruciatingly bad:

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Microsoft Word vs LATEX

What about the functions that Microsoft Word could not handle:

- collaborative work
- version control

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Google Drive

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Google Drive

https://docs.google.com/document/d/
1tLNutpn-Bb-UgWyKauLxztlrjS7PqVLML2YTsW3lN5U/edit

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Google Drive

Google drive already goes in the direction that we need. However:

- it is highly limited and does not provide editing capabilities for more complex documents
- does not provide citation utilities
- requires a Google account
- has all additional drawbacks typical to MS Word

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The solution to all your problems - LATEX

LATEX is supported by a whole bunch of text editors
(`http://en.wikipedia.org/wiki/Comparison_of_TeX_editors`)

Notepad++

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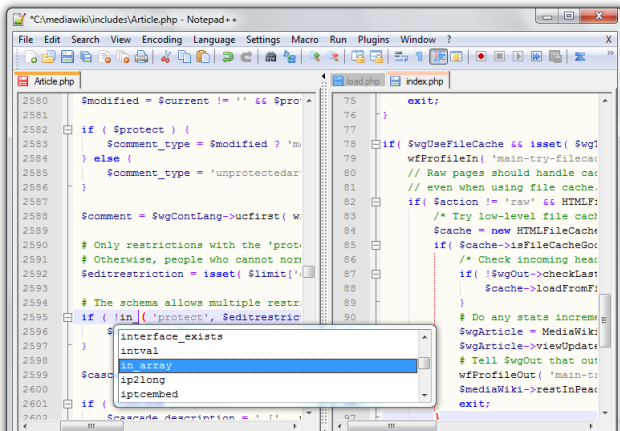
The solution to all your problems - LATEX

Eclipse is a multi-language Integrated Development Environment (IDE) comprising a base workspace and an extensible plug-in system for customizing the environment.

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The solution to all your problems - LATEX

Eclipse supports:

- a whole bunch of programming languages (e.g. Ada, C, C++, COBOL, Fortran, Haskell, JavaScript, Perl, PHP, Python, R, Ruby (including Ruby on Rails framework), Scala, Clojure, Groovy, Scheme and Erlang)

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The solution to all your problems - LaTeX

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- LaTeX

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- LATEX
- Subversion (SVN)

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The solution to all your problems - LATEX

Subversion is a software versioning and revision control system.

- http://betterexplained.com/articles/
  a-visual-guide-to-version-control

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- can be used for personal project versioning and revision

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Subversion is a software versioning and revision control system.

- http://betterexplained.com/articles/
  a-visual-guide-to-version-control

- can be used for personal project versioning and revision

- can be employed for collaborative work

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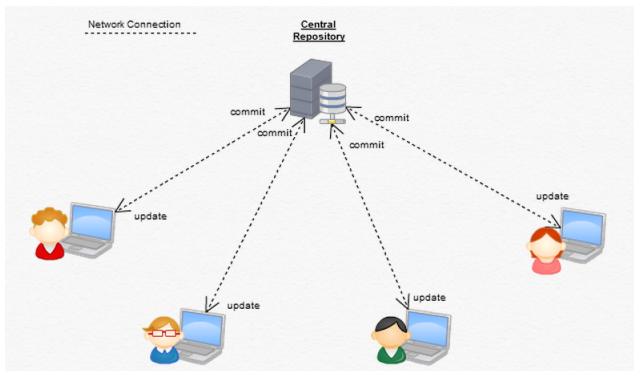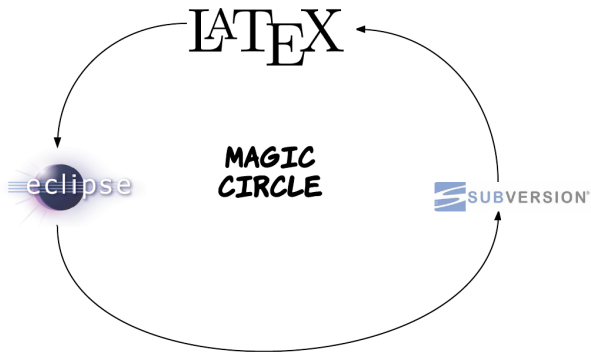
Some useful links

- Eclipse

    http://www.eclipse.org

- LaTeX plugin for Eclipse (TeXlipse)

    http://texlipse.sourceforge.net

- LaTeX tutorials

    http://latex-project.org/guides

    http://en.wikibooks.org/wiki/LaTeX

- Subversion plugin for Eclipse (Subclipse)

    http://subclipse.tigris.org

- Subversion tutorials

    http://svnbook.red-bean.com

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Document Classes
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Style Files/Packages
LATEX for Linguists

Simple Latex Documen - document.tex

```
%%This is a very basic article template.
%%There is just one section and two subsections.
\documentclass{article}
\begin{document}

\section{Section Title}
\subsection{Subsection Title}
Plain text.
\subsection{Another Subsection Title}
More plain text.

\end{document}
```

1 Section Title

1.1 Subsection Title

Plain text.

1.2 Another Subsection Title

More plain text.

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Document Classes - document.tex

Some of the most helpful document classes:

- **article** - articles in scientific journals, presentations, short reports, program documentation, invitations, etc.
- **report** - for longer reports containing several chapters, small books, thesis
- **book** - for real books
- **memoir** - for changing sensibly the output of the document. It is based on the book class, but you can create any kind of document with it.

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Document Class Options - document.tex

Some of the most helpful document class options:

- **10pt, 11pt, 12pt** - Sets the size of the main font in the document. If no option is specified, 10pt is assumed.

- **onecolumn, twocolumn** - Instructs LaTeX to typeset the document in one column or two columns.

- **landscape** - Changes the layout of the document to print in landscape mode.

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Math mode

LATEX provides a couple very easy ways for math typesetting:

- the $$ environment
- the `amsmath` package
- some useful tips

  http://en.wikibooks.org/wiki/LaTeX/Advanced_Mathematics

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Tables

Tables are probably the only annoying aspect of LATEX. Let us look at some http://en.wikibooks.org/wiki/LaTeX/Tables

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Tables

`tabular` **vs.** `table`

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Graphics

Graphics are a lot simpler than tables: `http://en.wikibooks.org/wiki/LaTeX/Importing_Graphics`

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Style Files/Packages

LATEX style files or packages can be used to define special formats and commands. The information in a style file can be accessed by any LATEX file using the command \usepackage{style_file}.

- The CIS LATEX style for Bachelor/Master Thesis

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- The LMU LATEX style file for PhD Thesis

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- The LMU LATEX style file for PhD Thesis
- The ClassicThesis LATEX style for PhD Thesis

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Style Files/Packages

Some packages in LATEX can be compared to plugins or add-on features. The initial LATEX distribution comes with dozens of preinstalled packages. However, a lot of supplementary ones can be used for additional, specific functionality. The Comprehensive TEX Archive Network (CTAN) (http://www.ctan.org) currently contains more than 4500 packages. There are also many more that can be acquired from other sources.

- **amsmath** - Advanced use of math typesetting
- **hyperref** - Extensive support for hypertext in LATEX
- **tipa** - Fonts and macros for IPA phonetic characters
- **parsetree** - provides a very clean layout for trees (this package supports no more than ternary trees)
- **avm** - supports the production of sorted and unsorted attribute-value matrices

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LATEX for Linguists Links

There are several sites that try to sum up the most important
functionality of LATEX for lingsuists.

- LaTeX for Linguists

  http://www.essex.ac.uk/linguistics/external/clmt/latex4ling

- Wiki on the topic

  http://en.wikibooks.org/wiki/LaTeX/Linguistics

- Intro to LATEX for CL students at Saarbrücken

  http://www.coli.uni-saarland.de/~gparis/LaTeX/Colis

- Markus Dickinson and Josh Herring at Indiana University

  http://cl.indiana.edu/~md7/08/latex/slides.pdf

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To Do Notes

The package `todonotes` is not existential, but it is very handy for drafting the first version. Here is its manual:
`http://www.tex.ac.uk/tex-archive/macros/latex/contrib/todonotes/todonotes.pdf`

Creating Slides with LATEX

Let us look at these slides!

Creating Slides with LaTeX

Useful links for the beamer package:

- Beamer Guide`http://faq.ktug.org/wiki/uploads/beamer_guide.pdf`
- Beamer Themes `http://latex.simon04.net`
- Beamer Theme Matrix
  `http://www.hartwork.org/beamer-theme-matrix`

Creating Slides with LATEX

Thank you! Happy LATEX-ing!