

# Text Formatting with L<sup>A</sup>T<sub>E</sub>X, Eclipse and SVN

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  - Text Editor vs. Word Processor
  - What You See Is What You Get
- 2 **L<sup>A</sup>T<sub>E</sub>X**
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# 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

# Text Editor vs. Word Processor

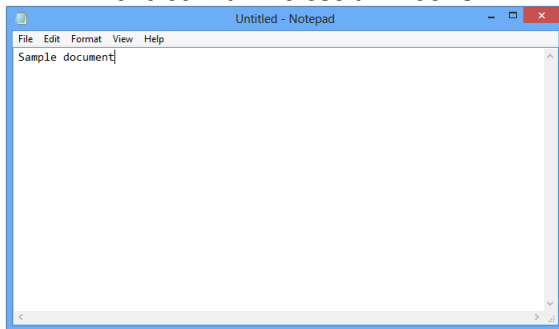
## Text Editors

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- the only non-printing characters they support are: newline, tab, and form feed
- [http://en.wikipedia.org/wiki/Comparison\\_of\\_text\\_editors](http://en.wikipedia.org/wiki/Comparison_of_text_editors)

# Text Editors

## Notepad

Bundled with Microsoft Windows



# Text Editors

## Notepad++

The screenshot shows the Notepad++ interface with two files open: `Article.php` and `load.php`. The `Article.php` file contains PHP code with line numbers 2580 through 2602. A context menu is open over the `in_array` function call on line 2595, listing options: `interface_exists`, `intval`, `in_array` (highlighted), `ip2long`, and `iptocmbd`. The `load.php` file shows code from line 75 to 90, including an `exit;` statement and a `if` block for file caching.

```

2580 $modified = $current != '' && $pro
2581
2582 if ( $protect ) {
2583     $comment_type = $modified ? 'm
2584 } else {
2585     $comment_type = 'unprotectedar
2586 }
2587
2588 $comment = $wgContLang->ucfirst( w
2589
2590 # Only restrictions with the 'prot
2591 # Otherwise, people who cannot non
2592 $editrestriction = isset( $limit['
2593
2594 # The schema allows multiple restr
2595 if ( in_array( 'protect', $editrestric
2596     $
2597 )
2598
2599 $cas
2600
2601 if (
2602     $cascode description = ' '
    
```

```

75     exit;
76 }
77
78 if( $wgUseFileCache && isset( $wg
79 wfProfileIn( 'main-try-fileca
80 // Raw pages should handle ca
81 // even when using file cache.
82 if( $action != 'raw' && HTMLF
83 /* Try low-level file cach
84 $cache = new HTMLFileCache
85 if( $cache->isFileCacheGor
86 /* Check incoming hear
87 if( !$wgOut->checkLas
88     $cache->loadFromF
89 }
90
91 # Do any stats increm
92 $wgArticle = MediaWiki
93 $wgArticle->viewUpdate
94 # Tell $wgOut that out
95 wfProfileOut( 'main-t
96 $mediaWiki->restInPea
97 exit;
    
```

PHP Hy length: 139209 lines: 4673 Ln: 2595 Col: 26 Sel: 0 UNIX ANSI as UTF-8 INS

# 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

# Word Processors

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



# Word Processors

Working on your thesis surely opts for more formatting!!!  
⇒ Word Processor

# 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

# Word Processors

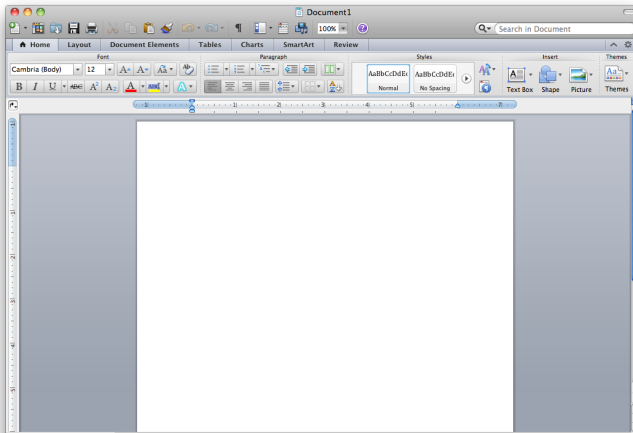
- early word processors used tag-based markup for document formatting
- most modern word processors use GUIs that enable what-you-see-is-what-you-get editing

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

# Word Processors

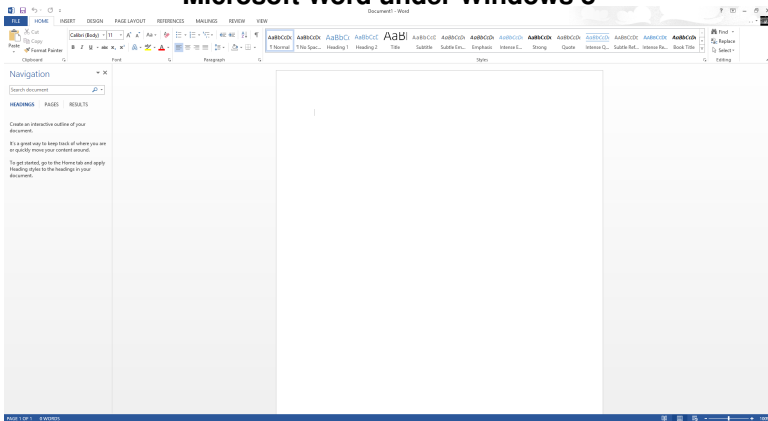
One of the most widely used Word Processors nowadays is:

## Microsoft Word



# Word Processors

## Microsoft Word under Windows 8



# 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

# 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

# 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



# 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?

# The solution to all your problems - L<sup>A</sup>T<sub>E</sub>X

L<sup>A</sup>T<sub>E</sub>X is not:

- text processor
- word processor

L<sup>A</sup>T<sub>E</sub>X:

- 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

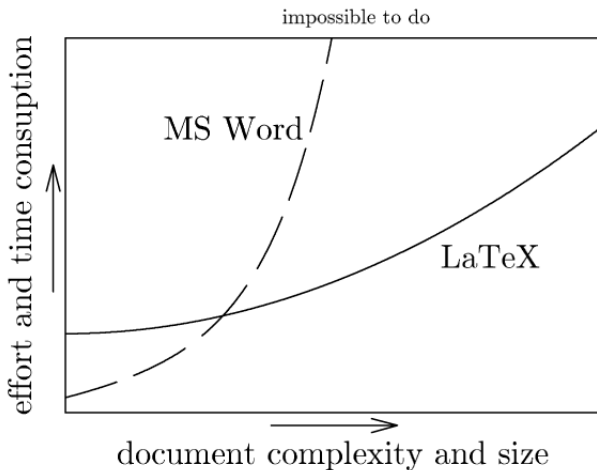
# Microsoft Word vs L<sup>A</sup>T<sub>E</sub>X



L<sup>A</sup>T<sub>E</sub>X is good where Microsoft Word is excruciatingly bad:

- increase in document length and number of graphics lead to drastic decrease in speed
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# Microsoft Word vs L<sup>A</sup>T<sub>E</sub>X



# Microsoft Word vs L<sup>A</sup>T<sub>E</sub>X



What about the functions that Microsoft Word could not handle:

- collaborative work
- version control

# Google Drive

Google

Drive

CREATE UP

My Drive

Shared with me

Starred

Recent

More

Download Drive for Mac

Meet your Drive

My Drive is the home for all your files. With Google Drive for your Mac, you can sync files from your computer to My Drive.

Download Google Drive for Mac

Then, go for a spin

- Explore the left h
- Create Google Dr
- See files at a gla
- Get the Google D

My Drive

<input type="checkbox"/>	TITLE	OWNER
<input type="checkbox"/> ☆	Imported from Google Notebook - My first notebook Shared	me
<input type="checkbox"/> ☆	Imported from Google Notebook - Test	me

# Google Drive

The screenshot shows a Google Docs interface. The document title is "Imported from Google Notebook - My first notebook". The menu bar includes File, Edit, View, Insert, Format, Tools, Table, and Help. The status bar indicates "Last edit was made 2 minutes ago by David Münzing". The document content shows the text "My first notebook" in green, followed by a horizontal line. On the right, a "Revision history" sidebar is open, showing a list of revisions:

- Today, 10:33 PM: David Münzing
- Today, 10:32 PM: David Münzing
- Today, 10:27 PM: Desi Z.
- Today, 10:26 PM: Desi Z.
- November 27, 2011, 6:22 AM: Desi Z. (with a "Restore this revision" link)

At the bottom of the sidebar, there are checkboxes for "Show changes" (checked) and a button for "Show less detailed revisions".

<https://docs.google.com/document/d/1tLNutpn-Bb-UgWyKauLxztlrjS7PqVLML2YTsw31n5U/edit>

# 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

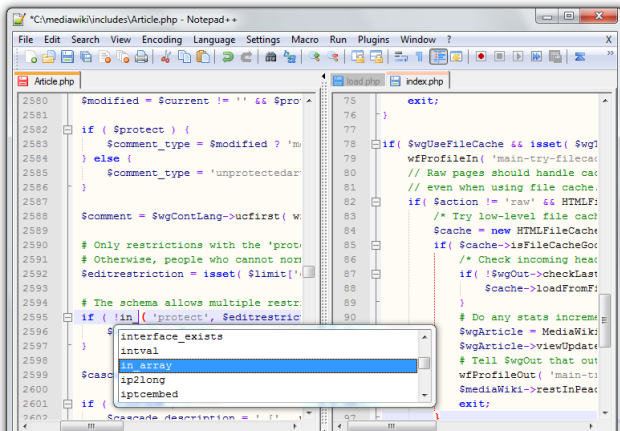


# The solution to all your problems - $\text{\LaTeX}$

$\text{\LaTeX}$  is supported by a whole bunch of text editors

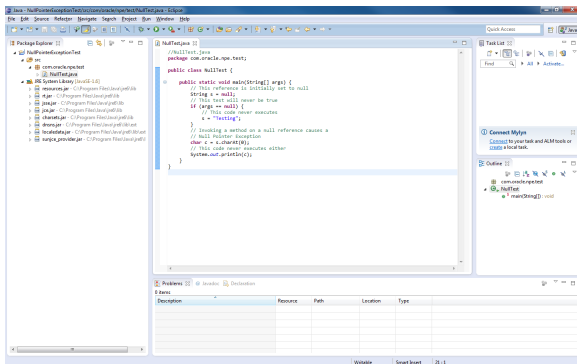
([http://en.wikipedia.org/wiki/Comparison\\_of\\_TeX\\_editors](http://en.wikipedia.org/wiki/Comparison_of_TeX_editors))

## Notepad++



# 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.



# The solution to all your problems - L<sup>A</sup>T<sub>E</sub>X

## 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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- L<sup>A</sup>T<sub>E</sub>X
- Subversion (SVN)

# The solution to all your problems - L<sup>A</sup>T<sub>E</sub>X

**Subversion** is a software versioning and revision control system.

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

# The solution to all your problems - L<sup>A</sup>T<sub>E</sub>X

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- `http://betterexplained.com/articles/a-visual-guide-to-version-control`
- can be used for personal project versioning and revision

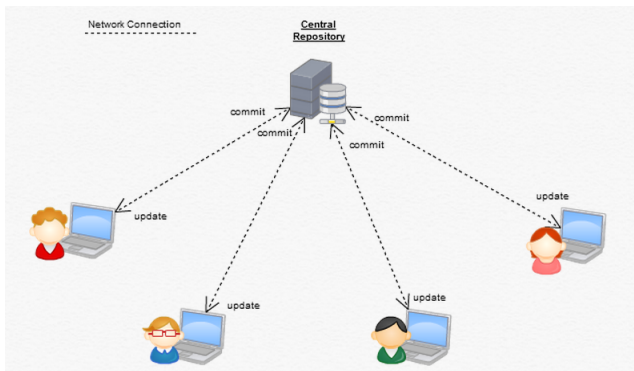
# The solution to all your problems - L<sup>A</sup>T<sub>E</sub>X

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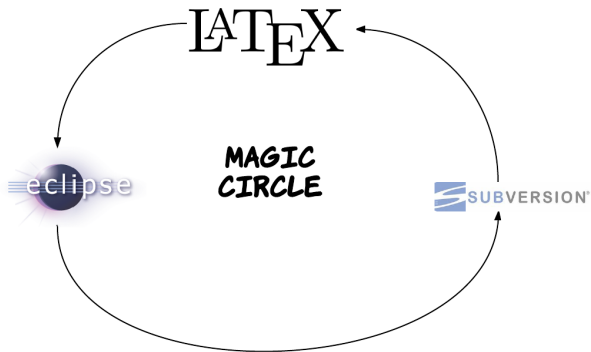
- `http://betterexplained.com/articles/a-visual-guide-to-version-control`
- can be used for personal project versioning and revision
- can be employed for collaborative work



# The solution to all your problems - $\text{\LaTeX}$



# The solution to all your problems - L<sup>A</sup>T<sub>E</sub>X



## Some useful links

- Eclipse

<http://www.eclipse.org>

- L<sup>A</sup>T<sub>E</sub>X plugin for Eclipse (TeXlipse)

<http://texlipse.sourceforge.net>

- L<sup>A</sup>T<sub>E</sub>X 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>

# Simple Latex Documenten - 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.

## 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.

## 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  $\text{\LaTeX}$  to typeset the document in one column or two columns.
- **landscape** - Changes the layout of the document to print in landscape mode.

# Math mode

L<sup>A</sup>T<sub>E</sub>X 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](http://en.wikibooks.org/wiki/LaTeX/Advanced_Mathematics)

# Tables

Tables are probably the only annoying aspect of L<sup>A</sup>T<sub>E</sub>X. Let us look at some <http://en.wikibooks.org/wiki/LaTeX/Tables>



# Tables

tabular vs. table

# Graphics

Graphics are a lot simpler than tables: [http://en.wikibooks.org/wiki/LaTeX/Importing\\_Graphics](http://en.wikibooks.org/wiki/LaTeX/Importing_Graphics)

# 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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# Style Files/Packages

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- The CIS L<sup>A</sup>T<sub>E</sub>X style for Bachelor/Master Thesis
- The LMU L<sup>A</sup>T<sub>E</sub>X style file for PhD Thesis
- The ClassicThesis L<sup>A</sup>T<sub>E</sub>X style for PhD Thesis

## 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

## L<sup>A</sup>T<sub>E</sub>X for Linguists Links

There are several sites that try to sum up the most important functionality of L<sup>A</sup>T<sub>E</sub>X for linguists.

- **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 L<sup>A</sup>T<sub>E</sub>X 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>

# Page Numbering

```
\setcounter{page}{1}
\pagenumbering{roman}
```

The command `pagenumbering` can take several arguments:

- **arabic** - Arabic numerals
- **roman** - Lowercase roman numerals
- **Roman** - Uppercase roman numeral
- **alph** - Lowercase letters
- **Alph** - Uppercase letters



## Changing the Fontsize

Command	Output
<code>\tiny</code>	<small>sample text</small>
<code>\scriptsize</code>	<small>sample text</small>
<code>\footnotesize</code>	<small>sample text</small>
<code>\small</code>	<small>sample text</small>
<code>\normalsize</code>	sample text
<code>\large</code>	sample text
<code>\Large</code>	sample text
<code>\LARGE</code>	sample text
<code>\huge</code>	sample text
<code>\Huge</code>	sample text

# Bibliography

```
@inproceedings{DBLP:conf/coling/BykhM12,  
  author    = {Serhiy Bykh and Detmar Meurers},  
  title     = {{Native Language Identification using Recurring n-grams  
              - Investigating Abstraction and Domain Dependence}},  
  booktitle = {COLING},  
  year     = {2012},  
  pages    = {425-440},  
  ee       = {http://aclweb.org/anthology/C/C12/C12-1027.pdf},  
  crossref = {DBLP:conf/coling/2012},  
  bibsource = {DBLP, http://dblp.uni-trier.de}  
}
```

# Bibliography

## Natbib commands

Citation command	Output
<code>\citet{goossens93}</code>	Goossens et al. (1993)
<code>\citep{goossens93}</code>	(Goossens et al., 1993)
<code>\citet*{goossens93}</code>	Goossens, Mittlebach, and Samarin (1993)
<code>\citep*{goossens93}</code>	(Goossens, Mittlebach, and Samarin, 1993)
<code>\citeauthor{goossens93}</code>	Goossens et al.
<code>\citeauthor*{goossens93}</code>	Goossens, Mittlebach, and Samarin
<code>\citeyear{goossens93}</code>	1993
<code>\citeyearpar{goossens93}</code>	(1993)
<code>\citealt{goossens93}</code>	Goossens et al. 1993
<code>\citealp{goossens93}</code>	Goossens et al., 1993
<code>\citetext{priv.\ comm.}</code>	(priv. comm.)

# Bibliography

```
@inproceedings{Bykh:Meurers:12,
  author    = {Serhiy Bykh and Detmar Meurers},
  title     = {{Native Language Identification using Recurring n-grams
    - Investigating Abstraction and Domain Dependence}},
  booktitle = {COLING},
  year     = {2012},
  pages    = {425-440},
  ee       = {http://aclweb.org/anthology/C/C12/C12-1027.pdf},
  crossref = {DBLP:conf/coling/2012},
  bibsource = {DBLP, http://dblp.uni-trier.de}
}
```

# Bibliography

In case you did not manage to find the full BibTeX entry for the reference you would like to include, you can fill the template yourself:  
[http://en.wikibooks.org/wiki/LaTeX/Bibliography\\_Management](http://en.wikibooks.org/wiki/LaTeX/Bibliography_Management)

## 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>

# External Tex Files

The command

```
\include{external_file}
```

allows you to include the content of a separate, external .tex file into your current document. Let us have a look at the `classicthesis` package.

# Variables

```
\newcommand{<command name>}{<value>}
```

```
\newcommand{\mySys}{\textsc{my{\Huge system}name}}
```

MY **SYSTEM** NAME



# Therefore

The `therefore` package provides you with a macro to carefully select one of a multitude of choices for *therefore*. Below are some examples of its use:

- And verily, I will use this package.
- It transpires that you will see its functionality.
- It is trivial that you will be able to use it too.

## PDF page selection

```
\usepackage{pdfpages}
\includepdf [pages={31,35-37}] {ClassicThesis.pdf}
```

# CVs

CVs can also be formatted in a nice and most importantly properly structured way. There are multiple templates that can be used for this purpose. Look at the following collection of templates for example:

<http://www.latextemplates.com/cat/curricula-vitae>

# Creating Slides with L<sup>A</sup>T<sub>E</sub>X

Let us look at these slides!

# Creating Slides with $\text{\LaTeX}$

## Note!

Beamer blocks can be often used to highlight text.

# Creating Slides with L<sup>A</sup>T<sub>E</sub>X

## Note!

Beamer blocks can be often used to highlight text.

- You can also use overlays in blocks.

# Creating Slides with L<sup>A</sup>T<sub>E</sub>X

## Note!

Beamer blocks can be often used to highlight text.

- You can also use overlays in blocks.
- Without the `\setbeamercovered{invisible}` you will partially see the inactive items.

# Creating Slides with L<sup>A</sup>T<sub>E</sub>X

Useful links for the beamer package:

- **Beamer Guide** [http://faq.ktug.org/wiki/uploads/beamer\\_guide.pdf](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>



Thank you!

Thank you! Happy L<sup>A</sup>T<sub>E</sub>X-ing!