



Introduction to \LaTeX

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RiSE - Reuse in Software Engineering

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Summary

- 1 Motivation
- 2 What is \LaTeX ?
- 3 Why \LaTeX ?
- 4 The Bibtex Hands On
- 5 The Beamer Hands On
- 6 Windows Installation
- 7 Linux Installation



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Why no more Word-like software?

- Template switching
- Keep focus
- Version control
- Collaborative edition
- Incompatibility between soft. versions
- Concise bibliography



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What is \LaTeX ?

- To prepare documents
- Easy to create:
 - summary
 - index
 - tables and figures lists
 - CITATION
 - BIBLIOGRAPHY
 - *math formulas*
- Creator: Donald Knuth



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Why L^AT_EX?

- Text quality
- Compatibility
- Stability
- Various formats conversion (PDF, HTML, PS)
- Documents compatibility
- Linux, Windows, Mac etc
- Document logic project
- Macros, Packages



Document Logic Project

```

1\documentclass[times, 10pt,twocolumn]{article}
2 \usepackage{latex8}
3 \usepackage{times}
4 \usepackage{graphicx,url}
5
6 \begin{document}
7
8 \title{Titulo}
9
10 \author{Autor 1, Autor 2}
11
12 \maketitle
13 \thispagestyle{empty}
14
15 \input{sections/abstract}
16 \input{sections/introduction}
17 \input{sections/cr_dup_problem}
18 \input{sections/system_architecture}
19 \input{sections/tests_architecture}
20 \input{sections/results}
21 \input{sections/discussion}
22 \input{sections/related_works}
23 \input{sections/conclusion}
24
25 \bibliographystyle{latex8}
26 \bibliography{../latexcommon/references}
27
28 \end{document}

```

Figure: Document structure

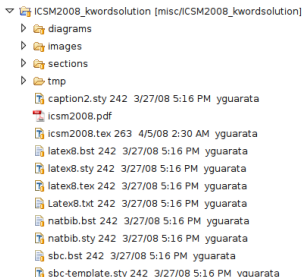


Figure: Project structure



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The Bibtex Hands On

- Program to produce references
- Uses a separate file (.bib)
- Only use the cited references

```
@ARTICLE{Mohan2006,
  author = {Kannan Mohan and Balasubramaniam Ramesh},
  title = {Change management patterns in software product lines},
  journal = {Communications of the ACM},
  year = {2006},
  volume = {49},
  pages = {68-72},
  number = {12},
  abstract = {Establishing effective change management practices
    to prevent uncontrolled evolution of the product platform.},
  address = {New York, NY, USA},
  doi = {http://doi.acm.org/10.1145/1183236.1183269},
  issn = {0001-0782},
  owner = {yguarata},
  publisher = {ACM Press},
  timestamp = {2007.09.24}
}
```

- Usage: `\cite{Mohan2006}`



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The Bibtex Hands On

- The power of \LaTeX and Beamer to make slides

```
\section{Why \LaTeX?}
\begin{frame}{Why \LaTeX?}
  \begin{itemize}
    \item Text quality
    \item Compatibility
    \item Stability
    \item Various formats conversion (PDF, HTML, PS)
    \item Documents compatibility
    \item Linux, Windows, Mac etc
    \item Document logic project
    \item Macros, Packages
  \end{itemize}
\end{frame}
```

- This is Beamer!



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- This is Beamer!



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Miktex and Editors

- Go to <http://www.miktex.org>
- Installing a basic MiKTeX system
- Installing the complete MiKTeX system
- Editors
 - Texniccenter - <http://www.toolscenter.org>
 - **Texlipse eclipse plugin** - <http://texlipse.sourceforge.net>
 - Notepad, Wordpad etc



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Ubuntu and Debian

- aptitude install tetex-base tetex-bin tetex-extra
- Editors
 - Kile - <http://kile.sourceforge.net/>
 - **Texlipse eclipse plugin** - <http://texlipse.sourceforge.net>
 - Gedit, Kedit, vim, vi, emacs etc



Some Links

Books <http://www.macrotex.net/texbooks/>

Examples <http://www.maths.ed.ac.uk/~mcolombo/stuff/latex-hints.html>

Tables <http://en.wikibooks.org/wiki/LaTeX/Tables>

Reference <http://www-h.eng.cam.ac.uk/help/tpl/textprocessing/teTeX/latex/latex2e-html/index.html>