Introductory Workshop to \LaTeX

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8 March, 2010
1. What is this \LaTeX\ and Why would I need it?

2. Basics

3. Typesetting Text

4. Structuring and Cross-referencing Text

5. Typesetting Mathematics

6. Graphics, Figures and Tables

7. Citations and References

8. Preparing Manuscripts for Conferences and Journals

9. Presentation Slides

10. Teasers
1. What is this \LaTeX\ and Why would I need it?
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Concerns when writing a paper/thesis...

- Is my lit survey strong enough to support my hypothesis?
- My bibliography/citation formatting got inconsistent.
- My citation and bibliography aren’t synchronised!
- My math equations don’t display/print correctly.
- Should this discussion go under this section or that?
- What formatting did I use for my subsection headings again?
- Didn’t I set that heading to bold and italic 5 minutes ago?
- My section/figure/page numbering’s gone all wrong!
- Does this subsection go together with this section?
- Oops, I forgot to update the TOC.
- What results should I put in this table?
- How do I fit/split this huge table on/across page(s)?
- My figure jumped off the page again!
- The application crashed!
- **MY FILE WAS CORRUPTED!!!**
Donald Knuth created $\text{TeX} = \text{TeX}$ (from Greek τεχνη ‘art’; ‘craft’)
- pronounced ‘tech’, like Scottish ‘loch’
- a computer typesetting system
- for “the creation of beautiful books”

Leslie Lamport wrote $\text{LaTeX} = \text{LaTeX} = \text{“Layman’s TeX”}$
- pronounced ‘lay-tech’ or ‘lah-tech’
- a document preparation system: plain text + markup
- a macro package on top of $\text{TeX}$
- separation of content and style

Preferred by many academic journals

Many, many “distros” (TeXLive, MiKTeX, MacTeX…)

More history at http://www.ctan.org/what_is_tex.html
Professional Typesetting Quality Output

- Typesetting quality & legibility
  - good kerning hinting and correct ligatures
  - inter-word, line and paragraph spacing
  - context-sensitive hyphenation

- Especially good at maths material

Table | fire | flower | fjörd
---|---|---|---

Kerning and ligature examples from http://nitens.org/taraborelli/latex

\[ W_{\psi}(f)(a, b) = \frac{1}{\sqrt{a}} \int_{-\infty}^{\infty} f(t)\psi\left(\frac{t - b}{a}\right) dt \]

This paper outlines an approach to produce a prototype WordNet system for Malay semi-automatically, by using bilingual dictionary data and resources provided by the original English WordNet system. Senses from an English-Malay bilingual dictionary were first aligned to English WordNet senses, and a set of Malay synsets were then derived. Semantic relations between the English WordNet synsets were extracted and re-applied to the Malay synsets, using the aligned synsets as a guide. A small Malay WordNet prototype with 12429 noun synsets and 5805 verb synsets was thus produced. This prototype is a first step towards building a full-fledged Malay WordNet.

\[ W_{\psi}(f)(a, b) = \frac{1}{\sqrt{a}} \int_{-\infty}^{\infty} f(t)\psi\left(\frac{t - b}{a}\right) dt \]

This paper outlines an approach to produce a prototype WordNet system for Malay semi-automatically, by using bilingual dictionary data and resources provided by the original English WordNet system. Senses from an English-Malay bilingual dictionary were first aligned to English WordNet senses, and a set of Malay synsets were then derived. Semantic relations between the English WordNet synsets were extracted and re-applied to the Malay synsets, using the aligned synsets as a guide. A small Malay WordNet prototype with 12429 noun synsets and 5805 verb synsets was thus produced. This prototype is a first step towards building a full-fledged Malay WordNet.
Other Pros and Cons

**Pros**
- Free software + **Free-of-charge**
- Portable (plain text input; DVI/PS/PDF...output)
- Light, robust, secure, stable, consistent
- Supports multilingual typesetting, international characters
- Good for complex, structured documents or lots of maths
- Good for batch-processing jobs

**Cons**
- Learning curve
- Overkill for simple documents
- Not as suitable for graphic-intensive material (e.g. advertising)
This is not a Word Processors vs \LaTeX{} debate.

- It’s a hands-on demonstration of an alternative tool.
- Some word processors also provide mechanisms to handle same routine tasks (with varying degrees of ease, consistency and stability)
- Use the best tool for the task at hand.
- **You** are the best judge to decide for yourself.
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(FOC options here; commercial solutions are available)

- Essential
  - MiKTeX: LaTeX engine for Windows (includes LaTeX-friendly editor and PDF previewer)

- Optional
  - JabRef: Java-based GUI bibliography and reference manager
  - LaTable: visual table editor to help with complex tables
  - GhostScript, GSView if you work with PostScript outputs
Minimal Document Structure

%% helloworld.tex — First LaTeX document
\documentclass{article}
\begin{document}
Hello World!
\end{document}

- **Standard document classes:**
  - `article`: for short reports, articles in proceedings or journals, etc.
  - `report`, `letter`, ...

- **Other document classes:** `beamer`, `scartcl`, `memoir`, `recipe`, `resume`, `leaflet`, `exam`, `beamerposter`...
1. Create, edit, save `.tex` file
2. Make sure `Typeset` operation set to `pdfLaTeX+MakeIndex+BibTeX`
3. `Typeset` (Ctrl + T or 📐)
4. Correct errors, repeat `Typeset`
5. View Output

Tip: Ctrl + click in source to jump to corresponding point in PDF (and vice versa)
- **Commands** (0 or more options/arguments)

\cmdname[option1, option2...]{arg1}{arg2}...

- **Environments**

\begin{envname}
environment contents
\end{envname}

- **Comments:** the % character.

% You won't see this line in the output.
You will see this line  %<— but nothing after this!
Another example

%%% document class declaration with options
\documentclass[a4paper,12pt]{article}

%%% document preamble starts...
%%% loading packages: for extra capabilities
\usepackage{marvosym}

%%% "meta" information and other definitions
\author{Lim Lian Tze}
\title{Hello}

%%% document preamble ends, document body starts
\begin{document}
\maketitle
Hello World! \Smiley
\end{document}
Aarrrrggh! Errors!

- Error message and line number in the Output panel
- In the Console bar:
  - Hit Enter (perhaps repeatedly) to continue anyway. May still get a PDF output but with erroneous content.
  - Hit x then Enter, or click to abort.
- Correct error, retry.
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White Space and New Lines

- Space and tab characters
  - White space does not (usually) matter
  - \( \text{T}_{\text{E}} \text{X} \) determines inter-word spacing to ensure legibility

- Paragraph breaking
  - Leave a blank line between text to break paragraph
  - Multiple blank lines won’t give more vertical spacing
  - \( \text{T}_{\text{E}} \text{X} \) determines inter-line spacing to ensure legibility

- Manual line- and page-breaking?
  - (are you sure?)
  - \( \text{T}_{\text{E}} \text{X} \) decides where to break lines, pages to ensure legibility
  - if you insist: \\
  - \textbackslash pagebreak
This is to demonstrate typesetting plain text in \LaTeX. It doesn’t care much about multiple blank spaces and tabs.

``Multiple blank lines'' have the same effect as one blank line.

Blank lines are for separating paragraphs (content), but not how far they are apart (style).
## Special Characters

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
<th>Equivalent in LaTeX</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>(hash, pound)</td>
<td>\#</td>
</tr>
<tr>
<td>$</td>
<td>(dollar)</td>
<td>\$</td>
</tr>
<tr>
<td>%</td>
<td>(percent)</td>
<td>\%</td>
</tr>
<tr>
<td>^</td>
<td>(“hat”)</td>
<td>\^{{}</td>
</tr>
<tr>
<td>&amp;</td>
<td>(ampersand)</td>
<td>\&amp;</td>
</tr>
<tr>
<td>_</td>
<td>(underscore)</td>
<td>\_</td>
</tr>
<tr>
<td>{</td>
<td>(left brace)</td>
<td>\{</td>
</tr>
<tr>
<td>}</td>
<td>(right brace)</td>
<td>\}</td>
</tr>
<tr>
<td>~</td>
<td>(tilde)</td>
<td>\sim {}</td>
</tr>
<tr>
<td>\sim</td>
<td>(wide tilde)</td>
<td>$\sim$</td>
</tr>
<tr>
<td>```</td>
<td>(open double quotes)</td>
<td>````</td>
</tr>
<tr>
<td>`</td>
<td>(close double quotes)</td>
<td>``</td>
</tr>
<tr>
<td>@</td>
<td>(alias)</td>
<td>\string@</td>
</tr>
</tbody>
</table>
Verbatim text

```
\begin{verbatim}
"I'm tired of escaping characters!"
Type all the special characters you want, 100%!
No need to escape your # and $ and ~ here,
and it respects your line breaks
    and whitespaces, too!
\end{verbatim}

Inline: \verb|mem_buffer|.
```

"I’m tired of escaping characters!"
Type all the special characters you want, 100%!
No need to escape your # and $ and ~ here,
and it respects your line breaks
    and whitespaces, too!

Inline: mem_buffer.
\usepackage[url] % this line in preamble!
...
You can find this presentation at \url{http://liantze.googlepages.com/latextypesetting}.
Your MiKTeX installation is most likely at \path{C:\Program Files\MiKTeX 2.8}.

You can find these slides at http://liantze.googlepages.com/latextypesetting.
Your MiKTeX installation might be at C:\ProgramFiles\MiKTeX2.8.

Windows paths often have space characters; use \usepackage[obeyspaces]{url}.
Special Symbols

- **Diacritic marks**: e.g. à, á, â, ã, ä, å, æ
  - no input methods: \`a, \'a, \~a, \~a, \"a, \r a, \ae
  - with input methods: (TeXworks saves files as UTF-8 by default)
    \begin{verbatim}
    \usepackage[utf8]{inputenc}
    \usepackage[T1]{fontenc}
    ...
    àáâãäåæ
    \end{verbatim}

- **Common text symbols**: e.g. ©®™℃
  \begin{verbatim}
  \textcopyright \textregistered \texttrademark \textcelsius
  \end{verbatim}

- **Mathematical symbols**: a whole slew of them!
“How would I know what command produces symbol \( X \)?

1. The Comprehensive \( \LaTeX \) Symbol List
   - Install the comprehensive package with MikTeX Package Manager
   - \texttt{mthelp -view comprehensive}

2. Detexify (http://detexify.kirelabs.org/)

\textbf{Detexify}^2 - \LaTeX\ symbol classifier

\begin{itemize}
  \item \texttt{\textbackslash textdiscount}
  \item \texttt{\textbackslash varnothing}
  \item \texttt{\textbackslash clock}
  \item \texttt{\textbackslash O}
\end{itemize}
### Font Families and Effects

<table>
<thead>
<tr>
<th>Command</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>\texttt{roman}</td>
<td>\texttt{roman}</td>
</tr>
<tr>
<td>\textsf{sans serif}</td>
<td>\textsf{sans serif}</td>
</tr>
<tr>
<td>\texttt{typewriter}</td>
<td>\texttt{typewriter}</td>
</tr>
<tr>
<td>\textbf{bold}</td>
<td>\textbf{bold}</td>
</tr>
<tr>
<td>\textit{italics}</td>
<td>\textit{italics}</td>
</tr>
<tr>
<td>\underline{underline}</td>
<td>\underline{underline}</td>
</tr>
<tr>
<td>\textsc{Small Caps}</td>
<td>\textsc{Small Caps}</td>
</tr>
<tr>
<td>\emph{emphasis}</td>
<td>\emph{emphasis}</td>
</tr>
</tbody>
</table>

- Commands can be nested:
  \texttt{\emph{Like this.}} → \texttt{Like this.}
Font size changing commands relative to base font size given in \texttt{documentclass} option

\begin{itemize}
\item \texttt{\tiny Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\scriptsize Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\footnotesize Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\small Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\normalsize Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\large Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\Large Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\LARGE Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\huge Text} \quad \rightarrow \quad \text{Text}
\item \texttt{\Huge Text} \quad \rightarrow \quad \text{Text}
\end{itemize}
List-like Environments

Bulleted Lists

\begin{itemize}
\item one
\item two
\end{itemize}

Numbered Lists

\begin{enumerate}
\item one
\item two
\end{enumerate}

Description Lists

\begin{description}
\item[one] is here
\item[two] is there
\end{description}

Lists can be nested up to 6 levels deep.
Worksheet Exercise 2
More on Changing Fonts

- Default document font: Computer Modern (designed by Knuth)
  - Computer Modern Sans Serif
  - Computer Modern Serif
  - Computer Modern Typewriter

- Use Times Roman + Helvetica + Courier as default:
  
  ```latex
  \usepackage{mathptmx}
  \usepackage[scaled=.89]{helvet}  % Helvetica is LARGE
  \usepackage{courier}
  ```

- Other fonts can be loaded via relevant packages
  (http://www.tug.dk/FontCatalogue/)

- But be careful about improper font combinations!
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Sectioning Commands

- article: section, subsection, subsubsection.
- book: part (not usually used), chapter, section, ...

\documentclass{article}
\begin{document}
\section{Introduction}
Introduce your topic here.
\section{Background}
A line or two.
\subsection{Related Work}
Review others' work.
\subsection{Problems}
Unresolved issues.
\end{document}

1 Introduction
Introduce your topic here.

2 Background
A line or two.

2.1 Related Work
Review others’ work.

2.2 Problems
Unresolved issues.
\documentclass{article}
\begin{document}
\section{Introduction}\label{sec:intro}
Introduce your topic here.

\section{Background}\label{sec:background}
Mention section \ref{sec:intro} again.

\subsection{Related Work}\label{sec:related}
Review others' work.

\subsection{Problems}\label{sec:problems}
In section \ref{sec:related} on page \pageref{sec:related}\ldots
\end{document}

“Bookmark” with \texttt{\label}, reference with \texttt{\ref, \pageref}
Author information (in preamble)

- \texttt{\author}: Name(s) of authors
- \texttt{\title}: Title of the article/book/report
- \texttt{\date}: Specify a date
- Other custom fields for respective journals, conference styles (see later)

Routine tasks (in document body)

- Abstract:

  \begin{abstract}
  My abstract text here.
  \end{abstract}
Footnote: ...why?\footnote{why not?}

Margin notes: ...why?\marginpar{why not?}

Auto-generate title: \maketitle

Auto-generate TOC: \tableofcontents
\listoffigures,\listoftables – we’ll try later

Try \documentclass{scrartcl} for a “modern” look

Non-English: e.g. \usepackage[bahasaM]{babel}
(Remove aux files before typesetting if you modify this line!)

PDF hyperlinks and bookmarks: hyperref package
Worksheet Exercise 3
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\eqref{eq:golden:ratio:fibonacci} relates the golden ratio and the Fibonacci series. Recall that the golden ratio, \( \phi = \frac{1}{2} (1 + \sqrt{5}) \).

\begin{equation}
\phi = 1 + \sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{F_n F_{n+1}}
\end{equation}

(1) relates the golden ratio and the Fibonacci series. Recall that the golden ratio, \( \phi = \frac{1}{2} (1 + \sqrt{5}) \).

\[ \phi = 1 + \sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{F_n F_{n+1}} \]  

Source: http://mathworld.wolfram.com/GoldenRatio.html
...Too much “treasure” to describe here!

- [http://en.wikibooks.org/wiki/LaTeX/Mathematics](http://en.wikibooks.org/wiki/LaTeX/Mathematics)
- Various symbols, operators: check the Comprehensive Symbol List
A family of wavelets can be constructed from a function $\psi(x)$, sometimes known as a “mother wavelet,” which is confined in a finite interval. “Daughter wavelets” $\psi^{a,b}(x)$ are then formed by translation ($b$) and contraction ($a$). 

An individual wavelet can be defined by

$$\psi^{a,b}(x) = |a|^{-\frac{1}{2}} \psi \left( \frac{x - b}{a} \right).$$

Then

$$W_\psi(f)(a,b) = \frac{1}{\sqrt{a}} \int_{-\infty}^{\infty} f(t) \psi \left( \frac{t - b}{a} \right) dt,$$

and Calderón’s formula gives

$$f(x) = C_\psi \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \langle f, \psi^{a,b} \rangle \psi^{a,b}(x) a^{-2} da \, db.$$

A common type of wavelet is defined using Haar functions.

Source: http://mathworld.wolfram.com/Wavelet.html
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pdflatex embeds JPG, PNG and PDF graphic files

\usepackage{graphicx}

\includegraphics[width=.3\textwidth]{MMU}

(no file extension \(\rightarrow\) automatically looks for .jpg, .png, .pdf)

Other ways to specify the size:
width=5cm, height=120mm, scale=1.1...
\begin{figure}[hbt!]
\centering
\includegraphics[width=.3\textwidth]{MMU}
\caption{MMU's logo}
\label{fig:mmu:logo}
\end{figure}

Figure \ref{fig:mmu:logo} depicts MMU's logo.

Figure 1: MMU’s logo

Figure 1 depicts MMU’s logo.
\begin{tabular}{| l | c || r |}
\hline
one & two two & three three tree \\ \hline
one one & two two two & three \\ \hline
one one one & two & three three \\
\multicolumn{2}{|l||}{In the end} & What?! \\
\hline
\end{tabular}

<table>
<thead>
<tr>
<th>one</th>
<th>two two</th>
<th>three three tree</th>
</tr>
</thead>
<tbody>
<tr>
<td>one one</td>
<td>two two two</td>
<td>three</td>
</tr>
<tr>
<td>one one one</td>
<td>two</td>
<td>three three</td>
</tr>
<tr>
<td>In the end</td>
<td></td>
<td>What?!</td>
</tr>
</tbody>
</table>

Prefer a visual editor? Try LaTable

(http://tug.ctan.org/tex-archive/support/latable/)


```latex
\begin{table}[hbt!]
\centering
\caption{Sample table}
\label{tab:sample}
\begin{tabular}{| l | c || r |}
\hline
one & two & three \hline
one & two & three \hline
one & two & three \hline
\end{tabular}
\end{table}
```

Table \ref{tab:sample} is a very simple example.

<table>
<thead>
<tr>
<th>one</th>
<th>two two</th>
<th>three three tree</th>
</tr>
</thead>
<tbody>
<tr>
<td>one one</td>
<td>two two two</td>
<td>three</td>
</tr>
</tbody>
</table>

Table 1 is a very simple example.
Worksheet Exercise 5
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latex-refs.bib

@ARTICLE{knuth:1984,
  author = {Donald E. Knuth},
  title = {Literate programming},
  journal = {The Computer Journal},
  year = {1984},
  volume = {27},
  number = {2},
  pages = {97--111},
  address = {Oxford, UK},
  publisher = {Oxford University Press}
}

JabRef: Java-based reference manager
http://jabref.sourceforge.net
\documentclass{article}
\bibliographystyle{plain}
\begin{document}
\cite{latex:companion} is a useful book. Knuth introduced the literate programming paradigm while developing \TeX \cite{knuth:1984}.
\bibliography{latex-refs}
\end{document}
plain

[2] is a useful book. Knuth introduced the literate programming paradigm while developing \TeX [1].

References


acm

[2] is a useful book. Knuth introduced the literate programming paradigm while developing \TeX [1].

References


unsrt

[1] is a useful book. Knuth introduced the literate programming paradigm while developing \TeX [2].

References


ieeetr

[1] is a useful book. Knuth introduced the literate programming paradigm while developing \TeX [2].

References


alpha

[MGB+04] is a useful book. Knuth introduced the literate programming paradigm while developing \TeX{} [Knu84].

References


apacite (with apacite package)

(Mittelbach et al. 2004) is a useful book. Knuth introduced the literate programming paradigm while developing \TeX{} (Knuth 1984).

References


agsm (with natbib package)

(Mittelbach et al. 2004) is a useful book. Knuth introduced the literate programming paradigm while developing \TeX{} (Knuth 1984).

References


dcu (with natbibt package)

(Mittelbach et al.; 2004) is a useful book. Knuth introduced the literate programming paradigm while developing \TeX{} (Knuth; 1984).

References


Worksheet Exercise 6
natbib: Flexible Citations

Recommended:

- `\usepackage{natbib}` for author-year styles
- `\usepackage{apacite}\bibliographystyle{apacite}`

natbib citation commands:

```
\citep{knuth:1984} \rightarrow (Knuth, 1984)
\citet{knuth:1984} \rightarrow Knuth (1984)
```
(Careful! `\cite` becomes `\citet` if using natbib!)

```
\citep[section 2.1]{knuth:1984} \rightarrow (Knuth, 1984, section 2.1)
\citeauthor{knuth:1984} \rightarrow Knuth
\citeyear{knuth:1984} \rightarrow 1984
```

(apacite supports `\citeauthor` and `\citeyear` too)

See also

http://en.wikibooks.org/wiki/LaTeX/Bibliography_Management
author = {John Doe} \quad \rightarrow \quad (Doe, 2002)
author = {J. Doe} \quad \rightarrow \quad (Doe, 2002)
author = {Doe, John} \quad \rightarrow \quad (Doe, 2002)
author = {John von Neumann} \quad \rightarrow \quad (von Neumann, 1945)
author = {Lim Lian Tze} \quad \rightarrow \quad (Tze, 2004)
author = {Lim, Lian Tze} \quad \rightarrow \quad (Lim, 2004)

author = {John Doe and Allen Smith and Lee, Ai Chong} \quad \rightarrow \quad (Doe, Smith and Lee, 2003)
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(sig-alternate.cls seems to be the more popular choice)

http://www.acm.org/sigs/publications/proceedings-templates

Download the template required by your conference organiser
(Choose Option 2 for this example)

Put sig-alternate.cls in the same path as your .tex file
(There are other ways of manually adding/installing packages system-wide, but we won’t discuss them today)

Learn-by-example from sig-alternate.tex and sig-alternate.pdf

ACM Computing Classification System: Categories, General Terms
http://www.acm.org/about/class/1998/
\documentclass{sig-alternate}

\conferenceinfo{\LaTeX\ Workshop}{2010 Cyberjaya, Malaysia}
\CopyrightYear{2010}
\crdata{0-12345-67-8/90/AB}

\numberofauthors{2}
\author{
  \alignauthor Lian Tze Lim\n  \affaddr{Multimedia University}\n  \affaddr{Cyberjaya, Malaysia}\n  \email{liantze@gmail.com}
\alignauthor Another Author\n  \affaddr{Another University}\n  \affaddr{Another City}\n  \email{an.other@email.com}
}
\title{My First Paper}

\begin{document}

\maketitle

\begin{abstract}
This should be a succinct paragraph summarising your paper.
\end{abstract}

\category{I.7.2}{Document Preparation}{Photocomposition, typesetting}

\terms{Documentation}

\keywords{\LaTeX, typesetting, learning by example}

%% Now your paper begins...

\section{Introduction}

...
%%% ACM uses abbrv bibliography style
\bibliographystyle{abbrv}
\bibliography{bibliography-file}
\end{document}
- Install the **IEEEtran package**; it’s included in MikTeX
- Conference mode available (not demonstrated today)
- IEEE Computer Society Press conferences use **IEEEconf** package instead
- Figures and tables spanning 2 columns:
  \begin{figure*}...
  \end{figure*}
  \begin{table*}...
  \end{table*}
- The documentation contains complete instructions (use \texttt{mthelp} to access it)
\documentclass{IEEEtran}
\usepackage{graphicx}

\author{Lim Lian Tze and Another Author}
\thanks{This work was received January 20, 2010; revised January 30, 2010.}
\thanks{Lim Lian Tze is with the Multimedia University. Another Author is with Another University. See http://fit.mmu.edu.my/sig/nlp/ for contact details.}
\title{My First Paper}
\IEEEpubid{0000--0000/00\$00.00 \copyright 2007 IEEE}

\begin{document}
\maketitle
\begin{abstract}
\end{abstract}
This should be a succinct paragraph summarising your paper.
\end{abstract}

\begin{IEEEkeywords}
\LaTeX, typesetting, learning by example.
\end{IEEEkeywords}

%%% Now your paper begins...
\section{Introduction}
...

%%% Use IEEEtran bibliography style
\bibliographystyle{IEEEtran}
\bibliography{bibliography-file}

%%% Author biographies
\begin{IEEEbiography}{Lim Lian Tze}
Introductory Workshop to \LaTeX
\end{IEEEbiography}
{Lim Lian Tze} is currently a Ph.D. student at the Multimedia University studying Natural Language Processing.
\end{IEEEbiography}

\begin{IEEEbiography}{{\includegraphics[width=1in,height=1.25in,clip,trim=0.25in 0.5in 0.25in 0.25in,keepaspectratio]{another-grayscale}}}
{Another Author} is Associate Professor at Another University with a research interest in Natural Language Processing.
\end{IEEEbiography}
1. What is this \LaTeX{} and Why would I need it?
2. Basics
3. Typesetting Text
4. Structuring and Cross-referencing Text
5. Typesetting Mathematics
6. Graphics, Figures and Tables
7. Citations and References
8. Preparing Manuscripts for Conferences and Journals
9. Presentation Slides
10. Teasers
Creating Presentations with \texttt{beamer}

- Quite a few choices to creating presentation slides…
- …but \texttt{beamer} is (one of the) most versatile
  (the manual has 200+ pages; use as a reference)
- This presentation was created with \texttt{beamer}!
  (Note the clickable hyperlinks and auto-generated section navigation)
- To run slideshow in Acrobat Reader:
  - \texttt{Ctrl} + \texttt{L} to go fullscreen
  - Spacebar or arrow keys (\leftarrow\rightarrow) to go to next/previous slide
  - \texttt{Esc} to exit slideshow
\documentclass{beamer}

\author{Lian Tze}
\title{Quick Beamer Example}
\institute{NLP-SIG, MMU}
\date{8 March 2010}

\begin{document}
\begin{frame}
\maketitle
\end{frame}

\section{Introduction}
\subsection{Hello!}

Lim Lian Tze | Introductory Workshop to LaTeX
\begin{frame}
\frametitle{Hello World!}

This is my first presentation with \LaTeX.

\begin{itemize}
\item Beamer has many features
\item This is just a simple demo
\end{itemize}
\end{frame}

\subsection{Maths}
\begin{frame}
\frametitle{Maths work, too}
\begin{equation}
y = ax^2 + bx + c
\end{equation}
\end{frame}
\end{frame}

\section{Conclusion}

\begin{frame}
\frametitle{It's Your Decision}
\begin{itemize}
  \item Give \LaTeX\ a try
  \item You might hate it, you might love it
  \item Now that you've tried it, you can decide if it's for you
\end{itemize}
\end{frame}

\end{document}
Quick Beamer Example

Lian Tze

NLP-SIG, MMU

8 March 2010

Hello World!

This is my first presentation with \LaTeX.

- Beamer has many features
- This is just a simple demo

Maths work, too

\[ y = ax^2 + bx + c \] (1)

It’s Your Decision

- Give \LaTeX\ a try
- You might hate it, you might love it
- Now that you’ve tried it, you can decide if it’s for you
Try these:

- \usetheme{CambridgeUS}
- \usetheme{Singapore}
- \usetheme{Montpellier}
- \usetheme{Warsaw}
- \usetheme{Goettingen}

- Colour schemes, e.g. \usecolortheme{crane}


- Other customisations, including defining your own themes

- Try googling for more themes; e.g.
  http://staff.science.uva.nl/~koppejan/misc/latex.html
Beamer Presentation Themes (cont’d)

See Chapter 15: Themes in beamer manual

CambridgeUS

Singapore

Montpellier

Warsaw

Goettingen
Agenda

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### Linguistics

(1) *Wen liebt seine Mutter?*  
Whom loves his mother  
‘Who does his mother love?’

### Chemistry

$$
\begin{align*}
\text{Zn}^{2+} & \rightleftharpoons +2\text{OH}^- +2\text{H}^+ \\
\text{Zn(OH)}_2 & \downarrow \text{amphoteres Hydroxid} +2\text{OH}^- +2\text{H}^+ \\
\text{[Zn(OH)}_4\text{]}^{2-} & \rightleftharpoons \text{Hydrozoikat}
\end{align*}
$$
Teasers: Domain-specific Stuff (cont’d)

- Electronics

\[ v_x = \frac{10 \Omega}{20 \Omega} v_x + \frac{5 \Omega}{5 \Omega} v_x \]

- Bar codes

Teasers: Domain-specific Stuff (cont’d)

- **Song books**

  Country road, take me home, to the place I belong.

  West Virginia, mountain momma, take me home, country road.

- **Games**

  Across: 1 unit of measure 2 * 5 sectioning unit
  Down: 1 η 3 unit of measure 4 non-proportional font


[4] \LaTeX\textsuperscript{2e} Wikibook. URL: http://en.wikibooks.org/wiki/LaTeX.

[5] *Getting to grips with \LaTeX*. URL:
http://www.andy-roberts.net/misc/latex/.

[6] *Malaysian \LaTeX\ Users Group Blog*. (I’m one of the authors.) URL:
http://latex-my.blogspot.com/.

[7] \LaTeX: Beautiful Typesetting. (My own page on \LaTeX; all the materials today can be downloaded here.) URL:
http://liantze.googlepages.com/latex.


Thank you
谢谢
ありがとうございます
Gracias
Danke
Grazie
Terima kasih
 شكرا لك
Merci
Cảm ơn bạn
감사합니다
Obrigado