Document structure

- A simple document

\documentclass{article}
\begin{document}
This is my \textit{first} document prepared in \LaTeX.
\end{document}

- Tex command structure:
  - \texttt{\command[options]{options}}

This is my \textit{first} document prepared in \LaTeX.
Parts of document

- Title

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

\texttt{\LaTeX\ tutorial}

\texttt{Abtin \ Wutao}

\texttt{today}

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

Abtin
Wutao

September 8, 2010
Chapter 1
Typesetting

1.1 Parts of document

1.1.1 sectioning

example

notes  Here is my example.
Typesetting

- New line: \\ 
- Text positioning
  - \begin{center} ... \end{center}
  - \begin{flushright} ... \end{flushright}
  - \begin{flushleft} ... \end{flushleft}
## Typesetting

<table>
<thead>
<tr>
<th>Family</th>
<th>Style</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>roman</td>
<td>roman</td>
<td>\texttt{roman}</td>
</tr>
<tr>
<td>sans serif</td>
<td>sans serif</td>
<td>\texttt{sans serif}</td>
</tr>
<tr>
<td></td>
<td>\texttt{...}</td>
<td>\texttt{...}</td>
</tr>
<tr>
<td>Series</td>
<td>medium</td>
<td>\texttt{medium}</td>
</tr>
<tr>
<td></td>
<td>boldface</td>
<td>\texttt{boldface}</td>
</tr>
<tr>
<td></td>
<td>\texttt{...}</td>
<td>\texttt{...}</td>
</tr>
<tr>
<td>Shape</td>
<td>upright</td>
<td>\texttt{upright}</td>
</tr>
<tr>
<td></td>
<td>italic</td>
<td>\texttt{italic}</td>
</tr>
<tr>
<td></td>
<td>\texttt{...}</td>
<td>\texttt{...}</td>
</tr>
</tbody>
</table>

```latex
\texttt{\textsf{\textbf{sans serif family, boldface}}}
\texttt{\texttt{roman family, italic}}
```
The equation representing a straight line in the Cartesian plane is of the form \( ax + by + c = 0 \), where \( a \), \( b \), \( c \) are constants.
It is easily seen that $(x^m)^n = x^{mn}$.

The following sequence
$$x_i, \quad i = 1 \ldots n$$
is converging

\begin{equation}
E(\theta, \sigma) = - \sum_{m=1}^{M} p(y_m)p(x|y_m) \tag{1}
\end{equation}
Referencing

- Labeling
  - \lable{key}

- Referencing
  - \ref{key}

- Example
  - Equation \ref{probability} can be reformulated into …
Packages

- Run MikTeX / Browse Packages to install new packages
- Using packages
  - `\usepackage{...}
  - Example: `\usepackage{graphicx}`
Lists

- Without order

\begin{itemize}
\item TeX is a typesetting language and not a word processor
\item TeX is a program and not an application
\end{itemize}

- With order

\begin{enumerate}
\item prepare a source file with the extension "tex"
\item Compile it with \LaTeX to produce a "dvi" file
\end{enumerate}
\begin{table}
\begin{tabular}{cr}
\hline
Planet & Diameter (km) \\
Mercury & 4878 \\
Venus & 12104 \\
Earth & 12756 \\
\hline
\end{tabular}
\caption{Planets Diameter}
\label{tab:planetDiameter}
\end{table}

Table 1: Planets Diameter
\begin{figure}
\includegraphics[width=\columnwidth]{filename}
\caption{fig:test}
\label{This is a test.}
\end{figure}