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- Think of LATEX as an interpreter between you and TEX.



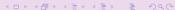
What Else is There?

XeTeX/XeLaTeX: based on a merger of TEX and modern font technologies.

- Supports Unicode character sets.
- Supports bidirectional typesetting.

LuaTeX: TFX-like engine with a lua interpreter built in.





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 - Coloured syntax
 - Buttons or menus to run LATEX and view the resulting PDF file.



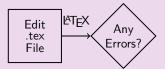
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- A TEX distribution (e.g MiKTeX or TeX Live).
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 - Coloured syntax
 - Buttons or menus to run LATEX and view the resulting PDF file.
 - Most include an integrated spell checker



Edit .tex File

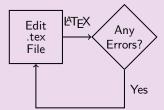






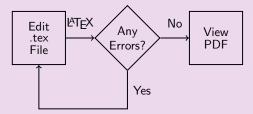




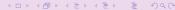


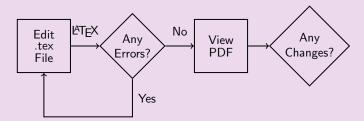






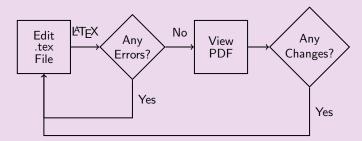






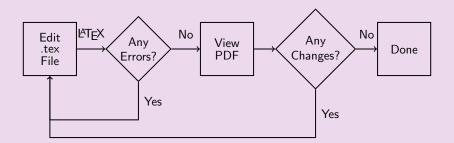
















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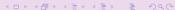
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- TEX follows many typesetting rules.
- People changing from word processors to TEX often get frustrated because TEX makes it difficult (but not impossible) to implement these bad habits.



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- TFX has special characters. These are symbols that have a special meaning and should be used with care!

 If you actually want to produce one of those symbols, you need to use a command:

```
\textbackslash \{ \} \% \textasciitilde \& \# \$
              \textasciicircum \_
```





Spaces

• TEX treats multiple spaces as a single space.



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- By default, the space between sentences is slightly larger than the space between words. This can be switched off using \frenchspacing.

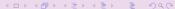




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- LATEX automatically indents paragraphs, except for the first paragraph after a section heading.





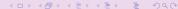
Example

\documentclass[a4paper,12pt]{article}

```
\begin{document}
% This is a comment
This is a simple
document\footnote{with a footnote}.
```

This is a new paragraph. \end{document}





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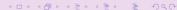


```
Example
\documentclass[a4paper,12pt]{article}
                                          The class name.
 Preamble
                             Class options
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          a simple
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                                             The document.
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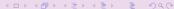
• The *document class* sets up the general layout of the document. For example:





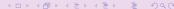
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 - the format of the headings;





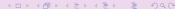
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- The class is specified using

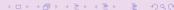
\documentclass[options]{class-name}





 There are many classes available for different types of documents.





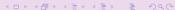
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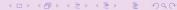
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The basic classes aren't very flexible.



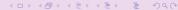
- The KOMA-Script classes:
 - scrartcl replaces article
 - scrreprt replaces report
 - scrbook replaces book
 - scrlttr2 replaces letter





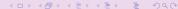
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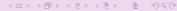
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- Presentations (replacing slides):
 - beamer (used to create this document)
 - prosper
 - foils





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- Or try the web address http://www.ctan.org/pkg/name where name is the name of the class. For example: http://www.ctan.org/pkg/beamer



Example

```
\documentclass{scrreprt}
\usepackage{lipsum}% Provides \lipsum for dummy text
\title{A Sample Document}
\author{Ann Author}
\begin{document}
\maketitle
\tableofcontents
```

\chapter{Introduction}

This is a sample document with some dummy text\footnote{and a footnote}. \lipsum \end{document}





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• Use \maketitle to display the title page.





Sectioning Commands

• Article-like classes provide the commands:

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\part[short title]{title}
\section[short title]{title}
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- If the short title is present, it's used for the table of contents or the page header.
- Book and report-like classes also provide the command:

```
\chapter[short title]{title}
```





Including External Images

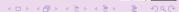
Need to use the graphicx package: \usepackage{graphicx}

To create a figure:

```
\begin{figure}[htbp]
\centering
\includegraphics{myimage}
\caption{A Sample Figure}
\end{figure}
```

- Image formats: pdf, png, jpg.
- File extension may be omitted.

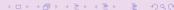




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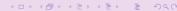
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- Use the bibtex application to select only those references you've cited in the document.



• Create a new file (with .bib extension).





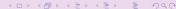
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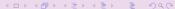
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- Each entry has a unique label. Choose a naming system you find easy to remember.





```
Example
@book{lamport94,
   author
            = "Leslie Lamport",
             = "{\LaTeX} : a document preparation
   title
                system",
   edition = "2nd",
  publisher = "Addison-Wesley",
   year
             = 1994
```

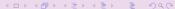




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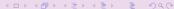
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                           Plain numbers don't need quotes
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```
Example
@inproceedings{smith05,
  author
            = "Smith, Jr, John and Jane Lucy Doe
               and Jo de Vere",
            = "An example article",
  title
  booktitle = "Proceedings of the Imaginary Society",
            = JAN.
  month
  year
            = 2005
```





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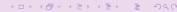
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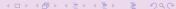




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 - newapa
 - biblatex new, very flexible.
- We will be using the natbib package with the plainnat bibliography style.
 - Can choose between numerical and author year formats.
 - Can have textual and parenthetical citations.



Citations (natbib)

• Textual citation: \citet[note]{label}



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Example

```
\label{lamport94} $\Rightarrow$ Lamport (1994) $$ \citet[p.~34]{lamport94} $\Rightarrow$ Lamport (1994, p. 34) $$
```





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\citet{lamport94} \Rightarrow Lamport (1994) \citet[p.~34]{lamport94} \Rightarrow Lamport (1994, p. 34)
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• Parenthetical citation: \citep[pre][post]{label}





• Textual citation: \citet[note]{label}

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\citet{lamport94} \Rightarrow Lamport (1994)
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```

Parenthetical citation: \citep[pre][post]{label}

Example

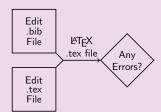
```
\citep{lamport94} \Rightarrow (Lamport, 1994)
\text{citep[p.~34]}\{\text{lamport94}\} \Rightarrow (\text{Lamport, 1994, p. 34})
\text{citep[see]}[]{\text{lamport94}} \Rightarrow (\text{see Lamport}, 1994)
```



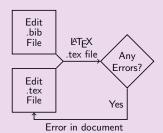
Edit .bib File

Edit .tex File



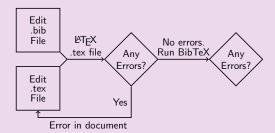




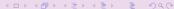


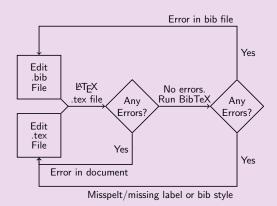






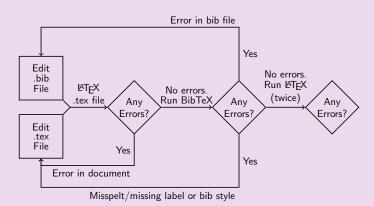




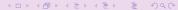


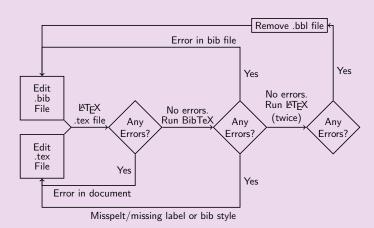




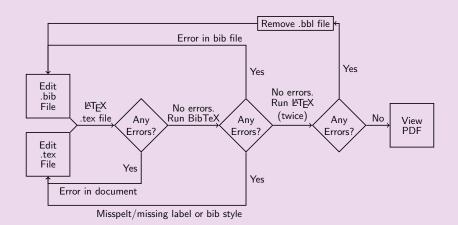




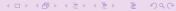












Assume the bibliography database is called myrefs.bib:

\documentclass{scrartcl}

\usepackage{natbib}
\bibliographystyle{plainnat}

\begin{document}

Main matter with citations such as \citet{lamport94}.

\bibliography{myrefs}
\end{document}



\end{document}

```
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