

L^AT_EX, A Short Course

Basic Document Formatting

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- Every \LaTeX source file must start with a `\documentclass` command. The usual document class is `article` but other standard classes are `book`, `letter`, `report`.
- The selected document class specifies the default page layout for your document.
- Immediately following the `\documentclass` command is the document *preamble*.
- The preamble is usually where one sets global document options.
- Following the preamble, the document itself is contained within the *document environment*.

```
% the document class
\documentclass[12pt]{article}

% This is the document's preamble

\begin{document} % The document environment.

% Your document's content goes here.

\end{document}
```

- Open the file `workfiles/preamble.tex` file and fill in the details asked for.
- After you have done this and viewed the typeset result, change the document class to `report` (don't change anything else) and see what happens.

- L^AT_EX has commands which you can use to automatically number sections and subsections of your document as well as name them.
- The command:

```
\section{Introduction}
```

creates a new section called “Introduction” and it is automatically numbered.

- A bonus feature is that a table of contents can automatically be created from sectioning commands (we’ll see this later!).

- The size, and typeface of the headings are determined by the document class.
- The complete list of sectioning commands are: `\chapter`, `\section`, `\subsection`, `\subsubsection`, `\paragraph`, `\subparagraph`.
- These heading commands form a hierarchy in the order given.
- The `\chapter` command is not available in the `article` class. In this case the top level of the hierarchy is `\section`.
- All sectioning commands require a title as a parameter.

- Experiment with the sectioning commands.
- Open `workfiles/sections.tex` and follow the instructions within.

- Font size commands are: `\tiny`, `\small`, `\footnotesize`, `\scriptsize`, `\normalsize`, `\large`, `\Large`, `\LARGE`, `\huge`, `\HUGE`.
- May be used anywhere in text to change **relative** font size.
- If placed in a pair of curly braces, the font size change takes effect only until the closing curly brace.
- Example: The following two lines are equivalent:

```
\texttt{\small That's a \Large huge watermelon, \normalsize Jimmy!}  
\texttt{\small That's a {\Large huge watermelon,} Jimmy!}
```

- This illustrates well \LaTeX 's scoping. Generally anything you do to settings only holds until the end of the current level of curly braces. The same holds for within environments.

- Experiment with font size commands within your current workfiles/sections.tex.
- Try mixing up font size changes and shape/weight commands.

- Custom document class files (`.cls` files) can be used to specify a different layout of your document.
- Many journals and conferences request that papers be submitted using their own custom class.
- The standard document classes, `article`, `report`, etc., are actually just built-in class files.
- Notice there is a file in your workfiles directory called `acmtrans2e.cls`.
- Change the document class of your `sections.tex` file to `acmtrans2e`. Re-run \LaTeX on it and view the result (if warnings show up, ignore them).

- Packages (.sty files) can be used to add additional custom features to \LaTeX .
- Packages are loaded in the document preamble with the `\usepackage` command.
- Example:

```
\usepackage{graphicx}
```

This package provides allows the inclusion of images in a document (we'll use this later!).

- There are a great many custom packages available that can make \LaTeX do almost anything you can think of.

- The `center` environment centers text horizontally on a line.
- \LaTeX will insert line breaks automatically if the text in the environment cannot fit on one line.
- Anything can be placed inside a `center` environment, even floating figures and tables (which we will cover later).
- Try it out!

- The `itemize` environment is handy for typesetting bulleted lists.
- Try typesetting the following (make a copy of `blank.tex` and type it into there):

```
To do list:  
\begin{itemize}  
\item Write paper for CMPT 899.  
\item Do laundry.  
\item Eat supper (if time remaining)  
\end{itemize}
```

- Itemize environments can be nested. Try putting an itemize environment within the body of an `\item`.
- Notice the default bullet is a •
- You can change the bullet to any text/symbol you want by putting it in a pair of `[]` immediately after `\item`. For example, try:

```
\begin{itemize}
\item[$\circ$] Write paper for CMPT 899.
\item[-] Do laundry.
\item[c] Eat supper (if time remaining)
\end{itemize}
```

- The `enumerate` environment works identically, except the default “bullets” are consecutive numbers.
- Try nesting `enumerate` environments and notice the effect:

```
\begin{enumerate}
\item Write paper for CMPT 899.
\item Do laundry.
\item Eat supper (if time remaining)
  \begin{enumerate}
    \item Boil water.
    \item Cook noodles.
    \item Eat noodles.
  \end{enumerate}
\end{enumerate}
```

- Footnotes can be added using the `\footnote` command. The text for the footnote is the argument to the command:

```
Forty-two is the answer to life the universe and  
everything\footnote{But nobody knows the question.}.
```

- A superscript footnote number is placed where the `\footnote` command appears. Numbering is automatic.
- The footnote text appears at the bottom of the page.
- Try adding the above code to `sections.tex`.