HKN Latex Reference Guide

Starting a Latex File

To start a basic Latex file,

1. Include \documentclass{article} at the beginning of the document

2. A title can be created by specifying the title name with \{*your_title*}. Then include \maketitle in the main body of your document.

3. Start the main body of your document with \begin{document}. Also specify the end of the document with \end{document}. This is where you will do most of your writing in Latex.

Basic Formatting

- Sections can be inserted with \section{*your_heading*} for a numbered heading and \section*{*your_heading*} for an unnumbered heading.

- Newlines can be inserted with \\

- Paragraphs can be inserted with \par

- Pagebreaks can be inserted with \newpage

- Italicize with \textit{*your_text*}

- Bold with \textbf{*your_text*}

- Underline with \underline{*your_text*}

- Center by enclosing what you wish to be centered with \begin{center} and \end{center}

Math

To insert mathematical expressions into your Latex document, enclose the expression in dollar signs.

For example: The function f of x equals x squared minus 5 is:

$$\$f(x)=x\hat{\{}2\} -5\$$$
$$f(x) = x^2 - 5$$

There are many different latex codes for mathematical expressions. Generally, one can search online for the math symbol you need.

Figures

1. To insert figures, include \usepackage{graphicx} at the beginning of your Latex document.

2. Also include \graphicspath{ {./*file_path/*} } to specify the folder that inlcudes the images you want to insert.

3. Simply use \includegraphics{*file_name*} to insert an image. The file extension is not required to be included.

See the different examples of figure position available in Latex here:
```
https://www.overleaf.com/project/new/template/19663?id=66518064&templateName=Example+
of+positioning+tables+and+figures&latexEngine=pdflatex&texImage=texlive-full%3A2020.
1&mainFile=
```

Lists

- Unordered lists can be created with \begin{itemize} and ended with \end{itemize}.

- Ordered lists can be created with \begin{enumerate} and ended with \end{enumerate}.

- Individual items in lists are created with \item *Your text here*

Tables

To include tables in your document,

1. Include \usepackage{tabularx} at the beginning of your file.

2. Begin a table with \begin{tabular}

3. Specify the format of your table with {| c | c | c |}, where 'c' indicates an additional column and | indicates a vertical line separating a column. (These vertical lines can be customized to your needs.)

4. Insert the main body of the table by entering the text you want to include in each cell and then separated each cell by &. Insert new lines to go to the next row.

5. Horizontal lines can be inserted within your table with \hline.

6. Multiple rows can be combined using \multirow{*number_of_rows*}{width_of_cell (e.g., 4em. Increase number to increase width)}{content_of_cell}. Make sure to include \usepackage{multirow}.

7. The same can be done with combining columns. Just use \multicol and \usepackage{multicol}.

For example:

```
    \begin{tabular}{ |c|c|c| }
\hline
cell1 & cell2 & cell3 \\
\hline

    \multirow{2}{4em}{multiple rows} & cell5 & cell6 \\
& cell8 & cell9 \\
\hline
\end{tabular}
```

Creates:

cell1	cell2	cell3
multiple	cell5	cell6
rows	cell8	cell9

Columns

- Include \usepackage{multicol}

- In the beginning of your file, specify the separation of columns with \setlength{\columnsep}{1cm}

- Insert columns within your document with \begin{multicols}{*number_ of_ cols*

  your_ text_ here

- End the columns with \end{multicols}.

See an example here:
https://www.overleaf.com/docs?engine=pdflatex&snip_name=multicols+package+demo&snip=
%5Cdocumentclass%7Barticle%7D%0A%5Cusepackage%7Bblindtext%7D%0A%5Cusepackage%7Bmulticol%
7D%0A%5Csetlength%7B%5Ccolumnsep%7D%7B1cm%7D%0A%5Ctitle%7BSecond+multicols+Demo%
7D%0A%5Cauthor%7BOverleaf%7D%0A%5Cdate%7BApril+2021%7D%0A%0A%5Cbegin%7Bdocument%
7D%0A%5Cmaketitle%0A%0A%5Cbegin%7Bmulticols%7D%7B2%7D%0A%5B%0A%5Csection%7BFirst+
Section%7D%0AAll+human+things+are+subject+to+decay.+And+when+fate+summons%2C+Monarchs+
must+obey.%0A%5D%0A%5Cblindtext%5Cblindtext%0A%5Cend%7Bmulticols%7D%0A%0A%5Cend%
7Bdocument%7D

Miscellaneous

- Insert hyperlinks by including \usepackage{hyperref} at the beginning of your file. Then use \url{*your_ url*} to insert a hyperlink in your document.

- Text can be colored with \usepackagexcolor. Then use \color{*your_ color*} to specify a different color. See https://www.overleaf.com/learn/latex/Using_colors_in_LaTeX for colors.