LaTeX Notes

K

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Contents

1 Page Setup

2 Comments

Comments are lines parts of code that are not compiled.
This can be done as a line or as an environment.

```
% This line would not show up on the compiled PDF.
```

Comment by Line

```
\begin{comment}
  This line would not show up on the compiled PDF.
  This would not be in the final document either.
  Nor would this one.
\end{comment}
```

Comment by environment

3 Preamble

4 Text Formatting

4.1 Font Styles

Type	Format	Result
Bold	`\textbf{Text}`	**Text**
Italics	`\textit{Text}`	*Text*
Underline	`\underline{Text}`	Text

Source

- https://latex-tutorial.com/symbols/text-formatting/

Further Study

- https://www.overleaf.com/learn/latex/Bold%2C_italics_and_underlining
- https://latex-tutorial.com/changing-font-style/

4.2 Font Color

https://www.overleaf.com/learn/latex/Using_colours_in_LaTeX

4.3 Font Sizes

Type	Format	Result
tiny	`{\tiny Text}`	Text
scriptsize	`{\scriptsize Text}`	Text
footnotesize	`{\footnotesize Text}`	Text
small	`{\small Text}`	Text
normalsize (default)	`{\normalsize Text}`	Text
large	`{\large Text}`	Text
Large	`{\Large Text}`	Text
LARGE	`{\LARGE Text}`	Text
huge	`{\huge Text}`	Text
Huge	`{\Huge Text}`	Text

Source

- https://texblog.org/2012/08/29/changing-the-font-size-in-latex/
- https://latex-tutorial.com/symbols/text-formatting/

4.4 Verbatim

- https://www.overleaf.com/learn/latex/Code_listing

5 Symbols

5.1 Degrees Symbol

The `\degree` command is provided by the `gensymb` package, so if you add:

```
\usepackage{gensymb}
```

to your preamble, that should enable the command.

Another alternative is the `\textdegree` command, which is provided by the `textcomp` package. And finally, `$^{\circ}$` is another way of obtaining roughly the right symbol.

6 Tables

Tables are Included in LaTeX there are no packages are required to be used.

6.1 Table with no Borders

```
\begin{center}
  \begin{tabular}{ c c c }
    cell1 & cell2 & cell3\\
    cell4 & cell5 & cell6\\
    cell7 & cell8 & cell9
  \end{tabular}
\end{center}
```

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

6.2 Table with Borders

```
\begin{center}
  \begin{tabular}{|c|c|c|}
    \hline
    cell1 & cell2 & cell3\\
    cell4 & cell5 & cell6\\
    cell7 & cell8 & cell9\\
    \hline
  \end{tabular}
\end{center}
```

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

6.3 Table with Double Borders

```
\begin{center}
  \begin{tabular}{||c c c||}
    \hline
    cell1 & cell2 & cell3\\ [0.5
    ex]
    \hline \hline
    cell4 & cell5 & cell6\\
    \hline
    cell7 & cell8 & cell9\\
    \hline
    cell10 & cell11 & cell12\\
    [1ex]
    \hline
  \end{tabular}
\end{center}
```

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9
cell10	cell11	cell12

Source

- https://www.overleaf.com/learn/latex/Tables

7 Columns

Include the following in the preamble:

```
\usepackage{multicol}         %Package for columns
\setlength{\columnsep}{1cm}   %Initialize spacing between columns
```

Preamble

7.1 Column Separation

```
\begin{multicols}{2}
  [
  \noindent \textbf{First Section}\\
  All things are subject to decay. And when fate summons, Monarchs
    must obey.
  ]
  \blindtext
\end{multicols}
Thanks to the genius of the authors of life itself this occurs and
    will continue until the cycle ends.
```

First Section
All things are subject to decay. And when fate summons, Monarchs must obey.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Thanks to the genius of the authors of life itself this occurs and will continue until the cycle ends.

Source

- https://www.overleaf.com/learn/latex/Multiple_columns

8 Tikz

8.1 circuitikz

Source

- https://www.overleaf.com/learn/latex/LaTeX_Graphics_using_TikZ%3A_A_Tutorial_for_Beginners_(Part_4)%E2%80%94Circuit_Diagrams_Using_Circuitikz

9 Including Files

9.1 Image Files

9.2 Coding Files

```
bool Graph::isCycle() {   //similar to DFS
for(int i = 0; i < size; i++) {
  parents[i] = i;
  colors[i] = i;
  colors[i] = 'W';
}
int t = 0;

for(int i =0; i < size; i++) {
  //nodes are either White or Black in here
  if(colors[i] == 'W'){
    //color[i] = 'G';
    bool res = isCycleVisit(i, t);
    if(res)
      return res;
  }//if
}//for
return false;
}
```

Function: Graph::isCycle()

Source

- https://www.youtube.com/watch?v=ByduYnAu2jM
- https://www.youtube.com/watch?v=-trhlQToLiU
- https://www.overleaf.com/learn/latex/Code_listing

10 Matricies

Type	LaTeXMarkup	Renders As

Plain	`\begin{matrix}`
	`  1 & 2 & 3\\`
	`  a & b & c`
	`\end{matrix}`
		$\begin{matrix} 1 & 2 & 3 \\ a & b & c \end{matrix}$

Parentheses; round brackets	`\begin{pmatrix}`
	`  1 & 2 & 3\\`
	`  a & b & c`
	`\end{pmatrix}`
		$\begin{pmatrix} 1 & 2 & 3 \\ a & b & c \end{pmatrix}$

Brackets; square brackets	`\begin{bmatrix}`
	`  1 & 2 & 3\\`
	`  a & b & c`
	`\end{bmatrix}`
		$\begin{bmatrix} 1 & 2 & 3 \\ a & b & c \end{bmatrix}$

Braces; curly brackets	`\begin{Bmatrix}`
	`  1 & 2 & 3\\`
	`  a & b & c`
	`\end{Bmatrix}`
		$\begin{Bmatrix} 1 & 2 & 3 \\ a & b & c \end{Bmatrix}$

Pipes	`\begin{vmatrix}`
	`  1 & 2 & 3\\`
	`  a & b & c`
	`\end{vmatrix}`
		$\begin{vmatrix} 1 & 2 & 3 \\ a & b & c \end{vmatrix}$

Double Pipes	`\begin{Vmatrix}`
	`  1 & 2 & 3\\`
	`  a & b & c`
	`\end{Vmatrix}`
		$\begin{Vmatrix} 1 & 2 & 3 \\ a & b & c \end{Vmatrix}$

Source: https://www.overleaf.com/learn/latex/Matrices

11 Cases

Source: https://www.overleaf.com/learn/latex/Questions%2FHow_to_handle_mathematical_expressions_involving_case_statements