

Math Notes

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1 Comments

2 Text Formatting

2.1 Font Styles

Type	Format	Result
Bold	<code>\textbf{Text}</code>	Text
Italics	<code>\textit{Text}</code>	<i>Text</i>
Underline	<code>\underline{Text}</code>	<u>Text</u>

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/>

2.2 Font Sizes

Type	Format	Result
tiny	<code>{\tiny Text}</code>	<small>Text</small>
scriptsize	<code>{\scriptsize Text}</code>	<small>Text</small>
footnotesize	<code>{\footnotesize Text}</code>	<small>Text</small>
small	<code>{\small Text}</code>	<small>Text</small>
normalsize (default)	<code>{\normalsize Text}</code>	<small>Text</small>
large	<code>{\large Text}</code>	<big>Text</big>
Large	<code>{\Large Text}</code>	Text
LARGE	<code>{\LARGE Text}</code>	Text
huge	<code>{\huge Text}</code>	Text
Huge	<code>{\Huge Text}</code>	Text

Source

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

2.3 Verbatim

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

3 Symbols

3.1 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.

4 Tables

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

4.1 Table with no Borders

```
1 \begin{center}
2   \begin{tabular}{c c c}
3     cell1 & cell2 & cell3 \\
4     cell4 & cell5 & cell6 \\
5     cell7 & cell8 & cell9 \\
6   \end{tabular}
7 \end{center}
```

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

4.2 Table with Borders

```
1 \begin{center}
2   \begin{tabular}{|c|c|c|}
3     \hline
4     cell1 & cell2 & cell3 \\
5     cell4 & cell5 & cell6 \\
6     cell7 & cell8 & cell9 \\
7     \hline
8   \end{tabular}
9 \end{center}
```

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

4.3 Table with Double Borders

```
1 \begin{center}
2   \begin{tabular}{||c c c||}
3     \hline
4     cell1 & cell2 & cell3 \\
5     \hline \hline
6   \end{tabular}
7 \end{center}
```

cell4 & cell5 & cell6
cell7 & cell8 & cell9
cell10 & cell11 & cell12

```

11 \hline
12 \end{tabular}
13 \end{center}

```

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

Source

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

5 Columns

Include the following in the preamble:

```

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

```

Preamble

5.1 Column Separation

```

1 \begin{multicols}{2}
2 [
3 \noindent \textbf{First Section}\\
4 All things are subject to decay. And when fate summons, Monarchs
   must obey.
5 ]
6 \blindtext
7 \end{multicols}
8 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, consectetur 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, consectetur 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

6 Tikz

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

7 Including Files

```

1  bool Graph::isCycle() {    //similar to DFS
2  for(int i = 0; i < size; i++) {
3      parents[i] = i;
4      colors[i] = i;
5      colors[i] = 'W';
6  }
7  int t = 0;
8
9  for(int i =0; i < size; i++) {
10     //nodes are either White or Black in here
11     if(colors[i] == 'W'){
12         //color[i] = 'G';
13         bool res = isCycleVisit(i, t);
14         if(res)
15             return res;
16     }//if
17 }//for
18 return false;
19 }
```

Function: Graph::isCycle()

Source

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