CS 251 OutLab4: Latex Basic + Advanced

In this lab, you've to make a report in latex. You can showcase your learning from previous labs in this report. You can consider any one or more labs for getting content for this report.

It is a must to make use of the following things in your document:

1. **Frontpage**(5 points): front page should look like this- https://postimg.cc/5j53BDMh

2. **Table of contents**(5 points): This should be an auto-generated table of contents (containing sections and subsections) with page numbers.

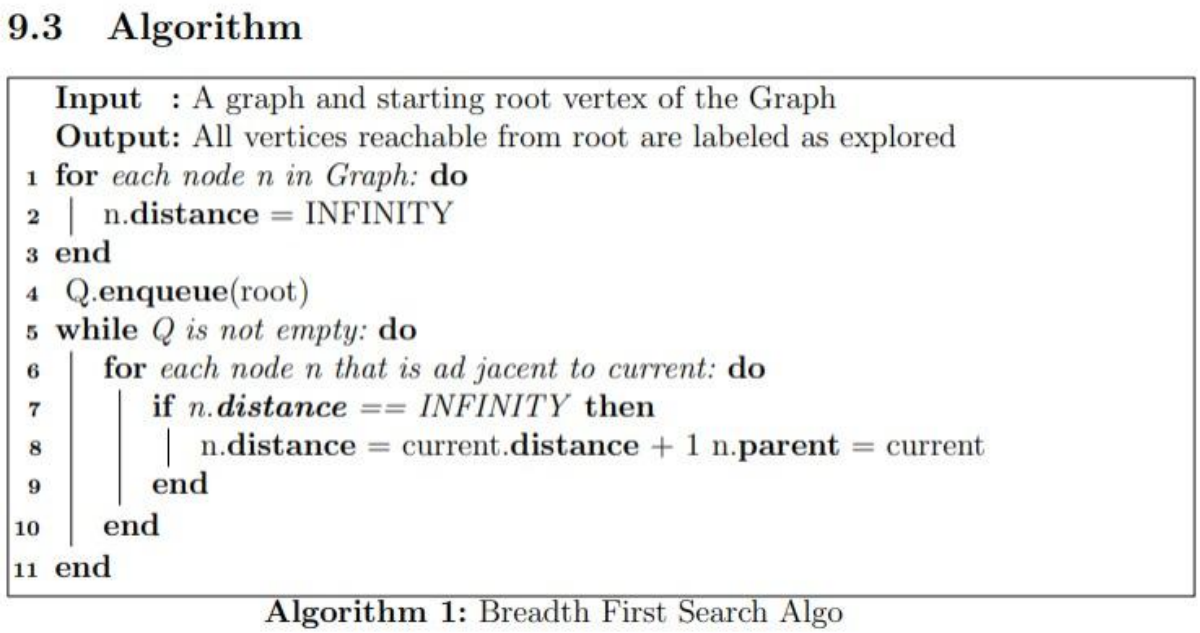
3. **Sections and subsections**(5+5 points): Both sections and subsections should be present in your report. You can have sections such as abstract, introduction, background, work done, algorithm, etc., and choose subsections accordingly.

4. Use of **itemization**(2.5*4 points): Both Ordered & unordered lists should be used and have at least **2** levels of nesting.

5. Add screenshots or **images with captions**(5+5 points).

6. Use a **table with a caption** (5+5 points)

7. **Algorithm and code**(10+10 points): You can use any algorithm and code of your choice (on which you've worked). Also for code and algo you can choose the formatting of your choice (listed/non-listed). Also, **add a caption** with the algorithm and code.
   Example: algorithm-



9.3 Algorithm

```
   Input  : A graph and starting root vertex of the Graph
   Output: All vertices reachable from root are labeled as explored
 1 for each node n in Graph: do
 2 |  n.distance = INFINITY
 3 end
 4  Q.enqueue(root)
 5 while Q is not empty: do
 6 |  for each node n that is ad jacent to current: do
 7 |  |  if n.distance == INFINITY then
 8 |  |  |  n.distance = current.distance + 1 n.parent = current
 9 |  |  end
10 |  end
11 end
```

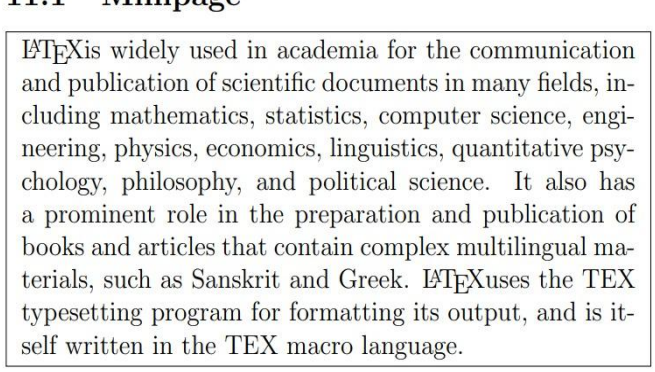
Algorithm 1: Breadth First Search Algo

And listed code will look like this-

Listing 1: Hello World! in c++

```
1 #include <iostream>
2
3 int main() {
4     std::cout << "Hello World!" << std::endl;
5     std::cin.get();
6     return 0;
7 }
```

8. **Minipage**(10 points): Add a minipage somewhere in your report. The mini page looks like this-



9. **Bibliography** or references with proper citation(5+5 points): At the end of the document use bibliography and insert citation(s) in the text using unique reference key.

Notes:

- The report should be of **at least 5 pages**(10 points), including the front page and table of contents.
- You can use the article or report document class, and font size: 10-12pt.
- You can use the Overleaf tool. (an online latex editor)
- You can use online resources but don't forget to mention it in the readme and bibliography.
- Use bold, italic & underlined words wherever needed, Also use new lines/paragraphs, proper spacing, etc.. You've to be creative with your work.

Submission Guidelines:

- Submit a **<roll_no>_outlab4.tar.gz** with following structure.

- Inside <roll_no>_outlab4 you've to put report.pdf (pdf form of your latex report) and readme.txt (or readme.md) file. And along with it include a folder that contains all the latex work including .tex, .bib, images.
- README contains name, roll no., and references. If you are using overleaf, please include the shareable (without edit access) link of your overleaf project in the readme. The last edit time should be before the deadline.

<roll_no>_outlab4
|__report.pdf
|__<folder>
| |__ <.tex>
| |__<.bib>
| |__<images>
|__README