Home Assignment 3: Stack & Queue (and a little bit of graph)

1. Write a code for implementing queue using ***linked-list***

2. We are given a string expression of size *N* which contains just opening and closing brackets of the types, '(', ')', '{', '}', '[' and ']'. The task is to check if the given expression contains balanced parentheses.

   Parentheses are balanced if,

   - For *every opening bracket, there is a closing bracket of the same type*.
   - *All brackets are closed in the correct order*

   Let's understand with some examples.

   Input:

   "( ) { }"

   Output
   Balanced

   Input:
   "( ) { [ ] }"

   Output:
   Balanced

   Input:
   "( ) {]"

   Output:
   Not Balanced

3. A priority queue is a special type of queue in which each element is associated with a priority value. And, elements are served on the basis of their priority. That is, higher priority elements are served first.
   However, if elements with the same priority occur, they are served according to their order in the queue.

   Watch a video tutorial here: https://youtu.be/wptevk0bshY
   Implement this using a queue.

4. Create a program to find the ***adjacency list*** of a graph.

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5. Learn C++ basics and STLs. Some great sites are:
    a. https://www.programiz.com/cpp-programming
    b. [C++ STL]: https://www.studytonight.com/cpp/stl/
    c. [C++ STL coding video tutorial]: https://www.simplilearn.com/tutorials/cpp-tutorial/cpp-standard-template-library?source=sl_frs_nav_playlist_video_clicked