**EX 4 (21-8-2023)**

1. Write a python program using classes to implement a stack with the following menu options,
   1. Push
   2. Pop
   3. Peek (Note: Displays the top value but does not remove it)
   4. Print (Note: Displays all the elements of a stack but does not remove the elements)
   5. Exit
2. Write a python program using classes to implement a queue with the following menu options,
   1. Enqueue
   2. dequeue
   3. Peek (Note: Displays the front value but does not remove it)
   4. Print (Note: Displays all the elements of a queue but does not remove the elements)
   5. Exit
3. Given a string containing just the characters '(' and ')', find the length of the longest valid parentheses substring. Identify whether to use stack or queue class, import the necessary module, and utilize the corresponding functions to solve the problem

**Example:**

1. **Input:** (())()()))

**Output:** (())()()

1. **Input:**

**Output:** 0

1. **Input:** ((((((

**Output:** 0

1. **Input:** ))(()(()))))

**Output:** (()(()))

4.Write a program in python to perform the following.Reverse the words of the string with each word reversed.

I/P. 'Apples are red in color'

O/P. 'roloc ni der era selppA'

5.Write a program in python that gets an input paragraph (minimum 3 sentences)

a.Display the length of the string and ask the user to provide a new paragraph if the length is less than 50.

b. Display the total number of words and sentences in the paragraph

c Make the first character of each sentence uppercase.

c. Replace vowels with their next character. a is replaced by b, e by f etc.

d. Replace all S or s with $