You may be asked to demonstrate/explain your work to the tutor, if you are absent/unavailable or fail to demonstrate properly, zero marks will be awarded.

Text book: Deitel, H M & Deitel, P J 2013, C: How to program, 7th edn, Pearson Prentice-Hall, Upper Saddle River, New Jersey.

Lab 4

1. Explain the below
   a. Data structures
   b. Differences between linear data structures and non-linear data structures
   c. Stacks with diagrammatic representation for push and pop (include a separate diagram for each operation of the stack)
   d. Differences between Linked lists and Stacks
   e. Give two applications of stacks

2. *(Reversing the Words of a Sentence)* Write a program that inputs a line of text and uses a stack to print the line reversed.

3. *(Palindrome Tester)* Write a program that uses a stack to determine whether a string is a palindrome (i.e., the string is spelled identically backward and forward). The program should ignore spaces and punctuation.