LAB 3 – 07.09.2022 – STACK

Evaluation
Observation - 5 marks
Execution - 15 marks
Spot - 5 marks

OBSERVATION (5 MARKS)

1.   What is Stack ADT? Write the basic operations performed on the stack.

2.   Implement stack operations push,pop,display using linked list .Briefly give the answers for the following questions
      (i) If the elements "A", "B", "C" and "D" are placed in a stack and are deleted one at a time, what is the order of removal?
      (ii) What is the top of stack?

EXECUTION (15 MARKS)

1.   Construct a Stack of integers of size 25 using array and perform the following operations:
a.   Insert odd numbers into the stack till there is space.
b.   Print the numbers from the stack
c.   Modify the program to issue warning and exit if any attempt to pop an empty stack or push onto a full one.
d.   Print the top most element

2.   Write a program to reverse a stack of strings using recursion and check whether that string is a palindrome or not. You are not allowed to use loop constructs like while, for..etc, and you can only use the following ADT functions like isEmpty(S), push(S) , pop(S).

3.   Construct a stack of numbered dinner plates organized one after another in the following series (4,2,7,4,3,1,8,9) and perform the given operations

a.   Insert a new plate
b.   Remove a plate
c.   Identify which plate can be taken out first
d.   Identify which plate can be taken out last