Department of Computer Science and Engineering,
Anna University, Chennai- 600025
CS6104 – Data Structures and Algorithms (R 2018)
Practical
August – December 2023
Year/Sem/Batch : II/III/ P

Exercise: 05	Stack and Queue	05 – Oct - 2023

Observation (5 Marks)

1. Implement a queue using two stacks

Execution (15 Marks)

2. Write a menu driven program to implement singly linked list with the following options

    a. insert

    b. delete

    c. display

    d. exit

    Briefly give the answers for the following questions

    (i) How many modifications are required to delete a node at the beginning?

    (ii) How many modifications are required to insert a node in the middle of the linked list?

3. 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?

4. Imagine a toll gate with only one counter, The following cars are waiting:

    TN601234, TN010978, TN453452, TN606116. Find a suitable data structure for the above scenario and simulate the same.

    a. What is the position of car TN010978?

    b. What is the position of newly arrived car TN596754?

    c. Identify the car which gets served first?

    d. Identify the car which gets served first?

    e. What will be the next car that get served after TN453452?

5. Write a program that extracts students from two different sections and arrange them in separate circles of boys and girls. The scenario is better explained in the diagram