



Exercise: 07

Stack using Linked List

20 – Sep – 2024

Observation (5 Marks)

1. What is linked list?
2. Name the types of linked lists.
3. What is the difference between a singly linked list and a doubly linked list?
4. Define the following terms
 - a. node
 - b. head
 - c. Tail
 - d. Sentinel node
5. Differentiate the following
 - a. singly linked list and a doubly linked list
 - b. linked list and an array
 - c. insertion in a singly linked list and a doubly linked list
 - d. circular linked list and a normal linked list.
6. How can you detect a cycle in a linked list?
7. What is the advantage of a linked list over an array?
8. What is the drawback of using a linked list?
9. What are the applications of linked lists?
10. How do you represent a linked list in memory?

Execution (15 Marks)

1. 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?

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?