Experiment No.7

Aim: Implement Doubly Linked List ADT.

Theory:

A Doubly Linked List (DLL) contains an extra pointer, typically called *previous pointer*, together with next pointer and data which are there in singly linked list.

Insertion

A node can be added in four ways

1) At the front of the DLL

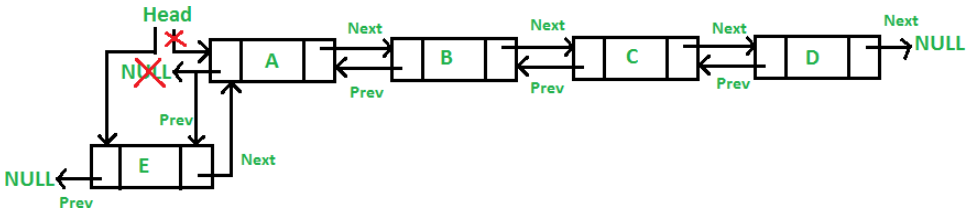
2) After a given node.

3) At the end of the DLL

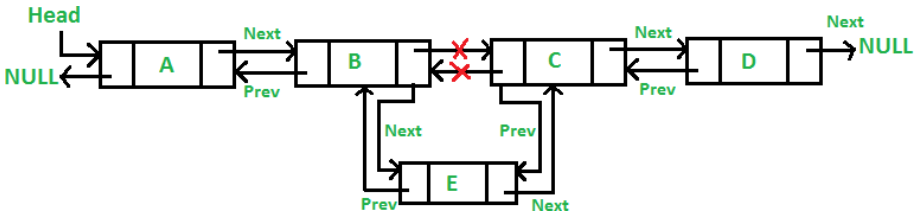
4) Before a given node.

1) Add a node at the front: (A 5 steps process)

The new node is always added before the head of the given Linked List. And newly added node becomes the new head of DLL.

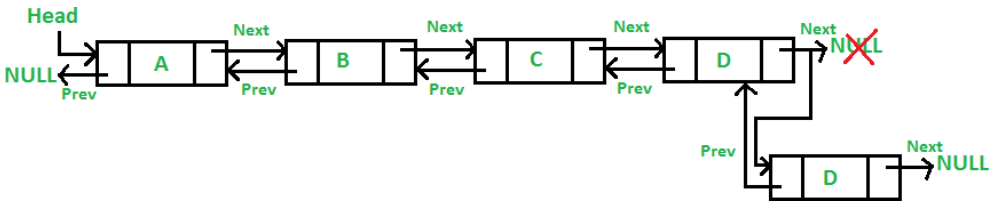


2) Insert node at a given position.We are given a pointer to a node as prev_node, and the new node is inserted after the given node.



3) Add a node at the end:

The new node is always added after the last node of the given Linked List.



Delete a node in DLL.

Deleting a node is similar to singly linked list,only make prev and next pointers NULL as per deletion.

Conclusion: (Students write conclusion in your own words. U have to describe what u you understood from the experiment and the concept of the experiment. **Conclusion carry 4 marks out of 10**)