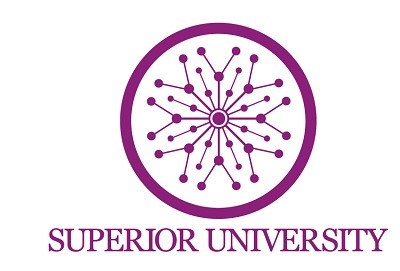
**Lab Tasks**



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SU92-BSSEM-S24-091

Subject:

DSA (Lab)

Class:

BS – Software Engineering

# **Lab # 07**

**- Doubly Linked List (Insert and Display Nodes)**

This lab shows the functions to insert node at first, last, Nth location, and Centre of a **doubly linked list** and also display the nodes in order and reverse order.

* The insert\_at\_start (int val) function inserts a new node at the beginning by making it the new head and updating the previous pointer of the old head.
* The insert\_at\_last (int val) function traverses the list to the last node and appends a new node, ensuring the previous pointer of the new node is properly set.
* The insert\_at\_pos (int pos, int d) function inserts a new node at a given position by iterating to the desired location, updating the surrounding nodes' next and previous pointers accordingly.
* The insert\_at\_mid (int d) function finds the middle of the list and inserts a new node after it. If the list is empty, it inserts the node at the start.
* The display () function prints the list from head to tail.
* The printReverse (Node \*head) recursively prints the list in reverse order.

The implementation ensures proper pointer handling for a doubly linked list, maintaining both forward and backward links between nodes.

