**Lab Task 09**



**Superior University Gold Campus**

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| **Roll No** | **SU92-BSSEM-S24-029 (Section – 3A)** |
| **Subject** | **Data Structures and Algorithms (Lab)** |
| **Class** | **BS – Software Engineering** |

# **Lab 09: Circular LinkedLists**

**1-Implement functions to insert node at first, last, Nth location, and centre of a circular linked list. And display in order and display in reverse order.**

This program has following function in Circular Linked List:

* **Insert\_at\_start**
* **Insert\_at\_last**
* **Insert\_at\_pos**
* **Insert\_at\_center**
* **Display**
* **Display\_reverse**

This program creates and manages a circular linked list, where the last node connects back to the first node, forming a loop. It includes functions to add nodes at the beginning, end, a specific position, or the middle of the list. The code also has functions to display the list in its original order and in reverse order.

The display\_reverse function works by temporarily reversing the list. It changes the direction of the links between nodes, prints the reversed list, and then reverses it again to bring it back to its original order. This ensures the circular structure is not broken. The code uses helper pointers (prev, curr, nextNode) to move through the list and adjust the links between nodes.

In simple terms, the code allows you to add nodes to a circular list in different ways, display the list as it is, and also display it in reverse order without permanently changing the list. It handles edge cases, like an empty list or invalid positions, to ensure the program works correctly in all situations.

**Outputs:**

