East West University
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Lab Manual : **05**
Course Code : **CSE/ICE207**
Course Title : **Data Structures**
Instructor : **Md. Manowarul Islam, Adjunct Faculty, Department of CSE**

Objective:

The objective of this lab is to provide a fundamental idea about the Singly LinkedList using C programming. At the end of the lab, students are able:

- ✓ Understand the concept of a singly linked list and its basic operations.
- ✓ Implement functions to create, insert, delete, and display elements in a singly linked list.
- ✓ Learn how to traverse through a singly linked list and perform various operations such as searching for an element.

Lab Tasks

1. Write a program in to insert a new node at the beginning of a linked list and display the Linked list

Sample Input	Sample Output
Input element: 10 Input element: 20 Input element: 30	10 20 10 30 20 10

2. Write a program in C to find a specific element of a singly linked list. (Create a linked list first. Insert at the end of the linked list for creating)

Sample Input	Sample Output
Linked List elements: 10 20 30 40 50 Search key: 40 Linked List elements: 10 20 30 40 50 Search key: 70	Element is found Not Found

3. Write a program in C to delete from the beginning of a Linked List. (Create the Linked list first)

Sample Input	Sample Output
Linked List elements: 10 20 30 40 50	 20 30 40 50

4. Write a program in C to delete the first occurrence of a specific element from a linked list. (Create the Linked list first)

Sample Input	Sample Output
Linked List elements: 10 20 30 20 50 60 Key: 20	10 30 20 50 60

5. Write a program in C to reverse a linked list. (Create the Linked list first)

Sample Input	Sample Output
Linked List elements: 10 20 30 40 50	 50 40 30 20 10