

University of Gujrat

**Assignment: 02**

**Name:**

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**Roll no:**

**22011556-113**

**Subject:**

**Data Structure & Algorithms**

**Section:**

**BS-IT[22-B]**

**Course code:**

**IT-209**

**Submitted to:**

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**GitHub link:**

<https://github.com/ZubairNawab08codes/Linked-List-Operations-22011556-113>

**# Linked List Operations (User Manual):**

This project demonstrates basic operations on a singly linked list. It includes the following operations:

**1. Insert at Head**

- Adds a new node at the beginning of the linked list.

**2. Insert at Tail**

- Appends a new node at the end of the linked list.

**3. Insert at Specific Position:**

- Inserts a new node at a specified position in the linked list.

**4. Update Element at Specific Position:**

- Modifies the value of a node at a specified position.

**5. Delete Element at Specific Position:**

- Removes a node from the linked list at a specified position.

**6. Search Element:**

- Checks if a specified value exists in the linked list.

**7. Traverse List:**

- Displays the elements of the linked list.

**## Usage:**

**1. Insert at Head:**

- Choose option 1 and enter the value to insert at the head.

**2. Insert at Tail:**

- Choose option 2 and enter the value to insert at the tail.

**3. Insert at Specific Position:**

- Choose option 3, enter the value, and specify the location (index) to insert.

**4. Update Element at Specific Position:**

- Choose option 4, enter the new value, and specify the location (index) to update.

**5. Delete Element at Specific Position:**

- Choose option 5 and specify the location (index) to delete.

**6. Search Element:**

- Choose option 6, enter the value to search.

**7. Traverse List:**

- Choose option 7 to display the current state of the linked list.

**## How to Run:**

Compile and run the C++ program. Follow the on-screen instructions to perform various linked list operations.

**## Contributing:**

Feel free to contribute to this project by opening issues or pull requests.