



SUPERIOR UNIVERSITY

NAME :ZOHAIK KHAN

ROLL_ NO : 022

SUBJECT: DSA LAB

LAB NO 3

- 1. Task: Implement a singly linked list with functions to insert a node at the start and at the end. Display the list after each insertion.).**

```

#include <iostream>
using namespace std;
struct Node {
    int data;
    Node* next;
};
class LinkedList {
private:
    Node* head;
public:
    LinkedList() : head(NULL) {}
    void insertAtStart(int value);
    void insertAtEnd(int value);
    void display();
};
void LinkedList::insertAtStart(int value) {
    Node* newNode = new Node{value, head};
    head = newNode;
}
void LinkedList::insertAtEnd(int value) {
    Node* newNode = new Node{value, NULL};
    if (!head) head = newNode;
    else {
        Node* temp = head;
        while (temp->next) temp = temp->next;
        temp->next = newNode;
    }
}

```

```

void LinkedList::display() {
    Node* temp = head;
    while (temp) {
        cout << temp->data << " -> ";
        temp = temp->next;
    }
    cout << "NULL" << endl;
}

```

```

int main() {
    LinkedList list;
    list.insertAtStart(10); list.display();
    list.insertAtEnd(20); list.display();
    list.insertAtStart(5); list.display();
    return 0;
}

```

```
10 -> NULL
10 -> 20 -> NULL
5 -> 10 -> 20 -> NULL
```

```
-----
Process exited after 0.5107 seconds with return value 0
Press any key to continue . . .
```