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# BSSE-3A

**Resource Person:**

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**(Lab Task 3)**

## Q1: Singly Linked List (Insert at End, Insert at Start)

**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.

**Answer:**

```
#include <iostream>
   using namespace std;

   struct Node {
       int data;
       Node* next;
   };

   Node* head = NULL;

   void insertAtStart(int data) {
       Node* newNode = new Node();
       newNode->data = data;
```

```
    newNode->next = head;
    head = newNode;
    cout << "Node inserted at start: " << data << endl;
}

void insertAtEnd(int data) {
    Node* newNode = new Node();
    newNode->data = data;
    newNode->next = NULL;

    if (head == NULL) {
        head = newNode;
        cout << "Node inserted at end: " << data << endl;
        return;
    }

    Node* temp = head;
    while (temp->next != NULL) {
        temp = temp->next;
    }
    temp->next = newNode;
    cout << "Node inserted at end: " << data << endl;
}
```

```
void displayList() {
    Node* temp = head;
    cout << "List: ";
    while (temp != NULL) {
        cout << temp->data << " -> ";
        temp = temp->next;
    }
    cout << "NULL" << endl;
}

int main() {
    insertAtStart(5);
    displayList();

    insertAtStart(3);
    displayList();

    insertAtEnd(7);
    displayList();

    insertAtEnd(10);
    displayList();
```

```
    return 0;
}
```

## Output: