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COURSE NAME: DATA STRUCTURES FOR MODERN COMPUTING SYSTEMS

COURSE CODE: CSA0302

Experiment 11: Linked List

Code:

```
#include <stdio.h>

#include <stdlib.h>

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

struct node* head = NULL;

void insertAtBegin(int data) {
    struct node* lk = (struct node*) malloc(sizeof(struct node));
    lk->data = data;
    lk->next = head;
    head = lk;
}

void insertAtEnd(int data) {
    struct node* lk = (struct node*) malloc(sizeof(struct node));
    lk->data = data;
    lk->next = NULL;

    if (head == NULL) {
        head = lk;
    } else {
        struct node* linkedlist = head;
        while (linkedlist->next != NULL) {
            linkedlist = linkedlist->next;
        }
    }
}
```

```

        linkedlist->next = lk;
    }
}

void insertAfterNode(struct node* lk, int data) {
    if (lk == NULL) {
        printf("Given node cannot be NULL\n");
        return;
    }
    struct node* newnode = (struct node*) malloc(sizeof(struct node));
    newnode->data = data;
    newnode->next = lk->next;
    lk->next = newnode;
}

void printList() {
    struct node* temp = head;
    while (temp != NULL) {
        printf("%d -> ", temp->data);
        temp = temp->next;
    }
    printf("NULL\n");
}

int main() {
    insertAtBegin(10);
    insertAtEnd(20);
    insertAtEnd(30);
    insertAfterNode(head->next, 25); // Insert after second node
    printList();
    return 0;
}

```

Output:

```
10 -> 20 -> 25 -> 30 -> NULL
```

```
=== Code Execution Successful ===
```