```c
#include<stdio.h>
#include<stdlib.h>

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

struct Node* insertAtEnd(struct Node* head, int newData)
{
    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
    newNode->data = newData;
    newNode->next = NULL;
    if (head == NULL)
    {
        return newNode;
    }
    struct Node* temp = head;
    while (temp->next != NULL)
    {
        temp = temp->next;
    }
    temp->next = newNode;
    return head;
}

struct Node* deleteFirst(struct Node* head)
{
    if (head == NULL)
    {
        printf("List is Empty! Deletion not Possible");
        return NULL;
    }
    struct Node* newHead = head->next;
    free(head);
    return newHead;
}

struct Node* deleteElement(struct Node* head, int target)
{
    if (head == NULL)
    {
```

```
        printf("List is Empty, hence cannot Delete \n");
        return NULL;
    }
    if (head->data == target)
    {
        struct Node* newHead = head->next;
        free(head);
        return newHead;
    }

    struct Node* temp = head;
    while (temp->next != NULL && temp->next->data != target)
    {
        temp = temp->next;
    }
    if (temp->next == NULL)
    {
        printf("Element %d not found in the list \n", target);
        return head;
    }
    struct Node* nodeToDelete = temp->next;
    temp->next = temp->next->next;
    free(nodeToDelete);
    return head;
}

struct Node* deleteLast(struct Node* head)
{
    if (head == NULL)
    {
        printf("List is Empty, hence cannot Delete \n");
        return NULL;
    }

    if (head->next == NULL)
    {
        free(head);
        return NULL;
    }

    struct Node* temp = head;
    while (temp->next->next != NULL)
    {
```

```
        temp = temp->next;
    }
    free(temp->next);
    temp->next = NULL;
    return head;
}

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

int main()
{
    struct Node* head = NULL;
    head = insertAtEnd(head, 1);
    head = insertAtEnd(head, 2);
    head = insertAtEnd(head, 3);

    printf("Linked List:");
    displayList(head);

    head = deleteFirst(head);
    printf("After deleting the first element:");
    displayList(head);

    head = deleteElement(head, 2);
    printf("After deleting the second element:");
    displayList(head);

    head = deleteLast(head);
    printf("After deleting the last Element:");
    displayList(head);

    return 0;
}
```

```
PROBLEMS  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\kadab\OneDrive\Desktop\DS> gcc six.c
PS C:\Users\kadab\OneDrive\Desktop\DS> .\a.exe
Linked List: 1 -> 2 -> 3 ->NULL
After deleting the first element: 2 -> 3 ->NULL
After deleting the second element: 3 ->NULL
After deleting the last Element:NULL
PS C:\Users\kadab\OneDrive\Desktop\DS>
```