18-1-24

Week - 4

WAP to delete the first element, specified element and last element and display the linked list.

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

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

struct Node* createNode (int value)
{
    struct Node* newNode = (struct Node*) malloc (sizeof (struct N
    newNode -> data = value;
    newNode -> next = NULL;
    return newNode;
};

void insertAtEnd (struct Node** head, int value)
{
    struct Node* newNode = createNode (value);
    if (*head == NULL)
        *head = newNode;
    else
    {
        struct Node* temp = *head;
        while (temp -> next != NULL){
            temp = temp -> next; }
        temp -> next = newNode;
    }
}
```

```
void deleteFirst (struct Node** head)
{
    if (*head != NULL) {
        struct Node* temp = *head;
        *head = (*head) -> next;
        free (temp);
    }
}

void deleteEle (struct Node** head, int value)
{
    struct Node* current = *head;
    struct Node* prev = NULL;
    while (current != NULL && current -> data != value)
    {
        prev = current;
        current = current -> next;
    }
    if (current == NULL)
        printf ("empty");
    if (prev == NULL)
        *head = current -> next;
    else
        prev -> next = current -> next;
    free (current);
}

void deleteLast (struct Node** head)
{
    if(*head == NULL)
        printf ("empty");
    struct Node* temp = *head;
    struct Node* prev = NULL;
```

```
    while (temp -> next != NULL)
    {
        prev = temp;
        temp = temp -> next;
    }
    if (prev == NULL)
        *head = NULL;
    else
        prev -> next = NULL;
    free (temp);
}
void display (struct Node * head)
{
    struct Node* temp = head;
    while (temp != NULL)
    {
        printf ("%d -> ", temp -> data);
        temp = temp -> next;
    }
    printf ("NULL \n");
}

void main()
{
    struct Node* head = NULL;
    insertAtEnd (&head, 1);
    insertAtEnd (&head, 2);
    insertAtEnd (&head, 3);
    insertAtEnd (&head, 4);
    printf (" initial linked list : ");
    display (head);

    deleteFirst (&head);
    printf (" After deleting the first element: ");
    display (head);
```

```
    deleteEle(&head, 2);
    printf("after deleting the specified element: ");
    display(head);

    deleteLast(&head);
    printf("after deleting the last element: ");
    display(head);
}
```

Output:

initial linked list: 1 → 2 → 3 → 4 → NULL
after deleting first element: 2 → 3 → 4 → NULL
After deleting the specified element: 3 → 4 → NULL
after deleting the last element: 3 → NULL

Sp.f
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