

8)WAP to Implement doubly link list with primitive operations

- I. Create a doubly linked list.
- II. Insert a new node to the left of the node.
- III. Delete the node based on a specific value
- IV. Display the contents of the list

```
#include <stdio.h>

# include <stdlib.h>

typedef struct Node{

    int data;

    struct Node *prev;

    struct Node *next;

}node;

void insert(node **head,int new_data)

{

    node *ptr=(node*)malloc(sizeof(node*));

    node *temp=*head;

    ptr->data=new_data;

    ptr->prev=NULL;

    if(*head==NULL)

    {

        ptr->next=NULL;

        *head=ptr;

    }

    else

    {

        ptr->next=temp;

        (*head)->prev=ptr;

        (*head) = ptr;

    }

}
```

```
void deleteAtValue(node **head,int val)
```

```
{
    node *temp=*head;
    if (head==NULL)
    {
        printf("list is empty\n");
    }
    else
    {
        while(temp->data!=val)
        {
            temp=temp->next;
        }
        temp->next->prev=temp->prev;
        temp->prev->next=temp->next;
        free(temp);
    }
}
```

```
void display(node **head)
```

```
{
    node *temp;
    temp=*head;
    if (temp==NULL)
    {
        printf("list is empty\n");
    }
    else
    {
        while(temp!=NULL)
        {
```

```

        printf("%d\t",temp->data);
        temp=temp->next;
    }
}
}
void main()
{
    node *head=NULL;
    int ch;
    int n;
    printf("SHREE VARNA M\n");
    printf("1BM22CS263");
    do
    {
        printf("\n1.insert\n2.delete\n3.display\n4.exit\nEnter your choice\n");
        scanf("%d",&ch);
        switch(ch)
        {
            case 1:printf("enter the data to insert:");
                    scanf("%d",&n);
                    insert(&head,n);
                    break;

            case 2:printf("enter the element to delete:");
                    scanf("%d",&n);
                    deleteAtValue(&head,n);
                    break;

            case 3:printf("the list is:");
                    display(&head);
                    break;

```

```
        case 4:exit(0);  
    }  
}while(ch<4);  
}
```

```
SHREE VARNA M  
1BM22CS263  
1.insert  
2.delete  
3.display  
4.exit  
Enter your choice  
1  
enter the data to insert:1  
  
1.insert  
2.delete  
3.display  
4.exit  
Enter your choice  
1  
enter the data to insert:2  
  
1.insert  
2.delete  
3.display  
4.exit  
Enter your choice  
1  
enter the data to insert:3  
  
1.insert  
2.delete  
3.display  
4.exit  
Enter your choice  
2  
enter the element to delete:2  
  
1.insert  
2.delete  
3.display  
4.exit  
Enter your choice  
3  
the list is:3 1  
1.insert  
2.delete  
3.display  
4.exit  
Enter your choice  
4
```