Doubly-Linked List (LAB-09)

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

struct node
{ int data;
 struct node *next;
 struct node *prev;
};
 struct node *head = NULL;

 void insert_beg()
 {
   struct node *new_node;
   new_node = (struct node *) malloc (sizeof(struct node));
   printf("Enter the item \n");
   scanf("%d", &new_node->data);
    new_node ->next = NULL;
    new_node ->prev = NULL;

    if (head == NULL)
     {
      head = new_node;
     }
    else
     {
      new_node -> next = head;
      head -> prev = new_node;
      head = new_node;
     }
 }
```

```
void del()
{
 struct node *temp;
 int ele;
 if (head==NULL)
 {
  printf("\nEmpty List\n");
  return;
 }
 printf("Enter the element to be deleted\n");
 scanf("%d", &ele);
 temp=head;
 while (temp->data!=ele)
 {
   temp=temp->next;
   if(temp==NULL)
   {
   printf("Element is not in the list\n");
   break;
   }
 }
 if(temp==head)
  {
   head=head->next;
  }
 else if(temp->next==NULL)
  {
   temp=temp->prev;
   temp->next=NULL;
  }
 else{
   temp->prev->next=temp->next;
   temp->next->prev=temp->prev;
 }}
```

```
void display()
{
 struct node *temp;
 temp=head;
 while(temp!=NULL)
 {
  printf("%d \t", temp->data);
  temp = temp->next;
 }
 printf("\n");
}
int main()
{ int choice;
 while(1)
 {
  printf("1. Insert at left \n");
  printf("2. Delete \n");
  printf("3. Display\n");
  printf("4. Exit \n");
  printf("Enter your choice \n");
 scanf("%d", &choice);
 switch(choice)
 {
  case1: insert_beg(); break;
  case2; del(); break;
  case3: display(); break;
  case4: exit(0);
 }
 }
}
```