

```

1 //aufgabe2.c
2 //Übung 12 Aufgabe 2 GIP
3 //Felix Fleisch Gruppe Die. 14-18 170945
4
5 #include<stdio.h>
6 #include<stdlib.h>
7
8 struct node{
9     int data;
10    struct node* next;
11    struct node* prev;
12 };
13
14 void printList(struct node* start){
15     printf("\n");
16     while(start!=NULL){
17         printf("%5d",start->data);
18         start=start->next;
19     }
20     printf("\n");
21 }
22
23 void append(int val,struct node* l){
24     l->next=malloc(sizeof(struct node));
25     l->next->prev=l;
26     l->next->data=val;
27     l->next->next=NULL;
28 }
29
30 void insertFirst(int val,struct node** list){
31     struct node* new=malloc(sizeof(struct node));
32     new->data=val;
33     new->next=*list;
34     (*list)->prev=new;
35     *list=new;
36 }
37
38 void delete(int val,struct node** list){
39     struct node* p=*list;
40     while(p!=NULL){
41         if(p->data==val){
42             if(p->prev!=NULL){
43                 p->prev->next=p->next;
44             }
45             if(p->next!=NULL){
46                 p->next->prev=p->prev;
47             }
48             if(p==*list){
49                 *list=p->next;
50             }
51         }
52         p=p->next;
53     }
54 }
55
56 int main(){
57     struct node* start=malloc(sizeof(struct node));
58     start->prev=NULL;
59     struct node* list=start;
60     start->data=-10;
61     for(int i=0;i<3;i++){
62         append(i*10,list);
63         list=list->next;
64     }
65     printList(start);
66     int i=0;
67
68     do{
69         printf("\nBitte Zahl eingeben\n");
70         int n=0;
71         scanf("%d",&n);
72         insertFirst(n,&start);
73         printList(start);

```

```
74         printf("\nWeiter? 0/1\n");
75         scanf("%d",&i);
76     }while(i==1);
77
78     do{
79         printf("\nBitte Zahl eingeben(loeschen)\n");
80         int n=0;
81         scanf("%d",&n);
82         delete(n,&start);
83         printList(start);
84         printf("\nWeiter? 0/1\n");
85         scanf("%d",&i);
86     }while(i==1);
87
88     printf("Ende:\n");
89     printList(start);
90     return(0);
91 }
```