

```
1  /*ordered_list*/
2  #include<stdio.h>
3  #include<stdlib.h>
4  struct node
5  {
6      int info;
7      struct node *link;
8  };
9  typedef struct node *NODE;
10 NODE getnode(){
11     NODE x;
12     x=(NODE)malloc(sizeof(struct node));
13     if(x==NULL){
14         printf("mem full\n");
15         exit(0);
16     }
17     return x;
18 }
19 void freenode(NODE x){
20     free(x);
21 }
22 NODE insert_front(NODE first,int item){
23     NODE temp;
24     temp=getnode();
25     temp->info=item;
26     temp->link=NULL;
27     if(first==NULL)
28         return temp;
29     temp->link=first;
30     first=temp;
31     return first;
32 }
33 NODE delete_front(NODE first){
34     NODE temp;
35     if(first==NULL){
36         printf("list is empty cannot delete\n");
37         return first;
38     }
39     temp=first;
40     temp=temp->link;
41     printf("item deleted at front-end is=%d\n",first->info);
42     free(first);
43     return temp;
```

```
39 temp=first;
40 temp=temp->link;
41 printf("item deleted at front-end is=%d\n",first->info);
42 free(first);
43 return temp;
44 }
45 NODE insert_rear(NODE first,int item){
46     NODE temp,cur;
47     temp=getnode();
48     temp->info=item;
49     temp->link=NULL;
50     if(first==NULL)
51         return temp;
52     cur=first;
53     while(cur->link!=NULL)
54         cur=cur->link;
55     cur->link=temp;
56     return first;
57 }
58 NODE delete_rear(NODE first){
59     NODE cur,prev;
60     if(first==NULL){
61         printf("list is empty cannot delete\n");
62         return first;
63     }
64     if(first->link==NULL){
65         printf("item deleted is %d\n",first->info);
66         free(first);
67         return NULL;
68     }
69     prev=NULL;
70     cur=first;
71     while(cur->link!=NULL){
72         prev=cur;
73         cur=cur->link;
74     }
75     printf("item deleted at rear-end is %d",cur->info);
76     free(cur);
77     prev->link=NULL;
78     return first;
79 }
80 NODE order_list(int item,NODE first){
81     NODE temp,prev,cur;
```

```
78     return first;
79 }
80 #NODE order_list(int item, NODE first) {
81     NODE temp, prev, cur;
82     temp = getnode();
83     temp->info = item;
84     temp->link = NULL;
85     if (first == NULL)
86         return temp;
87     if (item < first->info) {
88         temp->link = first;
89         return temp;
90     }
91     prev = NULL;
92     cur = first;
93     while (cur != NULL && item > cur->info) {
94         prev = cur;
95         cur = cur->link;
96     }
97     prev->link = temp;
98     temp->link = cur;
99     return first;
100 }
101 #NODE delete_info(int key, NODE first) {
102     NODE prev, cur;
103     if (first == NULL) {
104         printf("list is empty\n");
105         return NULL;
106     }
107     if (key == first->info) {
108         cur = first;
109         first = first->link;
110         free(cur);
111         return first;
112     }
113     prev = NULL;
114     cur = first;
115     while (cur != NULL) {
116         if (key == cur->info)
117             break;
118         prev = cur;
119         cur = cur->link;
120     }
```

```
117 break;
118 prev=cur;
119 cur=cur->link;
120 +)
121 if (cur==NULL) {
122     printf("search is unsuccessful\n");
123     return first;
124 }
125 prev->link=cur->link;
126 printf("key deleted is %d", cur->info);
127 freenode(cur);
128 return first;
129 }
130 void display(NODE first) {
131     NODE temp;
132     if (first==NULL)
133         printf("list empty cannot display items\n");
134     for (temp=first; temp!=NULL; temp=temp->link) {
135         printf("%d\n", temp->info);
136     }
137 }
138 void main() {
139     int item, choice, key;
140     NODE first=NULL;
141     for (;;) {
142         printf("\n 1:Insert_front\n 2:Delete_front\n 3:Insert_rear\n 4:Delete_rear\n 5:Order_list\n 6:Delete_info\n 7:Display_list\n 8:Exit\n");
143         printf("enter the choice\n");
144         scanf("%d", &choice);
145         switch(choice) {
146             case 1: printf("\nenter the item at front-end\n");
147                     scanf("%d", &item);
148                     first=insert_front(first, item);
149                     break;
150             case 2: first=delete_front(first);
151                     break;
152             case 3: printf("\nenter the item at rear-end\n");
153                     scanf("%d", &item);
154                     first=insert_rear(first, item);
155                     break;
156             case 4: first=delete_rear(first);
157                     break;
158             case 5: printf("\nenter the item to be inserted in ordered_list\n");
159                     scanf("%d", &item);
```

```
133 printf("list empty cannot display items\n");
134 for(temp=first;temp!=NULL;temp=temp->link){
135     printf("%d\n",temp->info);
136 }
137 }
138 void main(){
139     int item,choice,key;
140     NODE first=NULL;
141     for(;;){
142         printf("\n 1:Insert_front\n 2:Delete_front\n 3:Insert_rear\n 4:Delete_rear\n 5:Order_list\n 6:Delete_info\n 7:Display_list\n 8:Exit\n");
143         printf("enter the choice\n");
144         scanf("%d",&choice);
145         switch(choice){
146             case 1:printf("\nenter the item at front-end\n");
147                     scanf("%d",&item);
148                     first=insert_front(first,item);
149                     break;
150             case 2:first=delete_front(first);
151                     break;
152             case 3:printf("\nenter the item at rear-end\n");
153                     scanf("%d",&item);
154                     first=insert_rear(first,item);
155                     break;
156             case 4:first=delete_rear(first);
157                     break;
158             case 5:printf("\nenter the item to be inserted in ordered_list\n");
159                     scanf("%d",&item);
160                     first=order_list(item,first);
161                     break;
162             case 6:printf("\nenter the key to be deleted\n");
163                     scanf("%d",&key);
164                     first=delete_info(key,first);
165                     break;
166             case 7:printf("\n");
167                     display(first);
168                     break;
169             default:exit(0);
170             break;
171         }
172     }
173 }
174 }
```

■ "C:\web developement(html.css.js)\lab_7.exe"

```
1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit
enter the choice
```

1

enter the item at front-end

23

```
1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit
enter the choice
```

1

enter the item at front-end

21

```
1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit
enter the choice
```

3

enter the item at rear-end

44

```
1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
```

■ "C:\web development(html,css,js)\lab_7.exe"

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

3

enter the item at rear-end

47

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

1

enter the item at front-end

2

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

7

2

21

23

44

47

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list

■ "C:\web developement(html.css.js)\lab_7.exe"

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

2

item deleted at front-end is=2

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

7

21

23

44

47

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

4

item deleted at rear-end is 47

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

7

"C:\web developement(html.css.js)\lab_7.exe"

7:Display_list
8:Exit
enter the choice
7

21
23
44

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit
enter the choice

4
item deleted at rear-end is 44

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit
enter the choice

4
item deleted at rear-end is 23

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit
enter the choice

4
item deleted is 21

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list

■ "C:\web developement(html.css.js)\lab_7.exe"

6:Delete_info
7:Display_list
8:Exit

enter the choice

4

list is empty cannot delete

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

7

list empty cannot display items

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

5

enter the item to be inserted in ordered_list

2

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

5

enter the item to be inserted in ordered_list

45

1:Insert_front
2:Delete_front

■ "C:\web developement(html.css.js)\lab_7.exe"

enter the item to be inserted in ordered_list

45

1:Insert_front

2:Delete_front

3:Insert_rear

4:Delete_rear

5:Order_list

6:Delete_info

7:Display_list

8:Exit

enter the choice

5

enter the item to be inserted in ordered_list

6

1:Insert_front

2:Delete_front

3:Insert_rear

4:Delete_rear

5:Order_list

6:Delete_info

7:Display_list

8:Exit

enter the choice

7

2

6

45

1:Insert_front

2:Delete_front

3:Insert_rear

4:Delete_rear

5:Order_list

6:Delete_info

7:Display_list

8:Exit

enter the choice

6

enter the key to be deleted

6

key deleted is 6

1:Insert_front

2:Delete_front

3:Insert_rear

4:Delete_rear

"C:\web developement(html.css.js)\lab_7.exe"

8:Exit
enter the choice

7

2

6

45

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

6

enter the key to be deleted

6

key deleted is 6

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

7

2

45

1:Insert_front
2:Delete_front
3:Insert_rear
4:Delete_rear
5:Order_list
6:Delete_info
7:Display_list
8:Exit

enter the choice

8

Process returned 0 (0x0) execution time : 603.020 s

Press any key to continue.