

CollegeWork\DataStructure\singly-linked-list-2.c

```
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  struct node {
5      int data;
6      struct node *next;
7  };
8
9  void insert(struct node **head, int new_data) {
10     struct node *new_node = (struct node *)malloc(sizeof(struct node));
11     new_node->data = new_data;
12     new_node->next = *head;
13     *head = new_node;
14 }
15
16 void delete(struct node **head, int key) {
17     struct node *temp = *head, *prev;
18
19     if (temp != NULL && temp->data == key) {
20         *head = temp->next;
21         free(temp);
22         return;
23     }
24
25     while (temp != NULL && temp->data != key) {
26         prev = temp;
27         temp = temp->next;
28     }
29
30     if (temp == NULL) {
31         printf("Key not found\n");
32         return;
33     }
34
35     prev->next = temp->next;
36     free(temp);
37 }
38
39 void display(struct node *head) {
40     struct node *temp = head;
41
42     while (temp != NULL) {
43         printf("%d ", temp->data);
44         temp = temp->next;
45     }
46 }
47
48 int main() {
49     struct node *list1 = NULL;
50     struct node *list2 = NULL;
51
52     insert(&list1, 3);
53     insert(&list1, 1);
54     insert(&list1, 7);
55     insert(&list1, 2);
56
57     printf("Linked list 1: ");
```

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58     display(list1);
59
60     delete(&list1, 1);
61
62     printf("\nLinked list 1 after deletion: ");
63     display(list1);
64
65     insert(&list2, 5);
66     insert(&list2, 9);
67     insert(&list2, 4);
68
69     printf("\nLinked list 2: ");
70     display(list2);
71
72     delete(&list2, 9);
73
74     printf("\nLinked list 2 after deletion: ");
75     display(list2);
76
77     return 0;
78 }
79
80 /*OUTPUT
81
82 PS S:\WorkSpace\CollegeWork\DataStructure> gcc .\singly-linked-list-2.c
83 PS S:\WorkSpace\CollegeWork\DataStructure> ./a
84 Linked list 1: 2 7 1 3
85 Linked list 1 after deletion: 2 7 3
86 Linked list 2: 4 9 5
87 Linked list 2 after deletion: 4 5
88 PS S:\WorkSpace\CollegeWork\DataStructure>
89 */

```