

LAB 10

```
1 #include <stdio.h>
2 #define M 100
3
4     typedef struct {
5         int key;
6         int used;
7     } Record;
8
9     int hash(int k) {
10         return k % M;
11     }
12     void insert(Record ht[], int k) {
13         int i = hash(k);
14         int start = i;
15
16         while (ht[i].used) {
17             i = (i + 1) % M;
18             if (i == start)
19                 return;
20         }
21
22         ht[i].key = k;
23         ht[i].used = 1;
24     }
25     int search(Record ht[], int k) {
26         int i = hash(k);
27         int start = i;
28
29         while (ht[i].used) {
30             if (ht[i].key == k)
31                 return i;
32
33             i = (i + 1) % M;
34             if (i == start)
35                 break;
36         }
37
38         return -1;
39     }
40     int main() {
41         Record ht[M];
42         int n, k, i, pos, choice;
43
44         for (i = 0; i < M; i++)
45             ht[i].used = 0;
```

```
46
47     printf("Enter number of employee records: ");
48     scanf("%d", &n);
49
50     for (i = 0; i < n; i++) {
51         printf("Enter 4-digit key: ");
52         scanf("%d", &k);
53         insert(ht, k);
54     }
55     do {
56         printf("Enter key to search: ");
57         scanf("%d", &k);
58
59         pos = search(ht, k);
60
61         if (pos == -1)
62             printf("Key not found\n");
63         else
64             printf("Key found at address %02d\n", pos);
65
66         printf("Search another key? (1-Yes / 0-No): ");
67         scanf("%d", &choice);
68
69     } while (choice == 1);
70
71 }
```

OUTPUT:

```
C:\Users\BMSCECSE-L4\Docu X + - □ ×
Enter number of employee records: 3
Enter 4-digit key: 101
Enter 4-digit key: 102
Enter 4-digit key: 103
Enter key to search: 103
Key found at address 03
Search another key? (1-Yes / 0-No): no

Process returned 0 (0x0)  execution time : 23.316 s
Press any key to continue.
```

