

```
1  #include<stdio.h>
2  #include<stdlib.h>
3
4  int empkey[20], hashindex, n, m, *ht, elecount = 0;
5
6  void createhashtable() {
7      ht = (int*)malloc(m * sizeof(int));
8      if (ht == NULL) {
9          printf("MEMORY UNAVAILABLE!");
10     } else {
11         for (int i = 0; i < m; i++) {
12             ht[i] = -1;
13         }
14     }
15 }
16
17 void insertintohashtable(int key) {
18     hashindex = key % m;
19     printf("Key %d hashed to index %d.\n", key, hashindex);
20
21     // Linear probing to find the next available slot
22     while (ht[hashindex] != -1) {
23         printf("Collision at index %d. Probing next index.\n", hashindex);
24         hashindex = (hashindex + 1) % m;
25     }
26
27     ht[hashindex] = key;
28     printf("Key %d inserted at index %d.\n", key, hashindex);
29     elecount++;
30 }
31
32
33 void display() {
34     int i;
35     if (elecount == 0) {
36         printf("HASH TABLE EMPTY\n");
37     }
38     for (i = 0; i < m; i++) {
39         printf("T[%d] → %d\n", i, ht[i]);
40     }
41 }
42
43 void main() {
44     int i;
45     printf("Enter no of records: ");
46     scanf("%d", &n);
47     printf("Enter hashtable size: ");
48     scanf("%d", &m);
49     printf("Enter emp key values: \n");
50     for (i = 0; i < n; i++) {
51         scanf("%d", &empkey[i]);
52     }
53 }
```

```
54     createhashtable();
55     printf("Inserting keys into hashtable:\n");
56     for (i = 0; i < n; i++) {
57         if (elecount == m) {
58             printf("HASH TABLE FULL\n");
59             printf("Can't insert %d key\n", empkey[i]);
60             break;
61         }
62         insertintohashtable(empkey[i]);
63     }
64
65     display();
66 }
67
```