```
//15.hasing using linear probing method
#include <stdio.h>
#include<stdlib.h>
#define TABLE_SIZE 10
int h[TABLE_SIZE]={NULL};
void insert()
{
 int key,index,i,flag=0,hkey;
 printf("\nenter a value to insert into hash table\n");
 scanf("%d",&key);
 hkey=key%TABLE_SIZE;
 for(i=0;i<TABLE_SIZE;i++)
   {
    index=(hkey+i)%TABLE_SIZE;
    if(h[index] == NULL)
    {
       h[index]=key;
        break;
    }
   }
   if(i == TABLE_SIZE)
    printf("\nelement cannot be inserted\n");
}
void search()
{
 int key,index,i,flag=0,hkey;
 printf("\nenter search element\n");
 scanf("%d",&key);
 hkey=key%TABLE_SIZE;
 for(i=0;i<TABLE_SIZE; i++)
 {
```

```
    index=(hkey+i)%TABLE_SIZE;
    if(h[index]==key)
    {
      printf("value is found at index %d",index);
      break;
    }
  }
  if(i == TABLE_SIZE)
    printf("\n value is not found\n");
}
void display()
{
  int i;
  printf("\nelements in the hash table are \n");
  for(i=0;i< TABLE_SIZE; i++)
  printf("\nat index %d \t value =  %d",i,h[i]);
}
main()
{
    int opt,i;
    while(1)
    {
        printf("\nPress 1. Insert\t 2. Display \t3. Search \t4.Exit \n");
        scanf("%d",&opt);
        switch(opt)
        {
            case 1:
                insert();
                break;
            case 2:
                display();
```

```
            break;
        case 3:
            search();
            break;
        case 4:exit(0);
    }
  }
```

```
Press 1. Insert  2. Display     3. Search       4.Exit
1

enter a value to insert into hash table
50

Press 1. Insert  2. Display     3. Search       4.Exit
1

enter a value to insert into hash table
90

Press 1. Insert  2. Display     3. Search       4.Exit
1

enter a value to insert into hash table
30

Press 1. Insert  2. Display     3. Search       4.Exit
2

elements in the hash table are

at index 0       value =  50
at index 1       value =  90
at index 2       value =  30
at index 3       value =  0
at index 4       value =  0
at index 5       value =  0
at index 6       value =  0
at index 7       value =  0
at index 8       value =  0
at index 9       value =  0
Press 1. Insert  2. Display     3. Search       4.Exit
```

}