```
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
#define MAXSTUDENTS 50   /*  Constants */
#define HASH_SIZE 61 /* prime */

int hash( long int key, int n )
{  return(  key %n ) ;}

main( )
{
  char names[HASH_SIZE][25], temp_name[25];
  long int id[HASH_SIZE], key, temp_id;
  int  i,n, hash_index, cont;
  printf("Zeroing all elements of the array\n\n");
  for( i=0;  i < (HASH_SIZE); i++)
     id[i] = 0;
  do{
     printf("How many students? ");
     scanf("%d",&n);
     }while( n>MAXSTUDENTS );

  printf("Enter students' names and ID #'s\n");
  for( i=0; i<n; i++)
{
     printf("Student #%d:",i+1);
     printf("Name:");
     scanf("%s",temp_name);
     printf("ID:");
     scanf("%ld",&temp_id);

    hash_index = hash( temp_id,n );
    if( id[ hash_index ] == 0 )
   {   id[hash_index] = temp_id;
       strcpy( names[hash_index], temp_name );
    }
    else {              do{
                                hash_index++;

                                if( hash_index >= HASH_SIZE)   hash_index = 0;

                                if( id[ hash_index ] == 0 )
                                {           id[hash_index] = temp_id;
                                            strcpy( names[hash_index], temp_name );
                                             break;
                                }
                         }while(1);
     }
  }
```

```
 printf("Enter search key\n\n ID# :");
 scanf("%ld",&key);
 printf("\n  **SEARCHING**\n");
  hash_index = hash( key, n );


   if( id[hash_index ] == key )
    {
          printf("  **FOUND**\n");
             printf("ID#:%ld  Name:%s\n\n", key,names[hash_index]);

    }
    else {
      do{
          hash_index++;

          if( hash_index >= HASH_SIZE )
                    hash_index = 0;

          if( id[ hash_index ] == key )
          {
             printf("  **FOUND**\n");
             printf("ID#:%ld  Name:%s\n\n", key,names[hash_index]);
                    break;
           }
          if (id[hash_index]==0)            //found blank
          {
                    printf("Not found");
                    break;
          }
          }while(1);
    }
}
```