

Lab-10

Date _____
Page _____

```
#include <stdio.h>
```

```
#define TABLE_SIZE 10
```

```
void initializeHashTable()
```

```
{  
    int i;
```

```
    for (i = 0; i < TABLE_SIZE; i++)
```

```
        hash-table[i] = -1;
```

```
}
```

```
}
```

```
int hash(int key)
```

```
{  
    return key % TABLE_SIZE;
```

```
}
```

```
void insert (int key)
```

```
{  
    int hkey = hash(key);
```

```
    int index = hkey;
```

```
    int i = 0;
```

```
    while (hash-table[index] != -1)
```

```
        i++;
```

```
    index = (hkey + i) % TABLE_SIZE;
```

```
    if (i == TABLE_SIZE)
```

```
        printf("Hash table is Full");
```

```
        return;
```

```
}
```

```
}
```

```
hash-table[index] = key;
```

```
}
```

```
void search (int key) {  
    int hkey = hash(key);  
    int index = hkey;  
    int i = 0;
```

```
    while (hash-table[index] != key) {  
        i++;  
        index = (hkey + i) % TABLE_SIZE;  
        if (hash-table[index] == -1 || i == TABLE_SIZE)  
            {  
                printf("key %d not found", key);  
                return;  
            }  
    }
```

```
    printf("key %d found at index %d", key, i);  
}
```

```
void displayHashTable () {  
    printf("Hash Table");  
    int i;  
    for (i = 0; i < TABLE_SIZE; i++) {  
        printf("%d: ", i);  
        if (hash-table[i] != -1) {  
            printf("%d", hash-table[i]);  
        }  
    }
```

```
    }  
}
```

int main() {

int a, b, c, d, e;

initializeHashTable();

printf("Enter the value 1:");

scanf("%d", &a);

printf("Enter value 2:");

scanf("%d", &b);

printf("Enter value 3:");

scanf("%d", &c);

printf("Enter value 4:");

scanf("%d", &d);

printf("Enter value 5:");

scanf("%d", &e);

insert(a);

insert(b);

insert(c);

insert(d);

insert(e);

displayHashTable();

search(35);

search(49);

search(58);

return 0;

}

OUTPUT

Enter value 1: 12

Enter value 2: 23

Enter value 3: 35

Enter value 4: 47

Enter value 5: 58

Hash Table:

0:

1:

2: 12

3: 23

4:

5: 35

6:

7: 47

8: 58

9:

Key 35 Found at index 5

Key 49 not Found

Key 58 Found at index 8

~~8/15~~
29/12/24