

Linear probing

```
#include<stdio.h>

struct hash
{
    int key,hkey;

} ht[10];

void insert(struct hash ht[],int size)
{
    int ele,i;

    printf("\nEnter the element to insert:");
    scanf("%d",&ele);

    i=0;
    while(i<size)
    {
        if(ht[ele%size].key== -1)
        {
            ht[(ele%size+i)%size].key=ele;
            ht[ele%size].hkey= ele%size;
        }
        else
        {
            i++;
            ht[(ele%size+i)%size].key=ele;
```

```

    ht[ele%size].hkey=ele%size;
}
i++;
}
}

void search(struct hash ht[],int size)
{
    int s,i;
    printf("\nEnter the element to search:");
    scanf("%d",&s);
    if(ht[s%size].key==s)
        printf("\nSearch element is available in %d location",s%size);
    else
        printf("\nSearch element is not available");

}

void display(struct hash ht[],int size)
{
    int i;
    struct hash *p;
    printf("\nhkey\t\tkey\n");
    for(i=0;i<size;i++)
    {
        printf("%d\t\t%d\n",ht[i].hkey,ht[i].key);

    }
}

```

```
}
```

```
main()
```

```
{
```

```
int size,i,ch;
```

```
printf("enter the size of the array:");
```

```
scanf("%d",&size);
```

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

```
ht[i].key = -1;
```

```
do
```

```
{
```

```
printf("\n1.Insert\n2.search\n3.display\n4.exit");
```

```
printf("\nEnter your choice:");
```

```
scanf("%d",&ch);
```

```
switch(ch)
```

```
{
```

```
case 1:insert(ht,size);
```

```
break;
```

```
case 2:search(ht,size);
```

```
break;
```

```
case 3:display(ht,size);
```

```
break;
```

```
case 4:exit(0);
```

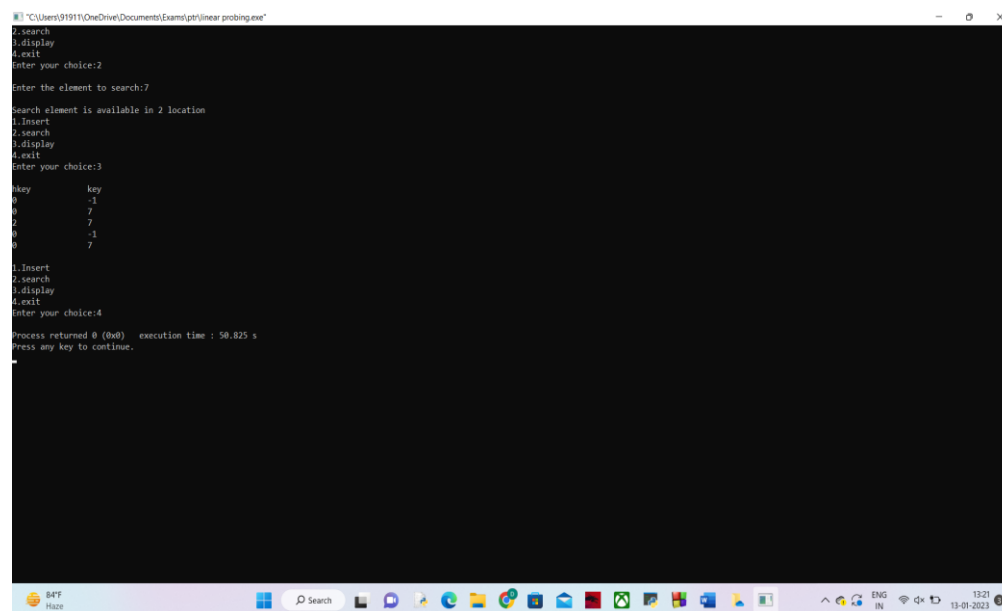
```
default: printf("enter the valid choice");
```

```
}
```

```
}while(ch>=0&&ch<=4);
```

```
}
```

Output:



```
"C:\Users\91911\OneDrive\Documents\Exams\ptr\linear probing.exe"
2.search
3.display
4.exit
Enter your choice:2

Enter the element to search:7

Search element is available in 2 location
1.insert
2.search
3.display
4.exit
Enter your choice:3

key      key
0        1
1        7
2        7
3        1
4        7

1.insert
2.search
3.display
4.exit
Enter your choice:4

Process returned 0 (0x0)   execution time : 50.825 s
Press any key to continue.
```