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#linear search
list=[45,56,78,63,2,5,4,6]
x=float(input())

for i in range(0,len(list)):
    if list[i]==x:
        print("the value is present in the",i)
        break
else:
    print("the value is not present",i)
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56
the value is present in the 1
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```
#BINARY SEARCH

b=[45,56,78,90,95,96,100]
x=float(input())
L=0
H=len(b)-1
def binary(b,x,L,H):
    #mid=L+H//2
    # for i in range(0,len(b)):
    while(L<=H):
        mid=L+(H-L)//2
        if b[mid]==x:
            return mid
        elif b[mid]<x:
            L=mid+1
        elif b[mid]>x:
            H=mid-1
    return -1

result=binary(b,x,L,H)
if result!=-1:
    print("no key element")
else:
    print(result,"key element")

90
3 key element
```

```
#bubble sort
a=[]
num=int(input("enter the size of the list"))
print("enter the values")
for k in range(num):
    a.append(int(input()))
print("unsorted list",a)
for j in range(len(a)-1):
    for i in range(len(a)-1):
        if a[i]>a[i+1]:
            a[i],a[i+1]=a[i+1],a[i]
print("sorted list",a)

enter the size of the list5
enter the values
2
5
0
10
4
unsorted list [2, 5, 0, 10, 4]
sorted list [0, 2, 4, 5, 10]
```

```
#insertion sort

q=[]
num=int(input("enter the size of the list"))
print("enter the values")
for k in range(num):
    q.append(int(input()))
print("unsorted list:",q)
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for j in range(len(q)-1):
    for i in range(len(q)-1):
        if q[i]>q[i+1]:
            q[i],q[i+1]=q[i+1],q[i]
    i=i+1
print("sorted list:",q)

```

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enter the size of the list5
enter the values
3
0
10
9
6
unsorted list: [3, 0, 10, 9, 6]
sorted list: [0, 3, 6, 9, 10]

```

```

#quick sort
a=[]
num=int(input("enter the size of the list"))
print("enter the values")
for k in range(num):
    a.append(int(input()))
print("unsorted list:",a)
def quick(a,i,j):
    piv=a[i]
    f=i+1
    while True:
        while(f<=j and piv>=a[f]):
            f=f+1
        while(f<=j and piv<=a[j]):
            j=j-1
        if f<=j:
            a[f],a[j]=a[j],a[f]
        else:
            break
    a[j],a[i]=a[i],a[j]
    return j
def op (a,i,j):
    if i>=j:
        return
    p=quick(a,i,j)
    op(a,i,p-1)
    op(a,p+1,j)
i=0
j=len(a)-1
op(a,i,j)
print(a,"sorted list")

```

```

enter the size of the list7
enter the values
4
6
2
10
0
6
8
unsorted list: [4, 6, 2, 10, 0, 6, 8]
[0, 2, 4, 6, 6, 8, 10] sorted list

```

