2. Write a program to perform binary search.

```
def binary_search (list , key):
    list.sort()
    low = 0
    high = len(list)-1
    mid = 0
    while (low <= high):
        mid = (low + high)//2
        if key > list[mid]:
            low = mid + 1
        elif key < list[mid]:
            high = mid - 1
        else :
            return mid
    return -1
list = [9,12,15,37,28,30]
key =12
result = binary_search (list , key)
if(result== -1):
    print ("element not found")
else :
    print ("element found at the position", result +1)
```

output :

element found at the position 2

3. Write a program to perform recursive binary search

```
def recursivebinary_search (list,low,high,key):
    list.sort()
    if low <= high:
        mid = (low + high)//2
    if key < list[mid]:
        return recursivebinary_search (list,mid+1,high,key)
    elif key > list[mid]:
        return recursivebinary_search (list,mid+1,high,key)
    elif list[mid] == key:
        return mid
    return -1
list = [9,12,15,37,28,11,30]
key = 37
result = recursivebinary_search (list,0,len(list)-1,key)
if (result== -1):
    print ("element not found")
else:
    print("element found at the position ", result +1)
```

output:

element found at the position 7