Activity 4

Write a program to perform searching activity using Linear and binary search.

mylist=[1,3,6,8,10,13,15]

def linearsearch(mylist,x):

    for i in range(len(mylist)):

        if mylist[i]==x:

            return i

    return -1

def binarysearch(mylist,l,r,x):

    while l<=r:

        mid=int(l+r)//2

        #print("mid:",mid)

        if mylist[mid]==x:

            return mid

        elif mylist[mid]<x:

            l=mid+1

        else:

            r=mid-1

    return -1

print(mylist)

while(1):

    print('1.Linear Search')

    print('2.Binary Search')

    print('3.Exit')

    c= int(input('Enter your Choice'))

    if(c==1):

        x=int(input())

        print(mylist)

        ans=linearsearch(mylist,x)

        if(ans==-1):

            print('Element is not found')

        else:

            print('Element position is',ans)

    elif(c==2):

        x=int(input())

        print(mylist)

        l=0

        r=len(mylist)-1

        ans=binarysearch(mylist,l,r,x)

        if(ans==-1):

            print('Element is not found')

        else:

            print('Element position is',ans)

    elif(c==3):

        print('Exit from the program')

        break