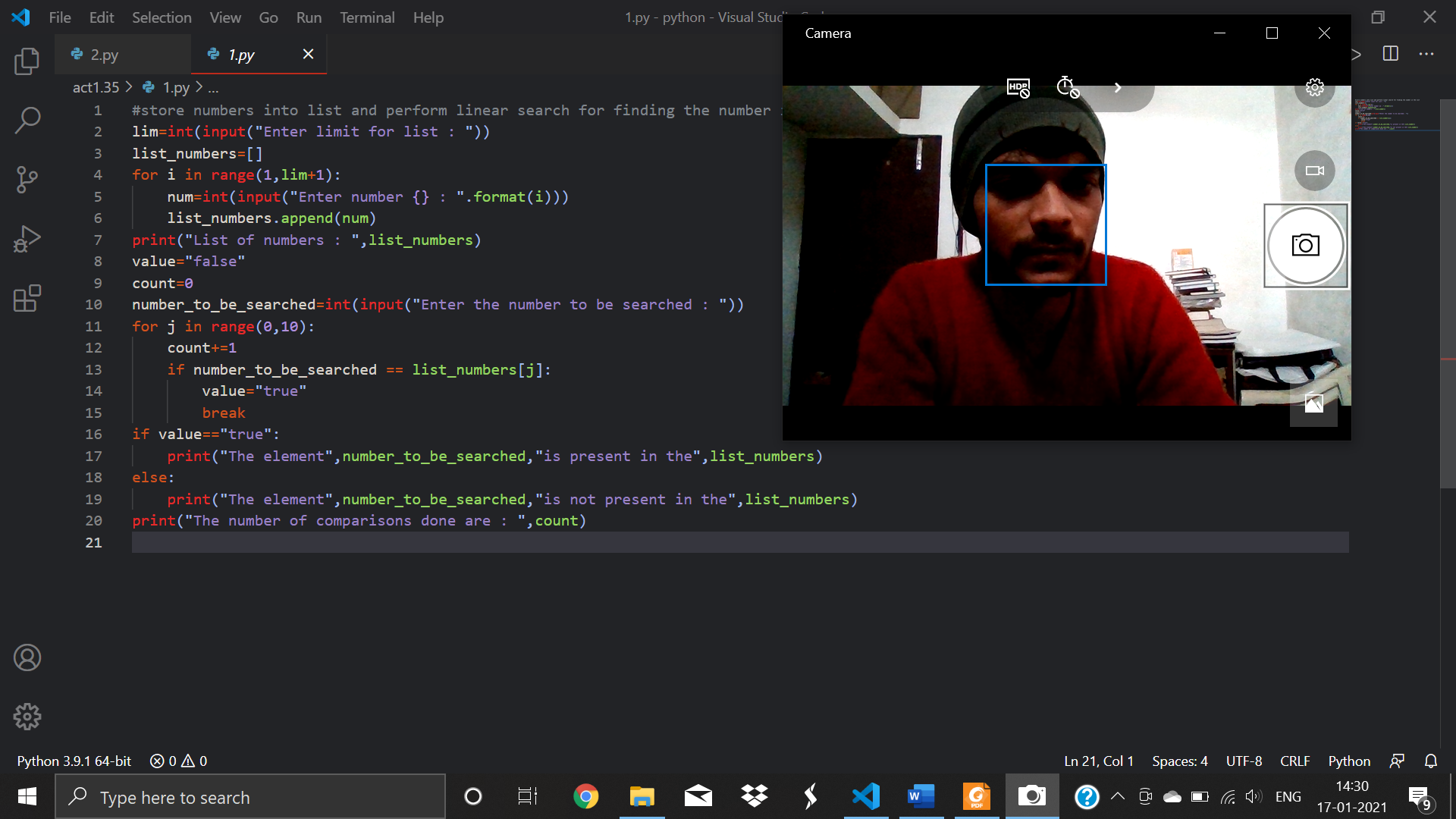
ACTIVITY 1.35

**Q1. 1) Write a python program to solve the following requirements.  
a. Read unsorted ‘n’ integers using input () and store them in a list (say list\_numbers). Minimum size of the list\_numbers should be 10.  
b. Print the list\_numbers on the screen.  
c. Read a number (say number\_to\_be\_searched) using input().  
d. Perform ‘linear search’ to find whether the number\_to\_be\_searched is present or not in list\_numbers.  
e. Print the suitable result  
 i. The searched element (print the actual value) is PRESENT in list\_number.  
 (or)  
 ii. The searched element (print the actual value) is NOT PRESENT in list\_number.  
f. Count the number of comparisons and print it.  
g. Run the same program for different number\_to\_be\_searched and record the outputs.**

**#code screenshot**



**#code**

#store numbers into list and perform linear search for finding the number in the list

lim=int(input("Enter limit for list : "))

list\_numbers=[]

for i in range(1,lim+1):

    num=int(input("Enter number {} : ".format(i)))

    list\_numbers.append(num)

print("List of numbers : ",list\_numbers)

value="false"

count=0

number\_to\_be\_searched=int(input("Enter the number to be searched : "))

for j in range(0,10):

    count+=1

    if number\_to\_be\_searched == list\_numbers[j]:

        value="true"

        break

if value=="true":

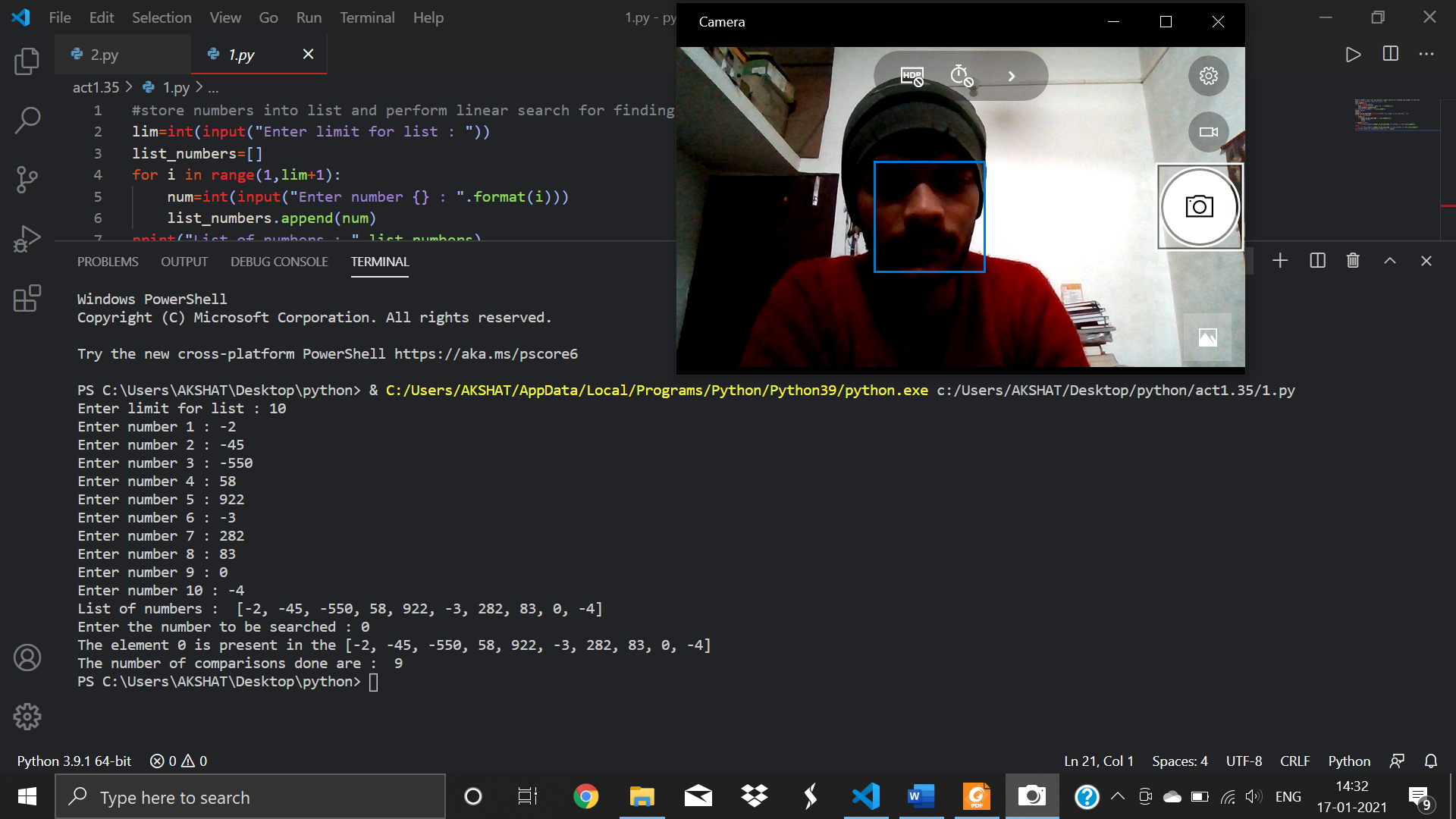
    print("The element",number\_to\_be\_searched,"is present in the",list\_numbers)

else:

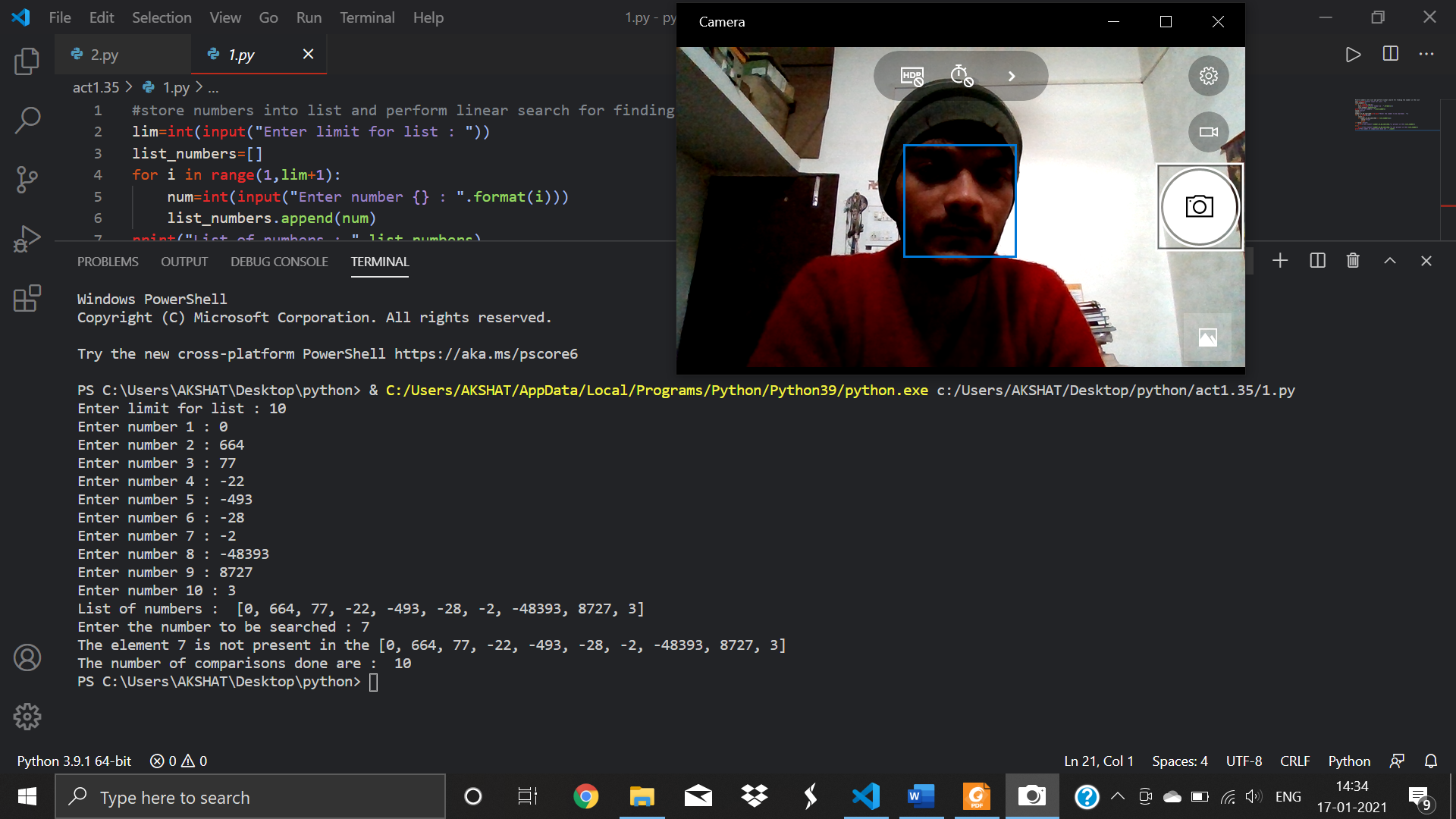
    print("The element",number\_to\_be\_searched,"is not present in the",list\_numbers)

print("The number of comparisons done are : ",count)

**#output screenshot 1**



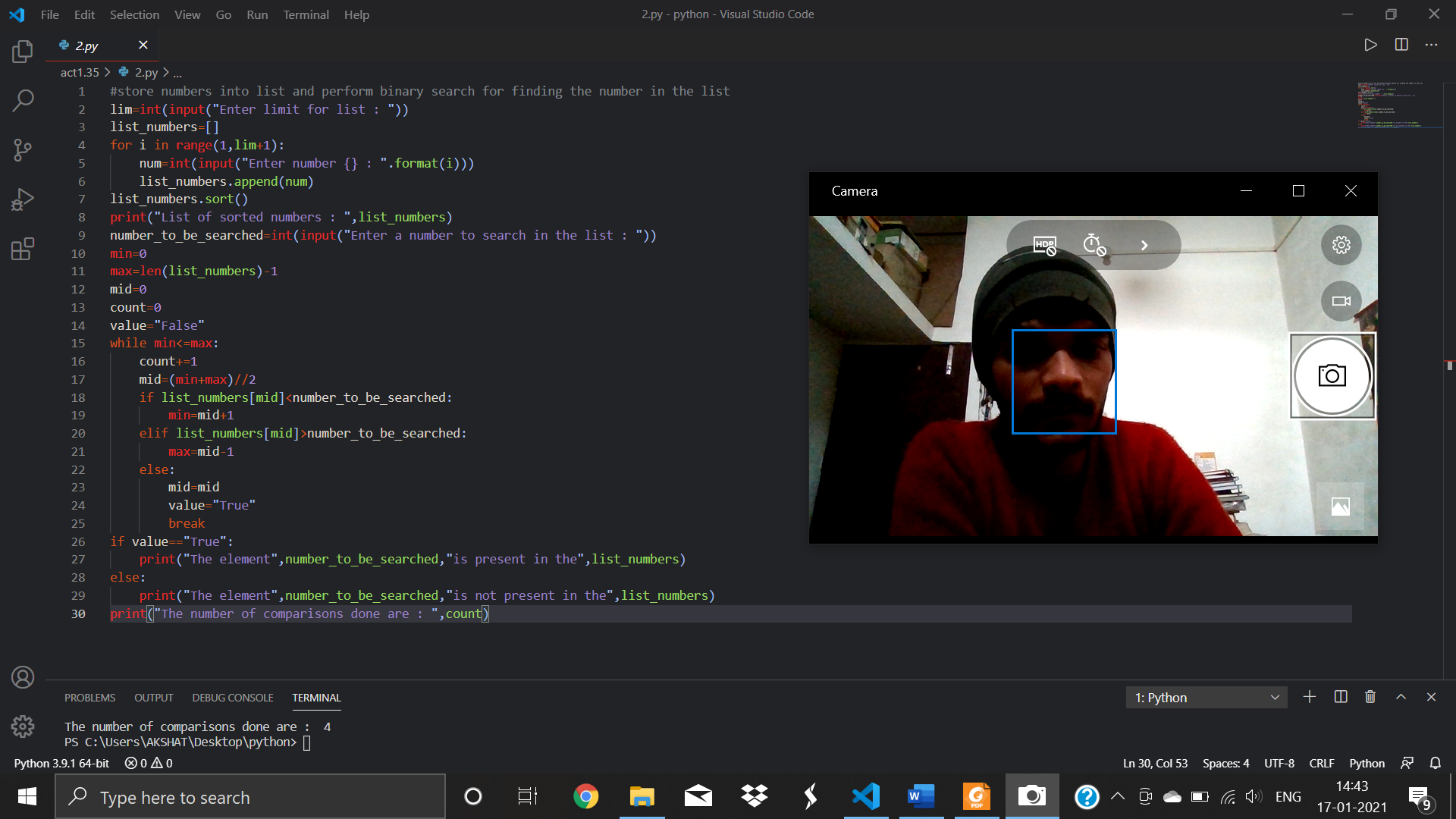
**#output screenshot 2**



**Q2. Write a python program to solve the following requirements.**

**a. Read sorted ‘n’ integers using input () and store them in a list (say list\_numbers). Minimum size of the list\_numbers should be 10.  
b. Print the list\_numbers on the screen.  
c. Read a number (say number\_to\_be\_searched) using input().  
d. Perform ‘binary search’ to find whether the number\_to\_be\_searched is present or not in list\_numbers.  
e. Print the suitable result**

**#code screenshot**



**#code**

#store numbers into list and perform binary search for finding the number in the list

lim=int(input("Enter limit for list : "))

list\_numbers=[]

for i in range(1,lim+1):

    num=int(input("Enter number {} : ".format(i)))

    list\_numbers.append(num)

list\_numbers.sort()

print("List of sorted numbers : ",list\_numbers)

number\_to\_be\_searched=int(input("Enter a number to search in the list : "))

min=0

max=len(list\_numbers)-1

mid=0

count=0

value="False"

while min<=max:

    count+=1

    mid=(min+max)//2

    if list\_numbers[mid]<number\_to\_be\_searched:

        min=mid+1

    elif list\_numbers[mid]>number\_to\_be\_searched:

        max=mid-1

    else:

        mid=mid

        value="True"

        break

if value=="True":

    print("The element",number\_to\_be\_searched,"is present in the",list\_numbers)

else:

    print("The element",number\_to\_be\_searched,"is not present in the",list\_numbers)

print("The number of comparisons done are : ",count)

**#output screenshot**

