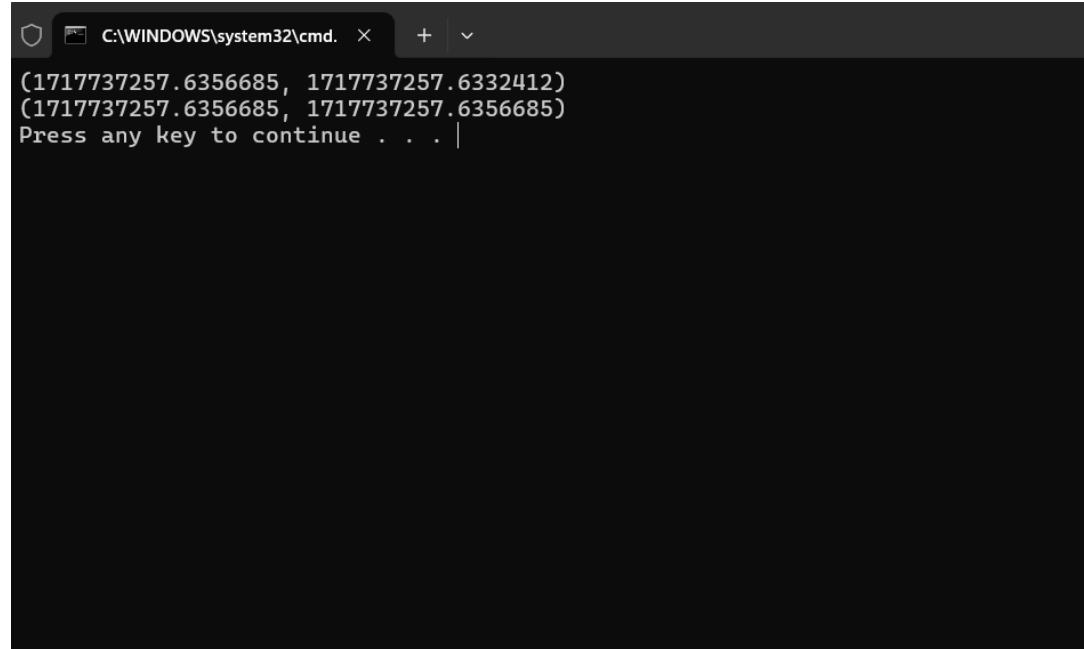


13) Write C program that demonstrates the usage of these notations by analyzing the time complexity of some example algorithms.

CODE:

```
import time
def linears(a,target):
    start_time=time.time()
    for num in a:
        if num==target:
            break
    end_time=time.time()
    return end_time,start_time
def binarys(a,target):
    start_time=time.time()
    low=0
    high=len(a)-1
    while low<=high:
        mid=(low+high)//2
        if a[mid]==target:
            break
        elif a[mid]<target:
            low=mid+1
        else:
            high=mid-1
    end_time=time.time()
    return end_time,start_time
a=list(range(100000))
target=999999
l=linears(a,target)
b=binarys(a,target)
print(l)
print(b)
```

OUTPUT:



```
C:\WINDOWS\system32\cmd.  X  +  v
(1717737257.6356685, 1717737257.6332412)
(1717737257.6356685, 1717737257.6356685)
Press any key to continue . . . |
```

TIME COMPLEXITY : $O(n)+O(\log n)$