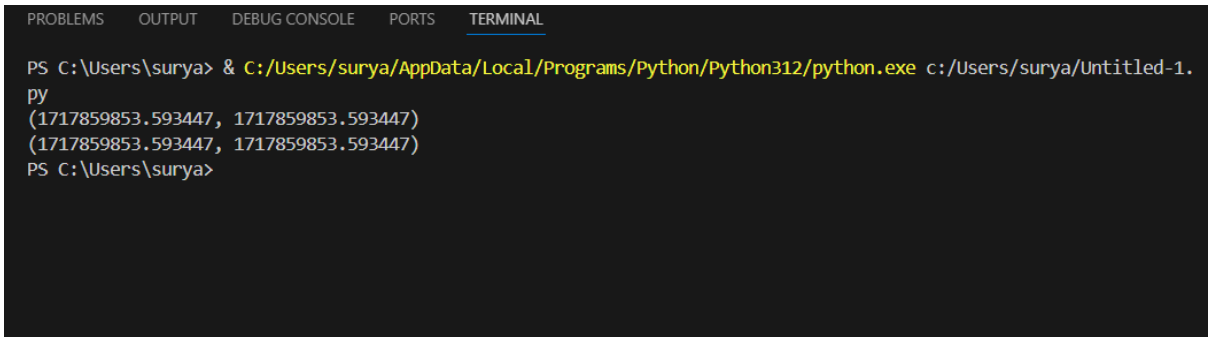
13.Write C program that demonstrates the usage of these notations by analyzing the time complexity of some example algorithms.

PROGRAM:

```
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:



TIME COMPLEXITY:

Time complexity for the above code is

O(n)+O(logn)