

Apriori Analysis

Determination of order of magnitude of a statement.

(How many times a statement repeats itself)

Example 1)

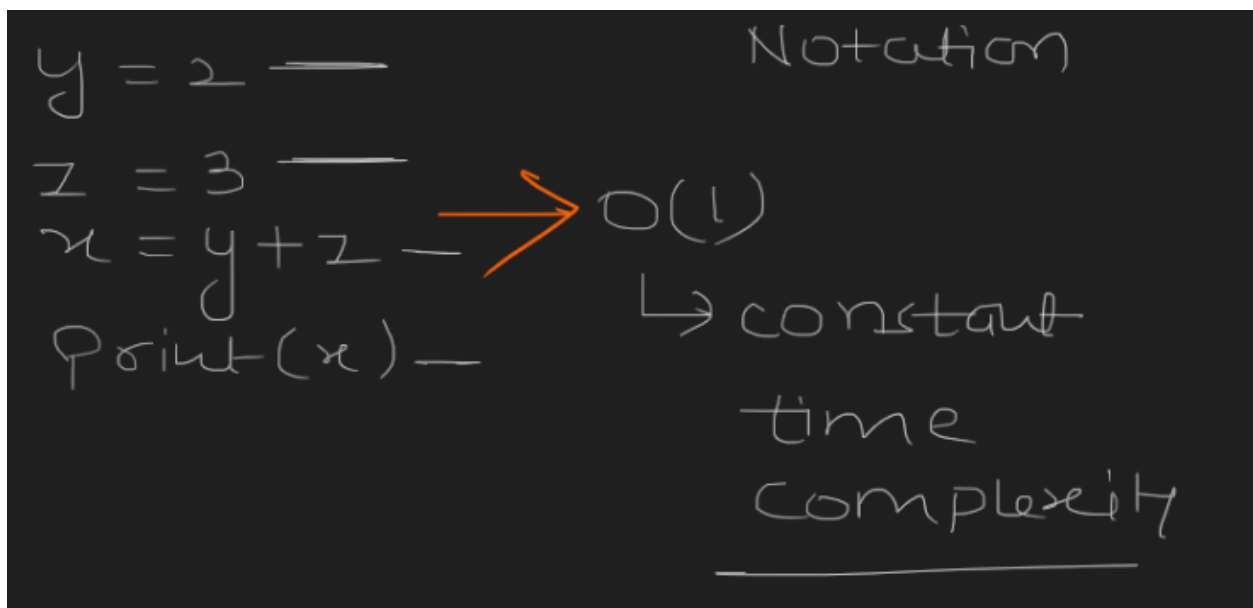
```
for i in range(n):  
    print(i)
```

For loop repeats $n-1$ times

print statement repeats itself for n times

Thus, time complexity is $O(n)$

Example 2)



Thus, time complexity is $O(1)$

Example 3)

The image shows a handwritten analysis of a code snippet on a dark background. The code snippet is as follows:

```
j = 0
x =
x = y + z
for i = 0 to n
  x = y + z
for i = 0 to n:
  for j = 0 to n:
    x = y + z
```

The analysis is written to the left of the code:

- Example 3
- $(2000)^2 + 2000 + 1$
- $n^2 + n + 1$
- $= O(n^2)$ {Approximate}
- $n \rightarrow \text{Large}$

Annotations on the code:

- A horizontal line under `x = y + z` is labeled with a '1'.
- A bracket under the first `for i = 0 to n` loop is labeled with an 'n'.
- A bracket under the nested loops is labeled with 'Two loops' and n^2 .

Thus, time complexity is $O(n^2)$