Time & space complexity

Time complexity   # times any statement is repeating

↳ CPU Time → Execute the code

Asymtotic Notations   Objective → Lower time complexity

↳ worst case time complexity (Big-O)

┌ Theta

↳ average case time complexity (Θ)

↳ best case time complexity (Ω)

↳ omega

Example 1

(n = 10)

```
for (int i=0; i < n; i++) ∝

    System.out.println("Hi")  →  10 times
```

n = 10
)

Time complexity = O(n)

Example 2

$n = 2$ ———— 100

```
for(int i=0; i<n; i++) α
    for(int j=0; j<n; j++) α
        System.out.println("Hi");
```

$(100)^2$ times

↳
↳

$n = 2$
↳ 2^2

i = 0		i = 1		
J = 0	J = 1	J = 0	J = 1	—— 4 times
	/	Hi		
Hi	Hi		Hi	

Time Complexity = $O(n^2)$

Note :

1) Loops in a code

2) Bigger Loop

3) # times statement is repeating