

# Linear Search

Searching: It is a process of finding a given value position in a list of values.

## Linear / sequential search:-

- It is basic & simple search algorithm.
- In sequential search, we compare the target value with all the other elements given in the list.

E.g:- arr = [18, 12, 19, 77, 29, 50]  
target = 77

start

In above example, the target value is compared with all the elements in

Array in sequential / linear way.

## Time Complexity:

→ Best Case:  $O(1)$  → Constant

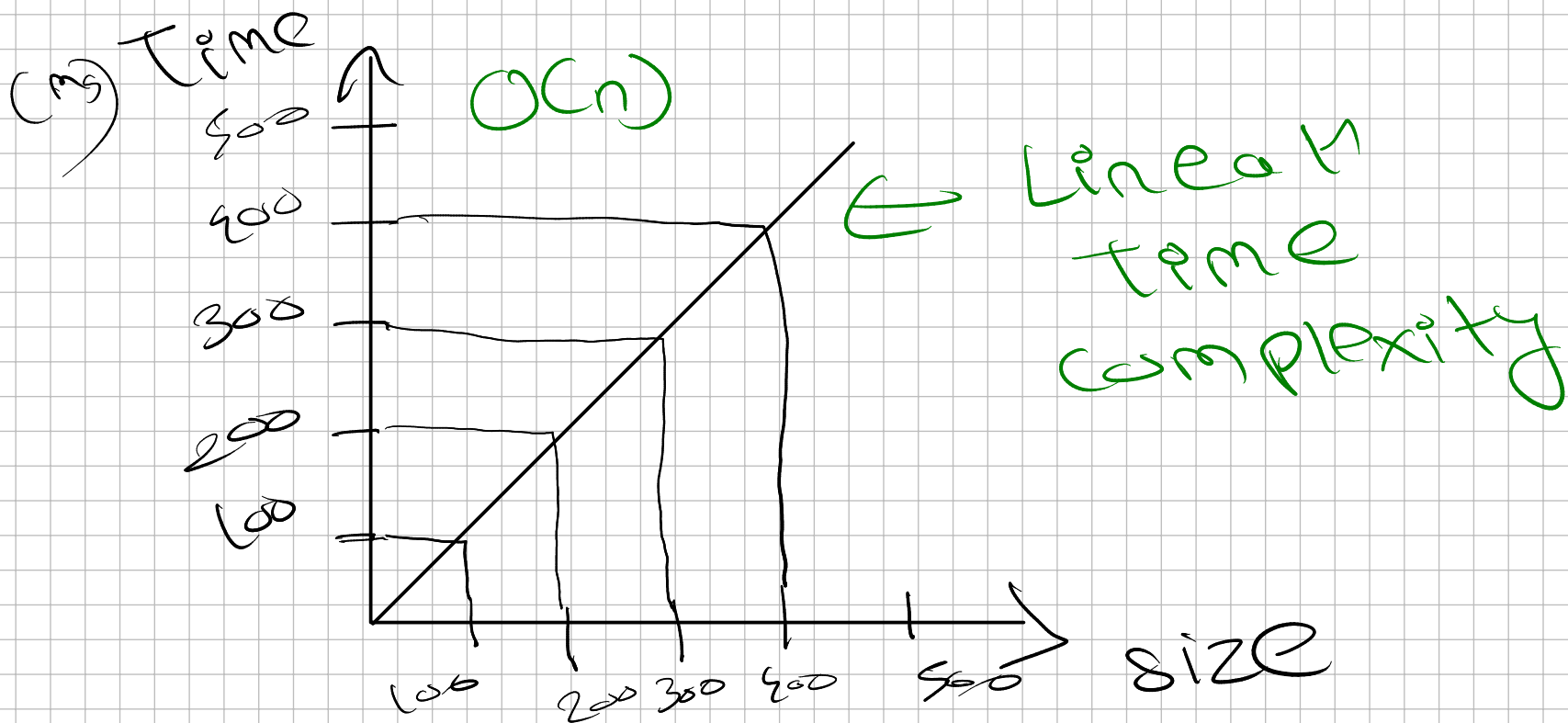
⇒ How many checks will the loop make in best case i.e. the element will be found at 0th index i.e. only one comparison will be made for the best case.

⇒ Worst Case:  $O(n)$

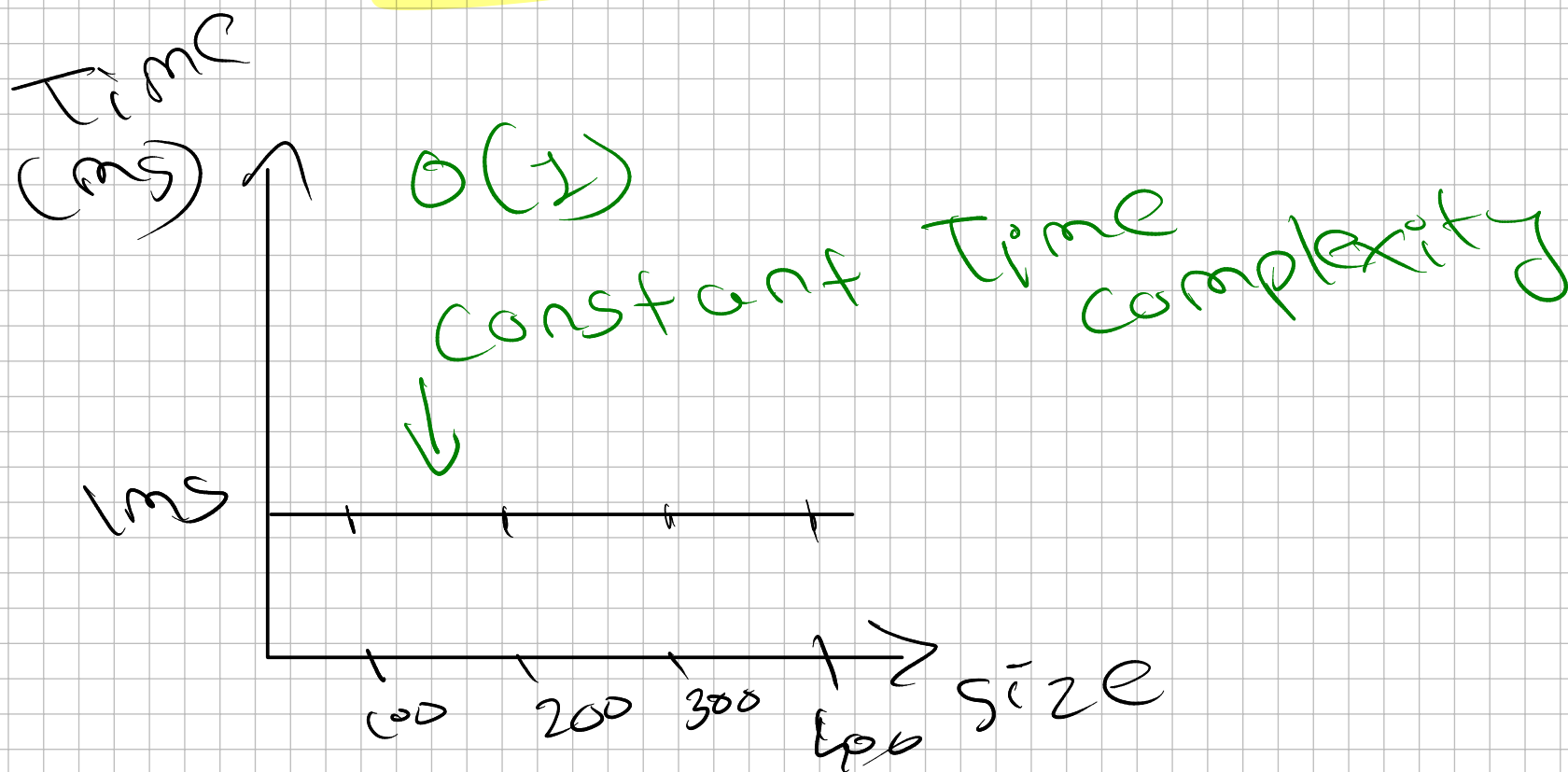
⇒ Worst case here it will go through every element & then it says element not found.

⇒

size of array	No. of comparisons	time (ms)
100	100	100ms
200	200	200ms
n	n	n



Worst case



BEST case