

Searching and Sorting

linear search

arr, target

return the target index if present

else -1

10	23	45	70	11
0	1	2	3	4

, 70

↓

3

run a loop and compare

Binary Search

arr, target
↓
Sorted

0	1	2	3	4	5	6	
10	23	35	45	50	70	85	50

1st Start mid end

1. I will consider the full array/list
start = 0 end = n-1

2. See the middle element.
middle = (end + start) // 2

3. we compare element at middle
with target.

$$\frac{4+4}{2} = 4$$

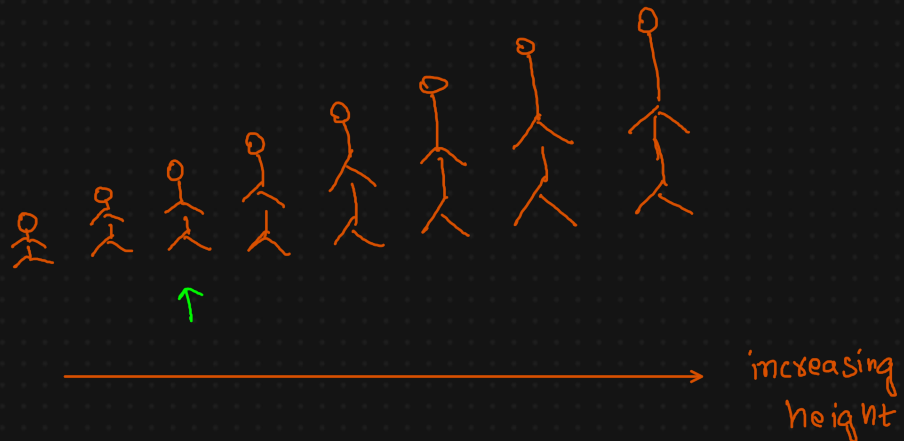
start mid end
4 5 6
↑
start = 4 = mid
end

1st iteration \Rightarrow mid = 3
arr[mid] = 45 < 50

2nd iteration \Rightarrow mid = 5
arr[mid] = 70 > 50

3rd iteration \Rightarrow mid = 4
arr[mid] = 50 == 50

teacher



Sorting Algorithm

1. Bubble sort

1. Pick up a element
2. Compare it with its adjacent element
3. repeat this process till end

64 34 25 12 22

1st 34 64 25

2nd 34 25 64 12 22

3rd 34 25 12 64 22

4th 34 25 12 22 64

34 25 12 22 } 64

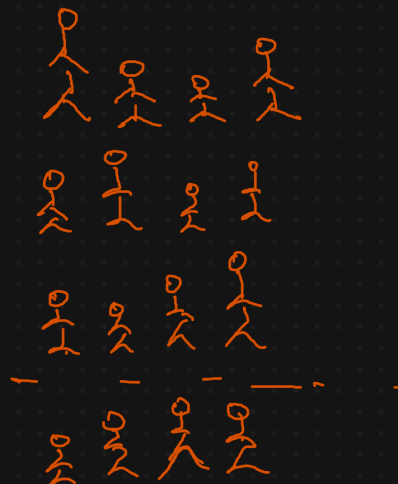
25 34 12

25 12 34 22

25 12 22 34

→ don't
have to
compare
with last
element

stage



Teacher