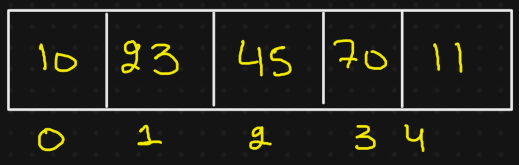
Searching and Sorting

Linear search

arr, target

return the target index if present
else -1



, 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

2nd

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.

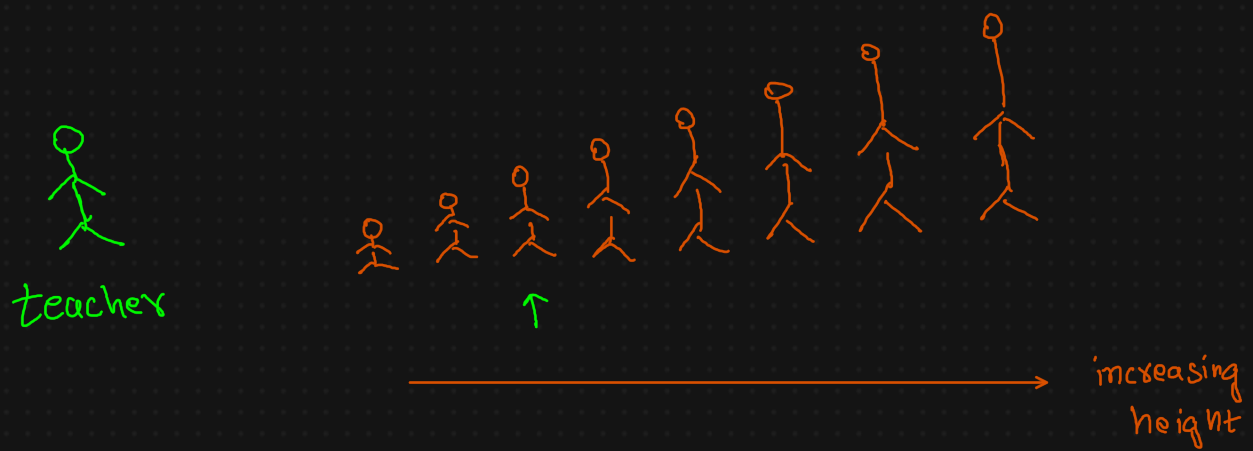
start mid end
4 5 6
start = 4 = mid
end

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

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

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

3rd iteration ⇒ mid = 4
arr[mid] = 50 == 50



Sorting Algorithm

1. Bubble sort

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