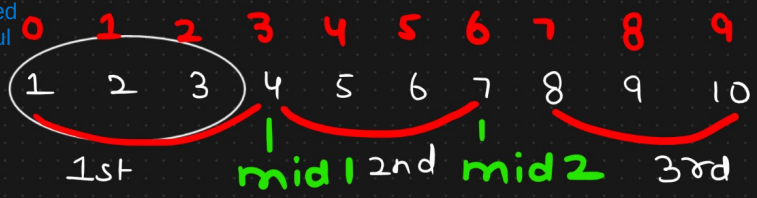
Until now we learned about linear and Binary search approach. Now we will understand about Ternary Search approach

Ternary Search

↳ Search space into three parts

↳ Sorted array

Whenever we are provided with a sorted array then Ternary search is very useful



In Binary search we are dividing our search space into 2 halves using only 1 middle value.
But,
In case of ternary search we will be dividing our search space into 3 equal portion using 2 middle values

l = left extreme index
r = right extreme index
1st = first search space
2nd = second search space
3rd = third search space

$mid1 = l + (r-l)//3 = 0 + 9//3 = 3$ $\quad l=0,\ r=9$

$mid2 = r - (r-l)//3 = 9 - 9//3 = 6$

$x = 5$ ⟶ Searching element

arr(mid1] == x

↳ return mid1

arr(mid2] == x

↳ return mid2

$x = 2$

Pseudo code where x represents the element to be searched

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$x < arr(mid1]$

$r = mid1 - 1$ ⟹ 1st search space

7

$x = 9$

$x > arr(mid2]$

$l = mid2 + 1$ ⟹ 3rd search space

else:

l(left extreme) r(right extreme)

$mid1+1,\ mid2-1$

↳ 2nd search space