Array : Video - 74

Easy → 3 Approaches

Leetcode - 1287

Element Appearing More than 25% in Sorted Array

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Company :- Will update soon...

1287. Element Appearing More Than 25% In Sorted Array

Hint

Easy 1.1K 54

Companies

Given an integer array **sorted** in non-decreasing order, there is exactly one integer in the array that occurs more than 25% of the time, return that integer.

map:-
1 → 1
2 → 2
6 → 4
7 → 1
10 → 1

Example:- arr = {1, 2, 2, 6, 6, 6, 6, 7, 10}

Out → 6

n = 9

n → 100%

n/2 → 50%

n/4 → 25%

freq = n/4 ;

9/4 = 2

Approach - 1:

T.C = O(n)

S.C = O(n)

∵ freq of elements

∵ freq > n/4 → ✓

Approach - 2

(sorted).

arr = { 1, 2, 2, 6, 6, 6, 6, 7, 10 }, n = 9

0 1 2 3 4 5 6 7 8

i i

arr[i] == arr[i+2]

arr[3] == arr[5]

freq = n/4 = 9/4 = 2

freq = n/4 ;

```
for(i=0; i<n-freq; i++) {
    if (arr[i] == arr[i+freq]) {
        return arr[i];
    }
}
return -1;
```

Approach-3

(Binary Search)

(sorted array)

n/4

arr = { 1, 2, 2, 6, 6, 6, 6, 7, 10 } , n = 9

0 1 2 3 4 5 6 7 8

i

left = 3

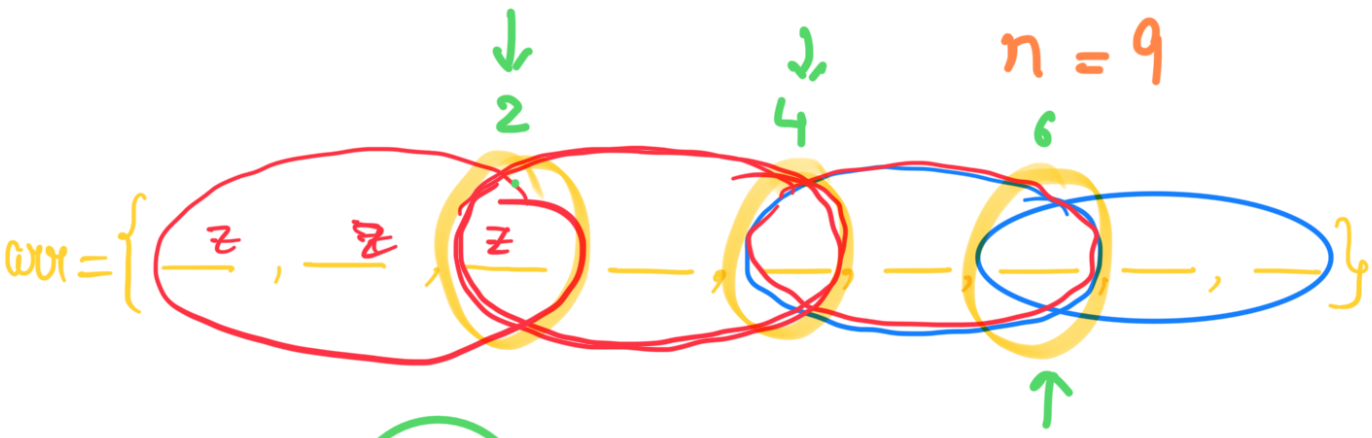
right = 6

6-3+1 = 3

1

O(n * log(n))

n/4 = 9/4 = 2



n/4 = 9/4 = 2

n/2 = 9/2 = 4

3*n/4 = 3*2 = 6

Candidates = { nums[n/4], nums[n/2], nums[3n/4] }

{ 1, 2, 2, 6, 6, 6, 6, 7, 10 } n = 9

left = 3
right = 6

6 - 3 + 1 = 4 > n/4

3 elements

for(int & cand : candidates) {

left = BS Left ( ); → log(n)
right = BS Ri.. ( ); → log(n)

if (ri - le + 1 > n/4) {

}

}

3 * log(n) ~ log(n).

Me confirm ✓