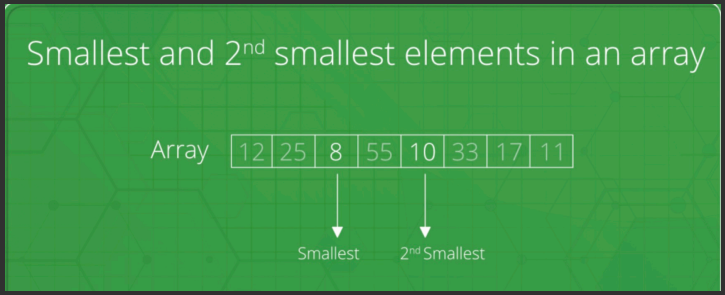
L8
Array Problem Solving

Find smallest and second smallest in Array




```
minE = arr[0];

if(arr[i] < minE)
    minE = arr[i]
```

Explanation Slide

minE = 8 ✓

sminE = 10 ✓

```
arr[i] < minE
    sminE = minE
    minE = arr[i]
```

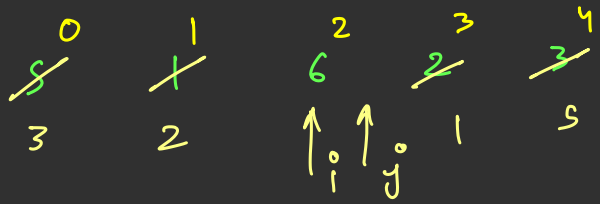
```
arr[i] > minE && arr[i] < sminE
    sminE = arr[i]
```

Reverse an array

Two pointer

↓

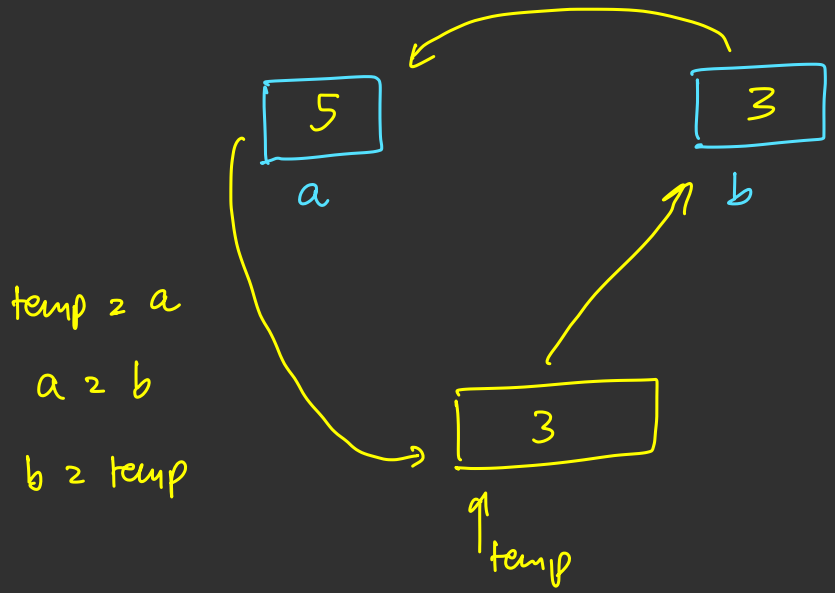
while loop

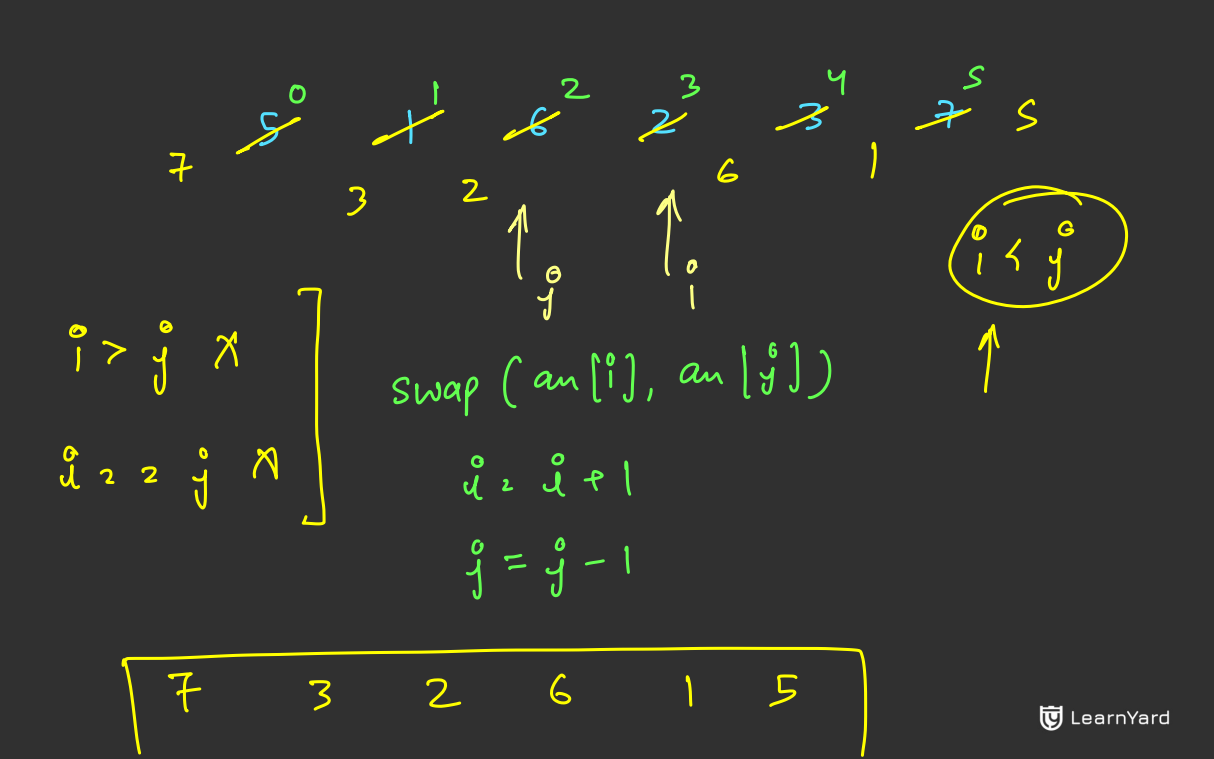


swap(arr[i], arr[j])

i = i+1, j = j--

3 2 6 1 5




7 5 1 6 2 3 4 7 5
0 1 2 3 4 5
3 2 6 1 5
j
i
i < j
i > j
swap(arr[i], arr[j])
i = i + 1
j = j - 1
7 3 2 6 1 5
LearnYard

Given a sorted array find it's median

$N \geq 6$

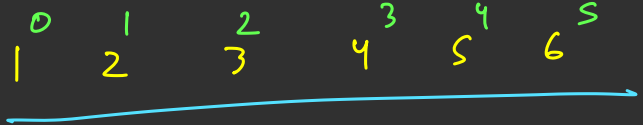
↓

inc / dec

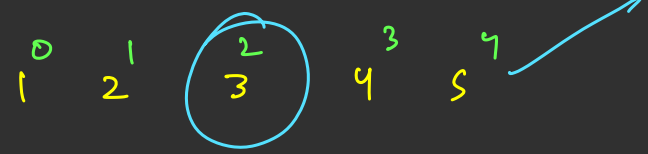
↓

even → $\frac{3+4}{2}$ = 3.5

odd → 3



$\frac{a_n(\frac{n}{2}) + a_n(\frac{n}{2}-1)}{2}$



$a_n(\frac{n}{2})$

Move Zeros [Leetcode]

283. Move Zeroes

Easy | Topics | Companies | Hint

Given an integer array `nums`, move all `0`'s to the end of it while maintaining the relative order of the non-zero elements.

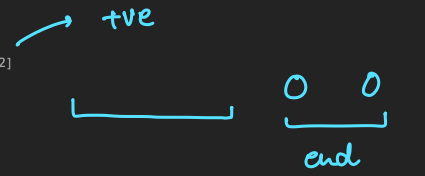
Note that you must do this in-place without making a copy of the array.

Example 1:

```
Input: nums = [0,1,0,3,12]
Output: [1,3,12,0,0]
```

Example 2:

```
Input: nums = [0]
Output: [0]
```



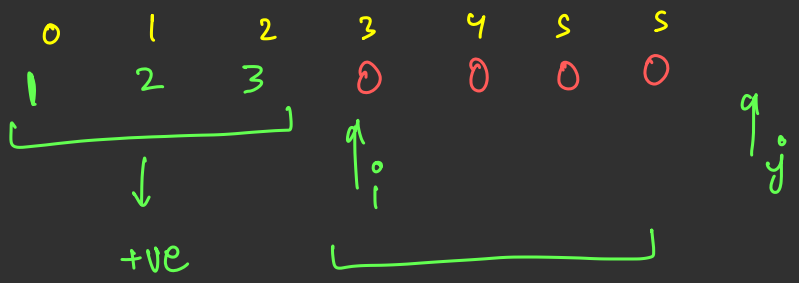
Two pointer

Explanation Slide

arr[j] > 0

```
arr[i] = arr[j]
i++
```

```
while (i < n)
{
    arr[i] = 0;
    i++
}
```



arr[j] > 0

arr[i] = arr[j]

i++

Practice and Homework Questions

Homework questions -

https://leetcode.com/problems/max-consecutive-ones/
https://leetcode.com/problems/two-sum/
https://leetcode.com/problems/two-sum-ii-input-array-is-sorted/
https://leetcode.com/problems/3sum/description/
https://leetcode.com/problems/4sum/description/
https://leetcode.com/problems/sort-colors/
https://www.geeksforgeeks.org/first-element-occurring-k-times-array/
https://practice.geeksforgeeks.org/problems/max-distance-between-same-elements/1

Thank You!

Please practice more questions and examples as above !!