Maths Concepts & Qns

video - 3

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Motivation :-

Your brain is a limitless powerhouse - capable of learning, adapting and mastering anything you set your mind to. Feed it challenges, and watch it grow.

MIK...

Find median of x sized subarrays EFFICIENTLY

Subarray size = 5

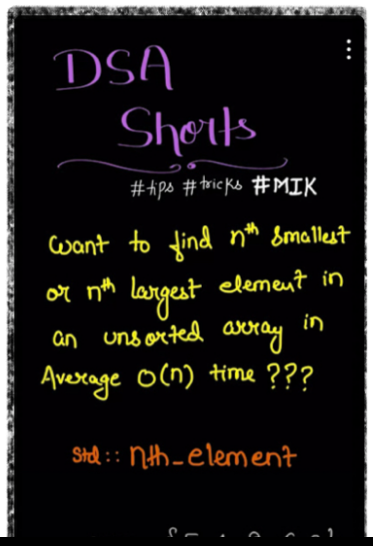
	0	1	2	3	4	5	6	7	8
nums = {	5 ,	-2 ,	1 ,	3 ,	7 ,	3 ,	6 ,	4 ,	-1 }

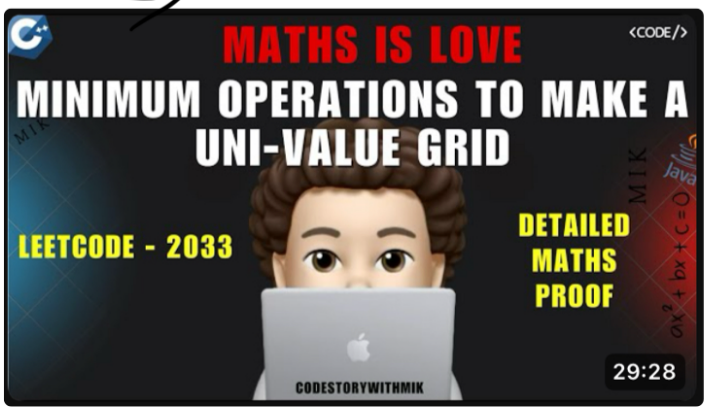
result = { 3, 3, 3, 4, 4 }

left {-2, 1, 3}

right {5, 7}

nth_element





nums = {5, 1, 8, 6, 2}

1.4K views

Find n^{th} smallest element.

→ Links in the description.

$$\text{nums} = \{\overset{0}{5}, \overset{1}{7}, \overset{2}{-2}, \overset{3}{3}, \overset{4}{1}\}$$

{Adjustment / Balancing}

{-2, 1, 3}

left (sorted)

100%

{5 7}

right (sorted)

left.size() <= right.size()

① DS → sorted.

② Even size → Half/Half.

③ odd size → left.size = right.size + 1

③ Multiset.

Subarray size = $\mathcal{K}$

0 1 2 3 4 5 6 7 8

nums = { 5 , -2 , 1 , 3 , 7 , 3 , 6 , 4 , -1 }

i j

result = { 3, 3, 3, 4, 4 }

left.empty() ||
left.size() <= right.size()

{ -1, 3, 4 }

left

multiset <int>

{ 6 }

right

multiset <int>

Time for the Qn :-

Weekly Contest - 443 → Qn-4

3505. Minimum Operations to Make Elements Within K Subarrays Equal

Solved

Hard | Companies | Hint

You are given an integer array `nums` and two integers, `x` and `k`. You can perform the following operation any number of times (**including zero**):

- Increase or decrease any element of `nums` by 1.

Return the **minimum** number of operations needed to have **at least** `k` *non-overlapping* subarrays of size **exactly** `x` in `nums`, where all elements within each subarray are equal.