

L33

Sorting : Problem Solving 2

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RECAP

Going to step up a bit today. So hold
tight and be attentive!

Ferris Wheel

$a_0 \quad a_1 \quad a_2 \quad a_3 - - - - a_{n-3} \quad a_{n-2} \quad a_{n-1}$

Stick Lengths

5

2 3 1 5 2

$$\text{final} = 5 \rightarrow 3 + 2 + 4 + 0 + 3 = 12$$

$$\text{final} = 4 \rightarrow 2 + 1 + 3 + 1 + 2 = 9$$

$$\text{final} = 3 \rightarrow 1 + 0 + 2 + 2 + 1 = 6$$

$$\text{final} = 2 \Rightarrow 0 + 1 + 1 + 3 + 0 \Rightarrow 5$$

$$\text{final} = 1 \Rightarrow 1 + 2 + 0 + 4 + 1 \Rightarrow 8$$

$$\Downarrow \\ (\leftarrow 1) \Rightarrow \text{cost} \geq 7$$

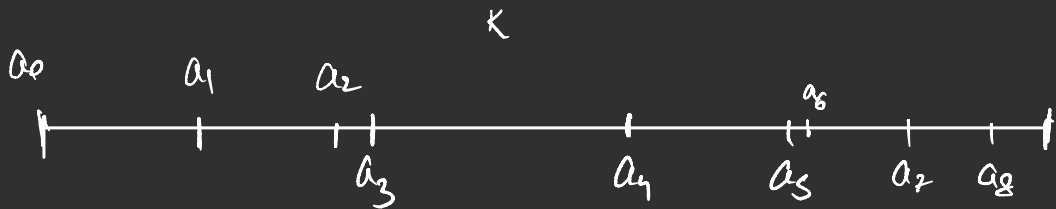
avg. ≈ 4

1 2 2 5 10

(4) \Rightarrow 14

(2) \Rightarrow 12

1 2 3 4 5 900



$$abs(a_0 - a_n) \neq abs(a_1 - a_n)$$



$$i * x - \text{sum}(\leq x) + \text{sum}(> x) - (n - i) * x$$

S

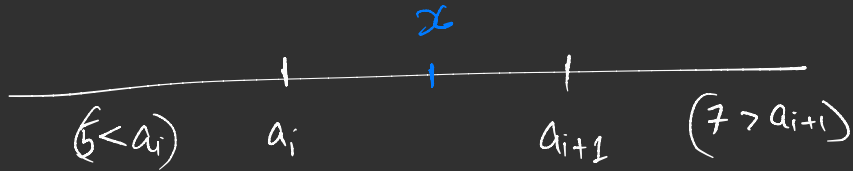
1, 5, 6, 8

$[2, 2, 3, 5, 8, 9]$

$res = [17, 17, 15, 15, 21, 25]$

$ans = 15$

- 1.) Observation 1: Converging to a value larger than $\max(arr)$ doesn't make sense
- 2.) Observation 2: Converging to a value smaller than $\min(arr)$ doesn't make sense
- 3.) Converging to a value that is not a part of the array is not beneficial



$$\begin{aligned} \text{left}(x) &= \text{left}(a_i) + \delta * (x - a_i) \\ \text{right}(x) &= \text{right}(a_{i+1}) + \delta * (a_{i+1} - x) \end{aligned} \quad \left[a_i \leq x \leq a_{i+1} \right]$$

$$\text{cost}(x) = \text{left}(a_i) + \text{right}(a_{i+1}) - \delta a_i + \delta a_{i+1} - 2x$$

[Try Yourself]

Given a string S and a string T. The target is to return a permutation of s, s.t. It doesn't contain T as a subsequence

1. $\leq \text{len}(S) \leq 10^5$
2. $1 \leq \text{len}(T) \leq 26$ [all the characters in t will be unique]

Thank You!

Reminder: Going to the gym & observing the trainer work out can help you know the right technique, but you'll muscle up only if you lift some weights yourself.

So, PRACTICE, PRACTICE, PRACTICE!