

Programación Competitiva

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 GitHub Examen

Dos punteros y Ventana deslizante

Dos punteros

Se usan dos punteros (o índices) en un array y se los mueven de acuerdo a los valores que apuntan

| | | | | | | | |
|---|---|----|----|----|----|----|----|
| 3 | 7 | 12 | 15 | 34 | 56 | 57 | 78 |
|---|---|----|----|----|----|----|----|

- ▶ Given an array of integers that is already *sorted in ascending order*, find two numbers such that they add up to a specific target number.

Input: [1, 2, 7, 9, 11, 15]

target: 11

Output: [1, 3] positions

Input: [-1, 1, 2, 3, 5]

target = 5

Output: [2, 3] positions

- Find three numbers in a sorted array that sum to a target

Input: [1, 2, 4, 5, 12]

target: 19

Output: [1, 3, 4] positions

Sum of two numbers

- ▶ <https://cses.fi/problemset/task/1640/>

Sum of three numbers

- ▶ <https://cses.fi/problemset/task/1641>

- ▶ Square each value in a sorted array and return the output in sorted order

Input: [-4, -3, 1, 2, 3]

Output: [1, 4, 9, 9, 16]

Mayor suma de subarrays

- Dado un array que contiene números enteros positivos y negativos. Encuentre la mayor suma de sus subarrays

Input: [1, -2, 3, 10, -4, 7, 2, -5]

Subarray: [3, 10, -4, 7, 2]

Output: 18

Ventana deslizable

- ▶ Maximum sum of any contiguous subarray of size k

Input: [2, 3, 4, 1, 5]

k : 3

Output: 10

Ventana deslizante

- Size of the smallest contiguous subarray with a sum greater than or equal to S

Input: [2, 4, 2, 5, 1]

S: 7

Output: 2

Sliding Window Maximum

- ▶ Given an array, there is a sliding window of size k which is moving from the very left of the array to the very right. You can only see the k numbers in the window. Each time the sliding window moves right by one position.

Return the sequence of max values of the sliding windows.

Input: [1, 3, -1, -3, 5, 3, 6, 7]

$k = 3$

Output: [3, 3, 5, 5, 6, 7]

- ▶ <https://leetcode.com/problems/sliding-window-maximum/>