

## Max Score from Subarray Mins

You are given an array **arr[]** of integers. Your task is to find the **maximum sum** of the **smallest** and **second smallest** elements across all subarrays (of size  $\geq 2$ ) of the given array.

**Examples :**

**Input:** arr[] = [4, 3, 5, 1]

**Output:** 8

**Explanation:** All subarrays with at least 2 elements and find the two smallest numbers in each:

[4, 3]  $\rightarrow 3 + 4 = 7$

[4, 3, 5]  $\rightarrow 3 + 4 = 7$

[4, 3, 5, 1]  $\rightarrow 1 + 3 = 4$

[3, 5]  $\rightarrow 3 + 5 = 8$

[3, 5, 1]  $\rightarrow 1 + 3 = 4$

[5, 1]  $\rightarrow 1 + 5 = 6$

Maximum Score is 8.

**Input:** arr[] = [1, 2, 3]

**Output:** 5

**Explanation:** All subarray with at least 2 elements and find the two smallest numbers in each:

[1, 2]  $\rightarrow 1 + 2 = 3$

[1, 2, 3]  $\rightarrow 1 + 2 = 3$

[2, 3]  $\rightarrow 2 + 3 = 5$

Maximum Score is 5

**Constraints:**

$$2 \leq \text{arr.size}() \leq 10^5$$

$$1 \leq \text{arr}[i] \leq 10^6$$