

1063. Number of Valid Subarrays Premium

Hard Topics Companies Hint

Given an integer array `nums`, return *the number of non-empty **subarrays** with the leftmost element of the subarray not larger than other elements in the subarray.*

A **subarray** is a **contiguous** part of an array.

Example 1:

Input: `nums = [1,4,2,5,3]`
Output: 11
Explanation: There are 11 valid subarrays: `[1]`, `[4]`, `[2]`, `[5]`, `[3]`, `[1,4]`, `[2,5]`, `[1,4,2]`, `[2,5,3]`, `[1,4,2,5]`, `[1,4,2,5,3]`.

Example 2:

Input: `nums = [3,2,1]`
Output: 3
Explanation: The 3 valid subarrays are: `[3]`, `[2]`, `[1]`.

Example 3:

Input: `nums = [2,2,2]`
Output: 6
Explanation: There are 6 valid subarrays: `[2]`, `[2]`, `[2]`, `[2,2]`, `[2,2]`, `[2,2,2]`.

Constraints:

- `1 <= nums.length <= 5 * 104`
- `0 <= nums[i] <= 105`

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

Given a data structure that answers queries of the type to find the minimum in a range of an array (Range minimum query (RMQ) sparse table) in O(1) time. How can you solve this problem?

Hint 2

For each starting index do a binary search with an RMQ to find the ending possible position.

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