2702. Minimum Operations to Make Numbers Non-positive Premium

Hard | Topics | Companies | Hint

You are given a **0-indexed** integer array `nums` and two integers `x` and `y`. In one operation, you must choose an index `i` such that `0 <= i < nums.length` and perform the following:

- Decrement `nums[i]` by `x`.
- Decrement values by `y` at all indices except the i^{th} one.

Return *the minimum number of operations to make all the integers in* `nums` ***less than or equal to zero.***

Example 1:

```
Input: nums = [3,4,1,7,6], x = 4, y = 2
Output: 3
Explanation: You will need three operations. One of the
optimal sequence of operations is:
Operation 1: Choose i = 3. Then, nums = [1,2,-1,3,4].
Operation 2: Choose i = 3. Then, nums = [-1,0,-3,-1,2].
Operation 3: Choose i = 4. Then, nums = [-3,-2,-5,-3,-2].
Now, all the numbers in nums are non-positive. Therefore, we
return 3.
```

Example 2:

```
Input: nums = [1,2,1], x = 2, y = 1
Output: 1
Explanation: We can perform the operation once on i = 1. Then,
nums becomes [0,0,0]. All the positive numbers are removed,
and therefore, we return 1.
```

Constraints:

- $1 <= nums.length <= 10^5$
- $1 <= nums[i] <= 10^9$
- $1 <= y < x <= 10^9$

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

Yes No

Accepted **3.1K** | Submissions **7.2K** | Acceptance Rate **42.7%**

Topics

Array Binary Search

Companies

0 - 3 months

Citadel 9

6 months ago

Snowflake 2

Hint 1

Given a candidate, can you check if it is possible to decrement all values to be less than or equal to 0 within the given steps in O(N) time?

Hint 2

If so, run a binary search to look for the minimum such valid candidate.

Discussion (3)