Problem 2602: Minimum Operations to Make All Array Elements Equal

Problem Information

Difficulty: Medium
Acceptance Rate: 37.53%
Paid Only: No
Tags: Array, Binary Search, Sorting, Prefix Sum

Problem Description

You are given an array `nums` consisting of positive integers.

You are also given an integer array `queries` of size `m`. For the `ith` query, you want to make all of the elements of `nums` equal to` queries[i]`. You can perform the following operation on the array **any** number of times:

* **Increase** or **decrease** an element of the array by `1`.

Return _an array_`answer` _of size_`m` _where_`answer[i]`_is the**minimum** number of operations to make all elements of _`nums` _equal to_`queries[i]`.

Note that after each query the array is reset to its original state.

Example 1:

Input: nums = [3,1,6,8], queries = [1,5] **Output:** [14,10] **Explanation:** For the first query we can do the following operations: - Decrease nums[0] 2 times, so that nums = [1,1,6,8]. - Decrease nums[2] 5 times, so that nums = [1,1,1,8]. - Decrease nums[3] 7 times, so that nums = [1,1,1,1]. So the total number of operations for the first query is 2 + 5 + 7 = 14. For the second query we can do the following operations: - Increase nums[0] 2 times, so that nums = [5,1,6,8]. - Increase nums[1] 4 times, so that nums = [5,5,6,8]. - Decrease nums[2] 1 time, so that nums = [5,5,5,8]. - Decrease nums[3] 3 times, so that nums = [5,5,5,5]. So the total number of operations for the second query is 2 + 4 + 1 + 3 = 10.

Example 2:

Input: nums = [2,9,6,3], queries = [10] **Output:** [20] **Explanation:** We can increase each value in the array to 10. The total number of operations will be 8 + 1 + 4 + 7 = 20.

Constraints:

* `n == nums.length` * `m == queries.length` * `1 <= n, m <= 105` * `1 <= nums[i], queries[i] <= 109`

Code Snippets

C++:

```
class Solution {
public:
vector<long long> minOperations(vector<int>& nums, vector<int>& queries) {

}
};
```

Java:

```
class Solution {
public List<Long> minOperations(int[] nums, int[] queries) {

}
}
```

Python3:

```
class Solution:
def minOperations(self, nums: List[int], queries: List[int]) -> List[int]:
```