Problem 2541: Minimum Operations to Make Array Equal II

Problem Information

Difficulty: Medium
Acceptance Rate: 32.83%
Paid Only: No
Tags: Array, Math, Greedy

Problem Description

You are given two integer arrays `nums1` and `nums2` of equal length `n` and an integer `k`. You can perform the following operation on `nums1`:

* Choose two indexes `i` and `j` and increment `nums1[i]` by `k` and decrement `nums1[j]` by `k`. In other words, `nums1[i] = nums1[i] + k` and `nums1[j] = nums1[j] - k`.

`nums1` is said to be **equal** to `nums2` if for all indices `i` such that `0 <= i < n`, `nums1[i] == nums2[i]`.

Return _the**minimum** number of operations required to make _`nums1` _equal to_`nums2`. If it is impossible to make them equal, return `-1`.

Example 1:

Input: nums1 = [4,3,1,4], nums2 = [1,3,7,1], k = 3 **Output:** 2 **Explanation:** In 2 operations, we can transform nums1 to nums2. 1st operation: i = 2, j = 0. After applying the operation, nums1 = [1,3,4,4]. 2nd operation: i = 2, j = 3. After applying the operation, nums1 = [1,3,7,1]. One can prove that it is impossible to make arrays equal in fewer operations.

Example 2:

Input: nums1 = [3,8,5,2], nums2 = [2,4,1,6], k = 1 **Output:** -1 **Explanation:** It can be proved that it is impossible to make the two arrays equal.

Constraints:

* `n == nums1.length == nums2.length` * `2 <= n <= 105` * `0 <= nums1[i], nums2[j] <= 109` * `0 <= k <= 105`

Code Snippets

C++:

```
class Solution {
public:
long long minOperations(vector<int>& nums1, vector<int>& nums2, int k) {

}
};
```

Java:

```
class Solution {
public long minOperations(int[] nums1, int[] nums2, int k) {

}
}
```

Python3:

```
class Solution:
def minOperations(self, nums1: List[int], nums2: List[int], k: int) -> int:
```