Problem 2426: Number of Pairs Satisfying Inequality

Problem Information

Difficulty: Hard
Acceptance Rate: 46.43%
Paid Only: No
Tags: Array, Binary Search, Divide and Conquer, Binary Indexed Tree, Segment Tree, Merge Sort, Ordered Set

Problem Description

You are given two **0-indexed** integer arrays `nums1` and `nums2`, each of size `n`, and an integer `diff`. Find the number of **pairs** `(i, j)` such that:

* `0 <= i < j <= n - 1` **and** * `nums1[i] - nums1[j] <= nums2[i] - nums2[j] + diff`.

Return _the**number of pairs** that satisfy the conditions._

Example 1:

Input: nums1 = [3,2,5], nums2 = [2,2,1], diff = 1 **Output:** 3 **Explanation:** There are 3 pairs that satisfy the conditions: 1. i = 0, j = 1: 3 - 2 <= 2 - 2 + 1. Since i < j and 1 <= 1, this pair satisfies the conditions. 2. i = 0, j = 2: 3 - 5 <= 2 - 1 + 1. Since i < j and -2 <= 2, this pair satisfies the conditions. 3. i = 1, j = 2: 2 - 5 <= 2 - 1 + 1. Since i < j and -3 <= 2, this pair satisfies the conditions. Therefore, we return 3.

Example 2:

Input: nums1 = [3,-1], nums2 = [-2,2], diff = -1 **Output:** 0 **Explanation:** Since there does not exist any pair that satisfies the conditions, we return 0.

Constraints:

* `n == nums1.length == nums2.length` * `2 <= n <= 105` * `-104 <= nums1[i], nums2[i] <= 104` * `-104 <= diff <= 104`

Code Snippets

C++:

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

}
};
```

Java:

```
class Solution {
public long numberOfPairs(int[] nums1, int[] nums2, int diff) {

}
}
```

Python3:

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