

2426. Number of Pairs Satisfying Inequality

My Submissions (/contest/biweekly-contest-88/problems/number-of-pairs-satisfying-inequality/submissions/)

Back to Contest (/contest/biweekly-contest-88/)

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:

- $0 \leq i < j \leq n - 1$ **and**
- $nums1[i] - nums1[j] \leq nums2[i] - nums2[j] + diff$.

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

User Accepted:	1303
User Tried:	2778
Total Accepted:	1406
Total Submissions:	5012
Difficulty:	Hard

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. $i = 0, j = 1$: $3 - 2 \leq 2 - 2 + 1$. Since $i < j$ and $1 \leq 1$, this pair satisfies the conditions.
2. $i = 0, j = 2$: $3 - 5 \leq 2 - 1 + 1$. Since $i < j$ and $-2 \leq 2$, this pair satisfies the conditions.
3. $i = 1, j = 2$: $2 - 5 \leq 2 - 1 + 1$. Since $i < j$ and $-3 \leq 2$, 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:

- $n == nums1.length == nums2.length$
- $2 \leq n \leq 10^5$
- $-10^4 \leq nums1[i], nums2[i] \leq 10^4$
- $-10^4 \leq diff \leq 10^4$

Discuss (<https://leetcode.com/problems/number-of-pairs-satisfying-inequality/discuss>)

JavaScript

```
1 function Fenwick(n) {
2   let a = Array(n).fill(0);
3   return { query, update, rangeSum, tree }
4   function query(i) {
5     let sum = 0;
6     for (i++; i > 0; i = parent(i)) sum += a[i];
7     return sum;
8   }
9   function update(i, v) {
10    for (i++; i < n; i = next(i)) a[i] += v;
11  }
12  function rangeSum(l, r) {
13    return query(r) - query(l - 1);
14  }
15  function parent(x) {
16    return x - lowestOneBit(x);
17  }
18  function next(x) {
19    return x + lowestOneBit(x);
20  }
21  function lowestOneBit(x) {
22    return x & -x;
23  }
24  function tree() {
```

```
25     return a;
26   }
27 }
28
29 ▾ const numberOfPairs = (a, b, diff) => {
30     let n = a.length, res = 0, st = new Fenwick(1e5);
31   ▾ for (let i = 0; i < n; i++) {
32       let x = a[i] - b[i], y = x + diff;
33       res += st.rangeSum(0, y + 1e5 / 2);
34       st.update(x + 1e5 / 2, 1)
35     }
36     return res;
37 };
```

☐ Custom Testcase[Use Example Testcases](#)[Run](#)[Submit](#)Submission Result: **Accepted** (/submissions/detail/877101638/) ?[More Details > \(/submissions/detail/877101638/\)](#)

Share your acceptance!

[◀1](#)

Copyright © 2023 LeetCode

[Help Center \(/support\)](#) | [Jobs \(/jobs\)](#) | [Bug Bounty \(/bugbounty\)](#) | [Online Interview \(/interview/\)](#) | [Students \(/student\)](#) | [Terms \(/terms\)](#) | [Privacy Policy \(/privacy\)](#) [United States \(/region\)](#)