

1865. Finding Pairs With a Certain Sum

Solved ●

Medium

Topics



Hint

You are given two integer arrays `nums1` and `nums2`. You are tasked to implement a data structure that supports queries of two types:

1. **Add** a positive integer to an element of a given index in the array `nums2`.
2. **Count** the number of pairs (i, j) such that `nums1[i] + nums2[j]` equals a given value $(0 \leq i < \text{nums1.length}$ and $0 \leq j < \text{nums2.length})$.

Implement the `FindSumPairs` class:

- `FindSumPairs(int[] nums1, int[] nums2)` Initializes the `FindSumPairs` object with two integer arrays `nums1` and `nums2`.
- `void add(int index, int val)` Adds `val` to `nums2[index]`, i.e., apply `nums2[index] += val`.
- `int count(int tot)` Returns the number of pairs (i, j) such that `nums1[i] + nums2[j] == tot`.

Example 1:

Input

```
["FindSumPairs", "count", "add", "count", "count", "add", "add", "count"]
[[[1, 1, 2, 2, 2, 3], [1, 4, 5, 2, 5, 4]], [7], [3, 2], [8], [4], [0, 1], [1, 1], [7]]
```

Output

```
[null, 8, null, 2, 1, null, null, 11]
```

Explanation

```
FindSumPairs findSumPairs = new FindSumPairs([1, 1, 2, 2, 2, 3], [1, 4, 5, 2, 5, 4]);
findSumPairs.count(7); // return 8; pairs (2,2), (3,2), (4,2), (2,4), (3,4), (4,4) make 2 + 5 and pairs (5,1), (5,5) make 3 + 4
findSumPairs.add(3, 2); // now nums2 = [1,4,5,4,5,4]
findSumPairs.count(8); // return 2; pairs (5,2), (5,4) make 3 + 5
findSumPairs.count(4); // return 1; pair (5,0) makes 3 + 1
findSumPairs.add(0, 1); // now nums2 = [2,4,5,4,5,4]
findSumPairs.add(1, 1); // now nums2 = [2,5,5,4,5,4]
findSumPairs.count(7); // return 11; pairs (2,1), (2,2), (2,4), (3,1), (3,2), (3,4), (4,1), (4,2), (4,4) make 2 + 5 and pairs (5,3), (5,5) make 3 + 4
```


Constraints:

- $1 \leq \text{nums1.length} \leq 1000$
- $1 \leq \text{nums2.length} \leq 10^5$
- $1 \leq \text{nums1}[i] \leq 10^9$
- $1 \leq \text{nums2}[j] \leq 10^5$
- $0 \leq \text{index} < \text{nums2.length}$
- $1 \leq \text{val} \leq 10^5$
- $1 \leq \text{tot} \leq 10^9$
- At most 1000 calls are made to `add` and `count` each.

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

Yes No

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