Description | Editorial | Solutions | Submissions

1874. Minimize Product Sum of Two Arrays

Premium

Solved

Medium | Topics | Companies | Hint

The **product sum** of two equal-length arrays `a` and `b` is equal to the sum of `a[i] * b[i]` for all `0 <= i < a.length` (**0-indexed**).

- For example, if `a = [1,2,3,4]` and `b = [5,2,3,1]`, the **product sum** would be `1*5 + 2*2 + 3*3 + 4*1 = 22`.

Given two arrays `nums1` and `nums2` of length `n`, return *the **minimum product sum** if you are allowed to **rearrange** the **order** of the elements in* `nums1`.

Example 1:

```
Input: nums1 = [5,3,4,2], nums2 = [4,2,2,5]
Output: 40
Explanation: We can rearrange nums1 to become [3,5,4,2]. The product sum of [3,5,4,2] and [4,2,2,5] is 3*4 + 5*2 + 4*2 + 2*5 = 40.
```

Example 2:

```
Input: nums1 = [2,1,4,5,7], nums2 = [3,2,4,8,6]
Output: 65
Explanation: We can rearrange nums1 to become [5,7,4,1,2]. The product sum of [5,7,4,1,2] and [3,2,4,8,6] is 5*3 + 7*2 + 4*4 + 1*8 + 2*6 = 65.
```

Constraints:

- `n == nums1.length == nums2.length`
- `1 <= n <= 10^5`
- `1 <= nums1[i], nums2[i] <= 100`

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

Yes | No

Accepted 19.2K | Submissions 21.5K | Acceptance Rate 89.3%

Topics

Companies

Hint 1

Hint 2

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Code

Python3 • Auto

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

        nums1 = sorted(nums1)
        nums2 = sorted(nums2, reverse=True)

        ans = 0

        for i in range(0, len(nums1)):
            ans += nums1[i] * nums2[i]

        return ans
```

Saved

Ln 7, Col 16

Testcase | Test Result

Accepted Runtime: 62 ms

• Case 1 • Case 2

Input

nums1 =
[5,3,4,2]

nums2 =
[4,2,2,5]

Output

40

Expected