

2542. Maximum Subsequence Score

Hint ⓘ

Medium



2K

85



Companies

You are given two **0-indexed** integer arrays `nums1` and `nums2` of equal length `n` and a positive integer `k`. You must choose a **subsequence** of indices from `nums1` of length `k`.

For chosen indices `i0`, `i1`, ..., `ik-1`, your **score** is defined as:

- The sum of the selected elements from `nums1` multiplied with the **minimum** of the selected elements from `nums2`.
- It can be defined simply as: $(\text{nums1}[i_0] + \text{nums1}[i_1] + \dots + \text{nums1}[i_{k-1}]) * \min(\text{nums2}[i_0], \text{nums2}[i_1], \dots, \text{nums2}[i_{k-1}])$.

Return the **maximum possible score**.

A **subsequence** of indices of an array is a set that can be derived from the set `{0, 1, ..., n-1}` by deleting some or no elements.

Example 1:

Input: `nums1 = [1,3,3,2]`, `nums2 = [2,1,3,4]`, `k = 3`

Output: 12

Explanation:

The four possible subsequence scores are:

- We choose the indices 0, 1, and 2 with score = $(1+3+3) * \min(2,1,3) = 7$.
- We choose the indices 0, 1, and 3 with score = $(1+3+2) * \min(2,1,4) = 6$.
- We choose the indices 0, 2, and 3 with score = $(1+3+2) * \min(2,3,4) = 12$.
- We choose the indices 1, 2, and 3 with score = $(3+3+2) * \min(1,3,4) = 8$.

Therefore, we return the max score, which is 12.

Example 2:

Input: `nums1 = [4,2,3,1,1]`, `nums2 = [7,5,10,9,6]`, `k = 1`

Output: 30

Explanation:

Choosing index 2 is optimal: `nums1[2] * nums2[2] = 3 * 10 = 30` is the maximum possible score.

Constraints:

- `n == nums1.length == nums2.length`
- `1 <= n <= 105`
- `0 <= nums1[i], nums2[j] <= 105`
- `1 <= k <= n`

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Yes No

Discussion (41)

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