

Problem 3478: Choose K Elements With Maximum Sum

Problem Information

Difficulty: Medium

Acceptance Rate: 32.58%

Paid Only: No

Tags: Array, Sorting, Heap (Priority Queue)

Problem Description

You are given two integer arrays, `nums1` and `nums2`, both of length `n`, along with a positive integer `k`.

For each index `i` from `0` to `n - 1`, perform the following:

* Find **all** indices `j` where `nums1[j]` is less than `nums1[i]`. * Choose **at most** `k` values of `nums2[j]` at these indices to **maximize** the total sum.

Return an array `answer` of size `n`, where `answer[i]` represents the result for the corresponding index `i`.

Example 1:

Input: nums1 = [4,2,1,5,3], nums2 = [10,20,30,40,50], k = 2

Output: [80,30,0,80,50]

Explanation:

* For `i = 0`: Select the 2 largest values from `nums2` at indices `[1, 2, 4]` where `nums1[j] < nums1[0]`, resulting in `50 + 30 = 80`. * For `i = 1`: Select the 2 largest values from `nums2` at index `[2]` where `nums1[j] < nums1[1]`, resulting in 30. * For `i = 2`: No indices satisfy `nums1[j] < nums1[2]`, resulting in 0. * For `i = 3`: Select the 2 largest values from `nums2` at indices `[0, 1, 2, 4]` where `nums1[j] < nums1[3]`, resulting in `50 + 30 = 80`. * For `i = 4`: Select the 2 largest values from `nums2` at indices `[1, 2]` where `nums1[j] < nums1[4]`,

resulting in `30 + 20 = 50`.

****Example 2:****

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

****Output:**** [0,0,0,0]

****Explanation:****

Since all elements in `nums1` are equal, no indices satisfy the condition `nums1[j] < nums1[i]` for any `i`, resulting in 0 for all positions.

****Constraints:****

```
* `n == nums1.length == nums2.length` * `1 <= n <= 105` * `1 <= nums1[i], nums2[i] <= 106` *  
`1 <= k <= n`
```

Code Snippets

C++:

```
class Solution {  
public:  
vector<long long> findMaxSum(vector<int>& nums1, vector<int>& nums2, int k) {  
  
}  
};
```

Java:

```
class Solution {  
public long[] findMaxSum(int[] nums1, int[] nums2, int k) {  
  
}  
}
```

Python3:

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