

# 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:**

`1 <= nums1.length == nums2.length <= 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]:
```