Problem 3321: Find X-Sum of All K-Long Subarrays II

Problem Information

Difficulty: Hard
Acceptance Rate: 40.94%
Paid Only: No
Tags: Array, Hash Table, Sliding Window, Heap (Priority Queue)

Problem Description

You are given an array `nums` of `n` integers and two integers `k` and `x`.

The **x-sum** of an array is calculated by the following procedure:

* Count the occurrences of all elements in the array. * Keep only the occurrences of the top `x` most frequent elements. If two elements have the same number of occurrences, the element with the **bigger** value is considered more frequent. * Calculate the sum of the resulting array.

Note that if an array has less than `x` distinct elements, its **x-sum** is the sum of the array.

Return an integer array `answer` of length `n - k + 1` where `answer[i]` is the **x-sum** of the subarray `nums[i..i + k - 1]`.

Example 1:

Input: nums = [1,1,2,2,3,4,2,3], k = 6, x = 2

Output: [6,10,12]

Explanation:

* For subarray `[1, 1, 2, 2, 3, 4]`, only elements 1 and 2 will be kept in the resulting array. Hence, `answer[0] = 1 + 1 + 2 + 2`. * For subarray `[1, 2, 2, 3, 4, 2]`, only elements 2 and 4 will be kept in the resulting array. Hence, `answer[1] = 2 + 2 + 2 + 4`. Note that 4 is kept in the array since it is bigger than 3 and 1 which occur the same number of times. * For subarray `[2, 2, 3, 4, 2, 3]`, only elements 2 and 3 are kept in the resulting array. Hence, `answer[2] = 2 + 2 + 2 + 3 + 3`.

Example 2:

Input: nums = [3,8,7,8,7,5], k = 2, x = 2

Output: [11,15,15,15,12]

Explanation:

Since `k == x`, `answer[i]` is equal to the sum of the subarray `nums[i..i + k - 1]`.

Constraints:

* `nums.length == n` * `1 <= n <= 105` * `1 <= nums[i] <= 109` * `1 <= x <= k <= nums.length`

Code Snippets

C++:

```
class Solution {
public:
vector<long long> findXSum(vector<int>& nums, int k, int x) {

}
};
```

Java:

```
class Solution {
public long[] findXSum(int[] nums, int k, int x) {

}
}
```

Python3:

```
class Solution:
def findXSum(self, nums: List[int], k: int, x: int) -> List[int]:
```