Problem 2670: Find the Distinct Difference Array

Problem Information

Difficulty: Easy
Acceptance Rate: 76.73%
Paid Only: No
Tags: Array, Hash Table

Problem Description

You are given a **0-indexed** array `nums` of length `n`.

The **distinct difference** array of `nums` is an array `diff` of length `n` such that `diff[i]` is equal to the number of distinct elements in the suffix `nums[i + 1, ..., n - 1]` **subtracted from** the number of distinct elements in the prefix `nums[0, ..., i]`.

Return _the**distinct difference** array of _`nums`.

Note that `nums[i, ..., j]` denotes the subarray of `nums` starting at index `i` and ending at index `j` inclusive. Particularly, if `i > j` then `nums[i, ..., j]` denotes an empty subarray.

Example 1:

Input: nums = [1,2,3,4,5] **Output:** [-3,-1,1,3,5] **Explanation:** For index i = 0, there is 1 element in the prefix and 4 distinct elements in the suffix. Thus, diff[0] = 1 - 4 = -3. For index i = 1, there are 2 distinct elements in the prefix and 3 distinct elements in the suffix. Thus, diff[1] = 2 - 3 = -1. For index i = 2, there are 3 distinct elements in the prefix and 2 distinct elements in the suffix. Thus, diff[2] = 3 - 2 = 1. For index i = 3, there are 4 distinct elements in the prefix and 1 distinct element in the suffix. Thus, diff[3] = 4 - 1 = 3. For index i = 4, there are 5 distinct elements in the prefix and no elements in the suffix. Thus, diff[4] = 5 - 0 = 5.

Example 2:

Input: nums = [3,2,3,4,2] **Output:** [-2,-1,0,2,3] **Explanation:** For index i = 0, there is 1 element in the prefix and 3 distinct elements in the suffix. Thus, diff[0] = 1 - 3 = -2. For index i

= 1, there are 2 distinct elements in the prefix and 3 distinct elements in the suffix. Thus, diff[1] = 2 - 3 = -1. For index i = 2, there are 2 distinct elements in the prefix and 2 distinct elements in the suffix. Thus, diff[2] = 2 - 2 = 0. For index i = 3, there are 3 distinct elements in the prefix and 1 distinct element in the suffix. Thus, diff[3] = 3 - 1 = 2. For index i = 4, there are 3 distinct elements in the prefix and no elements in the suffix. Thus, diff[4] = 3 - 0 = 3.

Constraints:

* `1 <= n == nums.length <= 50` * `1 <= nums[i] <= 50`

Code Snippets

C++:

```cpp
class Solution {
public:
vector<int> distinctDifferenceArray(vector<int>& nums) {


}
};
```

Java:

```java
class Solution {
public int[] distinctDifferenceArray(int[] nums) {


}
}
```

Python3:

```python
class Solution:
def distinctDifferenceArray(self, nums: List[int]) -> List[int]:
```