**1.3** You are given a 0-indexed integer array nums. The distinct count of a subarray of nums is defined as: Let nums[i..j] be a subarray of nums consisting of all the indices from i to j such that 0 <= i <= j < nums.length. Then the number of distinct values in nums[i..j] is called the distinct count of nums[i..j]. Return the **sum of the squares of distinct counts of all subarrays of nums**. A subarray is a contiguous non-empty sequence of elements within an array.

**AIM**:

To compute the sum of the squares of distinct counts of all possible subarrays of a given integer array.

**ALGORITHM:**

1. Initialize total sum = 0.

2. Generate all possible subarrays:

• Outer loop for starting index i.

• Inner loop for ending index j.

3. For each subarray nums[i..j]:

• Use a set to find the distinct elements.

• Let count = size of set.

• Add count \* count (square of distinct count) to total sum.

1. Return total sum after processing all subarrays.

**PROGRAM:**

A screenshot of a computer code

AI-generated content may be incorrect.

Input:

nums = [1,2,1]

Output:

A screenshot of a computer

AI-generated content may be incorrect.

**RESULT:**

Thus, the sum of the squares of distinct counts program is successfully executed, and the output is verified.

**PERFORMANCE ANALYSIS:**

Time Complexity:

• Generating all subarrays = O(n^2)

• Counting distinct using set (up to O(n) each)

• Worst case = O(n^3)

• For small n this is fine.

Space Complexity:

• Temporary set of size up to O(n)

• So overall = O(n)