3134. Find the Median of the Uniqueness Array

Description

You are given an integer array `nums`. The **uniqueness array** of `nums` is the sorted array that contains the number of distinct elements of all the subarrays of `nums`. In other words, it is a sorted array consisting of `distinct(nums[i..j])`, for all `0 <= i <= j < nums.length`.

Here, `distinct(nums[i..j])` denotes the number of distinct elements in the subarray that starts at index `i` and ends at index `j`.

Return the **median** of the **uniqueness array** of `nums`.

Note that the **median** of an array is defined as the middle element of the array when it is sorted in non-decreasing order. If there are two choices for a median, the **smaller** of the two values is taken.

Example 1:

Input: nums = [1,2,3]

Output: 1

Explanation:

The uniqueness array of `nums` is `[distinct(nums[0..0]), distinct(nums[1..1]), distinct(nums[2..2]), distinct(nums[0..1]), distinct(nums[1..2]), distinct(nums[0..2])]` which is equal to `[1, 1, 1, 2, 2, 3]`. The uniqueness array has a median of 1. Therefore, the answer is 1.

Example 2:

Input: nums = [3,4,3,4,5]

Output: 2

Explanation:

The uniqueness array of `nums` is `[1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3]`. The uniqueness array has a median of 2. Therefore, the answer is 2.

Example 3:

Input: nums = [4,3,5,4]

Output: 2

Explanation:

The uniqueness array of `nums` is `[1, 1, 1, 1, 2, 2, 2, 3, 3, 3]`. The uniqueness array has a median of 2. Therefore, the answer is 2.

Constraints:

- `1 <= nums.length <= 10^5`
- `1 <= nums[i] <= 10^5`