Problem 2419: Longest Subarray With Maximum Bitwise AND

Problem Information

Difficulty: Medium
Acceptance Rate: 65.39%
Paid Only: No
Tags: Array, Bit Manipulation, Brainteaser

Problem Description

You are given an integer array `nums` of size `n`.

Consider a **non-empty** subarray from `nums` that has the **maximum** possible **bitwise AND**.

* In other words, let `k` be the maximum value of the bitwise AND of **any** subarray of `nums`. Then, only subarrays with a bitwise AND equal to `k` should be considered.

Return _the length of the**longest** such subarray_.

The bitwise AND of an array is the bitwise AND of all the numbers in it.

A **subarray** is a contiguous sequence of elements within an array.

Example 1:

Input: nums = [1,2,3,3,2,2] **Output:** 2 **Explanation:** The maximum possible bitwise AND of a subarray is 3. The longest subarray with that value is [3,3], so we return 2.

Example 2:

Input: nums = [1,2,3,4] **Output:** 1 **Explanation:** The maximum possible bitwise AND of a subarray is 4. The longest subarray with that value is [4], so we return 1.

Constraints:

* `1 <= nums.length <= 105` * `1 <= nums[i] <= 106`

Code Snippets

C++:

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

}
};
```

Java:

```
class Solution {
public int longestSubarray(int[] nums) {

}
}
```

Python3:

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