Problem 2031: Count Subarrays With More Ones Than Zeros

Problem Information

Difficulty: Medium
Acceptance Rate: 49.19%
Paid Only: Yes
Tags: Array, Hash Table, Binary Search, Divide and Conquer, Binary Indexed Tree, Segment Tree, Merge Sort, Ordered Set

Problem Description

You are given a binary array `nums` containing only the integers `0` and `1`. Return _the number of_**subarrays** in nums that have **more** _`1`'_s than_`0` _' s. Since the answer may be very large, return it **modulo** _`109 + 7`.

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

Example 1:

Input: nums = [0,1,1,0,1] **Output:** 9 **Explanation:** The subarrays of size 1 that have more ones than zeros are: [1], [1], [1] The subarrays of size 2 that have more ones than zeros are: [1,1] The subarrays of size 3 that have more ones than zeros are: [0,1,1], [1,1,0], [1,0,1] The subarrays of size 4 that have more ones than zeros are: [1,1,0,1] The subarrays of size 5 that have more ones than zeros are: [0,1,1,0,1]

Example 2:

Input: nums = [0] **Output:** 0 **Explanation:** No subarrays have more ones than zeros.

Example 3:

Input: nums = [1] **Output:** 1 **Explanation:** The subarrays of size 1 that have more ones than zeros are: [1]

Constraints:

* `1 <= nums.length <= 105` * `0 <= nums[i] <= 1`

Code Snippets

C++:

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


}
};
```

Java:

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


}
}
```

Python3:

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