

Problem 3247: Number of Subsequences with Odd Sum

Problem Information

Difficulty: Medium

Acceptance Rate: 47.58%

Paid Only: Yes

Tags: Array, Math, Dynamic Programming, Combinatorics

Problem Description

Given an array `nums`, return the number of subsequences with an odd sum of elements.

Since the answer may be very large, return it **modulo** $10^9 + 7$.

Example 1:

Input: nums = [1,1,1]

Output: 4

Explanation:

The odd-sum subsequences are: `[_**1**_, 1, 1]`, `[1, _**1**_, 1]`, `[1, 1, _**1**_]`, `[_**1, 1, 1**_]`.

Example 2:

Input: nums = [1,2,2]

Output: 4

Explanation:

The odd-sum subsequences are: `[_**1**_ , 2, 2]` , `[_**1, 2**_ , 2]` , `[_**1**_ , 2, **2**_]` , `[_**1, 2, 2**_]` .

****Constraints:****

* `1 <= nums.length <= 105` * `1 <= nums[i] <= 109`

Code Snippets

C++:

```
class Solution {  
public:  
    int subsequenceCount(vector<int>& nums) {  
  
    }  
};
```

Java:

```
class Solution {  
public int subsequenceCount(int[] nums) {  
  
}  
}
```

Python3:

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