

# 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]`.

**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:
```