Problem 3686: Number of Stable Subsequences

Problem Information

Difficulty: Hard
Acceptance Rate: 55.86%
Paid Only: No
Tags: Array, Dynamic Programming

Problem Description

You are given an integer array `nums`.

A **subsequence** is **stable** if it does not contain **three consecutive** elements with the **same** parity when the subsequence is read **in order** (i.e., consecutive **inside the subsequence**).

Return the number of stable subsequences.

Since the answer may be too large, return it **modulo** `109 + 7`.

Example 1:

Input: nums = [1,3,5]

Output: 6

Explanation:

* Stable subsequences are `[1]`, `[3]`, `[5]`, `[1, 3]`, `[1, 5]`, and `[3, 5]`. * Subsequence `[1, 3, 5]` is not stable because it contains three consecutive odd numbers. Thus, the answer is 6.

Example 2:

Input: nums = [2,3,4,2]

Output: 14

Explanation:

* The only subsequence that is not stable is `[2, 4, 2]`, which contains three consecutive even numbers. * All other subsequences are stable. Thus, the answer is 14.

Constraints:

* `1 <= nums.length <= 105` * `1 <= nums[i] <= 10■■■■■■■5`

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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