Problem 790: Domino and Tromino Tiling

Problem Information

Difficulty: Medium
Acceptance Rate: 51.58%
Paid Only: No
Tags: Dynamic Programming

Problem Description

You have two types of tiles: a `2 x 1` domino shape and a tromino shape. You may rotate these shapes.

Given an integer n, return _the number of ways to tile an_ `2 x n` _board_. Since the answer may be very large, return it **modulo** `109 + 7`.

In a tiling, every square must be covered by a tile. Two tilings are different if and only if there are two 4-directionally adjacent cells on the board such that exactly one of the tilings has both squares occupied by a tile.

Example 1:

Input: n = 3 **Output:** 5 **Explanation:** The five different ways are shown above.

Example 2:

Input: n = 1 **Output:** 1

Constraints:

* `1 <= n <= 1000`

Code Snippets

C++:

```cpp
class Solution {
public:
int numTilings(int n) {


}
};
```

Java:

```java
class Solution {
public int numTilings(int n) {


}
}
```

Python3:

```python
class Solution:
def numTilings(self, n: int) -> int:
```