1931. Painting a Grid With Three Different Colors

Description

You are given two integers `m` and `n`. Consider an `m x n` grid where each cell is initially white. You can paint each cell **red**, **green**, or **blue**. All cells **must** be painted.
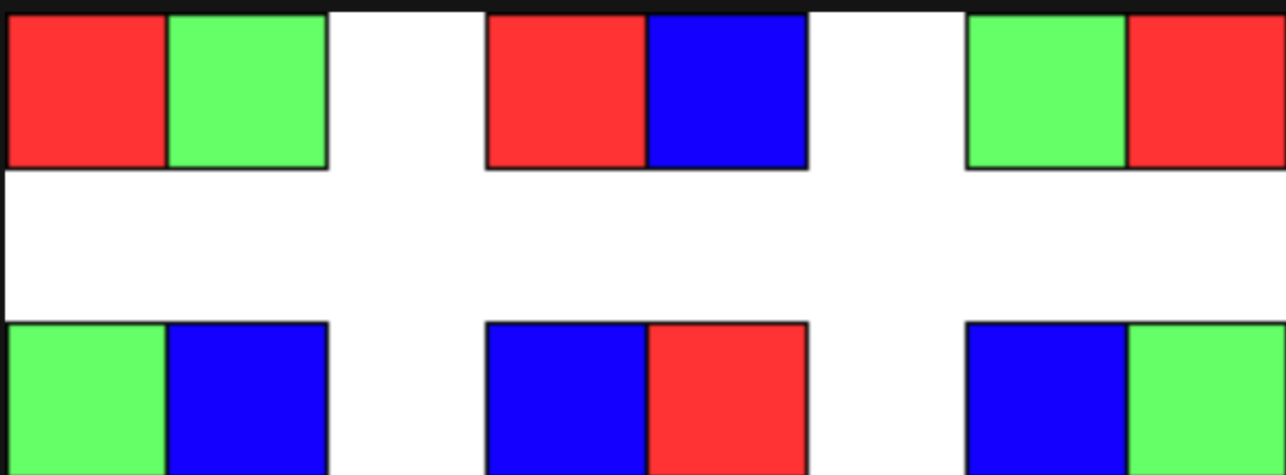
Return *the number of ways to color the grid with* *no two adjacent cells having the same color*. Since the answer can be very large, return it **modulo** `10⁹ + 7`.

Example 1:


```
Input: m = 1, n = 1
Output: 3
Explanation: The three possible colorings are shown in the image above.
```

Example 2:


```
Input: m = 1, n = 2
Output: 6
Explanation: The six possible colorings are shown in the image above.
```

Example 3:

```
Input: m = 5, n = 5
Output: 580986
```

Constraints:

- `1 <= m <= 5`
- `1 <= n <= 1000`