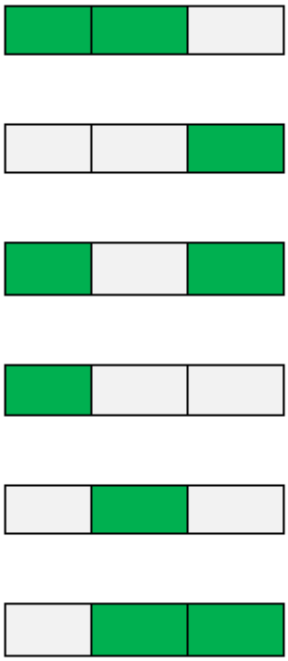
Painting the Fence

Given a fence with n posts and k colors, find out the number of ways of painting the fence such that at most 2 adjacent posts have the same color. Since answer can be large return it modulo 10^9 + 7.

Example 1:

```
Input: N=3,  K=2
Output: 6
```



Example 2:

```
Input: N=2,  K=4
Output: 16
```

Your Task:
Since, this is a function problem. You don't need to take any input, as it is already accomplished by the driver code. You just need to complete the function **countWays**() that takes **n and k** as parameters and returns the number of ways in which the fence can be painted.(modulo 10^9 + 7)

Expected Time Complexity: O(N).
Expected Auxiliary Space: O(N).

Constraints:
1 ≤ N ≤ 5000

1 ≤ K ≤ 100

```
def countWays(self,n,k):
        #code here.
        # if n==0:
        #     return 0
        if n==1:
            return k
        # if n==2:
        #     return k*k
        # dp = [0] * (n + 1)
        # total = k
        mod = 1000000007
        same = k*1
        diff = k*(k-1)
        total = same+diff
        for i in range(3,n+1):
            same = diff*1
            diff = total*(k-1)
            total = same+diff
        return total%mod
```