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**Help Patwari**

Attempted by: **976**

/

Accuracy: **91%**

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Maximum Points: **20**

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12 Votes

/

No tags

**PROBLEM**

**EDITORIAL**

**MY SUBMISSIONS**

**ANALYTICS**

[**DISCUSSIONS**](https://www.hackerearth.com/practice/algorithms/dynamic-programming/introduction-to-dynamic-programming-1/practice-problems/algorithm/help-patwari/discussion/)NEW

Patwari is really good at killing his enemy. His tactics lies in the way he chooses his steps while chasing his enemy. And the tactic is that he chooses his steps such that (steps&1 == 1).  
Now he wanted to know in how many ways he can kill his enemy K steps away from him. Order in which Patwari makes his steps does matters. Now as Patwari is not good in mathematics, he really wants your help to solve this problem! You have to print answer modulo 10^9 + 7

**Input Format :**

The only line of input contains an integer K (1≤K≤105)

**Output Format :**

Output the Number of distinct ways mod 109 + 7

**SAMPLE INPUT**

5

**SAMPLE OUTPUT**

5

**Explanation**

the 5 ways are :

3 + 1 + 1

1 + 3 + 1

1 + 1 + 3

1 + 1 + 1 + 1 + 1

5

This is a Fibonacci Pattern. You can simply write it for f(n) = f(n-1) + f(n-2).

#include<bits/stdc++.h>

#define int long long int

using namespace std;

int dp[100001];

int mod=1e9+7;

int ans(int n)

{

if(n==0)

return 0;

if(n==1)

return 1;

if(dp[n]!=-1)

return dp[n];

return dp[n]=(ans(n-1)%mod+ans(n-2)%mod)%mod;

}

main()

{

ios\_base::sync\_with\_stdio(false);

cin.tie(NULL);

cout.tie(NULL);

memset(dp,-1,sizeof(dp));

int k;

cin>>k;

cout<<ans(k);

}