**Count number of hops: -**

Easy Accuracy: 43.93% Submissions: 96K+ Points: 2

A frog jumps either 1, 2, or 3 steps to go to the top. In how many ways can it reach the top of **Nth** step. As the answer will be large find the answer modulo 1000000007.

**Example 1:**

**Input:**

N = 1

**Output:** 1

**Example 2:**

**Input:**

N = 4

**Output:** 7

**Explanation:**Below are the 7 ways to reach

4

1 step + 1 step + 1 step + 1 step

1 step + 2 step + 1 step

2 step + 1 step + 1 step

1 step + 1 step + 2 step

2 step + 2 step

3 step + 1 step

1 step + 3 step

**Your Task:**  
Your task is to complete the function **countWays()**which takes 1 argument(N) and returns the answer%(10^9 + 7).

**Expected Time Complexity:** O(N).  
**Expected Auxiliary Space:** O(1).

**Constraints:**  
1 ≤ N ≤ 105

**Code: -**

//{ Driver Code Starts

#include <bits/stdc++.h>

using namespace std;

// } Driver Code Ends

class Solution

{

public:

int mod = 1000000007;

//Function to count the number of ways in which frog can reach the top.

long long countWays(int n){

vector<long long> dp(n+1);

dp[0] = 1;

long long one, two, three;

for(int step=1; step<=n; ++step){

//recursive case

one = two = three = 0;

if(step - 1 >= 0) one = dp[step - 1];

if(step - 2 >= 0) two = dp[step - 2];

if(step - 3 >= 0) three = dp[step - 3];

dp[step] = (one + two + three) % mod;

}

return dp[n];

}

};

//{ Driver Code Starts.

int main()

{

//taking testcases

int t;

cin >> t;

while(t--)

{

//taking number of steps in stair

int n;

cin>>n;

Solution ob;

//calling function countWays()

cout << ob.countWays(n) << endl;

}

return 0;

}

// } Driver Code Ends

**T.C: - O(N)**

**S.C: - O(N)**