

Coding Arena

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A B C D E F

Problem : Mountain peak sequence

Consider the first three natural numbers 1, 2, 3. These can be arranged in the following ways: 2, 3, 1 and 1, 3, 2. In both of these arrangements, the numbers increase to a certain point and then decrease. A sequence with this property is called a "mountain peak sequence".

Given an integer N, write a program to find the remainder of mountain peak arrangements that can be obtained by rearranging the numbers 1, 2, ..., N.

Input Format:

One line containing the integer N

Output Format:

An integer m, giving the remainder of the number of mountain peak arrangements that could be obtained from 1, 2, ..., N is divide by Mod

Constraints:

Mod = 10^9+7

$N \leq 10^9$

Example 1

Input
3

Output
2

Explanation
There are two such arrangements: 1, 3, 2 and 2, 3, 1

Example 2

Input
4

Output
6

Explanation
The six arrangements are (1, 2, 4, 3), (1,3,4,2), (1,4,3,2), (2,3,4,1), (2,4,3,1), (3,4,2,1)

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note:

Participants submitting solutions in C language should not use functions from <conio.h> / <process.h> as these files do not exist in gcc

Note:

For C and C++, return type of main() function should be int.

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