Fibonacci

Description

The Fibonacci numbers are given by the following recurrance relation:

$$\begin{cases} F_0 = 0, F_1 = 1 \\ F_{n+2} = F_{n+1} + F_n \end{cases}$$

Now you are given an integer n, please output the number F_n modulo $10^9 + 7$.

Note Usually we use modulo to prevent calculating on large numbers. This is a simple way to check if your algorithm is correct or not.

You can utilize the file `fibonacci.cpp` to solve this problem. However, there may be some bugs inside!

Input

An intger n.

Output

Please output the value $F_n \mod 10^9 + 7$.

Technical Specifications

- For at least 40% test cases, we have $0 \leq n \leq 20$.
- For at least 60% test cases, we have $0 \leq n \leq 10^5$.
- For at least 80% test cases, we have $0 \leq n \leq 10^{18}$.
- For all test cases, we have $0 \leq n \leq 10^{1000}$.

Sample Input 1

```
4
```

Sample Output 1

```
3
```

Sample Input 2

```
5
```

Sample Output 2

```
5
```