

Fibonacci Sequence (Harder)

Time Limit: 2.0s **Memory Limit:** 64M

quantum is not feeling well today, and has decided to create a more painful version of the [simple Fibonacci problem](#).

Recall that the Fibonacci sequence is a well known sequence of numbers in which

$$F(n) = \begin{cases} 0, & \text{if } n = 0 \\ 1, & \text{if } n = 1 \\ F(n-2) + F(n-1), & \text{if } n \geq 2 \end{cases}$$

You are given a number N ($1 \leq N \leq 10^{100\,000}$), find the N^{th} Fibonacci number, modulo $1\,000\,000\,007 (= 10^9 + 7)$.

Input Specification

The first line of input will have the number N .

Output Specification

The N^{th} Fibonacci number, modulo $1\,000\,000\,007 (= 10^9 + 7)$.

Sample Input

```
26
```

Sample Output

```
121393
```