Fibonacci Sequence (Harder)

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
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Sample Output

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121393
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