

Fibonacci Counting System

[English](#)

[Vietnamese](#)

SM is specially passionate to represent integers in different counting systems.

This time, SM spent a lot of time for the Fibonacci Binary counting system.

Features of this system is that there aren't two digits 1 standing side by side.

An integer M can be expressed as

$$M_{10} = a_n a_{n-1} \dots a_2 a_1 F;$$

which $a_i = 1$ or 0 , $a_i * a_{i-1} = 0$ and $M = a_n F_n + a_{n-1} F_{n-1} + \dots + a_2 F_2 + a_1 F_1;$

which $F_0 = F_1 = 1$, $F_i = F_{i-1} + F_{i-2}$.

Example:

$$1_{10} = 1_F$$

$$2_{10} = 10_F$$

$$3_{10} = 100_F$$

$$4_{10} = 101_F$$

$$5_{10} = 1000_F$$

$$6_{10} = 1001_F$$

$$7_{10} = 1010_F$$

SM continuously wrote natural numbers 1, 2, 3... in the Fibonacci Binary counting system

and got a infinite string containing 0, 1. The beginning of the string is 110100101100010011010...

Looking at his result, SM wondered how many digits 1 in the first N digits of the sequence ?

Input

An integer N ($0 \leq N \leq 10^{15}$).

Output

Result in integer.

Example

Input:

21

Output:

10