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

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

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

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 continously 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 11010010110001001 1010…

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

Input

An integer N ($0 <= N <= 10^{15}$).

Output

Result in integer.

Example

Input:

21

Output:

10