B. Binary notation

You are given a positive integer n. Output its binary notation.

Input

The only line of input data contains an integer n ($1 \leq n \leq 10^6$).

Output

Output the binary notation of n (without any leading zeros).

Examples

input
5

output
101

input
13

output
1101

Note

In the first example $5 = 1 * 2^2 + 0 * 2^1 + 1 * 2^0$.