

D. Recover the String

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

For each string s consisting of characters '0' and '1' one can define four integers a_{00} , a_{01} , a_{10} and a_{11} , where a_{xy} is the number of **subsequences** of length 2 of the string s equal to the sequence $\{x, y\}$.

In these problem you are given four integers a_{00} , a_{01} , a_{10} , a_{11} and have to find any non-empty string s that matches them, or determine that there is no such string. One can prove that if at least one answer exists, there exists an answer of length no more than 1 000 000.

Input

The only line of the input contains four non-negative integers a_{00} , a_{01} , a_{10} and a_{11} . Each of them doesn't exceed 10^9 .

Output

If there exists a non-empty string that matches four integers from the input, print it in the only line of the output.

Otherwise, print "Impossible". The length of your answer must not exceed 1 000 000.

Examples

input
1 2 3 4
output
Impossible

input
1 2 2 1
output
0110