

Problem D. Dr. Bill Poucher

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 512 megabytes

There are n people. Each person sees some of the other people. Each of them will be given a black or white hat. After that each person will simultaneously name a color. Everyone who doesn't guess the color on his hat will die. *Horribly.*

Is there a deterministic strategy which guarantees that at least one person will survive?

Input

The first line contains two integers n and m ($2 \leq n \leq 3 \cdot 10^5, 1 \leq m \leq 3 \cdot 10^5$), the number of people and the number of relations of seeing someone (see below), respectively.

m lines follow. i -th of them contains two integers a_i and b_i ($0 \leq a_i, b_i < n, a_i \neq b_i$) meaning that a_i -th person sees b_i -th person. For all $i \neq j, a_i \neq a_j$ or $b_i \neq b_j$ holds.

Output

Print 1 if there exists such strategy and 0 otherwise.

Examples

standard input	standard output
4 3 0 1 1 2 2 3	0
2 2 0 1 1 0	1
6 8 0 2 0 3 2 1 3 1 5 2 1 4 4 5 3 4	1