
Problem A. Connected Spanning Subgraph

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 512 mebibytes

Bobo has a connected undirected graph G with n vertices and m edges where vertices are conveniently labeled with $1, 2, \dots, n$.

Bobo chooses a non-empty subset of edges such that the graph with the chosen edges is still connected. He would like to know the number of such subsets modulo 2.

Note that a graph is connected if, for any two vertices a and b , there exists a path which connects a and b .

Input

The input contains zero or more test cases, and is terminated by end-of-file. For each test case:

The first line contains two integers n and m ($2 \leq n \leq 2 \cdot 10^5$, $1 \leq m \leq 2 \cdot 10^5$).

The i -th of the following m lines contains two integers a_i and b_i which denote an edge between vertices a_i and b_i .

It is guaranteed that the sum of all m does not exceed $2 \cdot 10^5$, and all the given graphs are connected.

Output

For each test case, output an integer which denotes the remainder modulo 2.

Example

standard input	standard output
2 1	1
1 2	1
3 2	0
1 2	
2 3	
3 3	
1 2	
2 3	
3 1	