

Tourism

SEASON 6 – ROUND SIX – 150 point



Ivancho has been chosen for president of a new tourist agency. So now his task is to choose where to build the tourist hostels.

In Ivancho's country there are N tourist attractions and M one way roads between them. Our friend wants to build the hostels near the tourist attractions. What is more, in order to make the hikes more interesting, Ivancho want the following property: from every hostel starts a path (sequence of roads) which goes back to it. In this way, the hikes would not require walking backwards, which is not interesting.

More formally, if we represent the tourist attractions as vertices of a directed graph and the roads between them as edges, then a given vertex is suitable for a hostel if there is a path of at least one edge, which starts and ends in this vertex.

Help Ivancho prove that he is suitable for his new position by doing his work instead of him. Find all vertices, in which a tourist hostel can be built.

Input

The first line of the input file `tourism.in` contains two integers N and M – the number of attractions and the number of roads, respectively. M lines follow, containing 2 integers x and y . This indicates that there is a road in the direction from x to y . The tourist attractions are indexed with numbers from 1 to N .

Output

In the output file `tourism.out` write on separate lines in ascending order all indices of attractions, which are suitable for tourist hostels.

Constraints

$$1 \leq N \leq 3 \cdot 10^5$$

$$1 \leq M \leq 4 \cdot 10^5$$

Time limit: 0.3 sec

Memory limit: 256 MB

Example

Input (<code>tourism.in</code>)	Output (<code>tourism.out</code>)
5 7	1
1 2	3
1 4	4
3 1	5
4 2	
3 5	
5 5	
4 3	