In the name of God.

INOI, Iranian National Olympiad in Informatics
Online Contest, April 2008
Second Exam

Killall

Time limit for each test: 3000 Mili Seconds
Memory limit: 100 Mega Bytes

In every software system there are many processes running. Two processes may communicate directly (all communications are two sided). If we kill a process, all the process that were communicating directly or indirectly (through some other processes) with that process at that time will send an error message to system manager. We want to kill all the processes in a way that minimizes the number of error messages.

Write a program that

Problem

- reads the description of process and their communications from *Standard Input* ,
- computes the minimum number error messages,
- writes the order of killing processes with minimum number of error messages to *Standard Output* .

Input Sepcification

On the first line of the input there are two integers, n the number of processes, and ,m the number of communications, among processes. Processes are numbered from 1 to n.

In the next m lines, on each line there are two numbers i and j, the id of two processes that communicate with each other. No two processes appear in the input more than once, and none of the processes communicate with itself.

Output Specification

On the first line of the output, write the minimum number of error messages which required to kill all the processes. On the second line write the id of all n processes in an order such that it minimizes the number of error messages.

Restrictions

The size of the input which your program is going to be tested against is in the following table. However, some of these tests are in the same group and overall there will be 20 groups of tests.

n	m
10	30
13	65
15	14
15	88
15	90
16	110
16	99
17	22
17	30
18	42
19	25
19	40
22	23
23	22
24	23
24	23
25	33
27	33
30	35
32	38
33	308
35	44
40	41
44	43
45	44

Example

Standard Input	Standard Output
5 5 1 2 2 3 3 4 4 1 2 5	6 2 4 1 3 5