Capital City

There are N cities in Flatland connected with M unidirectional roads. The cities are numbered from 1 to N. The Flat Circle of Flatland (FCF) wants to set up a new capital city for his kingdom. For security reasons, *the capital must be reachable from all other cities* of Flatland. FCF needs the list of *all* candidate cities. You are the chief programmer at FACM (Flat Association for Computing Machinery) responsible for providing the list to FCF as soon as possible.

Input

The first line of the input file contains two integers: $1 \leq N \leq 100,000$ and $1 \leq M \leq 200,000$. Each of the following M lines contains two integers $1 \leq A, B \leq N$ denoting a road from A to B.

Output

The output file contains an integer denoting the number of candidate cities followed by the list of candidate cities in increasing order.

Example

Input:

```
4 4
1 2
3 2
4 3
2 1
```

Output:

```
2
1 2
```