## Bridges                                                                 P37339_en
Catorzè Concurs de Programació de la UPC - Final (2016-09-21)

A bridge of an undirected graph is defined as any edge whose removal increases the number of connected components. Please compute all the bridges of a given graph.

### Input

Input consists of several cases, each with the number of vertices $n$, followed by the number of edges $m$, followed by $m$ pairs $x$ $y$ indicating an edge between $x$ and $y$, with $x \neq y$. Assume $2 \leq n \leq 10^4$, $1 \leq m \leq 5n$, that vertices are numbered starting from zero, and that there is at most one edge connecting any pair of vertices.

### Output

For every graph, print the number of bridges, followed by a line with those bridges. The two vertices of each bridge must be sorted increasingly, and the bridges themselves must also be sorted increasingly. Print a line with 10 dashes at the end of every case.

### Sample input

```
2 1
0 1

3 3
2 1   0 1   2 0

4 3
2 1   0 1   3 0

7 8
6 5   4 3   6 1   2 3   3 0   2 0   0 6   1 5

6 3
1 5   3 4   4 0
```

### Sample output

```
1
0 1
----------
0

----------
3
0 1   0 3   1 2
----------
2
0 6   3 4
----------
3
0 4   1 5   3 4
----------
```

### Problem information

Author : Salvador Roura
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