12. Equivalent Relations

Given *n* equivalent relations, find the equivalent classes. Each line in the input shows the equivalent relation that consists of a pair of numbers separated by a space. Each line in the output is an equivalent class.

Note: You must sort each equivalent class in ascending order, and print the equivalent classes based on the smallest number of each class in ascending order.

Test Case

Please test your program with Input1 and Input2, and then check the answers with Output1 and Output2.

Listing 12: Equivalent Relations

```
 1   Input1：
 2   0 4
 3   3 1
 4   6 10
 5   8 9
 6   7 4
 7   6 8
 8   3 5
 9   2 11
10   11 0
11
12   Output1：
13   0 2 4 7 11
14   1 3 5
15   6 8 9 10
```

16	
17	Input2：
18	1 3
19	2 5
20	1 7
21	5 6
22	6 0
23	
24	Output2：
25	0 2 5 6
26	1 3 7

13. Maze

Given a 10 by 10 maze with one entrance and one exit, find the way to the exit (8,8) from the entrance (1,1). There is a border (represented by 1s) around the maze. There are only four moving directions: right > down > left > up. You must use a stack to store the moving path. Input is a 10 by 10 maze with a border. Output must be the moving path that consists of steps separate by ",".

Test Case

Please test your program with Input, and then check the answers with Output.

<div align="center">Listing 13: Maze</div>

1	Input：
2	1111111111
3	1011000011
4	1000011111
5	1011111111
6	1000111111
7	1110111111
8	1110111111
9	1110111111
10	1110000001
11	1111111111
12	Output：
13	(1,1),(1,2),(2,2),(3,2),(4,2),(4,1),(5,1),(6,1),(7,1),(6,1),(5,1),(4,1),(4,2),(3,2),(2,2),(1,2),(1,3),(1,4),(2,4),(3,4),(3,5),(3,6),(3,7),(3,8),(4,8),(5,8),(6,8),(7,8),(8,8)