

# Unusual Case

Input file: *standard input*  
Output file: *standard output*  
Time limit: 3 seconds  
Memory limit: 512 mebibytes

Sir Hamilton loves long walks...

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You are given a random undirected graph with  $n$  vertices and  $m$  edges: this graph is chosen randomly and uniformly from all graphs with this number of vertices and edges. You are also given an integer  $k$ . Your task is to find  $k$  non-intersecting Hamiltonian paths in the given graph.

A path is called Hamiltonian if it passes through all vertices of the graph exactly once.

In this problem, there is one example and exactly 30 more tests. In all tests except the example,  $n = 10\,000$ ,  $m = 200\,000$ , and  $k = 8$ .

## Input

The first line contains three integers: the number of vertices  $n$ , the number of edges  $m$ , and the number of paths  $k$  to be found.

Then  $m$  lines contain the description of the graph's edges. Each edge is described by a pair of integers from 1 to  $n$ : the numbers of the vertices it connects. The graph has no loops and no multiple edges.

## Output

Output  $k$  lines. In each line, output a Hamiltonian path: a sequence of  $n$  vertices in the order of traversal. Each edge of the graph can be used in at most one of the output paths. If there are several possible answers, output any one of them. It is guaranteed that an answer exists for each of the given tests.

## Example

| <i>standard input</i> | <i>standard output</i> |
|-----------------------|------------------------|
| 5 9 2                 | 1 3 5 2 4              |
| 1 3                   | 5 1 4 3 2              |
| 1 4                   |                        |
| 1 5                   |                        |
| 2 3                   |                        |
| 2 4                   |                        |
| 2 5                   |                        |
| 3 5                   |                        |
| 4 3                   |                        |
| 5 4                   |                        |

## Note

The example in the statement is the only test where  $n \neq 10\,000$ ,  $m \neq 200\,000$ ,  $k \neq 8$ . It is used to demonstrate the input and output format. The example is test 1 in the testing system.