Graph Representation

Given a graph, print it as adjacency list.

Or, in short: Read the graph as discussed in the lecture and print it.

Input

The first line of the input contains the number N, the number of nodes and the number M, the number of edges. Each of the following M lines, describe one of the edges.

Output

Print n lines. On the i-th line, print the neighbours of the i-th vertex ordered as in the adjacency list.

Limits

There are 4 test groups, each worth 25 points.

- In group 1, we have $1 \leq N \leq 10$, $0 \leq M \leq 10$.
- In group 2, we have $1 \leq N \leq 100$, $0 \leq M \leq 100$.
- In group 3, we have $1 \leq N \leq 1\,000$, $0 \leq M \leq 1\,000$.
- In group 4, we have $1 \leq N \leq 10\,000$, $0 \leq M \leq 10\,000$.

Examples

Input	Output
5 6 0 1 1 2 2 3 3 4 1 4 0 3	1 3 0 2 4 1 3 2 4 0 3 1