

Long Walk

Timelimit: 2 sec

Problem description

You have a graph and number k . Find out if you can walk in the graph for $k + 1$ steps. This means basically to start at some node and then making k steps, where a step is moving to an adjacent vertex, but not to the one you came from. It is not forbidden to visit a vertex twice in general, but only to make a step from x to y and then directly back to x .

It is guaranteed that the graph is connected. The number k is the number of nodes in the walk.

Input

Three numbers n, m, k ($1 \leq n, m, k \leq 10^5$), the number of vertices, edges, and the length of the walk. The vertices of the graph are $\{1, \dots, n\}$.

The next m lines contain the m edges as pairs of vertices.

Output

If a walk of length k is possible, output one as a list of k vertices. Otherwise output a single -1 .

Sample input/output

Input	Output
5 5 8 1 2 2 3 3 4 4 5 5 1	5 4 3 2 1 5 4 3