

Problem K. Kuratowski

Input file: *standard input*
Output file: *standard output*
Time limit: 3.5 seconds
Memory limit: 256 mebibytes

Kuratowski-Pontryagin theorem is a forbidden graphs characterization of planar graphs. It states that a finite graph is planar if and only if it does not contain a subgraph that is a subdivision of K_5 (the complete graph on five vertices) or of $K_{3,3}$ (complete bipartite graph on six vertices, three of which connect to each of the other three).

Little Max wants to check whether his favorite graph is planar. He is only a pupil and does not know the word “subdivision”, so he at least wants to find a subgraph of his graph which is **exactly** K_5 or $K_{3,3}$. Help him! Find either K_5 or $K_{3,3}$, or report their nonexistence.

A subgraph of a graph is a subset of its vertices and its edges, where both endpoints of every selected edge are among the subset of selected vertices. As opposed to *generated subgraph*, any subset of edges can be taken, not necessarily all edges between selected vertices. For example, $K_{3,3}$ is a subgraph of K_6 .

Input

The first line of input contains two space-separated integers n and m : the number of vertices and edges of the graph ($1 \leq n \leq 400$, $0 \leq m \leq \frac{n(n-1)}{2}$). Each of the next m lines contains two space-separated integers from 1 to n which denote an edge of the graph. There are no multiple edges and loops.

Output

If neither K_5 nor $K_{3,3}$ is a subgraph of the given graph, print the single word “NO”.

If you found a K_5 subgraph, print “K5” on the first line and five integers on the second one: the numbers of vertices which constitute the subgraph.

If you found a $K_{3,3}$ subgraph, print “K33” on the first line and two more lines with three integers each: the numbers of vertices in two parts of the subgraph.

If there are several subgraphs of one or both types, print any one of them.

Example

standard input	standard output
6 9 1 4 1 5 1 6 2 4 2 5 2 6 3 4 3 5 3 6	K33 1 2 3 4 5 6