A directed unweighted graph is given. It is necessary to determine if there are cycles in it, and if there is, then output any of them.

The first line of the input contains two natural numbers N and M ($1 \leq N \leq 100\ 000$, $0 \leq M \leq 100\ 000$) – the number of vertices and edges in the graph, respectively. Further in the M lines are listed the edges of the graph. Each edge is defined by a pair of numbers – the numbers of the initial and final vertices, respectively.

If there is no loop in the graph, then print **NO**, otherwise **YES** and then list all the vertices in the loop traversal order.

Sample input:
3 3
1 2
2 3
3 1

Sample output:
YES
1 2 3