Problem J
Multicolored Cycles

Time Limit: 2 seconds

Memory Limit: 512 megabytes

You are given an undirected graph with n vertices and m edges. The graph may contain self-loops (edges connect one vertex to itself) or parallel edges (edges that connect the same pair of vertices). A customer wants you to color all edges in this graph with either **blue** or **red**. Because the customer is a very weird person, he wants every cycle of the graph to have edges of both colors, i.e. there cannot be a cycle with edges only in red or blue. Your task is to find out if you can accomplish the problem.

Input

The first line contains two integers n and $(1 \leq n \leq 2000, 1 \leq m \leq 4000)$. Each of the next n lines contains two integers u and v denoting an edge connecting the u^{th} vertex to the v^{th} vertex $(1 \leq u, v \leq n)$.

Output

Output "Yes" if it is possible to color the edges satisfying the customer's condition, or "No" if it is impossible to do so.

Sample Input	Sample Output
2 2 1 2 1 2	Yes
2 3 1 2 1 2 1 2	No
5 4 1 2 2 3 1 5 2 4	Yes
5 8 1 2 2 3 3 1 1 4 4 5 5 1 2 4	Yes