	3666 - What a Special Graph Asia - Beijing - 2006/2007	3666 - What a Special Graph Asia - Beijing - 2006/2007	
	<u>Submit</u>	Ranking	

Bob is a graph theory lover. He likes to research all kinds of graphs. Recently, Bob is researching on a special graph. In this graph, we can't find out four different vertexes v_a , v_b , v_c , v_d , such that there are exactly three edges: $v_a - v_b$, $v_b - v_c$, $v_c - v_d$ connected between them. Bob names such graph as SpecialG.



This is a SpecialG

This is not a SpecialG

You are given a task by Bob: for a given simple graph G = (V, E), determine if it is a SpecialG.

Note: A simple graph is an unweighted, undirected graph containing no self-loops or multiple edges.

Input

Input contains several cases. Each case describes a graph which needs determination.

Each case begins with integers *n* and *m*, $1 \le n \le 10000$, $1 \le m \le 100000$, indicating the number of vertexes and edges in the graph respectively. Vertexes are numbered 1 to *n*.

Then for the *m* lines, each line contains two integers *a*, *b*, which means there is an edge between vertex *a* and *b*. $a \neq b$, $1 \leq a, b \leq n$.

The last case is followed by a line containing two zeros.

Output

For each case, output whether the graph is a SpecialG in the following format.

Sample Input

Sample Output

Case 1: YES Case 2: NO

Beijing 2006-2007