Problem B. Lawyers

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	1024 mebibytes

There are N lawyers. Each lawyer has been charged with committing a fraudulent offense. These N lawyers try to defend each other and make sure they are acquitted.

Lawyer A can defend lawyer B if and only if lawyer B trusts lawyer A, and there are M such pairs (A, B). Note that, if lawyer B trusts lawyer A, it does not imply that lawyer A trusts lawyer B.

Each lawyer is very hard-working, so one lawyer can defend any number of others.

Each lawyer is very talented, so anyone who receives at least one defense is unconditionally acquitted. With one exception: if lawyer A defends lawyer B and lawyer B defends lawyer A, it seems very suspicious, and both are found guilty.

Determine whether it is possible or not for all lawyers to be acquitted together.

Input

The first line contains two integers N and M, the number of lawyers and the number of trust relationships ($1 \le N, M \le 200\,000$).

The next M lines describe trust relations. The i-th of these M lines contains two different integers A_i and B_i, which means lawyer B_i trusts lawyer A_i, and so lawyer A_i can defend lawyer B_i. There are no such i and j ($1 \le i, j \le M$, $i \ne j$) that $A_i = B_i$ and $A_j = B_j$.

Output

Print "`YES`" (without quotes) if it is possible for all lawyers to be acquitted together. Print "`NO`" (without quotes) otherwise.

Examples

standard input	*standard output*
3 3 1 2 2 3 3 1	YES
4 6 1 2 1 3 1 4 2 3 2 4 3 4	NO
4 4 1 2 2 1 3 4 4 3	NO