Friendgroups

Problem ID: friendgroups

Many humans choose to partake in being a part of a friend group. What is this curious phenomenon known as a friend group? Well, when two people have a connection with each other, that is defined as a friendship. Now in this world, the friend of my friend is also my friend. So if person A is friends with person B, and person B is friends with person C, then person A is also friends with person C. So what are friend groups? Real life humans have imitated a graph concept known as strongly connected components. If person A and B are friends, then they are in a friend group of two people. If A and B, and B and C are friends, then the three of them are in a friend group of three. Isn't that great? Sadly these happy times cannot last. Humans also naturally develop a hatred for each other as well. You are given a list of friendships. Then you are given a list of rivalries that have sparked over time. Your job is to see if there are any rivalries within a friend group threatening to tear it apart.

Input

The input consists of a single test case. The first line contains two integers $1 \leq n \leq 1000$ denoting the number of friendships that follow, and $1 \leq k \leq 1000$ the number of rivalries. After that is n lines with two integers representing two individuals being friends with each other. Then there are k lines with two integers representing two individuals being rivals with each other. Each integer will be between 0 and 10000 inclusive.

Output

On a single line print out "Yes" if there are some new friendship troubles in a friend group or "No" if there are no rivalries within a friend group.

Sample Input 1

```
4 1
0 1
1 2
3 4
4 5
0 5
```

Sample Output 1

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No
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Sample Input 2

```
2 1
0 1
1 2
0 2
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Sample Output 2

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Yes
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