

Gossip Chains

It was a long night at the Habana, and when Jill woke up the next morning she blushed at the recollections of what had gone on. Nevertheless, she put on a brave face as she stepped into the student union building for lunch. “Jill!” cried Chris from the burrito stand, “I heard!”

Jill frowned. Could he know what happened at the Habana? He wasn’t there. But Jason was there, and she knew Jason talked to Joseph, who was fairly close to Erin. And didn’t Erin do breakfasts with Chris some days? She wasn’t sure.

Your task is to save Jill the embarrassment of not knowing how to react to Chris. You must write a program that will read in a list of people who tell each other secrets and then determine if a secret can pass from one given person to another.

Input

Say there are n people in this group of friends. For simplicity we will number the people $0, 1, \dots, n-1$. The first line of input will contain the single integer n ($1 \leq n \leq 300$).

Following this will be several lines of the form $a\ b$ (with a and b not equal), where each such line represents a pair of people who tell each other secrets. This list will be terminated by the line “-1 -1”. No pair of people will be repeated.

Following this will be several more lines of the form $p\ q$, where each such line is a query asking whether a secret can eventually pass from person p to person q . This list will be terminated by the line “-1 -1”.

Output

Output must be one line for each query. Each line of output should contain the single word “yes” or “no” according to whether a secret will or will not pass from person p to q .

Sample Input

```
6
0 3
0 4
1 5
2 4
-1 -1
2 3
2 5
-1 -1
```

Sample Output

```
yes
no
```

In the sample data above, the first query asks if a secret can pass from person 2 to 3. We know that 2 talks with 4, 4 talks with 0 and 0 talks with 3. Thus the first answer is yes. The second query asks if a secret can pass from person 2 to 5. But we know 5 only talks with 1 and 1 only talks with 5, so a secret can never pass from 2 to 5. Thus the second answer is no.

Scoring

The score for each line of the input file will be 100% if the correct answer is written to the output file and 0% otherwise.