Shield

Activate the Shield Generators!

You are aboard a spacecraft the size of a city flying through space. Unfortunately you have had a power failure and are stranded with only minimal backups. Again unfortunately, you are flying at an atrocious speed towards a meteor shower. You require your shields both to maintain atmosphere and protect your fragile city from the meteors. Your city has many shield generators, this situation simply requires that all areas of the city be shielded, not that all generators be active. In order to wait for rescue you must find a sufficiently small set of operating shield generators that will cover the whole city. The construction of the city is such that each generator is redundant for at least one other. That is, one of the two or more must be on to be fully shielded. You have a file of available shield generators and relationships of which ones can cover which others. You are also given the number of shield generators that you can effectively power. Determine if you can shield the entire city.

Input:

First line:

n m

the number of shield generators on the city with

$0<n<128$

the number of shield generators you can power with

$0<=m<=128$

Next j lines:

a b

A pair of shield generators that cover one another. There will at most be n*n such lines, terminated by eof. (Note that if shield 1 covers shield 2, and shield 2 covers shield 3, that shield 1 does not necessarily cover shield 3. There must be direct connections.)

Output:

yes or no

yes if it is possible to shield the city, no if it is not.

Examples:

input.txt

```
3 1$
0 1$
0 2$
```

output.txt

```
yes$
```

input.txt

```
4 1$
0 1$
0 2$
2 3$
```

output.txt

```
no$
```