DMOPC '15 Contest 3 P3 - Dimethylbenzene

Time limit: 1.0s **Memory limit:** 64M

Xyene really likes the organic compound xylene, also known as dimethylbenzene. He has received an organic molecule as a present, and would like to know if there exists a dimethylbenzene somewhere in it.

However, organic chemistry is a struggle for **Xyene**, so he'll settle for knowing whether or not his molecule contains **six** carbons atoms arranged in a ring, or **cycle**. There may be multiple cycles in **Xyene**'s present, but he's only interested in finding out if there is **at least one** that is six atoms long.

Xyene has numbered the carbon atoms in his present from $1 \dots N$, and has given you M distinct pairs of the form (u, v), representing a bond between atoms u and v.

Does his present contain at least one cycle of length six?

Input Specification

The first line of input will contain two space-separated integers N ($2 \le N \le 20$) and M ($1 \le M \le 20$). The next M lines will contain two integers u and v, defining a $u \longleftrightarrow v$ bond.

Output Specification

YES if the given molecule contains a cycle that is six carbon atoms long, NO otherwise.

Sample Input 1

6 6

1 2

2 3

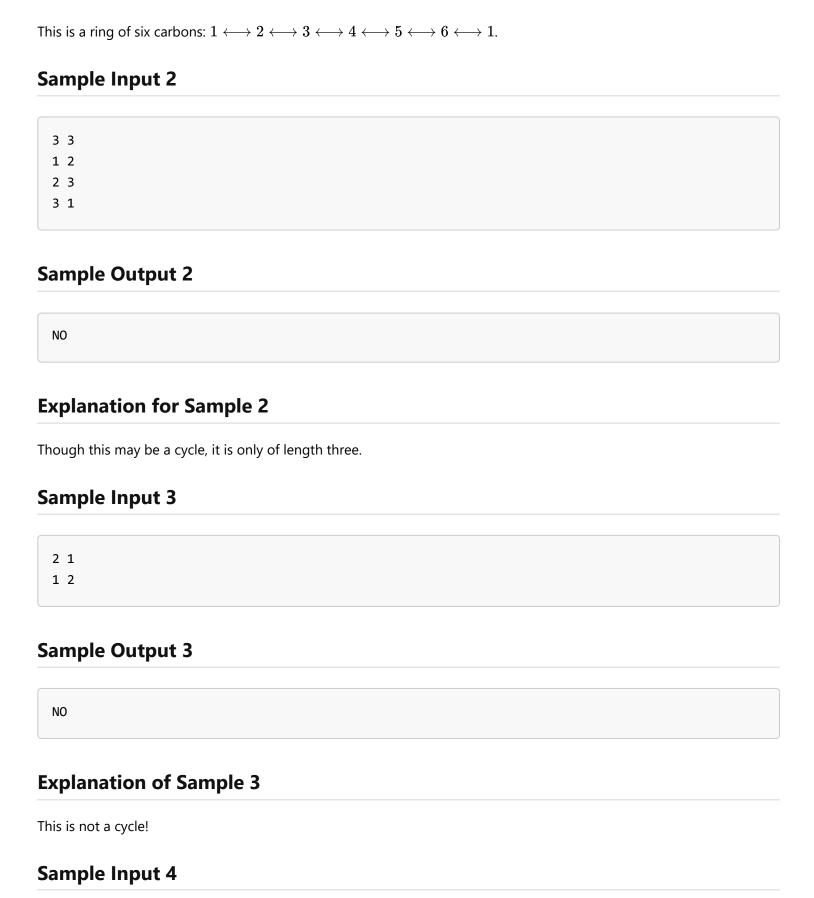
5 6

6 1

Sample Output 1

YES

Explanation for Sample 1



8 8			
1 2			
2 3			
3 4			
4 5			
5 6			
6 1			
0 1			
6 7			
7 8			
/ 0			

Sample Output 4

YES

Sample Input 5

 8 9

 1 2

 2 3

 3 4

 4 5

 5 6

 6 1

 6 7

 7 8

 8 1

Sample Output 5

YES