Mock CCC '18 Contest 5 J5/S3 - Directed Graph Connectivity

Time limit: 0.6s **Memory limit:** 1G

Given a directed graph of N vertices and M edges, determine for each edge if it is possible to reach vertex N from vertex 1 given that that edge is deleted from the graph.

Constraints

$1 \leq N \leq 50$

$1 \leq M \leq N^2 - N$

$1 \leq s_i, t_i \leq N, s_i \neq t_i$

Input Specification

The first line of the input contains two space-separated integers, N and M.

Each of the next M lines contains two space-separated integers, s_i and t_i, indicating that the ith edge goes from vertex s_i to t_i.

You may assume that any given tuple (s_i, t_i) appears at most once.

Output Specification

Output M lines.

On the ith line, given that the ith edge is deleted, print `YES` if it is still possible to reach vertex N from vertex 1. Print `NO` otherwise.

Sample Input

```
3 3
1 2
2 1
2 3
```

Sample Output

```
NO
YES
NO
```