Prefinals Moscow Workshop 2022
Day 5: Division A Contest 3, Saturday, April 23, 2022

Moscow Pre-Finals
Workshop
★ 2022 ★

ВКОНТАКТЕ   Yandex

Problem G. Dynamic Reachability

Input file:	*standard input*
Output file:	*standard output*
Time limit:	12 seconds
Memory limit:	512 mebibytes

You are given a directed graph with n vertices and m edges, the vertices of which are labeled by $1, 2, \ldots, n$. The color of each edge is either black or white. Initially, all the m edges are colored black.

You need to perform q operations. Each operation is one of the following:

- "1 k" $(1 \le k \le m)$: Change the color of the k-th edge in the input from black to white and vice versa.

- "2 u v" $(1 \le u, v \le n,\ u \ne v)$: You need to answer whether vertex u can reach vertex v without passing any white edge.

Input

The input contains only a single case.

The first line contains three integers n, m and q $(2 \le n \le 50\,000,\ 1 \le m, q \le 100\,000)$, denoting the number of vertices, the number of edges, and the number of operations.

Each of the following m lines contains two integers u_i and v_i $(1 \le u_i, v_i \le n,\ u_i \ne v_i,\ 1 \le i \le m)$, denoting a directed edge from vertex u_i to vertex v_i.

Each of the next q lines describes an operation in formats described in the statement above.

Output

For each query, print a single line. If vertex u can reach vertex v without passing any white edge, print "YES". Otherwise, print "NO".

Example

standard input	standard output
5 6 7	YES
1 2	NO
1 3	NO
2 4	YES
3 4	
3 5	
4 5	
2 1 5	
2 2 3	
1 3	
1 4	
2 1 4	
1 3	
2 1 5	