Dynamic Reachability

Input file:	`standard input`
Output file:	`standard output`
Time limit:	12 seconds
Memory limit:	512 megabytes

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" ($1 \leq k \leq m$): Change the color of the k-th edge in the input from black to white and vice versa.
- "`2` u v" ($1 \leq u, v \leq n$, $u \neq v$): 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 ($2 \leq n \leq 50\,000$, $1 \leq m, q \leq 100\,000$), 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 ($1 \leq u_i, v_i \leq n$, $u_i \neq v_i$, $1 \leq i \leq m$), 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 1 2 1 3 2 4 3 4 3 5 4 5 2 1 5 2 2 3 1 3 1 4 2 1 4 1 3 2 1 5	YES NO NO YES