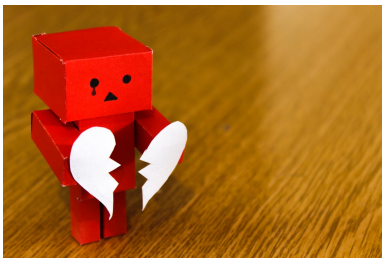
Problem I
Island of Love
Time limit: 4 seconds



Island of Love is an exciting new game show. On this show, many of the contestants start as friends. The show is quite a high-pressure situation. It involves long bouts of relaxing by the pool, drinking lots of beer, gossiping, and strenuous arguing. Since it is such a stressful situation, people stop being friends as the season progresses. All friendships are bidirectional. That is, if person X is friends with person Y, then person Y is also friends with person X. Also, as the show goes on, people never become friends, they only ever stop being friends (yes, it is depressing).

Two people are on *speaking terms* if they are friends or if there is some sequence of friendships that connect the two people. For example, if person X is only friends with person Y and person Y is friends with person Z, then person X and person Z are on speaking terms. However, if person Y and person Z end their friendship, then person X and person Z are no longer on speaking terms since there is no sequence of friendships connecting them.

Your job is to process some friendship ending events, as well as determine if two people are on speaking terms at certain points throughout the season. All the events and queries will be in the order of the time that they occur. You can assume they all happen at distinct times. A friendship ending event results in two people no longer being friends.

Input

The first line of input contains three integers N ($1 \leq N \leq 10^5$), which is the number of people on the show, F ($0 \leq F \leq 10^5$), which is the number of distinct pairs of friends when the show begins, and Q ($0 \leq Q \leq 10^5$), which is the number of events and queries to process.

The next F lines describe the friendships. Each of these lines contains two integers X and Y ($1 \leq X < Y \leq N$), which denote that person X is friends with person Y. It is guaranteed that all pairs are distinct.

The next Q lines describe the friendship ending events and queries in the order they occurred. Each of these lines contains three items. The line starts with a single character t (t is either `E` or `S`). Then follow two integers X and Y ($1 \leq X < Y \leq N$). If t is `E`, then there was a friendship ending event between person X and person Y (it is guaranteed that they were friends before this event). If t is `S`, then you must determine if person X and Y are on speaking terms at this point in time.

Output

For each query in the given order, display if the two people are on speaking terms at that given time.

Sample Input 1	Sample Output 1
3 3 4 1 2 1 3 2 3 E 1 2 S 1 2 E 1 3 S 1 2	YES NO

Sample Input 2	Sample Output 2
4 4 5 1 2 1 3 2 3 3 4 E 1 2 S 1 4 E 2 3 S 1 4 S 2 4	YES YES NO