Gossips - 100 points

Poli is in her first year at college. Although she went to one of the best universities she quickly discovered that her colleagues are split into *N* friendship groups, the main purpose of these groups being spreading gossips. Poli knows that each group *i* is formed out of one or more subgroups so that each subgroup can be a part of only one group. Now, let's say that a group *i* finds a gossip about group *j*; then all the subgroups of *i* (and the subgroups of these subgroups etc.) and all the groups of which group *i* is a part of know the gossip about group *j*. Also all of these groups know the gossip about every group of which group *j* is a part of (but they don't know anything about the subgroups of *j*, because those members may not be implicated in the gossip).

Because Poli is a friend with every one of her colleagues she knows when a gossip appears (that is when a group *i* finds a gossip about a group *j*). Now she wants to be able to answer fast to questions like: << Does a group *i* know a gossip about group *j*? >>.

Unfortunately Poli's college is rather big, so you have to help her!

Input Data
On the first line of the standard input there are three numbers *N* - the number of groups, *M* - the number of relations between the groups and *Q* - the number of queries. Next there are *M* lines of the form *a b* representing that group *b* is a subgroup of group *a*. The next *Q* lines have three numbers each: *s* - the type of query, and *x y* - two groups. If *s* is *1* then you have to answer *YES* if there is at least one gossips between group *x* and group *y* or *NO* if not. If *s* is *2* then group *x* just found out a gossip about group *y*.

Output Data
You must print to the standard output several lines, one for each query of type 1, each line being *YES* or *NO* (without quotation marks).

Constraints
- 1 <= *N, Q* <= 100.000
- 1 <= *M* < *N*
- 1 <= *x, y* <= *N*
- if a group *i* knows a gossip about group *j* it doesn't mean that group *j* knows also a gossip about *i*.

Example

Standard Input	Standard Output
9 7 7	YES
6 1	NO
6 2	YES
7 6	NO
7 3	YES
8 4	
8 5	
9 7	
2 6 4	
2 8 6	

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1 2 4
1 2 5
1 4 7
1 8 1
1 5 9
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Time limit: 1 second / test case