Problem G. Ground Construction

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	256 mebibytes

Rabbit loves to dig holes and make underground passages. There are N rabbits including him, numbered 0 through $N-1$. There are N huts numbered 0 through $N-1$, and rabbit x lives in hut x.

One day, they heard that someone is going to construct some underground passages. By this construction, rabbits will be able to go to another rabbit's hut using these passages, and they will be happy.

For some reason, constructed passage might be destroyed. Construction or destruction will be done one by one, and during each construction or destruction every rabbit will be in its own room.

Rabbits want to know whether or not certain pairs of rabbits can meet by using underground passages at certain stages of construction. Note that all passages are bidirectional and all rabbits are so friendly that they can pass through other rabbits' huts freely. Write a program that processes the information of construction or destruction of passages and rabbits' questions.

Input

The input is given in the following format:

$$N\ K$$
$$T_1\ A_1\ B_1$$
$$\vdots$$
$$T_K\ A_K\ B_K$$

The first line contains two integers N and K ($2 \le N \le 40\,000$, $1 \le k \le 40\,000$). The following K lines contain the information of construction or dedstruction and rabbits' questions, in the order that they are made. The i-th line of them contains three integers T_i, A_i and B_i ($1 \le T_i \le 3$, $0 \le A_i < B_i \le N-1$).

- If $T_i = 1$, a passage between hut A_i and hut B_i is constructed. This information only appears when there does not exist a passage between hut A_i and hut B_i.
- If $T_i = 2$, a passage between hut A_i and hut B_i is destroyed. This information only appears when there exists a passage between hut A_i and hut B_i.
- If $T_i = 3$, this is a rabbits' question: Can rabbit A_i and rabbit B_i meet by using underground passages?

Output

Your program should output a line for each i with $T_i = 3$. It should contain a word `YES` if rabbit A_i and rabbit B_i can meet at that time, or `NO` otherwise.

Examples

standard input	standard output
4 10 1 0 1 1 0 2 3 1 2 2 0 1 1 2 3 3 0 1 1 0 1 2 0 2 1 1 3 3 0 2	YES NO YES