Problem J

Jaime's Room

Jaime has a very messy room with N objects, in the past, Jaime used to be very careful with his belongings that is why each object has a label that uniquely identifies it with the numbers from 1 to N. Jaime has been very busy training for the next programming contest, and his mother, seeing how busy he is, decided to clean the room with the only condition that it will be cleaned in the way she finds it best, using boxes and throwing some things to the thrash, to not be bothered with his training Jaime agreed to his mother's terms.

Jaime's mother has C boxes labeled with the numbers from 1 to C that she will use to clean Jaime's room, each day she decides to move some objects to a box, to make her work easier (and harder) she takes the box with label k and picks two numbers i and j then she proceeds to move all objects identified with the numbers i, $i+1$, ... j to the box, regardless if they are already in another box. Since Jaime has a lot of items, sometimes Jaime's mother decides to throw a box to the thrash with all the objects inside of it, once the box have been thrown neither Jaime nor his mother will be able to find the object.

With all the changes Jaime's mother is doing in his room, Jaime is unable to find objects. He decided to create a program to help him find them using the information his mother gives him regarding what objects have been moved to what box and what boxes have been thrown to the thrash. Help Jaime write this program to answer what box has a given item and if given two items they are on the same place (same box, room, or thrash).

Input

The first line of input contains two integer numbers N ($1 \leq N \leq 10^5$) and C ($1 \leq C \leq 10^7$) separated by a space, representing the number of objects in Jaime's room, and the number of boxes his mother has available. The next line contains a single integer Q ($1 \leq Q \leq 10^5$) representing the number of actions to perform in the program. Each of the next Q lines describe an action to be performed in the program, the actions can be one of the following:

- m i j k : Move all the objects with labels i to j (inclusive) to box k
- b k : Throw box k to the thrash with all its contents
- d i : Answer the label of the box that contains the item with index i
- s i j: Answer if the object with index i and object with index j are in the same place (same box, room, or thrash)

It is guaranteed that for any action: $1 \leq i, j \leq N$ and $1 \leq k \leq C$.

Output

For each action that starts with 'd' print a single line with an integer representing the box that contains the object, if the object is in the thrash print the string "para que quieres saber eso", if the object is in the room but not inside a box print the string "si lo encuentro que te hago". For each action that starts with 's' print a single line containing the string "si"if the two objects are in the same place, or the string "no"otherwise. Answer to the actions should be in the same order as the actions appear in the input

Input example 1	**Output example 1**
10 5 5 m 1 4 2 m 3 5 1 s 4 5 b 2 d 1	si para que quieres saber eso