Fonte: <https://www.hackerrank.com/challenges/oracle2/problem>

Leaderboard: <https://www.hackerrank.com/challenges/oracle2/leaderboard> (@alaindominguezf1)

Deus ex machina is not going to make things easy for Neo. In front of Neo is a set of **N** balls.  
Each ball can be any of K colors. Deus ex Machina wants Neo to figure out which ball's color appears the most ( Plurality ). We will call bi as ball b with color i. **Plurality** exists in this set, i.e.,

∃ *b*i : |*b*i| > |bj| ∀ j ≠ i, i,j ∈ {0,1,2,3}

Neo is allowed to ask the same question, pick any 2 balls from a set of N balls and ask Oracle if they are the same or not. If they are of the same color, the Oracle answers **YES** and if they are not, Oracle answers **NO**.

**Input Format**

First line contains 5 single space separated characters/Integers.

1st is N which is the cardinality of the balls set.  
2nd is 1 indicating that Plurality exists.  
3rd is an integer indicating the number of times oracle might lie ( 0 in this version of the game)  
4th is k indicating each ball can have any of the k colors.  
5th is an integer 1 indicating the oracle lies exactly 0 time( ignore this number)

Second line is an integer D, D lines follow. Each line shows all your previous questions to Oracle. Each question is of the format

A B YES/NO

0≤A,B

**Constraints**

N ∈ {20, 40, 60, 80}  
k ∈ {2,3,4,5} colors

A minimum of N/2 queries must be asked to Oracle before Neo makes a guess.  
Any guess of color before that would result in loosing the game.

**Output Format**

Output 2 single spaced integers which serve as indices of the balls whose colors Oracle has to compare. When Neo is sure of the ball with the plurality, output 1 integer which is the index of the ball whose color is the plurality.

**Sample Input**

20 1 0 3 1

2

2 1 NO

3 4 NO

The 1st line says that there are 20 balls and plurality exists and each ball has any of the 3 colors. 2nd says that two queries were asked to oracle. The 1st one was whether the balls indexed at 2 and 1 are of the same color or not and the Oracle's reply was a NO and the 2nd one was whether the balls indexed at 3 and 4 were of the same color or not and the Oracle's reply was a NO.

**Sample Output**

5 6

Neo wants to know whether the balls indexed at 5 and 6 are of the same color or not.

1

Neo answers that the ball indexed at 1 appears most in the set.

**Task**

Complete the function *nextQuestion* with takes in all the 5 integers, along with a 2-D array *query* where query[i][j] = 1 if a query

i j

is asked and the Oracle says YES. The same value is set to 0 if the oracle says 0.

Note:- query[i][j] = query[j][i]

and the values is set to -1 if no query is asked for i and j.

**Scoring**

If M queries were asked to Oracle, on correct answer

M < N/2, score = 0  
M >= (K - 1) \* (N - K/2), score = 1  
N/2 <= M < (K - 1) \* (N - K/2), score =( (K - 1) \* (N - K/2) - M )/12

A minimum score of 1 is given for every correct submission.