F1

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

The cat Miston found a fragment of an old Soviet newspaper about an F1 race in the attic. In the margins, there were written $2m$ numbers, two numbers per line.

From other notes, Miston understood what these numbers meant: someone had professionally, in chronological order, transcribed all overtakes. That is, the numbers f_i and s_i in the i-th line meant that driver number f_i overtook driver number s_i. Moreover, only those overtakes that changed the results table were recorded (in other words, overtakes by one or more laps were not recorded).

However, there is no description of the starting grid anywhere — that is, the order in which the drivers line up before the race starts. Only the total number of drivers was found — there were n of them.

After leaving the dusty attic, the kittens bombarded the tired cat with questions of the form "could driver x_i have ended up in place p_i?". He will have to answer them.

Input

The first line contains three integers n, m, and q ($0 \le n, m, q \le 3 \cdot 10^5; n \ne 0; q \ne 0$) — the number of drivers, overtakes, and questions.

The i-th of the next m lines contains two integers f_i and s_i ($1 \le f_i, s_i \le n; f_i \ne s_i$) — the numbers from the i-th line in the margins.

It is guaranteed that the overtaking data is correct, i.e. there exists at least one starting grid such that all recorded overtakes are possible in the specified order.

The i-th of the next q lines contains two integers x_i and p_i ($1 \le x_i, p_i \le n$) — the driver number and the place from the i-th question.

Output

Print q lines, where the i-th line should contain `Yes` if the answer to the i-th question is positive, and `No` otherwise.

Assume that all drivers finished the race, nobody was disqualified, and nobody received any delayed time penalties.

Scoring

The tests for this problem consist of nine groups. Points for each group are awarded only if all tests in the group and all tests required for it are passed.

Group	Points	Additional constraints	Required groups
0	0	Tests from the statement	–
1	5	$m = 0$	–
2	17	$n, m \leq 10$	0
3	8	The leader finished last*	–
4	7	$p_i = 1$	–
5	11	$p_i \leq 3$	4
6	12	$n, m \leq 1000$	0, 2
7	11	$n \leq 20\,000$	0, 2, 6
8	7	$q \leq 10$	–
9	22	–	0–8

* The driver in pole position — that is, the one starting first —finished last.

Example

standard input	standard output
6 4 6 4 2 2 4 2 3 5 1 4 2 1 2 3 5 1 1 5 5 6 1	No Yes Yes No Yes Yes

Note

Consider all starting grids suitable for the sample and the corresponding race results and answers to the questions.

Starting grid	Finish order	1	2	3	4	5	6
1, 5, 3, 2, 4, 6	5, 1, 2, 3, 4, 6	No	Yes	No	No	No	No
1, 5, 6, 3, 2, 4	5, 1, 6, 2, 3, 4	No	Yes	Yes	No	No	No
3, 2, 4, 1, 5, 6	2, 3, 4, 5, 1, 6	No	No	No	No	No	No
3, 2, 4, 6, 1, 5	2, 3, 4, 6, 5, 1	No	No	No	No	Yes	No
6, 1, 5, 3, 2, 4	6, 5, 1, 2, 3, 4	No	No	Yes	No	No	Yes
6, 3, 2, 4, 1, 5	6, 2, 3, 4, 5, 1	No	No	No	No	Yes	Yes