HARBOUR SPACE





KOTLIN HEROES 🕎 HOME TOP CONTESTS GYM PROBLEMSET GROUPS RATING API HELP DASHA 🟋 CALENDAR

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS STANDINGS CUSTOM INVOCATION

F. Forced Online Queries Problem

time limit per test: 5 seconds memory limit per test: 256 megabytes input: standard input output: standard output

You are given an undirected graph with n vertices numbered from 1 to n. Initially there are no edges.

You are asked to perform some queries on the graph. Let last be the answer to the latest query of the second type, it is set to 0 before the first such query. Then the queries are the following:

- $1 \ x \ y \ (1 \le x, y \le n, x \ne y)$ add an undirected edge between the vertices $(x + last - 1) \bmod n + 1$ and $(y + last - 1) \bmod n + 1$ if it doesn't exist yet, otherwise remove it;
- 2 x y ($1 \le x, y \le n, x \ne y$) check if there exists a path between the vertices $(x + last - 1) \mod n + 1$ and $(y + last - 1) \mod n + 1$, which goes only through currently existing edges, and set last to 1 if so and 0 otherwise.

Good luck!

Input

The first line contains two integer numbers n and m ($2 \leq n, m \leq 2 \cdot 10^5$) — the number of vertices and the number of gueries, respectively.

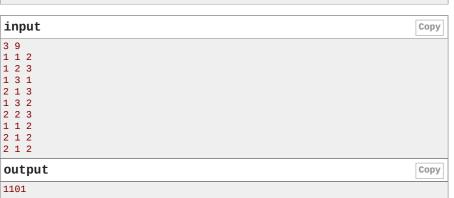
Each of the following m lines contains a query of one of two aforementioned types. It is guaranteed that there is at least one query of the second type.

Output

Print a string, consisting of characters '0' and '1'. The i-th character should be the answer to the i-th query of the second type. Therefore the length of the string should be equal to the number of queries of the second type.

Examples





Educational Codeforces Round 72 (Rated for Div. 2)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest





→ Contest materials Announcement #1 (en) Announcement #2 (ru) × Tutorial #1 (en) × Tutorial #2 (ru) ×

Note

The converted queries in the first example are:

- 112
- 113
- 232
- 135
- 245
- 124
- 234
- 124
- 254

The converted queries in the second example are:

- 112
- 123
- 131
- 213
- 113
- 231
- 123223
- 212

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The only programming contests Web 2.0 platform
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