Problem I. Insider's Information

Input file:	`insider.in`
Output file:	`insider.out`
Time limit:	2 seconds
Memory limit:	256 megabytes

Ian works for a rating agency that publishes ratings of the best universities. Irene is a journalist who plans to write a scandalous article about the upcoming rating.

Using various social engineering techniques (let's not get into more details), Irene received some insider's information from Ian.

Specifically, Irene received several triples (a_i, b_i, c_i), meaning that in the upcoming rating, university b_i stands between universities a_i and c_i. That is, either a_i comes before b_i which comes before c_i, or the opposite. All triples told by Ian are consistent — let's say that actual rating *satisfies* them all.

To start working on the first draft of the future article, Irene needs to see at least some approximation to the actual rating. She asked you to find a proposal of a rating in which at least half of the triples known by Irene are satisfied.

Input

The first line contains integers n and m, the number of rated universities, and the number of triples given to Irene by Ian ($3 \le n \le 100\,000$; $1 \le m \le 100\,000$).

Each of the next m lines contains three distinct integers a_i, b_i, c_i — the universities making a triple ($1 \le a_i, b_i, c_i \le n$).

Output

Output the proposal of a rating from the first university to the last one. The proposal rating should satisfy at least $\frac{m}{2}$ triples. If there are many such proposals, output any one of them.

Example

insider.in	insider.out
4 3 1 2 3 1 2 3 1 4 3	4 3 2 1

In the example above, the first two triples are satisfied whereas the last one is not. Therefore, at least half of all triples are satisfied.