ECE30018 Problem Solving Studio, Fall 2023

P10. Dinner Party

| Submission due: 11:30 AM, 4 Dec Mon

Dinner Party

You invited n students to a freshmen party. Every invited student is expecting to meet new persons in this party. But unfortunately, since there was no single room to accommodate all at once, you need to distribute the students to two rooms.

You had shared this news to the students and let them send you a request to inform who he/she does not want to be in the same room for they know each other already. You ended up received a list of requests, but you found that it is not possible to accept all requests because there is no way to distribute the students while satisfying all requests.

So, you want to receive as many requests as possible in their order of arrival, and then reject the remaining requests after you found it becomes impossible. Write an efficient program that finds the first request that you need to reject

Requirements

Input data

- The first line from the standard input has an integer n, which represents that the number of students for $1 \leq n \leq 10{,}000$ where the students are identified by their IDs from 1 to n.
- The second line has an integer m, the number of requests from the students, for $1 \leq m < 100{,}000$
- The remaining m lines show the requests in order of their arrivals. Each line has two positive integers which are IDs of two students who know each other already.

Output data

- Print an integer between 1 to m to the standard output. The integer is the first index of the request that you must reject.
- Your program should return the answer within 0.5 second.

Example of test data

Input data 1

```
4
5
4 3
1 2
4 1
2 3
1 3
```

Output data 1

```
5
```

Input data 2

```
4
4
1 2
1 3
1 4
2 3
```

Output data 2

```
4
```