Problem B
Connected Component Queries

Time limit: 1 second

Memory limit: 2048 megabytes

Problem Description

You are given a graph of n verticies, where the vertices are numbered from 1 to n. There are no edges between the vertices initially.

q queries are given. Each query belongs to one of the following three types:

1. 1 u_i v_i —Add an **undirected** edge between vertex u_i and v_i.
2. 2 u_i —Find the number of verticies in the same connected component as u_i.

Can you answer all these queries?

Input Format

The first line of the input contains two integers n and q. The i-th of the following q lines contains the i-th query in the format as in the problem description.

Output Format

For each query of type 2, output the answer to the query in one line.

Technical Specification

- $1 \leq n, q \leq 2 \times 10^5$
- $1 \leq u_i < v_i \leq n$ for $i = 1, 2, \ldots, q$ of query type 1
- $1 \leq u_i \leq n$ for $i = 1, 2, \ldots, q$ of query type 2
- It is guaranteed that there is at least one query of type 2 in the input.

Scoring

1. (8 points) $1 \leq n, q \leq 1000$
2. (12 points) No additional constraints.

Sample Input 1

```
5 8
2 4
2 2
1 2 4
2 2
1 1 5
2 5
1 4 5
2 2
```

Sample Output 1

```
1
1
2
2
4
```

Sample Input 2

```
5 8
1 2 3
1 3 5
1 2 5
2 1
2 2
2 3
2 4
2 5
```

Sample Output 2

```
1
3
3
1
3
```

Sample Input 3

```
5 7
1 2 3
1 4 5
2 1
2 2
2 3
2 4
2 5
```

Sample Output 3

```
1
2
2
2
2
```