B. Disjoint Sets Union 2

time limit per test: 1 second

memory limit per test: 256 megabytes

Implement disjoint sets union data structure. You have to perform queries of two types:

- `union` u v — unite two sets that contain u and v, respectively;
- `get` v — find the set to which v belongs to, find the minimal and the maximal element of the set, and the total number of elements in it.

Input

The first line of the input contains two integers n and m ($1 \le n, m \le 3 \cdot 10^5$) — the number of elements and the number of queries. Next m lines contain queries, one per line. For a query `union` the line looks like `union` u v ($1 \le u, v \le n$). For a query `get` the line looks like `get` v ($1 \le v \le n$).

Output

For each operation `get` you should output the result on a separate line in the respected order. Each result should consist of three integers: the minimal element, the maximal element and the number of elements in the set.

Example

input Copy

```
5 11
union 1 2
get 3
get 2
union 2 3
get 2
union 1 3
get 5
union 4 5
get 5
union 4 1
get 5
```

output Copy

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