

HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

STEP 1 STEP 2 STEP 3 | THEORY PRACTICE | SUBMIT SUBMISSIONS HACKS STANDINGS CUSTOM INVOCATION ITMO Academy: pilot course » Disjoint Sets Union » Step 1 » Practice

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	Сору
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	Сору
3 3 1	
1 2 2	
1 3 3	
5 5 1	
4 5 2	
1 5 5	

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