Mock CCC '18 Contest 2 S5 - A Link/Cut Tree Problem

Time limit: 1.4s **Memory limit:** 1G

Given a graph, support the following two operations:

`Query(a_i, b_i, w_i)`: Does there exist a path from `a_i` to `b_i` using only edges with weight at least `w_i`?

`Update(m_i, x_i)`: Update the weight of edge `m_i` to be `x_i`.

Constraints

For 2 marks, there will be no update operations.

For 3 additional marks, $M \leq 10^3$ and $Q \leq 10^3$.

Input Specification

The first line will contain two space-separated integers, N $(1 \leq N \leq 10^3)$ and M $(1 \leq M \leq 5000)$, indicating respectively the number of vertices and the number of edges in the graph.

The next M lines will contain three space-separated integers u_i $(1 \leq u_i \leq N)$, v_i $(1 \leq v_i \leq N, u_i \neq v_i)$ and z_i $(1 \leq z_i \leq 10^9)$, indicating that edge i is an undirected weighted edge between vertices u_i and v_i with weight z_i. There may be multiple edges between two vertices.

The next line will contain a single integer Q $(1 \leq Q \leq 10^5)$, the number of operations to support.

Each of the next Q lines will contain the description of either a query or an update.

An update operation, which can happen at most 2000 times, will take the form `1 m_i x_i` $(1 \leq m_i \leq M, 1 \leq x_i \leq 10^9)$.

A query will take the form `2 a_i b_i w_i` $(1 \leq a_i, b_i \leq N, 1 \leq w_i \leq 10^9, a_i \neq b_i)$.

Note that the operations happen in the order specified in the input.

Output Specification

For each query, print on a separate line `1` if the answer to the query is yes, and `0` otherwise.

Sample Input

```
3 4
1 2 3
2 3 3
2 1 1
1 2 1
6
2 1 2 4
2 2 3 2
1 1 4
2 1 2 4
1 2 1
2 2 3 2
```

Sample Output

```
0
1
1
0
```