

## Problem A. Magma Cave

Input file:           standard input  
 Output file:         standard output  
 Time limit:          12 seconds  
 Memory limit:       512 megabytes

Little Q is researching an active volcano. There are  $n$  caves inside the volcano, labeled by  $1, 2, \dots, n$ . At the very beginning, before the first volcanic activity event, there is no magma path between these caves. You will be given  $q$  operations, each operation is one of the following:

- “1  $u$   $v$   $w$ ” ( $1 \leq u, v \leq n$ ,  $u \neq v$ ,  $1 \leq w \leq q$ ): A volcanic activity event comes such that a new magma path between the  $u$ -th cave and the  $v$ -th cave occurs, whose length is  $w$ . Here  $w$  is used for identifying the magma path, so  $w$  will always be pairwise different.
- “2  $k$   $w$ ” ( $1 \leq k < n$ ,  $1 \leq w \leq q$ ): Assume it is a undirected graph with  $n$  vertices, each magma path denoting an edge, Little Q is wondering whether there exists a spanning tree whose  $k$ -th shortest edge is of length  $w$ . You are the partner of Little Q, please write a program to answer his question.

### Input

The first line contains a single integer  $T$  ( $1 \leq T \leq 100$ ), the number of test cases. For each test case:

The first line contains two integers  $n$  and  $q$  ( $2 \leq n \leq 50\,000$ ,  $1 \leq q \leq 200\,000$ ), denoting the number of caves and the number of operations.

Each of the next  $q$  lines describes an operation in formats described in the statement above.

It is guaranteed that the sum of all  $n$  is at most 300 000, and the sum of all  $q$  is at most 1 000 000.

### Output

For each question, print a single line. If it is possible, print “YES”, otherwise print “NO”.

### Example

standard input	standard output
2	NO
3 7	YES
1 1 2 1	YES
2 1 1	NO
1 2 3 5	YES
1 1 3 4	YES
2 2 4	
2 2 5	
2 2 3	
2 4	
1 1 2 1	
1 1 2 2	
2 1 1	
2 1 2	