

# Problem B: Cats and Yarn

Your little kitten Fluffy discovered your grandma's basket of yarn. While you were out of the room, she started to play with it. Although Fluffy had a lot of fun, she soon got tangled up in the yarn and was unable to free herself.

You opened the door and found Fluffy in this predicament: sitting in the middle of the room and meowing desperately, waiting for you to free her. Unfortunately, the yarn tangled itself not only around Fluffy, but also around a lot of other items. While you try to approach Fluffy and pull some of the threads, you notice that you also pull on a lot of items on the other side of the room.



Human! I need your assistance...

You want to help Fluffy get free from her self-inflicted mess as soon as possible and decide to cut some of the threads until Fluffy is able to move again. As a first step, you want to be able to somehow move through the room without pulling loads of items from the tables when touching the yarn. This means, for now your goal is to have at least two different items that are not directly or indirectly connected by the threads (i. e. when pulling on the first item, the second item does not move, as there is no path of threads between them).

As Fluffy spread a lot of different balls of yarn across the room, most of the connecting threads between two items differ in strength. You only have one old pair of worn-out scissors, and cutting the threads is quite fiddly and takes you some time. Thus, you try to minimize the sum of the strengths of the threads that you have to cut through.

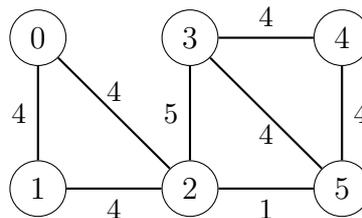


Figure B.1: The third sample input. The easiest way to separate at least two items is cutting through the threads between 2 and 3 and between 2 and 5, giving a total strength of 6.

## Input

The input consists of:

- one line with two integers  $n$  and  $m$  ( $2 \leq n \leq 50$ ,  $0 \leq m \leq 1\,225$ ) denoting the number of items in the room and the number of threads connecting these items;
- $m$  lines specifying the threads of yarn, each consisting of three integers  $a$ ,  $b$  and  $c$  ( $0 \leq a, b < n$ ,  $1 \leq c \leq 10^9$ );  $a$  and  $b$  are the two connected items and  $c$  is the strength of the thread. All threads are distinct and no thread connects an item to itself.

## Output

Print one line with one integer, the minimum sum of thread strengths to cut through.

**Sample Input 1**

2 1  
0 1 5

**Sample Output 1**

5

**Sample Input 2**

4 4  
0 1 1  
0 2 2  
1 3 3  
2 3 4

**Sample Output 2**

3

**Sample Input 3**

6 8  
0 1 4  
1 2 4  
2 0 4  
3 4 4  
4 5 4  
5 3 4  
2 3 5  
2 5 1

**Sample Output 3**

6