HELP, the end is approaching! Tak-o is trying to destroy the world. He has built 2 main bases, some middle towers to control specific areas and bridges between towers to send his troops around. Our superhero Birkan has an idea. If we can disconnect the 2 main bases by destroying towers and bridges, we will be able to stop Tak-o. Destroying towers and bridges have a cost. Help Birkan with computing the minimum cost of disconnecting Tak-o's bases to save our world.

- There is only one bridge between two towers, there are also bridges between bases and towers.
- We cannot destroy the bases yet.
- Note that some towers may be isolated and some paths may be dead-ends.

**Input**

- First line of input contains two integers $T$ and $B$, representing the number of towers + bases ($T$) and the number of bridges ($B$).
- Following $T - 2$ lines, one per tower, contain the information below, separated by spaces: An integer $i$, the identifier of the tower. The first base has id 1 and that the second has id $T$. Another integer $t$, specifying the cost of destroying the tower.
- Then the remaining $B$ lines, one per bridge, contain the following information separated by spaces: Two integers $x$ and $y$ specifying the identifiers of the towers linked by the bridge. Remember that the bridge is bidirectional. An integer $z$ specifying the cost of destroying the bridge.
- The last line of the input will be '0 0'.

**Output**

For each test case, print a line with the minimum cost of interrupting the communication between the two bases. Print 0 if the bases are not connected.

**Constraints**

- $2 \leq T \leq 50$
- $0 \leq B \leq 1000$
- $2 \leq i \leq T - 1$
- $0 \leq t \leq 100000$
- $1 \leq x < y \leq T$
- $0 \leq z \leq 100000$

**Examples**
Notes

For the first example, we should destroy the tower with ID:2 and the bridge between base1(tower ID:1) and base2(tower ID:3).