IOI Training Camp 2015

Islands and Bridges

Lalit is in an amusement park. There are N islands in this park. These islands are connected with each other by bridges. For each pair of islands (a, b) there is exactly one way to go from a to b or vice versa. The bridges are of varying lengths. Lalit wants to traverse the paths between all possible pairs of vertexes. For example, if there are 4 vertexes numbered 1 to 4, he wants to go from 1 to 2, then from 1 to 3, then from 1 to 4, then from 2 to 3, then from 2 to 4, and finally from 3 to 4. Each time he starts a traversal, he buys an energy drink which gives him K units of energy. He must buy that drink for which K is at least equal to the length of the minimum bridge in the path he is going to traverse. The energy drink costs 1 unit of money per 1 unit of energy. So a drink with K units of energy will cost K units of money. Can you tell Lalit the minimum cost he will have to bear for completing this adventure.

Input

The first line of input will contain an integer N, *i.e.*, the number of islands.

The next $N-1$ lines will contain 3 space-separated integers x, y and l denoting that island x and island y are connected by bridge a bridge of length l.

Output

Output the minimum cost that Lalit will have to bear in order to complete his adventure.

Test Data

In all the subtasks, the integers x and y are in the range $[1, N]$. Integer l is in the range $[1, 10^6]$.

Subtask 1 (20 Points): $1 \leq N \leq 300$.

Subtask 2 (80 Points): $1 \leq N \leq 10^6$.

Sample Input

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

Sample Output

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10
```

Limits

Time: 1 second

Memory: 256 MB