

# Distance

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## Description

The live on Christmas Eve was a huge success. Several years later, the rise of new cities reshapes the road network. Now it is in the form of a **general tree** instead of a binary tree.

The increasing population leads to economic prosperity as well as heavy traffic load. Today, it may take more than 1 unit time to travel from one city to another city directly connected by a road because of the frequent traffic jam.

As a girl loving travel, Kyaruru would like to know the longest time it may take to travel if she freely chooses a departure and a destination. You may assume that Kyaruru always considers the shortest way only.

## Input

The first line contains an integer  $n$ , indicating the number of cities.

In each of the following  $n - 1$  lines there're three integers  $u, v, w$ , separated by spaces, denoting a road connecting the city  $u, v$ , and it will take  $w$  units time to go through it.

It is guaranteed that the road network forms a tree.

## Output

One integer, indicating the longest traveling time Kyaruru could find.

## Sample Input/Output

Input

```
6
1 2 1
1 3 2
2 4 3
4 5 1
3 6 2
```

Output

```
9
```

## Constraint

$1 \leq n \leq 10^5, 1 \leq u, v \leq n, 1 \leq w \leq 10^9$ .