Distance

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, Kyaru 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 Kyaru 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 Kyaru 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

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