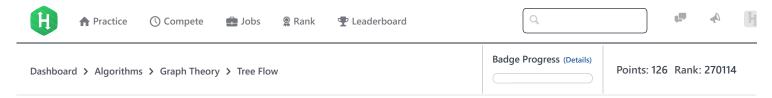
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Problem Submissions Leaderboard Discussions Editorial €

Recall that a tree is an undirected, connected acyclic graph. We have a weighted tree, T, with n vertices; let $dist_{u,v}$ be the total sum of edge weights on the path between nodes u and v.

Let's consider all the matrices, $A_{u,v}$, such that:

- $\bullet \ \ A_{u,v}=-A_{v,u}$
- $0 \leq |A_{u,v}| \leq dist_{u,v}$
- ullet $\sum_{i=1}^n A_{u,i} = 0$ for each u
 eq 1 and u
 eq n

We consider the *total value* of matrix \boldsymbol{A} to be:

$$\sum_{i=1}^{n} A_{1,i}$$

Calculate and print the maximum total value of $m{A}$ for a given tree, $m{T}$.

Input Format

The first line contains a single positive integer, n, denoting the number of vertices in tree T.

Each line i of the n-1 subsequent lines contains three space-separated positive integers denoting the respective a_i , b_i , and c_i values defining an edge connecting nodes a_i and b_i (where $1 \le a_i, b_i \le n$) with edge weight c_i .

Constraints

- $2 \le n \le 500000$
- $1 \le c_i \le 10^4$
- Test cases with $n \leq 10$ have 30% of total score
- Test cases with $n \leq 500$ have 60% of total score

Output Format

Print a single integer denoting the maximum total value of matrix A satisfying the properties specified in the *Problem Statement* above.

Sample Input

3 1 2 2

1 3 1

Sample Output

3

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Explanation

In the sample case, matrix $oldsymbol{A}$ is:

$$A = egin{pmatrix} 0 & 2 & 1 \ -2 & 0 & 2 \ -1 & -2 & 0 \end{pmatrix}$$

The sum of the elements of the first row is equal to 3.

f y in Submissions:<u>135</u> Max Score:80 Difficulty: Hard Rate This Challenge: ☆☆☆☆☆☆

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