

E. « Treasure Map »

Problème

After years of research, you finally found the map of the famous Treasure Island. You don't lose a single minute and rush, with your crew, to wealth and eternal glory (at least until you end up hanged for your crimes of piracy).

This island, which contains all the gold of an ancient civilization, is a set of islets and cliffs linked by millenary wooden hanging bridges, only waiting for your arrival to break. The map contains the location of all these treasures and bridges and the weight of the treasures. Your chief officer, who is also a good mathematician, calculated from the length of each bridge and the properties of the wood of the island, the load they can bear without breaking.

Each treasure is only accessible through a single path. Moreover, your chief officer told you that each bridge would only bear a single round trip. All the pirates who want to use a bridge will go at once, when going to the treasures and then when coming back. If they have too much gold, they will simply hide it (who knows, they might come back later with a bridges engineer to grab the rest of it). The pirates are very lightweight compared to the gold they can carry, so you don't have to care about their weight.

How much gold can you bring back to the ship, if you have enough pirates to reach all the treasures on the island ?



Woe to those who, too greedy of gold, will
make this bridge collapse

Input

- On the first line, an integer $1 \leq N \leq 10^5$: the number of treasures ;
- On a second line, N space-separated integers $0 \leq W_i \leq 10^4$: the weights, in kilograms, of the treasures ;

- On $N - 1$ lines, the information about each bridge, space-separated : two integers $B_{i,1}$ and $B_{i,2}$, the id of the treasures linked by the bridge (identified from 0 to $N - 1$ in the same order than the list of weights), and a third integer $0 \leq S_i \leq 10^5$, the weight of gold, in kilograms, that the bridge can bear. The treasure with id 0 is always where the ship is located.

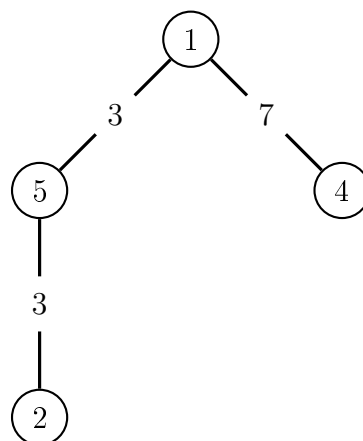
Note : the ship and a treasure are separated by at most 100 bridges.

Output

- An integer : the quantity of gold, in kilograms, that the pirates can bring back to the ship.

Examples

Example 1



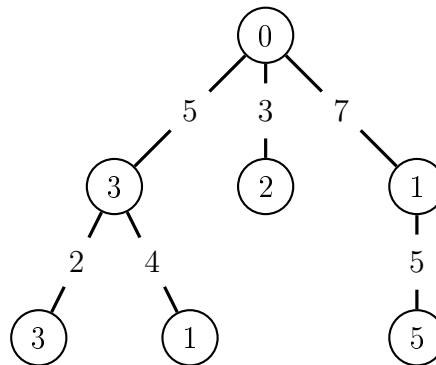
In this example, the pirate ship is located at the treasure with weight 1. The pirates can bring back 8 kilograms of gold :

- 4 from the path on the right ;
- 3 from the path on the left ;
- and 1 one from the treasure next to the ship.

Input
4
1 5 4 2
0 1 3
0 2 7
1 3 3

Ouput
8

Exemple 2



Input
7
0 3 2 1 3 1 5
0 1 5
0 2 3
0 3 7
1 4 2
1 5 4
3 6 5

Output
13