HPI Hasso Plattner Institut
IT Systems Engineering | Universität Potsdam

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Sommersemester 2017

Week 7 – (Adv.) Competitive Programming

Abgabe 05.06.2017 17:00 Uhr, über das Judge-Interface

ipomc-rev-2: (100 points - 1 second timelimit)

Prof. Plattner and his mice are getting better in the contests with his friends. In the near future, Prof. Platter would like to host a contest at the HPI. Therefore he searches for a race track. As you may remember, the new building of the HPI, contains a lot of pipes, where his race mice are carrying IP packages to train for these contests (and as you may remember, the network does not contain cycles). He would like to use a few of these pipes for the contest. He advised you, to find the longest track in his network, so please help him!

Input The first line of the input contains the number of computers and network devices n ($0 \leq n \leq 25000$). The following $n - 1$ lines contain three numbers, a_i b_i d_i. This means, a_i and b_i are directly connected with a pipe and the distance from a_i to b_i is d_i (you can assume that the distance from b_i to a_i is the same). The result will be smaller than $2 * 10^9$.

Output Please print three lines. The first one should contain the distance between the two farthest devices. The second and the third line should contain the indices of the devices (the smaller one first). If there are multiple paths with the same length, the Judge will accept any of them.

Points There are three groups of test sets.

(a) easy: For the first test set worths 30 points you can assume that $n \leq 200$.

(b) medium: For the second test set worths 40 points you can assume that $n \leq 5000$.

(c) hard: For the third test set worths 30 points there are no additional assumptions.

Sample Input

```
9
5 8 109
2 4 59
4 8 76
0 6 84
3 2 62
6 5 63
7 8 2
8 1 47
```

Sample Output

```
453
0
3
```