(Adv.) Competitive Programming

Submit until 07.06.2019 13:30, via the judge interface

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Problem: sameday (1 second timelimit)

Last week was a very eventful week. On Monday aliens made first contact with Earth. On Wednesday someone told you that you have a spiritual quantum connection (whatever that means) to the owner of a very powerful galactic corporation. Then on Friday you heard that the owner died some time ago and you would inherit control over the corporation. Totally unprepared you sign the documents and begin learning about their operation. After looking into the finances and legal situation of the company, you realize that the aliens probably made up all the stuff about the connection and only contacted Earth in the first place to find someone stupid enough to take it over.

But now that you are in this situation, you can at least make the best of it and try to save the company: It has a production plant on every single planet of the United Planets. On every planet a different thing is produced, that is offered on all other planets with a same-day shipping service. Also every combination of product and target planet (minus shipments to the same planet obviously) has its own space logistics department, so combining shipments is impossible. All the shipments are done via a galactic hyperspace network, which links pairs of planets bidirectionally. The network is set up, so that their is always only one unique path between a pair of planets, which may need multiple hops. Recently this network was sold to two private companies each controlling some of the links. To 'improve service quality' the company Zero Delay Hyperspace only allows a spaceship to pass through their links if it has not used a link of One Galaxy Connections in the last day. Therefore, not all connections are possible with same-day shipment anymore. That is also why trillions of angry customers are suing your company right now.

So now you want to now how many of your logistics departments can still comply with same-day shipping, so that you can begin with your restructuring operation.

Input First, there is a line with $2 \leq n \leq 100000$, the number of planets. The following $n-1$ lines each describe a hyperspace link each: They contain the indices $0 \leq a, b < n$ of the connected planets and the number 0 or 1, indicating if it is owned by Zero Delay Hyperspace or One Galaxy Connections.

Output Output one line, which contains the number of pairs planets for which same-day shipments are still possible.

Sample input

```
4
0 1 0
1 2 1
2 3 0
```

Sample output

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8
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