2019 TUBES

The Endians are modernising. A vast network of pneumatic tubes is being installed, to ease the burden on the long-overstrained newspaper delivery service. Having been previously bitten by other "miracles of rare device", which proved less than successful, several houses have been selected to participate in a trial.

The h selected houses are evenly spaced on a straight ridge, adjacent houses being 1 ESU (Endian Specific Unit) apart. For the trial, $h-1$ tubes have been supplied with different lengths 1, ..., $h-1$ ESU.

A plan has been drawn up indicating which houses are to be directly connected by a tube; a tube only connects the two houses at its ends. It is possible to send a newspaper between any two houses by a series of tubes. Each house is connected by at least one tube and, if all the houses connected to only a single tube are removed from the plan and at least two houses remain, it is possible to send a newspaper on a route that takes in every remaining house without repeating a house.

For example, suppose that the plan connects 1-2, 1-3, 1-4 & 2-5. For the plan to be realised with the supplied tubes, there are several possible orderings for the houses, including 2 3 5 4 1, 4 3 2 5 1 and 5 1 4 3 2.

SAMPLE INPUT

```
5
1 2
1 3
4 1
5 2
```

The first line of input will consist of a single integer, h ($1 < h \leq 50000$), indicating the number of houses on the plan. The $h-1$ following lines will consist of a pair of integers, indicating two houses that are to be directly connected by a tube; no pair of houses will be repeated.

You should output a single line containing a permutation of the numbers 1 to h indicating a valid order for the houses on the ridge so that the plan can be realised with the $h-1$ supplied tubes of different lengths.

SAMPLE OUTPUT

```
5 1 4 3 2
```