

PW - L // The DuzziNet

Mr. Lenarduzzi is trying to connect all of Massey through the use of fishing (literally). Duzzi ordered some fiber fishing wire to lay out across Massey. To minimize the cost, he wants to lay the minimum amount of fiber fishing wire to connect his room to all other rooms.

Given a list of how much wire it takes to connect each pair of rooms, you must find the minimum fiber fishing wire required to connect them all. Each room must connect to some other room such that Mr. Duzzi's fishing club can be known throughout all rooms.

The distance between any two rooms will not exceed 100,000.

Input Format

The first line consists of one integer N , representing the number of rooms. The next N lines contain an $N \times N$ connectivity matrix, where each element shows the distance from one room to another.

Output Format

A single integer length that is the sum of the minimum length of wire required to connect all of Massey.

Sample Input 1:

```
4
0 4 9 21
4 0 8 17
9 8 0 16
21 17 16 0
```

Sample Output 1:

```
28
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