Road construction Submit Completed

100points | 10sec

> Standard API : C++, C, Java

We are going to build a road from our headquarters to the factory.
We want to build a road at a minimum cost,
To do so, we must minimize the cost of purchasing land.
Given map information, find the minimum cost to buy the land.

[Requirements]

Map information

1. The map is a square shape with size N (N= Natural number, 2≤N≤100)
2. The land is divided into 1*1 size and each land purchase price is provided as a string
3. If the purchase price is zero, it means that it is already owned by the company

Precautions on purchasing land

1. Roads should be linked up, down, left, and right(Diagonal connection is not possible)

2. The headquarter is located at (0, 0) and the factory is located at (N-1, N-1).(These lands are already owned by the company, so 0 won)

(0, 0) display means (vertical coordinate, horizontal coordinate)

The map size N of input 1 is 3 and the input information is shown in the following table.

	0	1	2
0	**0**	**4**	**1**
1	**2**	**5**	**3**
2	**6**	**2**	**0**

Purchase (0, 1), (0, 2), (1, 2) to buy the land you need to buy to build the road from headquarter (0, 0) to factory (2, 2).
At this time, the cost is 4 + 1 + 3 = 800 million.

	0	1	2
0	0	4	1
1	2	5	3
2	6	2	0

Given map size N and map information, calculate the minimum cost required to purchase the land.

[Input type]

Input map size N in the first line(N= Natural number, $2 \le N \le 100$)
Input N single-digit land price information from the second line to N lines as a string

[Output type]

Output the minimum purchase price of the land to be purchased from the head office (0, 0) to the factory (N-1, N-1)

Input/Output Example

␣ : Blank ↲ : Line Break ↹ : Tab

Example 1

Input

```
3↲
041↲
253↲
620↲
```

Output

```
8↲
```

* Please keep the input and output formats carefully