Coding Arena

<C*deVita/>
the TCS Coding Contest

Change Default Language

Time Left
05 hr 51 min 18 sec

A B C D E F G H

Rules & Regulations

Launch Code Editor

Notifications

Status messages

Problem : Rook Challenge

"What are you doing with a chessboard with numbers written in each square?" asked Shyam. Gayatri replied "This is a new game called rook challenge. You have heard of the queen challenge, where the objective is to place eight queens on an 8 x 8 chessboard so that they do not attack each other. This is a rook challenge, where we place N rooks on a N x N square grid so that they do not attack each other."

Shyam was puzzled. "But rooks only attack on rows and columns. Isn't it easy to just place one rook in each column on different rows" he said. "True", said Gayatri. "But the rooks must be placed on numbered squares so that the sum of the numbers on these squares is maximum. Also, one rook must necessarily be placed on a square with a colored star".

Can you help Gayatri?

A checkerboard with N rows and N columns has positive integers on each square, with one square having a colored star. N rooks must be placed (one in a square) so that each row and each column has exactly one rook, and one rook must be on the square with the colored star.

The picture shows a 4 x 4 chessboard with rooks in positions (1,1), (2,2), (3,3), and (4,4). The colored star is in square (3,3). The total of the squares the rooks are placed in is 50+32+28 + 28 or138. Gayatri feels that this can be improved.

Input Format:

The first line of the input is the size of the chessboard (N).

The next line is a pair of comma separated positive integers giving the row and column of the colored star.

The next N lines have a set of N comma separated positive integers which represent the numbers in each of the N rows.

Output Format:

One line giving the maximum possible sum of the numbers on which the rooks are placed according to the rules.

Constraints:
None

Example 1

Input
4
3,3
50,58,13,57
40,32,26,48
37,13,28,20
49,25,31,28

Output
183

Explanation
The size of the chessboard (and the number of rooks is 4. The colored star is in (3,3). The numbers are as given.

The optimal position of the rooks is in the figure below. The total of the numbers in the squares where the rooks are is 58+48+28+49=183

Example 2

Input
5
5,2
95,17,19,60,97
58,62,62,16,68
105,53,88,77,25
59,34,44,26,22
102,36,85,107,104

Output
331

Explanation
It is a 5x5 chessboard. The square with the colored star is (5,2). The optimal placement is as per the figure below. The total of the numbers is 97+62+77+59+36=331

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note:

Participants submitting solutions in C language should not use functions from <conio.h> / <process.h> as these files do not exist in gcc

Note:

For C and C++, return type of main() function should be int.

Submit Answer

I , **SOURAV KUMAR** confirm that the answer submitted is my own.
I would like to provide attribution to the following sources.

Select Language

Select File

Browse... Submit