Heroine in Danger (Bonus)

ZPRAC-16-17-Lab8

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[20]*Heroine in Danger* (*Bonus*)

Important Note: This Bonus question carries 20 marks and will be graded. You can also choose to do it before other 3 questions.

Our biggest villain Tamraj Kilvish has captivated Shaktimaan's beloved Geeta in his grid-like aashram with dimension $n \times n$, where each cell is indexed as (i,j) for $0 \le i,j \le n-1$. Using his superpowers, Shaktimaan has found out that Geeta is present in the cell $(n-1,n-1)$. Shaktimaan has to start from cell $(0,0)$ and finally reach $(n-1,n-1)$. He can only go to the cell towards right or below the current cell or towards the right of the cell directly below current cell i.e. if Shaktimaan is present in cell (i,j) then he can only move to cell $(i+1,j)$ or $(i,j+1)$ or $(i+1,j+1)$. To stop shaktimaan, some fighters are present in each cell. If Shaktimaan passes through a cell, then he has to fight all the fighters in that cell. You have to write a C program that outputs the minimum number of fighters Shakitmaan needs to fight in order to save Geeta. For example, if the grid (3×3) is:

1 7 3
1 0 4
3 1 1

Then Shaktimaan will meet minimum 2 fighters on the path $(0,0) \rightarrow (1,1) \rightarrow (2,2)$ i.e. $1+0+1=2$

Input: First line contains an integer N which represents the size of the grid. Next N lines follow with N space separated integers(≥ 0)(representing number of fighters in each cell)
Output: Minimum number of fighters Shaktimaan needs to fight in order to reach Geeta.

Example:
Input:
4
1 9 10 5
5 6 1 1
0 6 3 4
0 1 1 1
Output:
9

Explanation:
Shaktimaan will meet minimum number of fighters on the path
$(0,0)\rightarrow(1,0)\rightarrow(2,0)\rightarrow(3,0)\rightarrow(3,1)\rightarrow(3,2)\rightarrow(3,3)$ i.e. $1+5+0+0+1+1+1=9$

$1\leq N\leq 100$