

Catch Me If You Can (Bonus)

ZPRAC-16-17-Lab8

[20]

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Shaktimaan wants to finish all evil in the world as soon as possible. He goes to the Evil Matrix where each cell contains some bad people(the value of cell represents number of bad people present in it). He has to move on the matrix from first row to last row catching all the bad people present in the cells he moves through. He can start from any cell in first row and end at any cell in last row but once he starts moving, he can only go to the cell directly below the current cell or left or right of the cell directly below the current cell i.e. if Shaktimaan is present in cell (i,j) then he can only move to cell $(i+1,j-1)$, $(i+1,j)$ and $(i+1,j+1)$. Find the maximum number of bad people he can catch.

Input: First line contains two integers h and w which represent height and width of the Evil Matrix. Next h lines follow with w space separated integers representing number of bad people in a cell (≥ 0).

Output: Maximum number of bad people shaktimaan can catch moving according to the rules provided in the question.

Example:

Input:

3 4

1 9 8 3

3 2 1 1

10 1 1 0

Output:

22

Explanation: The maximum sum path is $9 \rightarrow 3 \rightarrow 10$