Problem C. Ant Foraging

Time limit   1000 ms

Mem limit   128000 kB

Description

In a rectangular grid of size m × n, there is a certain amount of food scattered across the grid. An ant starts its journey from the top-left corner (1, 1) and moves towards the bottom-right corner (m, n) to gather food. After reaching the bottom-right corner, the ant must return to the starting point to collect more food. During the outward journey, the ant can only move either right or down, and on the return trip, it can only move left or up.

Each cell contains a certain amount of food, but the starting point (1, 1) and the destination point (m, n) have no food. The goal is to find two paths (outward and return) that maximize the total amount of food collected. Importantly, each cell (except for the starting and destination points) can be visited only once. This means food collected on the outward journey cannot be collected again on the return trip.

Input

The first line contains two integers m and n, representing the number of rows and columns in the grid.
The next m lines each contain n integers, representing the amount of food available at each cell in the grid. The value at each cell is a natural number between [0, 100].
1≤m,n≤50

Output

Output a single integer representing the maximum total amount of food the ant can collect during the two trips (outward and return), ensuring no cell is visited more than once.

Sample 1

Input	Output
3 3 0 3 9 2 8 5 5 7 0	34