Problem H. Image Smoother

Given a 2D integer matrix M representing the gray scale of an image, you need to design a smoother to make the gray scale of each cell becomes the average gray scale (rounding down) of all the 8 surrounding cells and itself. If a cell has less than 8 surrounding cells, then use as many as you can.

Input

The first row gives two positive integers n, m separated by spaces, representing the rows and columns of the matrix($1 \leq n, m \leq 128$)

Next output n-row, m-column, represents matrix M and the value in the given matrix is in the range of [0, 255].

Output

Output smoothed n-rows, m-column matrix M, no extra spaces at the end of each row.

Example

standard input	standard output
3 3 1 1 1 1 0 1 1 1 1	0 0 0 0 0 0 0 0 0

Hint

For the point (0,0), (0,2), (2,0), (2,2): floor(3/4) = floor(0.75) = 0
For the point (0,1), (1,0), (1,2), (2,1): floor(5/6) = floor(0.83333333) = 0
For the point (1,1): floor(8/9) = floor(0.88888889) = 0