Problem C
Greyscale image histogram

Time Limit: 3 seconds
Memory Limit: 512 Megabytes

Problem description

An image histogram is a type of histogram that acts as a graphical representation of the tonal distribution in a digital image. It plots the number of pixels for each tonal value.

By looking at the histogram for a specific image a viewer will be able to judge the entire tonal distribution at a glance.

Nam would like to judge the light exposure of a greyscale digital image so he needs you to help him to generate the image histogram.

Input

The first line contains three integers n, m ($0 < n, m \leqslant 1024$), the number rows and columns of the image matrix.

The next n lines contain m integer numbers a_{ij} where $0 \leqslant a_{ij} \leqslant 255$ - the grey value of the pixels of the source greyscale image that are separated by spaces ($0 \leqslant i \leqslant n$, $0 \leqslant j \leqslant m$).

Output

A line contains 256 values f_i – frequence of the value i^{th} in grey scale appears in the image where $0 \leqslant f_i \leqslant n \times m$ and $\sum_{i=0}^{255} f_i = n \times m$

Example:

Input	Output
4 3 10 10 10 10 10 10 10 10 10 10 10 10	0 0 0 0 0 0 0 0 0 0 12 0

Input	Output
2 3 0 0 0 0 0 0	6 0

Input	Output
3 2 10 100 10 200 100 200	0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0