Submatrix Sum

ZPRAC-16-17-Lab10

[30 points]

Given a matrix its sum is defined as the sum of all of its elements.

Your task is to find the sum of the sum of all submatrices of a given matrix.

For example:
Let's say you are given a 2x2 matrix as follows:

{1,2
 3,4}

There are a total of 9 submatrices for this matrix:

{1}, {2}, {3}, {4}, {1,2}, {3,4},
{1
 3},

{2
 4},

{1, 2
 3, 4}

and their respective sums are:

1, 2, 3, 4, 3, 7, 4, 6, 10

Now the sum of all these is 1+2+3+4+3+7+4+6+10 = 40

INPUT FORMAT:

M N --- integers denoting the number of rows and columns of matrix respectively
(MxN integers) --- elements of the matrix

OUTPUT FORMAT:

S --- sum of sum of all submatrices

EXAMPLE:

INPUT:
2 2
1 2
3 4

OUTPUT:
40