Matrix Broadcasting

50 POINTS

Given two matrices *A* and *B* of order *(m1, n1)* and *(m2, n2)* respectively. Your task is to add matrix B to matrix A using broadcasting technique if possible.
The broadcasting sum works as follows:

- If the size of matrices A and B are same then we add B to A element wise.
- If B is a row vector with same number of columns as in A then B is added to each row of A element wise.
- If B is a column vector with same number of rows as in A then B is added to each column of A element wise.
- If B is a singleton matrix then the single element is added to all elements of A.
- In all other cases, it's not possible to add B to A.

Input format:
The first line of input contains four space separated integers denoting *m1, n1, m2* and *n2* respectively.
Next *m1* lines contains *n1* space separated integers each denoting the matrix A
Next *m2* lines contains *n2* space separated integers each denoting the matrix B

Output format:
Output the matrix A *m1* lines each containing *n1* space separated integers after performing the broadcasting sum.
If sum is not possible then print Error.

Constraints:
(i) $1 \leq m1, n1, m2, n2 \leq 100$
(ii) $0 \leq matrix[i][j] \leq 10^4$

Test Case - 1
2 3 2 3
0 1 2
3 4 5
1 2 3
4 5 0
1 3 5
7 9 5

Test Case - 2
2 3 1 3
0 1 2
3 4 5
6 5 4
6 6 6
9 9 9

2 3 2 1
0 1 2
3 4 5
0
1
0 1 2
4 5 6

2 3 1 1
0 1 2
3 4 5
1
1 2 3
4 5 6

2 3 3 2
0 1 2
3 4 5
0 1
2 3
4 5
Error

Problem tags:

THE COMPLETE C COURSE   ARRAY   MATRIX   MEDIUM