Before attempting the problem, you are **required** to thoroughly read the reference material - https://www.hackerearth.com/practice/data-structures/arrays/multi-dimensional/tutorial/.

Statement

Given a 2D array A, convert all rows to columns and columns to rows.

Input

First line of input contains two space separated integers, N - total rows, M - total columns. The following N lines each contain M space-separated integers, the i, j^{th} element of the array ($A[i][j]$).

Output

Print M lines, each containing N space-separated integers, such that the input is transposed.

Constraints

- $1 \leq N \leq 10$
- $1 \leq M \leq 10$
- $1 \leq A[i][j] \leq 100$, where $0 \leq i < N$ and $0 \leq j < M$

Sample

Sample Input	Sample Output
3 5 13 4 8 14 1 9 6 3 7 21 5 12 17 9 3	13 9 5 4 6 12 8 3 17 14 7 9 1 21 3