Problem B. Bingo

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

Consider the following game. You have an integer matrix of size $N \times M$. Your task is to put M tokens at some cells of the matrix such as:

1. each column contains exactly one token;
2. difference D_r between the maximum and minimum number of tokens in one row is minimum possible;
3. among all such token placements, select one such that the maximum value in a matrix cell with a token is minimum possible.

Input

The first line of input contains two integers N and M ($1 \le N, M \le 110$). Then matrix a_i comes: N lines, each containing M integers $a_{i,j}$ ($1 \le a_{i,j} \le 10^9$).

Output

Print two integers which describe the placement you found: the minimum possible value of D_r and the minimum value in a matrix cell with a token.

Examples

standard input	standard output
3 3 1 2 3 2 1 2 3 2 1	0 1
3 5 1 2 3 4 5 5 4 3 2 1 4 3 2 1 5	1 2