

## Submatrix

### Problem Description

Given the following definition:

Submatrix: A new matrix formed by selecting the intersection positions of some rows and some columns from a matrix (keeping the relative order of rows and columns) is called a submatrix of the original matrix.

For example, in the left image below, select the elements at the intersection of rows 2 and 4 and columns 2, 4, and 5, and get a 2\*3 submatrix as shown in the right image.

9	3	3	3	9
9	4	8	7	4
1	7	4	6	6
6	8	5	6	9
7	4	5	6	1

One of its submatrixes is:

4	7	4
8	6	9

Adjacent elements: An element in a matrix is adjacent to the four elements above, below, on its left, and on its right (if any).

The score of a matrix: The sum of the absolute values of the differences between each pair of adjacent elements in the matrix.

Task: Given a positive integer matrix with  $n$  rows and  $m$  columns, select a submatrix with  $r$  rows and  $c$  columns from the matrix such that the score of the submatrix is minimized, and output the score.

### Input

The first line contains four integers  $n$ ,  $m$ ,  $r$ , and  $c$ , separated by a space between every two integers. The meanings of these integers are as described in the problem description.

The next  $n$  rows, each containing  $m$  integers separated by spaces, are used to represent that matrix with  $n$  rows and  $m$  columns in the problem description.

### Output

The output consists of one row which contains an integer representing the minimum score of the submatrix that satisfies the problem description.

### Sample Input

```
5 5 2 3
9 3 3 3 9
9 4 8 7 4
1 7 4 6 6
6 8 5 6 9
7 4 5 6 1
```

6 8 5 6 9

7 4 5 6 1

**Sample Output**

6

**Hint**

For 50% of the data,  $1 \leq n \leq 12$ ,  $1 \leq m \leq 12$ , and every element in the matrix satisfies:  $1 \leq a[i][j] \leq 20$ ;

For 100% of the data,  $1 \leq n \leq 16$ ,  $1 \leq m \leq 16$ , and every element in the matrix satisfies:  $1 \leq a[i][j] \leq 1000$ ,  $1 \leq r \leq n$ ,  $1 \leq c \leq m$ .