
Control C401B

P42596_en

Your task is to write a program that reads a sequence of matrices of integers, and prints which of them has the maximum difference between its greatest element and the smallest element. In case of a tie, you must choose the matrix that appeared before in the sequence.

Using the definition

```
typedef vector<vector<int> > Matrix;
```

your program must implement and use the procedure

```
void min_max(const Matrix& mat, int& minimum, int& maximum);
```

that, given the non empty matrix *mat*, leaves at *minimum* and at *maximum* the elements minimum and maximum of *mat*, respectively.

Input

The input is a non empty sequence of non empty matrices of integers. Each matrix is described with its size $n > 0$ and $m > 0$, followed by its $n \times m$ elements.

Output

The output is two lines indicating which is the maximum difference between the maximum element and minimum element of each matrix, and which is the first matrix with this difference.

Sample input 1

```
2 2
3 9
9 3

1 5
-1 -1 -7 -1 0

2 1
1
8

2 4
9 9 9 9
2 9 9 2
```

Sample input 2

```
1 1
4
```

Sample output 1

```
la diferencia maxima es 7
la primera matriu amb aquesta diferencia es la 2
```

Sample output 2

```
la diferencia maxima es 0
la primera matriu amb aquesta diferencia es la 1
```

Problem information

Author : Professorat de P1

Translator : Carlos Molina

Generation : 2023-07-14 18:00:56

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