

4468 Maximum Score

Professor Anupam Shukla is fond of playing with matrix. One day in his class he has defined a matrix which is filled up with scores but these scores can be positive, negative or zero. Professor Shukla has called the position of an element in a matrix by cell. Every cell is connected to its right, left, top and bottom only if the corresponding cell exists. Score of a connected component is the sum of scores in the cells of the connected component.

Professor Shukla has asked his students to write a program to find a connected component of cells from the matrix that has the highest aggregate score. If there are two or more connected components with the same maximal score, return the one with the largest size, i.e., the one with the largest number of cells.

Input

The input may contain multiple test cases.

First line of the input of the program will be the dimensions of the matrix and the scores are given on the next line onwards.

Output

The output should be the total score followed by the matrix showing the cells in the connected component. Other cells should be represented by 'X'.

Sample Input

```
3 4
-1 4 -6 7
3 2 -9 -9
-3 0 -5 4
```

Sample Output

```
10
X 4 -6 7
3 2 X X
X 0 X X
```