Write a program to print all the LEADERS in the array. An element is leader if it is greater than all the elements to its right side. And the rightmost element is always a leader. For example int the array {16, 17, 4, 3, 5, 2}, leaders are 17, 5 and 2.

Input Format

You will take an integer as input from STDIN which represent the length of the array and on another line array elements will be there separated by single space

Constraints

1 <= L <= 1000 1 <= Ai <= 1000

Output Format

print the numbers one on each line to the STDOUT.

Sample TestCase

Input 6 16 17 4 3 5 2

Output 17 5 2

A Grass Field is divided into N x M Blocks of size 1. Some of the blocks in the field have caught fire.

Now, in each second, the fire is spreading to the adjacent Blocks i.e. if (i , j) Block is on fire at time t,

then Blocks (i + 1, j) , (i - 1, j) , (i , j - 1) , (i , j + 1) will be on fire at time t+1.

You will be provided with the current configuration of the field at time t = 0. Your task is to determine

the minimum time in which the whole field catches fire.

M[i][j] = 1 , if the block is on fire.

M[i][j] = 0 , if the block is not on fire.

Input Format

The First line will contain two Integers N and M denoting dimensions of the field.

Each of the next N lines will contain M integers.

Constraints

1 <= N,M <= 500

M[i][j] = {0,1}

Output Format

You have to print the Minimum Time in which the whole field catches fire.

If the complete field never catches fire, output -1.

Sample TestCase 1

Input

3 3

0 0 0

0 1 0

0 0 0

Output

2