A STRIP OF LAND

PROBLEM

The residents of Dingilville are trying to locate a region to build an airport. The map of the land is at hand. The map is a rectangular grid of unit squares, each identified by a pair of coordinates (*x*,*y*), where *x* is the horizontal (west-east) and *y* is the vertical (south-north) coordinate. The height of every square is shown on the map.

Your task is to find a rectangular region of squares with the largest area (i.e. a rectangular region consisting of the largest number of squares) such that

a. the height difference between the highest and the lowest squares of the region is less than or equal to a given limit *C*, and

b. the width (i.e. the number of squares along the west-east direction) of the region is at most 100.

In case there is more than one such region you are required to report only one of them.

ASSUMPTIONS

- 1 <= *U* <=700, 1 <= *V* <=700 where *U* and *V* designate the dimensions of the map. More specifically, *U* is the number of squares in the west-east direction, and *V*, in the south-north direction.
- 0 <= *C* <= 10
- -30,000 <= H_{xy} <= 30,000 where the integer H_{xy} is the height of the square at coordinates (*x*, *y*), 1 <= *x* <= *U*, 1 <= *y* <= *V*.
- The southwest corner square of the map has the coordinates (1,1) and the northeast corner has the coordinates (*U*,*V*).

INPUT

The input is a text file named **land.inp**.

- The first line contains three integers: *U*, *V* and *C*.
- Each of the following *V* lines contains the integers H_{xy} for *x* = 1,…,*U*. More specifically, H_{xy} occurs as the *x*'th number on the (*V-y+2)*'th input line.

OUTPUT

The output must be a text file named **land.out** consisting of one line containing
four integers locating the region found: X_{min}, Y_{min}, X_{max}, Y_{max}, where (X_{min} , Y_{min}) is the coordinates of the southwest corner square, and (X_{max}, Y_{max}) is the coordinates of the northeast corner square of the region.

EXAMPLE

land.inp:

```
10 15 4
41 40 41 38 39 39 40 42 40 40
39 40 43 40 36 37 35 39 42 42
```

EVALUATION

Your program will be allowed to run 130 seconds.
No partial credit can be obtained for a test case.