Programming Assignment 4

Skiing

Please write a program in LC-3 assembly language to solve the following problem.

Michael likes skiing. When skiing, one would slide down from a higher place to a lower place to gain speed. But when one arrives at the bottom, he has to walk up or wait others to pick him up. So every time Michael always chooses the longest distance he can slide.
Suppose the skiing field is a rectangular area which is described by a two-dimensional array. Each element of the array denotes the height of the point. Michael can start from any point, and he can slide to one of the four adjacent points if its height is lower than current height. Michael cannot leave ski field when skiing.

Input Specification:

Memory location **x3200** stores the number of rows of that matrix. Memory location **x3201** stores the number of columns of that matrix. The matrix is stored in **column major** order starting at **x3202**. You could download the attached **.obj** file and load it into simulator to test your program. You can also write your own test cases.

Output Specification:

Store your result in **R2**.

Sample Input:

```
5 5
1  2  3  4  5
16 17 18 19 6
15 24 25 20 7
14 23 22 21 8
13 12 11 10 9
```

Sample Output:

```
25
```