Mohanty, Vivek (Cognizant)

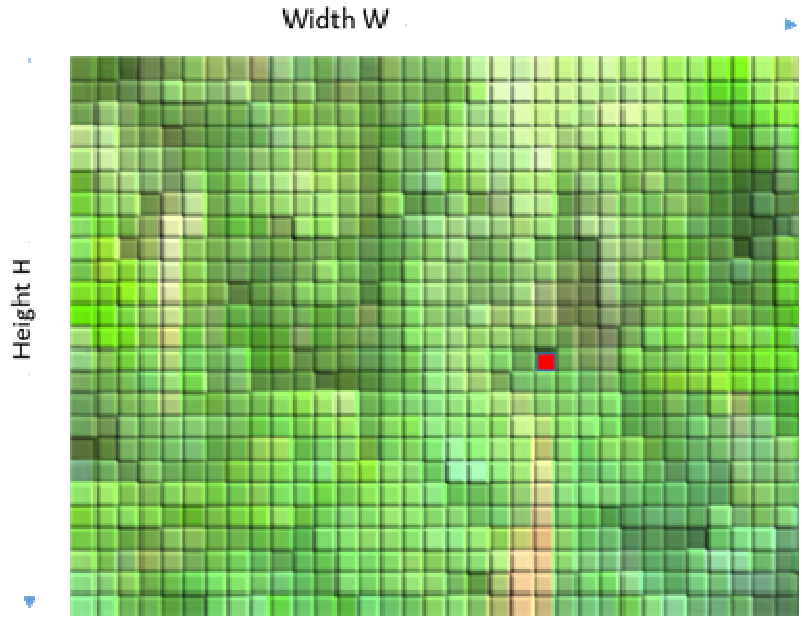
From: Basu, Kaustuv (Cognizant)
Sent: Friday, April 13, 2018 1:24 PM
To: Basu, Kaustuv (Cognizant)
Subject: CodingrAlert: Build a cage for the man-eater

Hi,

Really need your help!

A man eating tiger has been spotted in a national forest. The forest department is planning to build a cage to catch the man-eater using walls made up of wooden logs. The jungle is typically dense and it prevents building the wall at random as it would be very costly to do so. At certain places it is not so dense and the wall can be easily built with much lesser cost. We need to estimate the lowest cost possible to build the wall and share that info with the forest department.
As you know, the tiger can go in all possible directions and will try to escape!

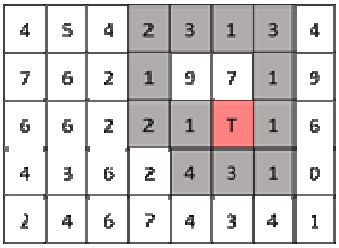
For simplicity, let us assume the jungle as a grid with height H and width W, as below:



The tiger is sitting at grid location (Tx,Ty) marked with the red dot! As the tiger can move in all eight directions, e.g. up, down, left, right, and in diagonals, we need to build the wall without any gap.

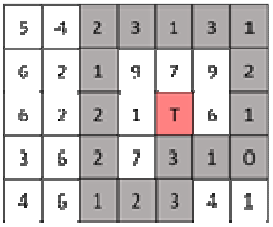
The below grids will help you understand the problem:

Ex. A:



Here the Tiger is at Row=3, Col=6. The cost of building the wall for each grid is given. The highlighted grids around the tiger give the lowest cost for building the wall. Any other combination leads to a greater cost.
Here the cost is the sum of all shaded grids = (2+3+1+3+1+1+2+1+1+4+3+1) = 23

Ex. B:



Here the Tiger is at Row=3, Col=5. The cost of building the wall for each grid is given. The highlighted grids around the tiger give the lowest cost for building the wall. Any other combination leads to a greater cost.
Here the cost is the sum of all shaded grids = (2+3+1+3+1+1+2+2+1+2+3+1+0+1+2+3) = 26

Input Parameters:
H = 1 to 15
W = 1 to 15
Cost per grid = C = 0 to 1000
Location of tiger = Tx (2 to 14)
Location of tiger = Ty (2 to 14)

Output:
Cost of building the wall: Integer

Request you to think about the problem and provide a solution. You can share the algo or your code. You can code in Java, C, C++, python or any other language of your choice!

Reach out to me in case you need any clarification.
Best of luck!

Best regards

Kaustuv Basu

Note: this email uses intelligent algorithm to find the most creative and intelligent minds of our group and hence it has reached your mailbox. If you feel there is a bug in the algo, please reach out to me and I will exclude you for our next coding alert email.