Solutions Team Interview Homework V3

Alice is an explorer who makes maps. She is standing at point(0,0) and must explore the area. She can move one point at time left, right, up or down. For example, if Alice is standing at (x,y) she can move to (x+1,y), (x−1,y),(x,y+1) or (x, y−1). She cannot jump or move diagonally.

Bill must stop Alice from making these maps. Therefore, Bill decided to plant mines, and has placed these mines at points where the sum of the absolute value of the coordinates digits is greater than 21. For example the point(59, −79) has a mine, because `5 + 9 + 7 + 9 > 21`. But the point(−113, −104) has no mine because `1 + 1 + 3 + 1 + 0 + 4 <= 21`.

If Alice steps on a mine she will die, and she can't jump over the mines, so she must walk around the mines to avoid them.

Write a program to calculate the number of points Alice can access if she starts at point(0,0). It may help to make your program visualise the map (e.g. in the console) in order to check correctness.

There is a correct answer, but don't worry too much if you are not sure if you have got the right one. Your program will be reviewed based on the data structures you choose, optimisation you add, etc.

Notes:

- Feel free to use any language.
- Please create and include a Git log in your code submission