Utility Scale
Design Software

PYTHON DEVELOPER

www.pvcase.com/career/#python-developer

Some crazy scientist created these quantum something energy cells.

The cells are unique in a way that they produce a stronger energy output if there are more cells next to it.

What the scientist observed was, that the cells are aware of their cardinal direction and if you place a cell to the north, the energy of the cell is increased by 10% for each cell in a multiplicative manner, meaning if a cell has 3 cells to it's north, you would estimate it's power:

<initial power> * 1.1 * 1.1 * 1.1

Cells to the north, increase output by 10%
Cells to the south, increase output by 15%
Cells to the west, increase output by 12%
Cells to the east, increase output by 8%

Task 1:

Given a grid of cells, calculate the total power.

First line of input is the initial cell power.

The input data will be cell counts in a single line of the grid, cells are perfectly aligned, so a cell placed to the top of a cell will be considered to be placed to the north respective to that cell.

Example input:
100
1
2
3

A		
B	C	
D	E	F

A power = 100 * 1.15 * 1.15	D power = 100 * 1.1 * 1.1 * 1.08 * 1.08
B power = 100 * 1.1 * 1.08 * 1.15	E power = 100 * 1.1 * 1.08 * 1.12
C power = 100 * 1.12 * 1.15	F power = 100 * 1.12 * 1.12

Task 2:

The grid by line calculation tool, is useful, but limiting. So, to allow custom configurations the input was changed to 1s and 0s, where 1 represents that a cell is present.

So the previous task grid input would now look like:
100
100
110
111

Add support for this type of input.

Task 3:

Create a web application where you can submit your name and the input data for a grid

mywebsite/overview should then show a table with columns:
Name | Total Power | Calculation Time

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Thank you!