[[](https://codechalleng.es/profiles/danielhao5)](https://codechalleng.es/profiles/danielhao5)Bite 263. Count the number of islands in a grid

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You are tasked with counting the amount of islands in a 2D matrix / grid.

Islands are represented by 1s, oceans by 0. If the 1s are connected either horizontally or vertically (not diagonally), then they count as one island. You can assume a grid has a limited size up to 10x10. Try to make the search / count of number of islands as efficient as possible. If no islands are found, just return 0.

The goal is to find how many islands there are in the ocean, regardless of its size.

Examples:

###### Example 1

grid = [[1, 1, 0, 0, 1],

[1, 1, 0, 0, 1],

[0, 1, 0, 0, 0],

[1, 0, 0, 0, 1],

[1, 0, 0, 0, 0]]

expected: 4 islands

(top left island has size 5; top right = 2, bottom left = 2, bottom right = 1)

###### Example 2

grid = [[1, 0, 0, 1],

[1, 0, 1, 0],

[0, 1, 0, 0],

[1, 0, 0, 1]]

expected: 6 islands

(only top left one has size 2, all other islands are of size 1)

###### Example 3

empty = [[0, 0, 0, 0],

[0, 0, 0, 0],

[0, 0, 0, 0],

[0, 0, 0, 0]]

expected = 0 islands

Tasks:

1. Complete count\_islands which returns the number of islands found.
2. Complete mark\_islands which marks all visited islands in-place (modifying the passed-in grid directly), no return value.