

1117. As Far from Land as Possible

Difficulty : Medium

<https://leetcode.com/problems/as-far-from-land-as-possible>

Given an $n \times n$ grid containing only values 0 and 1, where 0 represents water and 1 represents land, find a water cell such that its distance to the nearest land cell is maximized, and return the distance. If no land or water exists in the grid, return -1.

The distance used in this problem is the Manhattan distance: the distance between two cells (x_0, y_0) and (x_1, y_1) is $|x_0 - x_1| + |y_0 - y_1|$.

Example 1:

1	0	1
0	0	0
1	0	1

Input: grid = [[1,0,1],[0,0,0],[1,0,1]]

Output: 2

Explanation: The cell (1, 1) is as far as possible from all the land with distance 2.

Example 2:

1	0	0
0	0	0
0	0	0

Input: grid = [[1,0,0],[0,0,0],[0,0,0]]

Output: 4

Explanation: The cell (2, 2) is as far as possible from all the land with distance 4.

Constraints:

- $n == \text{grid.length}$
- $n == \text{grid}[i].\text{length}$
- $1 \leq n \leq 100$
- $\text{grid}[i][j]$ is 0 or 1