1274. Number of Ships in a Rectangle Premium

Hard Topics Companies Hint

*(This problem is an **interactive problem**.)*

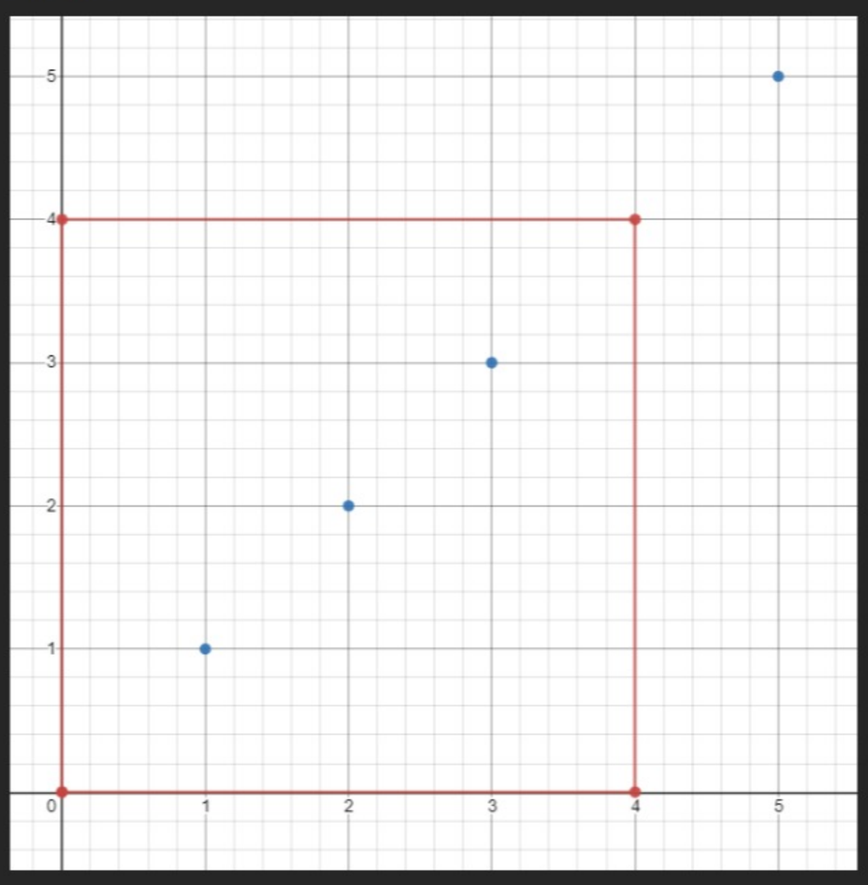
Each ship is located at an integer point on the sea represented by a cartesian plane, and each integer point may contain at most 1 ship.

You have a function `Sea.hasShips(topRight, bottomLeft)` which takes two points as arguments and returns `true` If there is at least one ship in the rectangle represented by the two points, including on the boundary.

Given two points: the top right and bottom left corners of a rectangle, return the number of ships present in that rectangle. It is guaranteed that there are **at most 10 ships** in that rectangle.

Submissions making **more than 400 calls** to `hasShips` will be judged *Wrong Answer*. Also, any solutions that attempt to circumvent the judge will result in disqualification.

Example :



Input:
ships = [[1,1],[2,2],[3,3],[5,5]], topRight = [4,4], bottomLeft = [0,0]
Output: 3
Explanation: From [0,0] to [4,4] we can count 3 ships within the range.

Example 2:

Input: ans = [[1,1],[2,2],[3,3]], topRight = [1000,1000], bottomLeft = [0,0]
Output: 3

Constraints:

- On the input `ships` is only given to initialize the map internally. You must solve this problem "blindfolded". In other words, you must find the answer using the given `hasShips` API, without knowing the `ships` position.
- `0 <= bottomLeft[0] <= topRight[0] <= 1000`
- `0 <= bottomLeft[1] <= topRight[1] <= 1000`
- `topRight != bottomLeft`

Seen this question in a real interview before? 1/5

Yes No

Accepted 29.6K | Submissions 43.2K | Acceptance Rate 68.7%

Topics

Array Divide and Conquer Interactive

Companies

0 - 6 months

Bloomberg 3

Hint 1

Use divide and conquer technique.

Hint 2

Divide the query rectangle into 4 rectangles.

Hint 3

Use recursion to continue with the rectangles that has ships only.

Discussion (4)