

AlgoExpert

Quad Layout

C#

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Sublime

Monokai

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PromptScratchpadOur Solution(s)Video Explanation

Run Code

Solution 1Solution 2Solution 3

1// Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3using System;
4using System.Collections.Generic;
5
6public class Program {
7 // O(n^2) time | O(n) space - where n is the number of coordinates
8 public static int RectangleMania(Point[] coords) {
9 HashSet<string> coordsTable = getCoordsTable(coords);
10 return getRectangleCount(coords, coordsTable);
11 }
12
13 public static HashSet<string> getCoordsTable(Point[] coords) {
14 HashSet<string> coordsTable = new HashSet<string>();
15 foreach (Point coord in coords) {
16 string coordstring = coordToString(coord);
17 coordsTable.Add(coordstring);
18 }
19 return coordsTable;
20 }
21
22 public static int getRectangleCount(Point[] coords, HashSet<string> coordsTable) {
23 int rectangleCount = 0;
24 foreach (Point coord1 in coords) {
25 foreach (Point coord2 in coords) {
26 if (!isInUpperRight(coord1, coord2)) continue;
27 string upperCoordstring = coordToString(new Point(coord1.x,
28 coord2.y));
29 string rightCoordstring = coordToString(new Point(coord2.x,
30 coord1.y));
31 if (
32 coordsTable.Contains(upperCoordstring) &&
33 coordsTable.Contains(rightCoordstring)
34) rectangleCount++;
35 }
36 }
37 return rectangleCount;
38 }
39
40 public static bool isInUpperRight(Point coord1, Point coord2) {
41 return coord2.x > coord1.x && coord2.y > coord1.y;
42 }
43
44 public static string coordToString(Point coord) {
45 return coord.x.ToString() + "-" + coord.y.ToString();
46 }
47
48 public class Point {
49 public int x;
50 public int y;
51
52 public Point(int x, int y) {
53 this.x = x;
54 this.y = y;
55 }
56 }
57 }
58

