

Solution 1Solution 2Solution 3

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 // O(n^2) time | O(n) space - where n is the number of coordinates
4 function rectangleMania(coords) {
5   const coordsTable = getCoordsTable(coords);
6   return getRectangleCount(coords, coordsTable);
7 }
8
9 function getCoordsTable(coords) {
10  const coordsTable = {};
11  for (const coord of coords) {
12    const coordString = coordToString(coord);
13    coordsTable[coordString] = true;
14  }
15  return coordsTable;
16 }
17
18 function getRectangleCount(coords, coordsTable) {
19  let rectangleCount = 0;
20  for (const [x1, y1] of coords) {
21    for (const [x2, y2] of coords) {
22      if (!isInUpperRight([x1, y1], [x2, y2])) continue;
23      const upperCoordString = coordToString([x1, y2]);
24      const rightCoordString = coordToString([x2, y1]);
25      if (upperCoordString in coordsTable && rightCoordString in coordsTable) rectangleCount++;
26    }
27  }
28  return rectangleCount;
29 }
30
31 function isInUpperRight(coord1, coord2) {
32  const [x1, y1] = coord1;
33  const [x2, y2] = coord2;
34  return x2 > x1 && y2 > y1;
35 }
36
37 function coordToString(coord) {
38  const [x, y] = coord;
39  return `${x}-${y}`;
40 }
41
42 exports.rectangleMania = rectangleMania;
43
```

