Problem 1828: Queries on Number of Points Inside a Circle

Problem Information

Difficulty: Medium
Acceptance Rate: 86.67%
Paid Only: No
Tags: Array, Math, Geometry

Problem Description

You are given an array `points` where `points[i] = [xi, yi]` is the coordinates of the `ith` point on a 2D plane. Multiple points can have the **same** coordinates.

You are also given an array `queries` where `queries[j] = [xj, yj, rj]` describes a circle centered at `(xj, yj)` with a radius of `rj`.

For each query `queries[j]`, compute the number of points **inside** the `jth` circle. Points **on the border** of the circle are considered **inside**.

Return _an array_`answer` _, where_`answer[j]`_is the answer to the_`jth` _query_.

Example 1:

![](https://assets.leetcode.com/uploads/2021/03/25/chrome_2021-03-25_22-34-16.png)

Input: points = [[1,3],[3,3],[5,3],[2,2]], queries = [[2,3,1],[4,3,1],[1,1,2]] **Output:** [3,2,2] **Explanation:** The points and circles are shown above. queries[0] is the green circle, queries[1] is the red circle, and queries[2] is the blue circle.

Example 2:

![](https://assets.leetcode.com/uploads/2021/03/25/chrome_2021-03-25_22-42-07.png)

Input: points = [[1,1],[2,2],[3,3],[4,4],[5,5]], queries = [[1,2,2],[2,2,2],[4,3,2],[4,3,3]] **Output:** [2,3,2,4] **Explanation:** The points and circles are shown above. queries[0] is green, queries[1] is red, queries[2] is blue, and queries[3] is purple.

Constraints:

* `1 <= points.length <= 500` * `points[i].length == 2` * `0 <= x■■■■■■i, y■■■■■■i <= 500` * `1 <= queries.length <= 500` * `queries[j].length == 3` * `0 <= xj, yj <= 500` * `1 <= rj <= 500` * All coordinates are integers.

Follow up: Could you find the answer for each query in better complexity than `O(n)`?

Code Snippets

C++:

```
class Solution {
public:
vector<int> countPoints(vector<vector<int>>& points, vector<vector<int>>&
queries) {

}
};
```

Java:

```
class Solution {
public int[] countPoints(int[][] points, int[][] queries) {

}
}
```

Python3:

```
class Solution:
def countPoints(self, points: List[List[int]], queries: List[List[int]]) ->
List[int]:
```