

5528. Coordinate With Maximum Network Quality

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You are given an array of network towers `towers` and an integer `radius`, where `towers[i] = [xi, yi, qi]` denotes the i^{th} network tower with location (x_i, y_i) and quality factor q_i . All the coordinates are **integral coordinates** on the X-Y plane, and the distance between two coordinates is the **Euclidean distance**.

The integer `radius` denotes the **maximum distance** in which the tower is **reachable**. The tower is **reachable** if the distance is less than or equal to `radius`. Outside that distance, the signal becomes garbled, and the tower is **not reachable**.

The signal quality of the i^{th} tower at a coordinate (x, y) is calculated with the formula $\lfloor q_i / (1 + d) \rfloor$, where d is the distance between the tower and the coordinate. The **network quality** at a coordinate is the sum of the signal qualities from all the **reachable** towers.

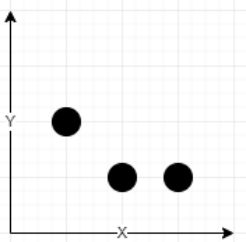
Return the *integral coordinate where the **network quality** is maximum*. If there are multiple coordinates with the same **network quality**, return the *lexicographically minimum coordinate*.

Note:

- A coordinate (x_1, y_1) is lexicographically smaller than (x_2, y_2) if either $x_1 < x_2$ or $x_1 == x_2$ and $y_1 < y_2$.
- $\lfloor val \rfloor$ is the greatest integer less than or equal to val (the floor function).

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

Example 1:



Input: towers = [[1,2,5],[2,1,7],[3,1,9]], radius = 2
Output: [2,1]
Explanation:
At coordinate (2, 1) the total quality is 13
- Quality of 7 from (2, 1) results in $\lfloor 7 / (1 + \text{sqrt}(0)) \rfloor = \lfloor 7 \rfloor = 7$
- Quality of 5 from (1, 2) results in $\lfloor 5 / (1 + \text{sqrt}(2)) \rfloor = \lfloor 2.07 \rfloor = 2$
- Quality of 9 from (3, 1) results in $\lfloor 9 / (1 + \text{sqrt}(1)) \rfloor = \lfloor 4.5 \rfloor = 4$
No other coordinate has higher quality.

Example 2:

Input: towers = [[23,11,21]], radius = 9
Output: [23,11]

Example 3:

Input: towers = [[1,2,13],[2,1,7],[0,1,9]], radius = 2
Output: [1,2]

Example 4:

Input: towers = [[2,1,9],[0,1,9]], radius = 2
Output: [0,1]
Explanation: Both (0, 1) and (2, 1) are optimal in terms of quality but (0, 1) is lexicographically minimal.

Constraints:

- $1 \leq \text{towers.length} \leq 50$
- $\text{towers}[i].\text{length} == 3$
- $0 \leq x_i, y_i, q_i \leq 50$
- $1 \leq \text{radius} \leq 50$

JavaScript



```
1 /**
2  * @param {number[][]} towers
3  * @param {number} radius
4  * @return {number[]}
5  */
6 var bestCoordinate = function(towers, radius) {
7
8  };
```

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