Problem 1924: Erect the Fence II

Problem Information

Difficulty: Hard
Acceptance Rate: 50.84%
Paid Only: Yes
Tags: Array, Math, Geometry

Problem Description

You are given a 2D integer array `trees` where `trees[i] = [xi, yi]` represents the location of the `ith` tree in the garden.

You are asked to fence the entire garden using the minimum length of rope possible. The garden is well-fenced only if **all the trees are enclosed** and the rope used **forms a perfect circle**. A tree is considered enclosed if it is inside or on the border of the circle.

More formally, you must form a circle using the rope with a center `(x, y)` and radius `r` where all trees lie inside or on the circle and `r` is **minimum**.

Return _the center and radius of the circle as a length 3 array_`[x, y, r]`_._ Answers within `10-5` of the actual answer will be accepted.

Example 1:

Input: trees = [[1,1],[2,2],[2,0],[2,4],[3,3],[4,2]] **Output:** [2.00000,2.00000,2.00000] **Explanation:** The fence will have center = (2, 2) and radius = 2

Example 2:

Input: trees = [[1,2],[2,2],[4,2]] **Output:** [2.50000,2.00000,1.50000] **Explanation:** The fence will have center = (2.5, 2) and radius = 1.5

Constraints:

* `1 <= trees.length <= 3000` * `trees[i].length == 2` * `0 <= xi, yi <= 3000`

Code Snippets

C++:

```
class Solution {
public:
vector<double> outerTrees(vector<vector<int>>& trees) {

}
};
```

Java:

```
class Solution {
public double[] outerTrees(int[][] trees) {

}
}
```

Python3:

```
class Solution:
def outerTrees(self, trees: List[List[int]]) -> List[float]:
```