

Problem 573: Squirrel Simulation

Problem Information

Difficulty: Medium

Acceptance Rate: 57.32%

Paid Only: Yes

Tags: Array, Math

Problem Description

You are given two integers `height` and `width` representing a garden of size `height x width`.

You are also given:

* an array `tree` where `tree = [treer, treec]` is the position of the tree in the garden, * an array `squirrel` where `squirrel = [squirrelr, squirrelc]` is the position of the squirrel in the garden, * and an array `nuts` where `nuts[i] = [nutir, nutic]` is the position of the `ith` nut in the garden.

The squirrel can only take at most one nut at one time and can move in four directions: up, down, left, and right, to the adjacent cell.

Return _the**minimal distance** for the squirrel to collect all the nuts and put them under the tree one by one_.

The **distance** is the number of moves.

Example 1:

Input: height = 5, width = 7, tree = [2,2], squirrel = [4,4], nuts = [[3,0], [2,5]] **Output:** 12

Explanation: The squirrel should go to the nut at [2, 5] first to achieve a minimal distance.

Example 2:

****Input:**** height = 1, width = 3, tree = [0,1], squirrel = [0,0], nuts = [[0,2]] ****Output:**** 3

****Constraints:****

```
* `1 <= height, width <= 100` * `tree.length == 2` * `squirrel.length == 2` * `1 <= nuts.length <= 5000` * `nuts[i].length == 2` * `0 <= treer, squirrelr, nutir <= height` * `0 <= treec, squirrelc, nutic <= width`
```

Code Snippets

C++:

```
class Solution {  
public:  
    int minDistance(int height, int width, vector<int>& tree, vector<int>& squirrel, vector<vector<int>>& nuts) {  
  
    }  
};
```

Java:

```
class Solution {  
public int minDistance(int height, int width, int[] tree, int[] squirrel,  
int[][][] nuts) {  
  
}  
}
```

Python3:

```
class Solution:  
    def minDistance(self, height: int, width: int, tree: List[int], squirrel:  
List[int], nuts: List[List[int]]) -> int:
```