573. Squirrel Simulation Premium

Medium | Topics | Companies | Hint

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

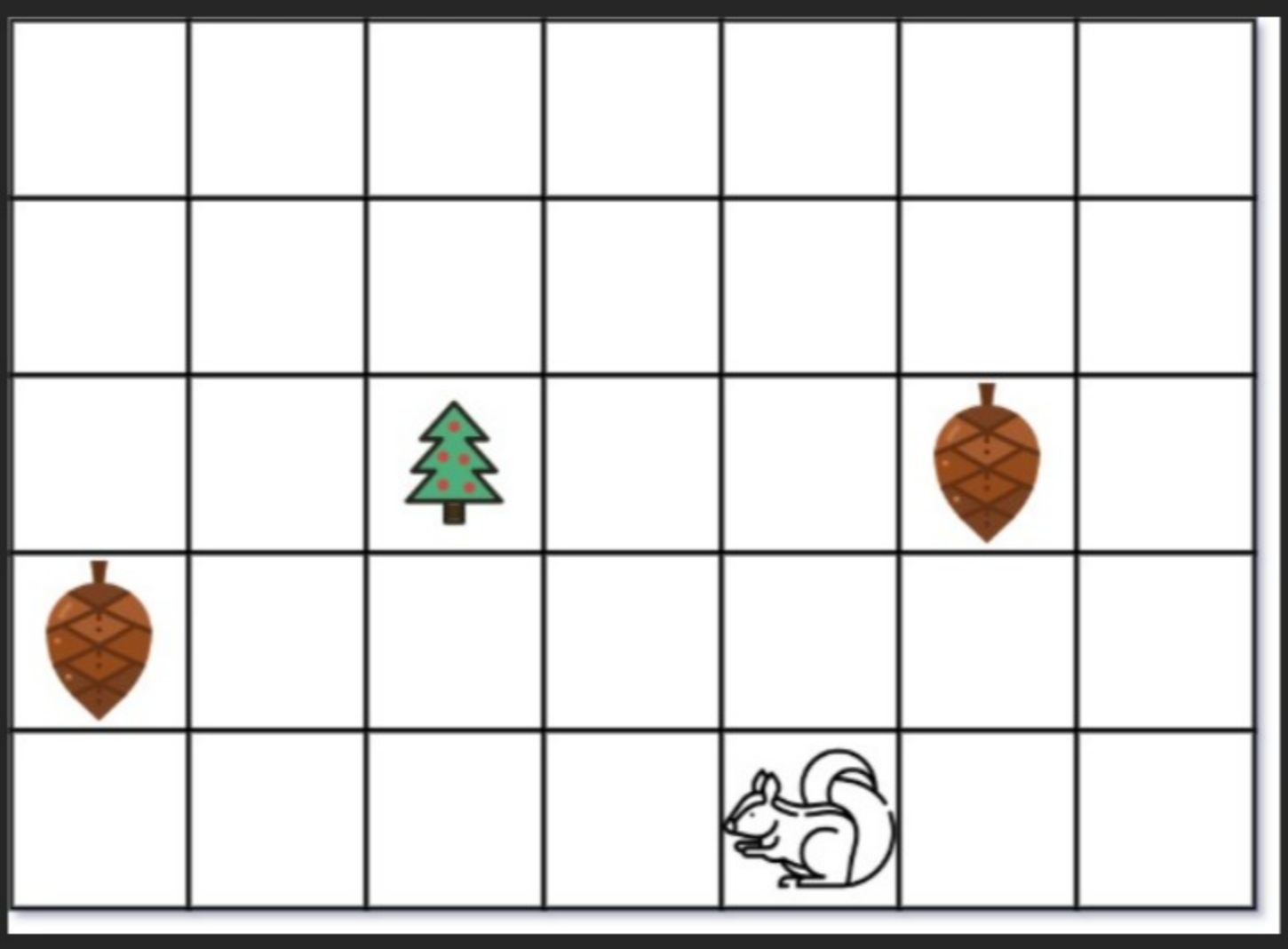
- an array `tree` where `tree = [tree_r, tree_c]` is the position of the tree in the garden,
- an array `squirrel` where `squirrel = [squirrel_r, squirrel_c]` is the position of the squirrel in the garden,
- and an array `nuts` where `nuts[i] = [nut_ir, nut_ic]` is the position of the `i^th` nut in the 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.*

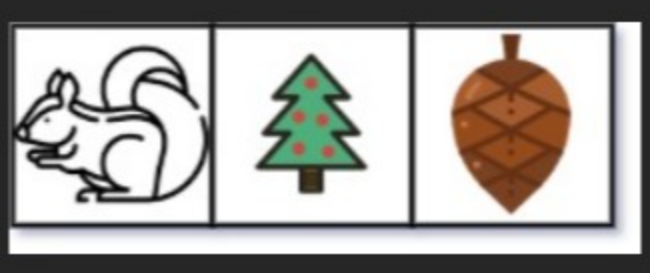
The **distance** is the number of moves.

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 <= tree_r, squirrel_r, nut_ir <= height`
- `0 <= tree_c, squirrel_c, nut_ic <= width`

Seen this question in a real interview before? 1/5

Yes No

Accepted 22.8K | Submissions 39.9K | Acceptance Rate 57.2%

Topics

Array Math

Companies

0 - 6 months

Block 2

Hint 1

Will Brute force solution works here? What will be its complexity?

Hint 2

Brute force definitely won't work here. Think of some simple solution. Take some example and make some observations.

Hint 3

Will order of nuts traversed by squirrel is important or only first nut traversed by squirrel is important?

Hint 4

Are there some paths which squirrel have to cover in any case? If yes, what are they?

Hint 5

Did you notice only first nut traversed by squirrel matters? Obviously squirrel will choose first nut which will result in minimum distance.

Discussion (9)