1730. Shortest Path to Get Food Premium

Medium | Topics | Companies | Hint

You are starving and you want to eat food as quickly as possible. You want to find the shortest path to arrive at any food cell.

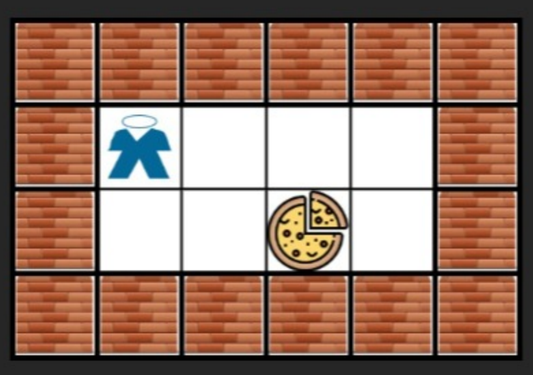
You are given an `m x n` character matrix, `grid`, of these different types of cells:

- `'*'` is your location. There is **exactly one** `'*'` cell.
- `'#'` is a food cell. There may be **multiple** food cells.
- `'O'` is free space, and you can travel through these cells.
- `'X'` is an obstacle, and you cannot travel through these cells.

You can travel to any adjacent cell north, east, south, or west of your current location if there is not an obstacle.

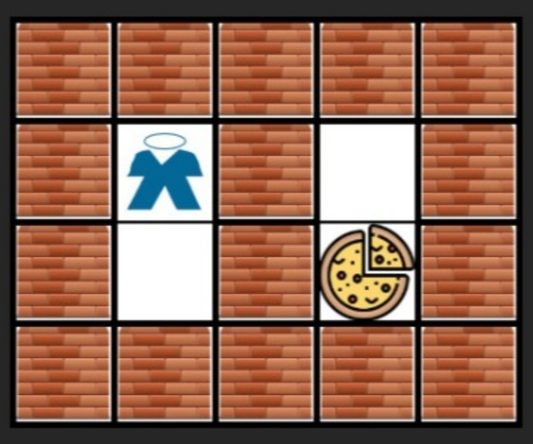
Return *the **length** of the shortest path for you to reach **any** food cell*. If there is no path for you to reach food, return `-1`.

Example 1:



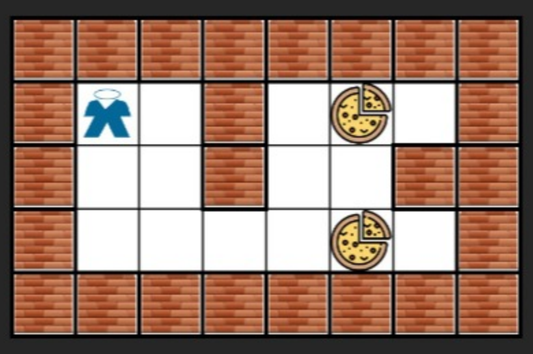
```
Input: grid = [["X","X","X","X","X","X"],["X","*","O","O","O","X"],["X","O","O","#","O","X"],["X","X","X","X","X","X"]]
Output: 3
Explanation: It takes 3 steps to reach the food.
```

Example 2:



```
Input: grid = [["X","X","X","X","X"],["X","*","X","O","X"],["X","O","X","#","X"],["X","X","X","X","X"]]
Output: -1
Explanation: It is not possible to reach the food.
```

Example 3:



```
Input: grid = [["X","X","X","X","X","X","X","X"],["X","*","O","X","O","#","O","X"],["X","O","O","X","O","O","X","X"],["X","O","O","O","O","#","O","X"],
["X","X","X","X","X","X","X","X"]]
Output: 6
Explanation: There can be multiple food cells. It only takes 6 steps to reach the bottom food.
```

Constraints:

- `m == grid.length`
- `n == grid[i].length`
- `1 <= m, n <= 200`
- `grid[row][col]` is `'*'`, `'X'`, `'O'`, or `'#'`.
- The `grid` contains **exactly one** `'*'`.

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

Yes No

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Topics

Array Breadth-First Search Matrix

Companies

0 - 6 months

Bloomberg 2 DoorDash 2

6 months ago

Google 2 Amazon 2

Hint 1

Run BFS starting from the '*' position.

Hint 2

Keep the current number of the steps as a state in the queue.

Hint 3

The first time you reach a food, return the number of steps as the answer.

Hint 4

In case the queue is empty and you still did not manage to reach a food, return -1.

Similar Questions

01 Matrix	Medium
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Discussion (15)