Problem 1926: Nearest Exit from Entrance in Maze

Problem Information

Difficulty: Medium
Acceptance Rate: 48.05%
Paid Only: No
Tags: Array, Breadth-First Search, Matrix

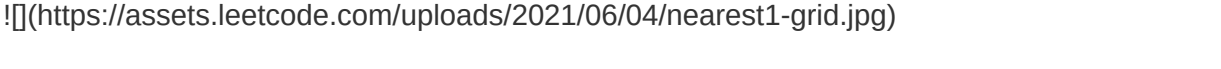
Problem Description

You are given an `m x n` matrix `maze` (**0-indexed**) with empty cells (represented as `'.'`) and walls (represented as `'+'`). You are also given the `entrance` of the maze, where `entrance = [entrancerow, entrancecol]` denotes the row and column of the cell you are initially standing at.

In one step, you can move one cell **up** , **down** , **left** , or **right**. You cannot step into a cell with a wall, and you cannot step outside the maze. Your goal is to find the **nearest exit** from the `entrance`. An **exit** is defined as an **empty cell** that is at the **border** of the `maze`. The `entrance` **does not count** as an exit.

Return _the**number of steps** in the shortest path from the _`entrance` _to the nearest exit, or_`-1` _if no such path exists_.

Example 1:



Input: maze = [["+","+",".","+"],[".",".",".","+"],["+","+","+","."]], entrance = [1,2] **Output:** 1 **Explanation:** There are 3 exits in this maze at [1,0], [0,2], and [2,3]. Initially, you are at the entrance cell [1,2]. - You can reach [1,0] by moving 2 steps left. - You can reach [0,2] by moving 1 step up. It is impossible to reach [2,3] from the entrance. Thus, the nearest exit is [0,2], which is 1 step away.

Example 2:

Input: maze = [["+","+","+"],[".",".","."],["+","+","+"]], entrance = [1,0] **Output:** 2 **Explanation:** There is 1 exit in this maze at [1,2]. [1,0] does not count as an exit since it is the entrance cell. Initially, you are at the entrance cell [1,0]. - You can reach [1,2] by moving 2 steps right. Thus, the nearest exit is [1,2], which is 2 steps away.

Example 3:

Input: maze = [[".","+"]], entrance = [0,0] **Output:** -1 **Explanation:** There are no exits in this maze.

Constraints:

* `maze.length == m` * `maze[i].length == n` * `1 <= m, n <= 100` * `maze[i][j]` is either `'.'` or `'+'`. * `entrance.length == 2` * `0 <= entrancerow < m` * `0 <= entrancecol < n` * `entrance` will always be an empty cell.

Code Snippets

C++:

```
class Solution {
public:
int nearestExit(vector<vector<char>>& maze, vector<int>& entrance) {

}
};
```

Java:

```
class Solution {
public int nearestExit(char[][] maze, int[] entrance) {

}
}
```

Python3:

```
class Solution:
def nearestExit(self, maze: List[List[str]], entrance: List[int]) -> int:
```