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Description

Solution

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499. The Maze III

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There is a ball in a `maze` with empty spaces (represented as `0`) and walls (represented as `1`). The ball can go through the empty spaces by rolling **up**, **down**, **left** or **right**, but it won't stop rolling until hitting a wall. When the ball stops, it could choose the next direction. There is also a hole in this maze. The ball will drop into the hole if it rolls onto the hole.

Given the `m x n` `maze`, the ball's position `ball` and the hole's position `hole`, where `ball = [ballrow, ballcol]` and `hole = [holerow, holecol]`, return a string *instructions of all the instructions that the ball should follow to drop in the hole with the shortest distance possible*. If there are multiple valid instructions, return the **lexicographically minimum** one. If the ball can't drop in the hole, return `"impossible"`.

If there is a way for the ball to drop in the hole, the answer `instructions` should contain the characters `'u'` (i.e., up), `'d'` (i.e., down), `'l'` (i.e., left), and `'r'` (i.e., right).

The **distance** is the number of **empty spaces** traveled by the ball from the start position (excluded) to the destination (included).

You may assume that **the borders of the maze are all walls** (see examples).

Example 1:

Input: `maze = [[0,0,0,0,0],[1,1,0,0,1],[0,0,0,0,0],[0,1,0,0,1],[0,1,0,0,0]]`, `ball = [4,3]`, `hole = [0,1]`  
Output: `"lul"`  
Explanation: There are two shortest ways for the ball to drop into the hole.  
The first way is left -> up -> left, represented by `"lul"`.  
The second way is up -> left, represented by `"ul"`.  
Both ways have shortest distance 6, but the first way is lexicographically smaller because `'l' < 'u'`. So the output is `"lul"`.

Example 2:

i

Java

Autocomplete

```
1 class Solution {
2     public String findShortestWay(int[][] maze, int[] ball, int[] hole) {
3
4     }
5 }
```

Problems

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Console

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https://leetcode.com/problems/the-maze-iii/