Problem 999: Available Captures for Rook

Problem Information

Difficulty: Easy
Acceptance Rate: 71.01%
Paid Only: No
Tags: Array, Matrix, Simulation

Problem Description

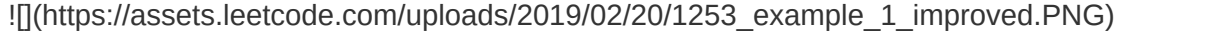
You are given an `8 x 8` **matrix** representing a chessboard. There is **exactly one** white rook represented by `'R'`, some number of white bishops `'B'`, and some number of black pawns `'p'`. Empty squares are represented by `'.'`.

A rook can move any number of squares horizontally or vertically (up, down, left, right) until it reaches another piece _or_ the edge of the board. A rook is **attacking** a pawn if it can move to the pawn's square in one move.

Note: A rook cannot move through other pieces, such as bishops or pawns. This means a rook cannot attack a pawn if there is another piece blocking the path.

Return the **number of pawns** the white rook is **attacking**.

Example 1:



Input: board = [[".",".",".",".",".",".",".",".",."],[".",".",".",".","p",".",".",".",".","."],[".",".",".",".",".","R",".",".",".",".","p"],[".",".",".",".",".",".",".",".",".","."],[".",".",".",".",".",".",".",".",".","."],[".",".",".",".",".","p",".",".",".",".","."],[".",".",".",".",".",".",".",".",".","."],[".",".",".",".",".",".",".",".",".","."]]

Output: 3

Explanation:

In this example, the rook is attacking all the pawns.

Example 2:

Input: board = [[".",".",".",".",".",".",".",".",."],[".","p","p","p","p","p",".","."],[".","p","p","B","p","p",".","."],[".","p","B","R","B","p",".","."],[".","p","p","B","p","p",".","."],[".","p","p","p","p","p",".","."],[".",".",".",".",".",".",".",".],[".",".",".",".",".",".",".",".]]

Output: 0

Explanation:

The bishops are blocking the rook from attacking any of the pawns.

Example 3:

Input: board = [[".",".",".",".",".",".",".",".","."],[".",".",".",".","p",".",".",".","."],[".",".",".",".","p",".",".",".","."],[".","p","p",".","R",".","p","B","."],[".",".",".",".",".",".",".",".","."],[".",".",".",".","B",".",".",".","."],[".",".",".",".","p",".",".",".","."],[".",".",".",".",".",".",".",".","."]]

Output: 3

Explanation:

The rook is attacking the pawns at positions b5, d6, and f5.

Constraints:

* `board.length == 8` * `board[i].length == 8` * `board[i][j]` is either `'R'`, `'.'`, `'B'`, or `'p'` * There is exactly one cell with `board[i][j] == 'R'`

Code Snippets

C++:

```
class Solution {
public:
int numRookCaptures(vector<vector<char>>& board) {

}
};
```

Java:

```
class Solution {
public int numRookCaptures(char[][] board) {

}
}
```

Python3:

```
class Solution:
def numRookCaptures(self, board: List[List[str]]) -> int:
```