Problem 36: Valid Sudoku

Problem Information

Difficulty: Medium
Acceptance Rate: 63.75%
Paid Only: No
Tags: Array, Hash Table, Matrix

Problem Description

Determine if a `9 x 9` Sudoku board is valid. Only the filled cells need to be validated **according to the following rules** :

1. Each row must contain the digits `1-9` without repetition. 2. Each column must contain the digits `1-9` without repetition. 3. Each of the nine `3 x 3` sub-boxes of the grid must contain the digits `1-9` without repetition.

Note:

* A Sudoku board (partially filled) could be valid but is not necessarily solvable. * Only the filled cells need to be validated according to the mentioned rules.

Example 1:

Input: board = [["5","3",".",".","7",".",".",".",".","."] ,["6",".",".","1","9","5",".",".","."] ,[".","9","8",".",".",".",".","6","."] ,["8",".",".",".","6",".",".",".","3"] ,["4",".",".","8",".","3",".",".","1"] ,["7",".",".",".",".","2",".",".",".","6"] ,[".","6",".",".",".",".",".","2","8","."] ,[".",".",".","4","1","9",".",".","5"] ,[".",".",".",".","8",".",".","7","9"]] **Output:** true

Example 2:

Input: board = [["8","3",".",".","7",".",".",".",".","."] ,["6",".",".","1","9","5",".",".","."] ,[".","9","8",".",".",".",".","6","."] ,["8",".",".",".","6",".",".",".","3"] ,["4",".",".","8",".","3",".",".","1"]

,["7",".",".",".",".","2",".",".",".",".","6"] ,[".","6",".",".",".",".",".","2","8","."] ,[".",".",".",".","4","1","9",".",".","5"] ,[".",".",".",".","8",".",".","7","9"]] **Output:** false **Explanation:** Same as Example 1, except with the **5** in the top left corner being modified to **8**. Since there are two 8's in the top left 3x3 sub-box, it is invalid.

Constraints:

* `board.length == 9` * `board[i].length == 9` * `board[i][j]` is a digit `1-9` or `'.'`.

Code Snippets

C++:

```
class Solution {
public:
bool isValidSudoku(vector<vector<char>>& board) {

}
};
```

Java:

```
class Solution {
public boolean isValidSudoku(char[][] board) {

}
}
```

Python3:

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