

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 9×9 Sudoku board is valid. Only the filled cells need to be validated

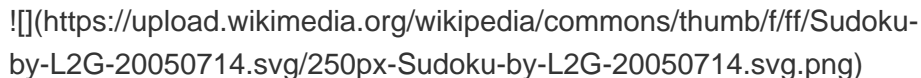
****according to the following rules** :**

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 3×3 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",".", "8",".", "4",".", "2",".", "3",".", "7",".", "6",".", "2","8",".", "4","1","9",".", "5",".", "8",".", "7","9"]] **Output:** true
```

****Example 2:****

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

```
,["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:
```