

# Leet Code

## Day-20 Q-05 Valid Sudoku

Determine if a 9x9 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 9 3x3 sub-boxes of the grid must contain the digits 1–9 without repetition.

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

A partially filled sudoku which is valid.

The Sudoku board could be partially filled, where empty cells are filled with the character '.'.

### Example 1:

Input:

```
[
  ["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:**

```
[
  ["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.

### 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.
- The given board contain only digits 1-9 and the character '.'.
- The given board size is always 9x9.