

# 036. Valid Sudoku

## 036 Valid Sudoku

- Hash Table+array

### Description

Determine if a Sudoku is valid, according to: [Sudoku Puzzles - The Rules](#).

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

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.

### Note:

A valid Sudoku board (partially filled) is not necessarily solvable. Only the filled cells need to be validated.

### 1. Thought line

### 2. Hash Table+array

```
class Solution {
public:
    bool isValidSudoku(vector<vector<char>>& board) {
        bool usedRow[9][9]={false}, usedColumn[9][9]={false}, usedSubBox[9][9]={false};

        for (int i = 0; i<=board.size()-1; ++i){
            for (int j = 0; j<=board[i].size()-1; ++j){
                if (board[i][j]!='.'){
                    int num = board[i][j] - '0' - 1;
                    if (usedRow[i][num] || usedColumn[j][num] || usedSubBox[i/3 * 3 + j/3][num])
                        return false;
                    usedRow[i][num] = usedColumn[j][num] = usedSubBox[i/3 * 3 + j/3][num] = true;
                }
            }
        }
    }
}
```

```
    return true;  
}  
};
```