

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

CODE:

```
def isValidSudoku(board):
    rows = [set() for _ in range(9)]
    columns = [set() for _ in range(9)]
    boxes = [set() for _ in range(9)]

    for i in range(9):
        for j in range(9):
            if board[i][j] != '.':
                num = board[i][j]
                box_index = (i // 3) * 3 + (j // 3)

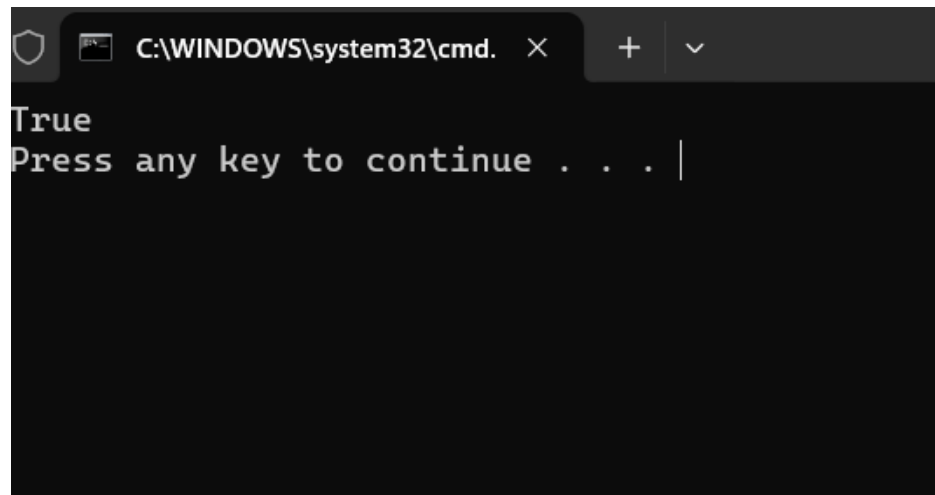
                if num in rows[i] or num in columns[j] or num in boxes[box_index]:
                    return False

                rows[i].add(num)
                columns[j].add(num)
                boxes[box_index].add(num)

    return True

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", ".", ".", "."]
]
print(isValidSudoku(board))
```

OUTPUT:



```
C:\WINDOWS\system32\cmd.  ×  +  v

True
Press any key to continue . . . |
```

TIME COMPLEXITY :  $O(n)$