

```

def is_valid(board, row, col, num):
    for x in range(9):
        if board[row][x] == num:
            return False

    for x in range(9):
        if board[x][col] == num:
            return False

    start_row = row - row % 3
    start_col = col - col % 3

    for i in range(3):
        for j in range(3):
            if board[start_row + i][start_col + j] == num:
                return False

    return True

def solve_sudoku(board):
    for row in range(9):
        for col in range(9):
            if board[row][col] == 0:
                for num in range(1, 10):
                    if is_valid(board, row, col, num):
                        board[row][col] = num

                        if solve_sudoku(board):
                            return True
                        board[row][col] = 0
                return False
    return True

def print_board(board):
    for row in board:
        print(row)

sudoku_board = [
    [5, 3, 0, 0, 7, 0, 0, 0, 0],
    [6, 0, 0, 1, 9, 5, 0, 0, 0],
    [0, 9, 8, 0, 0, 0, 0, 6, 0],
    [8, 0, 0, 0, 6, 0, 0, 0, 3],
    [4, 0, 0, 8, 0, 3, 0, 0, 1],
    [7, 0, 0, 0, 2, 0, 0, 0, 6],
    [0, 6, 0, 0, 0, 0, 2, 8, 0],
    [0, 0, 0, 4, 1, 9, 0, 0, 5],
    [0, 0, 0, 0, 8, 0, 0, 7, 9]
]

print("Original Sudoku:")
print_board(sudoku_board)

if solve_sudoku(sudoku_board):
    print("\nSolved Sudoku:")
    print_board(sudoku_board)
else:
    print("No solution exists.")

```

↔ Original Sudoku:

```

[5, 3, 0, 0, 7, 0, 0, 0, 0]
[6, 0, 0, 1, 9, 5, 0, 0, 0]
[0, 9, 8, 0, 0, 0, 0, 6, 0]
[8, 0, 0, 0, 6, 0, 0, 0, 3]
[4, 0, 0, 8, 0, 3, 0, 0, 1]
[7, 0, 0, 0, 2, 0, 0, 0, 6]
[0, 6, 0, 0, 0, 0, 2, 8, 0]
[0, 0, 0, 4, 1, 9, 0, 0, 5]
[0, 0, 0, 0, 8, 0, 0, 7, 9]

```

Solved Sudoku:

```

[5, 3, 4, 6, 7, 8, 9, 1, 2]
[6, 7, 2, 1, 9, 5, 3, 4, 8]
[1, 9, 8, 3, 4, 2, 5, 6, 7]
[8, 5, 9, 7, 6, 1, 4, 2, 3]
[4, 2, 6, 8, 5, 3, 7, 9, 1]
[7, 1, 3, 9, 2, 4, 8, 5, 6]
[9, 6, 1, 5, 3, 7, 2, 8, 4]
[2, 8, 7, 4, 1, 9, 6, 3, 5]
[3, 4, 5, 2, 8, 6, 1, 7, 9]

```

