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#include <iostream>
using namespace std;

const int SIZE = 9;

void printBoard(int board[SIZE][SIZE]) {
    for (int row = 0; row < SIZE; row++) {
        for (int col = 0; col < SIZE; col++) {
            cout << board[row][col] << " ";
        }
        cout << endl;
    }
}

bool isValid(int board[SIZE][SIZE], int row, int col, int num) {
    for (int i = 0; i < SIZE; i++) {
        if (board[row][i] == num || board[i][col] == num)
            return false;
    }

    int startRow = row - row % 3, startCol = col - col % 3;
    for (int i = 0; i < 3; i++) {
        for (int j = 0; j < 3; j++) {
            if (board[i + startRow][j + startCol] == num)
                return false;
        }
    }
    return true;
}

bool solveSudoku(int board[SIZE][SIZE]) {
    for (int row = 0; row < SIZE; row++) {
        for (int col = 0; col < SIZE; col++) {
            if (board[row][col] == 0) {
                for (int num = 1; num <= 9; num++) {
                    if (isValid(board, row, col, num)) {
                        board[row][col] = num;
                        if (solveSudoku(board))
                            return true;
                        board[row][col] = 0;
                    }
                }
                return false;
            }
        }
    }
    return true;
}

void userFillBoard(int board[SIZE][SIZE]) {
    cout << "Enter the Sudoku puzzle row by row (use 0 for empty spaces):\n";
    for (int i = 0; i < SIZE; i++) {
        for (int j = 0; j < SIZE; j++) {
            cin >> board[i][j];
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        }
    }
}

int main() {
    int board[SIZE][SIZE] = {0};

    cout << "Welcome to the Sudoku Solver!\n";
    cout << "1. Solve a Sudoku puzzle\n";
    cout << "2. Enter your own puzzle\n";
    int choice;
    cin >> choice;

    if (choice == 1) {
        int exampleBoard[SIZE][SIZE] = {
            {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}
        };

        for (int i = 0; i < SIZE; i++)
            for (int j = 0; j < SIZE; j++)
                board[i][j] = exampleBoard[i][j];

        cout << "Solving the example Sudoku puzzle...\n";
    } else if (choice == 2) {
        userFillBoard(board);
    } else {
        cout << "Invalid choice!\n";
        return 0;
    }

    cout << "Original Puzzle:\n";
    printBoard(board);

    if (solveSudoku(board)) {
        cout << "Solved Sudoku:\n";
        printBoard(board);
    } else {
        cout << "No solution exists for the given Sudoku puzzle.\n";
    }

    return 0;
}
```