import java.util.Scanner;  
  
public class SudokuSolver {  
  
 private static final int *SIZE* = 9;  
  
 public static boolean solveSudoku(int[][] board) {  
 for (int row = 0; row < *SIZE*; row++) {  
 for (int col = 0; col < *SIZE*; col++) {  
 if (board[row][col] == 0) {  
 for (int num = 1; num <= *SIZE*; num++) {  
 if (*isValid*(board, row, col, num)) {  
 board[row][col] = num;  
  
 if (*solveSudoku*(board)) {  
 return true;  
 }  
  
 board[row][col] = 0; // backtrack  
 }  
 }  
 return false;  
 }  
 }  
 }  
 return true; // solved  
 }  
  
 private static boolean isValid(int[][] board, int row, int col, int num) {  
 // Check row  
 for (int x = 0; x < *SIZE*; x++) {  
 if (board[row][x] == num) {  
 return false;  
 }  
 }  
 for (int x = 0; x < *SIZE*; x++) {  
 if (board[x][col] == num) {  
 return false;  
 }  
 }  
 int startRow = row - row % 3;  
 int 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;  
 }  
  
 public static void printBoard(int[][] board) {  
 for (int row = 0; row < *SIZE*; row++) {  
 for (int col = 0; col < *SIZE*; col++) {  
 System.*out*.print(board[row][col] + " ");  
 }  
 System.*out*.println();  
 }  
 }  
  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
 int[][] board = new int[*SIZE*][*SIZE*];  
  
 System.*out*.println("Enter the Sudoku puzzle (use 0 for empty cells):");  
 for (int i = 0; i < *SIZE*; i++) {  
 for (int j = 0; j < *SIZE*; j++) {  
 board[i][j] = scanner.nextInt();  
 }  
 }  
  
 System.*out*.println("Solving Sudoku...");  
 if (*solveSudoku*(board)) {  
 System.*out*.println("Sudoku solved successfully:");  
 *printBoard*(board);  
 } else {  
 System.*out*.println("No solution exists for the given Sudoku.");  
 }  
  
 scanner.close();  
 }  
}

