




COMP 220 Final Project – Sudoku


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The sudoku game will allow the user to play sudoku using the terminal. The user will input the row, column, and a number (1-9) and the board will update/print out after each guess. The game will not include notes, and the player may guess up to 3 wrong numbers before losing the game. For the “beyond the basics,” we will generate boards uniquely, and remove numbers randomly until only one solution for the puzzle exists.

<div></div> <div>SudokuBoard</div>
<div>- cells : ArrayList<ArrayList<Integer>></div>
<div><div><div>+ SudokuBoard()</div><div>+ SudokuBoard(board : String)</div><div>+ getCell(row : int, col : int) : int</div><div>+ getCell(coord : Coordinate) : int</div><div>+ setCell(row : int, col : int, cell : int)</div><div>+ setCell(coord : Coordinate, cell : int)</div><div>+ generateBoard()</div><div>+ generatePuzzle() : SudokuBoard</div><div>- solved() : SudokuBoard</div><div>- getRandomNumbers(n : int) : int[]</div><div>+ getContradictions() : ArrayList<Coordinate></div><div>+ isValid() : boolean</div><div>+ isFull() : boolean</div><div>- isValidCell(row : int, col : int) : boolean</div><div>- isValidCell(coord : Coordinate) : boolean</div><div>- isValidRow(row : int, col : int) : boolean</div><div>- isValidRow(coord : Coordinate) : boolean</div><div>- isValidCol(row : int, col : int) : boolean</div><div>- isValidCol(coord : Coordinate) : boolean</div><div>- isValidBox(row : int, col : int) : boolean</div><div>- isValidBox(coord : Coordinate) : boolean</div><div>- flip()</div><div>- mirror()</div><div>+ toString() : String</div></div></div>

<div></div> <div>SudokuPuzzle</div>
<div>- puzzle : SudokuBoard</div> <div>- solution : SudokuBoard</div>
<div><div><div>+ SudokuPuzzle()</div><div>+ SudokuPuzzle(puzzle : Sudoku Board, solution : SudokuBoard)</div><div>+ guess(row : int, col : int, cell : int) : boolean</div><div>+ isSolved() : boolean</div><div>+ toString() : String</div></div></div>

<div></div> <div>Coordinate</div>
<div>- row : int</div> <div>- col : int</div>
<div><div><div>+ Coordinate(row : int, col : int)</div><div>+ getRow() : int</div><div>+ getCol() : int</div><div>+ toString() : String</div></div></div>

<div></div> <div>CommandLineUI</div>
<div>+ main(args : String[])</div>