Sudoku package

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1. Implement class SudokuState that represents the state of a sudoku. It has private int dimension and private ArrayList<ArrayList<Integer> > grid. For example, dimension 9 represents the classic 9×9 sudoku. Dimension must be a perfect square (for example $9 = 3 \times 3$ allows us to have 3×3 grids). grid contains values between 1 and dimension (both inclusive) or 0 to represent an empty field. Write appropriate constructors and methods.

2. Implement class SudokuSolver that has ArrayList<SudokuState> getNextStates(SudokuState sudokuState) and Boolean finalState(SudokuState sudokuState). The second function returns true if every row, column and $\sqrt{dimension} \times \sqrt{dimension}$ grid contains numbers 1 through dimension.

3. Write test cases for both methods of SudokuSolver testing with both valid and invalid states.