**EITHER**

**public** **interface** Digit {}

**public** **interface** Index {}

**public** **interface** Gets {

**public** Digit getByColumn(Digit columnIndex, Index rowIndex);

**public** Digit getByRow(Index rowIndex, Index columnIndex);

**public** Digit getBySquare(Index squareIndex, Index positionIndex);

}

**public** **interface** Sets {

**public** **void** setByColumn(Digit value, Index columnIndex, Index rowIndex);

**public** **void** setByRow(Digit value, Index rowIndex, Index columnIndex);

**public** **void** setBySquare(Digit value, Index squareIndex, Index positionIndex);

}

**OR**

**public** **interface** IntGets {

**public** **int** getByColumn(**int** columnIndex, **int** rowIndex);

**public** **int** getByRow(**int** rowIndex, **int** columnIndex);

**public** **int** getBySquare(**int** squareIndex, **int** positionIndex);

}

**public** **interface** IntSets {

**public** **void** setByColumn(**int** value, **int** columnIndex, **int** rowIndex);

**public** **void** setByRow(**int** value, **int** rowIndex, **int** columnIndex);

**public** **void** setBySquare(**int** value, **int** squareIndex, **int** positionIndex);

}

**AND**

**public** **interface** Serialize {

**public** **void** fromCSV( String csv);

**public** String toCSV();

**public** **void** setCell(**int** value, **int** gridIndex);

**public** **int** getCell(**int** gridIndex);

@Override

**public** String toString();

}

**public** **interface** hintImpossible {

**public** **boolean**[] isImpossible(**int** gridIndex);

**public** **int**[] impossibles(**int** gridIndex);

//OR A SET VERSION AS BELOW

}

**public** **interface** HintPossible {

//public boolean[] isPossible(int gridIndex);

//public int[] possibles(int gridIndex);

//OR

**public** Set<Integer> rowPossibilities( **int** rowIndex);

**public** Set<Integer> columnPossibilities( **int** columnIndex);

**public** Set<Integer> squarePossibilities( **int** squareIndex);

}

**public** **interface** Game {

**public** **void** setMaxValue( **int** maximum );

**public** **int** getMaxValue();

**public** **int**[] toArray();

**public** **void** set( **int**[] cellValues);

**public** **void** setSquareWidth( **int** squareWidth);

**public** **void** setSquareHeight( **int** squareHeight);

**public** **void** restart();

}

**public** **interface** Validating {

**public** **boolean** isCompleted(); // no zeros

**public** **boolean** isLegal(); // no duplicates

**public** **boolean** isFinished(); // no zeros AND no duplicates

}