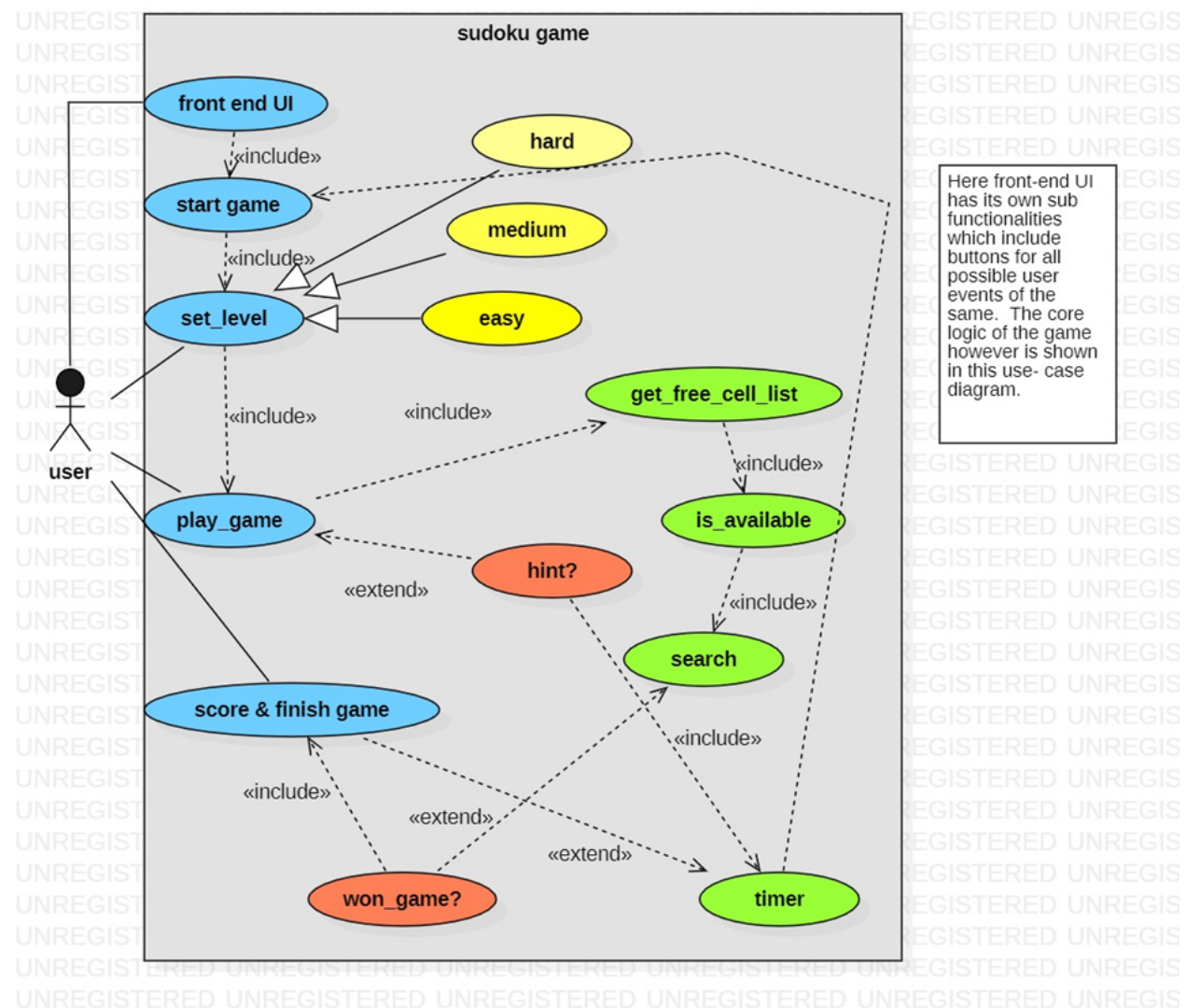# OOADJ ASSIGNMENT: PROJECT DEFINITION AND USE CASE DIAGRAM

PROBLEM STATEMENT:

To build an application which enables users to play a game of sudoku with a suitable front end and the ability to play multiple levels with appropriate solutions.
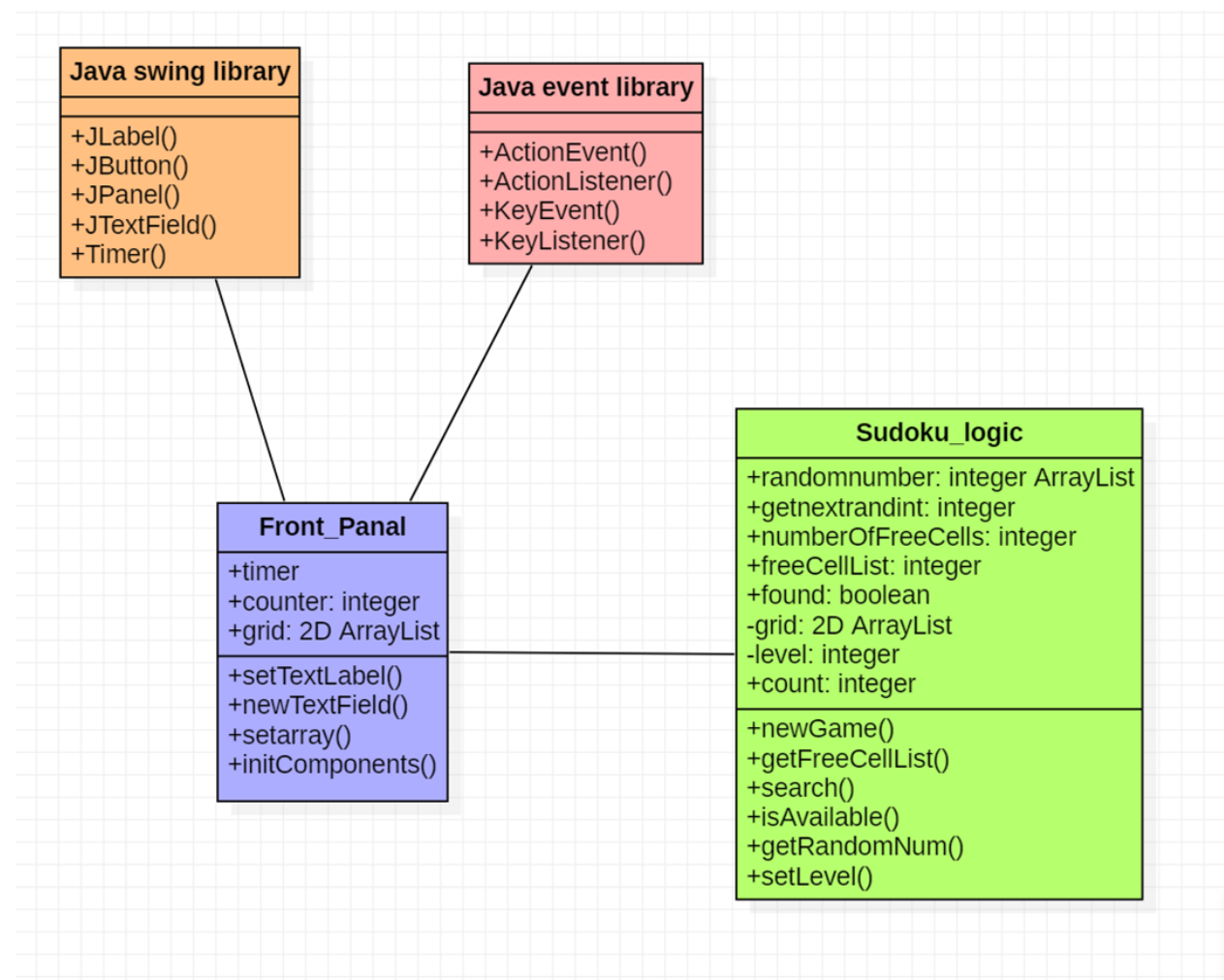
Use cases diagram:

The use case diagram has use cases marked in certain colors:

1. blue: use-cases associated to the user directly

2. yellow: generalized categories

3. green: core logic of the game and internal use cases of the application. (they are included)

4. orange: extended use cases as per user choice.

UML CLASS DIAGRAM:

Java swing library

+JLabel()
+JButton()
+JPanel()
+JTextField()
+Timer()

Java event library

+ActionEvent()
+ActionListener()
+KeyEvent()
+KeyListener()

Sudoku_logic

+randomnumber: integer ArrayList
+getnextrandint: integer
+numberOfFreeCells: integer
+freeCellList: integer
+found: boolean
-grid: 2D ArrayList
-level: integer
+count: integer

+newGame()
+getFreeCellList()
+search()
+isAvailable()
+getRandomNum()
+setLevel()

Front_Panal

+timer
+counter: integer
+grid: 2D ArrayList

+setTextLabel()
+newTextField()
+setarray()
+initComponents()

TEAM1: WORK BREAKDOWN OF CLASSES

Nivedhitaa: (Class Sudoku_logic): Core JAVA implementation of logic of the game (Recursive backtracking)

Riya: (Class Panal) :Front end/UI using Swing

Nithin: Edge-case and button semantics along with assist in UI and logic