CMSC 132

Sections 020X/030X

DEPARTMENT OF COMPUTER SCIENCE

Assignment: **Project #3**

Due Date: **Friday 03/04, 11:00PM**

Open/Closed policy: **OPEN**

Overview

For this project you will implement a game called **clear cell**. We will provide the graphical user interface (GUI) and you will develop the code that implements the rules of the game. A video demonstrating the game can be found here: Game Video

As you saw in the video, the game board is a grid of colorful squares we are calling "cells". The goal is to clear as many cells as possible before the colorful cells reach the bottom row. When the user clicks on a cell it will be cleared, along with adjacent cells that have the same color. (This includes cells directly above, below, to the left, to the right, and each of the four diagonally adjacent squares.) If an entire row of cells is cleared, the row will be removed (collapsed) so that all of the rows beneath shift upward.

The game will keep track of the player's score: **The player gets one point for each cell that is cleared.**

You are not allowed to use ArrayList or any Java collection for this project -- just use regular arrays.

Grading

- (48%) Public Tests
- (42%) Release Tests
- (10%) Style

There are no secret tests for this projecct

Code Distribution

Click this link to download the project zip file, which you must import into Eclipse as usual.

The project's code distribution contains the following:

- **gui package** → Includes the graphical user interface for the game. Executing the main method of this class will allow you to play the game.
- **model package** → Includes the classes you need to implement.
- **tests package** → Includes the public tests.
- **Text files** → Contains the expected output for the public tests.

What You Must Do

You are expected to implement methods for the GameModel and ClearCellGameModel classes. The other classes have been provided and you should not modify them. You should implement the project in the following order:

1. Familiarize yourself with the BoardCell enumerated type.
2. Implement the abstract class GameModel.
3. Implement the concrete class ClearCellGameModel (an extension of GameModel).

The javadoc is here: Project Javadoc

Requirements/Clarifications

- Clearing one cell awards the player one point
- You may not use ArrayList or any other Java Collection class for this project (just use regular arrays).
- When the ClearCellGameModel needs to generate a random row, it must use the random number generator that was passed to its constructor. Read the Javadoc carefully!
- You may not add any classes of your own, but feel free to add any instance variables and private methods that you find useful. (Hint: You'll need at least two instance variables: one for the random number generator, and one for the player's score.)

Submission

Submit your project using the "Submit Project" option (available by right clicking on the project folder).

Academic Integrity

Please make sure you read the academic integrity section of the syllabus so you understand what is permissible in our programming projects. We want to remind you that we check your project against other students' projects and any case of academic dishonesty will be referred to the Office of Student Conduct