Software Methods and Tools

Fall 2015

Assignment 2

Due on 11:59PM, Monday, September 14, 2015

Description:

We will use IBM Rational Software Modeler to create a UML class diagram in this assignment. Imagine that you are asked to design and implement a Tetris video game. If you are not familiar with the Tetris game, try to play it at http://tetris.com/play-tetris/ to get a general idea about how it works. In fact, this is the application that we will be focused on in our remaining assignments. We will design, implement (or adapt), and test the application with different software methods and tools, and use a version control system to manage its source code later this semester.

Our task in Assignment 2 is creating a UML class diagram capturing the main classes and their relationships of the Tetris game. Below is a list of classes that must be included in your diagram. Feel free to add more classes into the list if it is necessary to you.

- *GameBoard*. This class represents the game board where you play the game and put the falling tiles. Depending on your design, it may also contain the information about the current layout (e.g. the existing tiles) of the board.

- *InformationPanel*. This class represents the panel displaying the current status information (e.g. score, time) of the game.

- *Tiles*. This is an important class representing falling tiles. Note that there are tiles of different shapes and colors.

- *Clock*. The Clock class manages the information such as the the number of cycles that have elapsed, the number of milliseconds per cycle, etc.

- *GameControl*. It decides when the game is over and whether the player wins or not. It may also control how the player plays the game (e.g. keys used). Again, this depends on your specific design.

Complete your design, and add all the necessary attributes and operations (include constructors) for each class. For attributes, you must include visibility, name, and type. For operations, you must include visibility, name, parameter list, and return type.

Make sure that your diagram shows the complete signature of attributes and methods. Include generalizations, realizations, associations, and multiplicities where they apply.

Submit screenshot(s) showing your class diagram, put them in a single document (pdf), and submit it to Blackboard.