CE203 Assignment 2

Mahrad Pisheh Var 1404537

Tetris program has 11 classes which are:

* Tetris
* Framing
* GamePart
* BlockMovements
* Controls
* Mouse
* Keyboard
* DrawingBlocks
* Scores
* Save
* Shapes

The duty of each class is mentioned below;

Tetris Class:

Contains the main method to run the program and calls the frame object from Framing class to perform the methods been mentioned in Framing class.

Framing Class:

This class will extend the JFrame to create the frame and add the components the title is mentioned “Mahrad Pisheh Var” and the size of the frame is with the width of 250 and height of 500, the height is chosen higher because on top of the game part of the program score and reset button is added at bottom of the program, the frame should be made in middle of the screen and the game part of the program which the Tetris shapes will move has black background colour therefore the colour black is not included in Color objects in DrawingBlocks class.

One method that has been added extra to the Framing class is ReturnStatus that returns the current score of the player.

GamePart Class:

This class will hold a big part of the program which gets elements and methods from other classes to make the randomly generated blocks and moves the blocks down by 1 and allows the user to control the shapes position.

This class will get the shapes needed from Shapes class and gets the event handling class from Controls function and the keyboard listener from Keyboard class and mouse listener from Mouse class it checks the availability of movements of the block from BlockMovements class and it will generate the shape and draws them or delete them from DrawingBlocks class. It will save the score from Save class, and it keeps the track of score and removes lines if the row is filled with shapes from Scoring class.

This class has 3 important method which is the main part of the functionality of the program,

pieceDropped method which will keep the track of the shape’s coordination on the grid of frame and if it hits the boundary and this method will call scoring method from Scoring class to check if the row is filled with shapes.

getnewPiece method which will generate the new piece and checks immediately if the shape can move down or the game is over if it is over it will stop the timer and gives an appropriate message and asks the user if it wants to save the score.

PaintingNew method which will assign the position of the shape on the grid of the game which is used in paint method that this method creates the grid and checks the highest coordination of the shape from the grid and draws it.

BlockMovements class:

This class will check if the movement availability of the shape this includes boundaries of the frame and colliding with other shapes.

DrawingBlocks class:

This class will make the paint or draw the blocks with assigned position with colour assigned to each shape.

Keyboard class:

Tracks any keyboard events and if the shift button is pressed it will move the block immediately down to bottom. And calls the pieceDropped from GamePart to get the new piece.

Mouse class:

Tracks any mouse events and checks the viability of movements from BlockMaker class and executes.

Save class:

It has two main method saving and loading, which saving will save and load the scores and names line by line.

Score class:

This class will keep the track of each row entities, and if its full it clears the row and moves any shape from row above down and it will increment the score by 10 which directly has effect on the speed of the shapes.

Shape class:

This class will define each shape and how its coordinated. To get the shapes right the graph technique is used to define the shapes and each point on the graph shows the edge of the shape. This will make the movements of the class easier and also for rotation.

The Tetris game part is divided into a grids that is defined in an array with size of height and width of the frame which each Tetris shape can be positioned in each grid which cause the other part of the array to be filled as coordinated by the shape coordination.

