Assignment 2

In order to practice concept of Inheritance and its related topics, we are going to create a simple graphical application that only consists of circles and boxes. The idea is to have several moving balls (drawn as simple circles) and several stationary boxes that can affect the moving balls. You will be provided with a simple graphics library, so you do not have to worry about graphics.

NOTE: This assignment requires knowledge from both Lecture 3 and Lecture 4. So the absolute deadline is Monday May 11th. Although it is strongly recommended (and possible) to finish it by Monday May the 4th (be with you).

Do <u>exactly</u> as follows:

1. NOTE TO THIS ➔ DO NOT READ NEXT STEP UNLESS YOU HAVE FINISHED CURRENT STEP.
2. Download DVA222_Asgn2.zip from Blackboard.
3. Run the application. It should draw some moving balls.
4. Read the code, specially the **Shape** and **Ball** classes. Notice to our design and code implementation.
5. Read this several times➔ As your assignment you will have to design and develop classes that achieve the following goals:
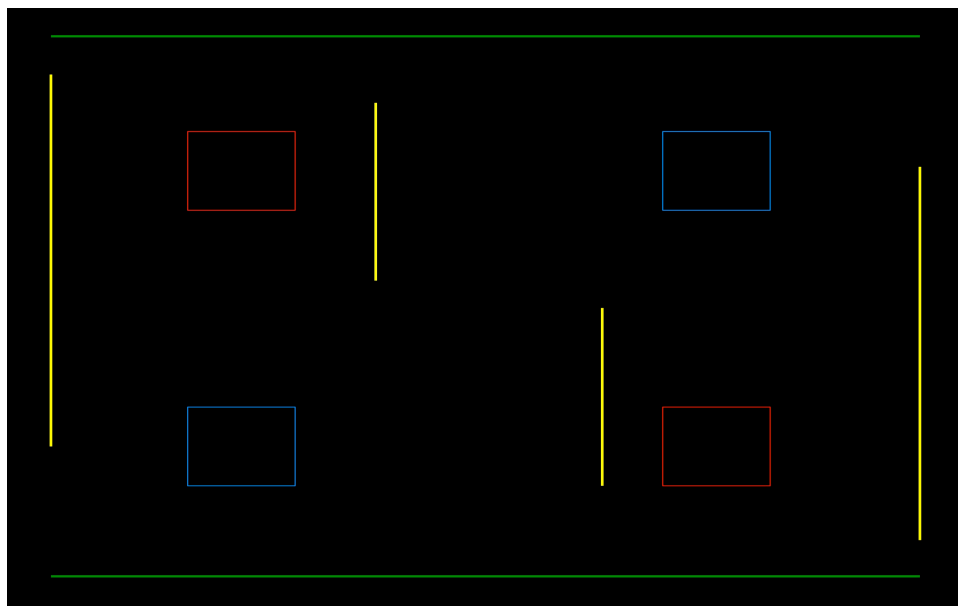
    a. The above image shows different objects that will be added to the program and will be visible to the user. Your program must look like this when done. Of course it will also have some moving balls that move around. Exactly 20 of them.

    b. As you can see there are 2 types of *lines*: *Vertical lines* (yellow) and *Horizontal lines* (green). Vertical lines reflect the ball back by changing their X-speed. Horizontal lines reflect it by changing the Y-speed.

     c.   There are also some *boxes*.

     d.   The red boxes are *SpeedUp Boxes*. They allow the balls to pass through them but meanwhile increase their speed. The direction of the ball does not change while moving through them.

     e.   The blue boxes are *SpeedDown Boxes*. They allow the balls to pass through them but meanwhile decrease their speed. The direction of the ball does not change while moving through them.

6. Design an awesome class hierarchy for solving the problem. Talk with teacher assistants, get their approval and then you can move to the next step.
7. Implement the code.
8. Show your work to the teacher assistants again and get their approval.
9. Feel awesome ☺