Tutorial 4 - Bounce

In this tutorial you will be given a simplified version of bounce, different in many ways from A1, but similar enough to be helpful with the fundamental concepts to give you confidence to start the assignment. Credit goes to SOFTENG 251 and Ian Warren.

1. Download the source code from:

<https://canvas.auckland.ac.nz/files/956995/download?download_frd=1>

It won’t compile and run until you complete step 2.

1. In AnimationViewer Create an arraylist called \_shapes, and in the constructor add 2 rectangles and 2 ovals of any x, y, deltaX, deltaY, width and height you like. Then run the bounce AnimationViewer class. You should see shapes bouncing at this point.
2. Improve the RectangleShape class:

* There is already a RectangleShape constructor in this class, write an overloaded constructor and take in as a parameter a string of text that can be displayed in a rectangle.

1. Complete the drawCenteredText method in the GraphicsPainter class that will draw text in exactly the centre of the shape. Template code for the fields you need has been written for you as well as pseudocode to implement this method.

NB:

* Ascent: the degree by which the characters extend above the baseline (middle of text)
* Descent: the degree by which the characters below the baseline (middle of text)

1. Complete the move method in the DynamicRectangleShape so that after called super.move(\_width, \_height) it now changes to a green coloured rectangle when bouncing on the bottom or top walls, but a normal rectangle on bouncing the left and right walls (no fill).

This can be done through:

* Changing the \_rectType to “drawNormalRect” on bouncing on the top and bottom and “drawColorRect” upon bouncing on left and right.

1. Test your application to see if it acts the way it should.