

CS 1110 Assignment 10

1. Smiley Face

Name: `SmileyFace.java`

Write a program using JavaFX that draws a smiley face. The face should have two eyes and a mouth (or something equivalent). Feel free to be creative with the colors and expressions.

2. Random Circles

Name: `RandomCircles.java`

Write a program using JavaFX that draws 100 random circles. Ensure that the circles have random sizes, random locations, and random colors.

3. Moving Circle

Name: `MovingCircle.java`

Write a program using JavaFX that displays a circle that is initially positioned in the middle of the window and allows the user to move the circle by pressing the arrow keys.

4. Circle Area

Name: `CircleArea.java`

Write a program using JavaFX that calculates the area of a circle. In particular, the program should have a text field for the user to enter the circle's radius, a label to display the result (the circle's area), and a button to initiate the calculation.

$$A = \pi \times r^2$$

5. Calculate BMI

Name: `CalculateBMI.java`

Write a program using JavaFX that calculates BMI. In particular, the program should have a text field to get weight from the user, a text field to get height from the user, a label to display the result (the BMI value), a check box for if the units are imperial units (i.e., assume the width and height are in metric units unless the check box is checked, in which case the values are in imperial units), and a button to initiate the calculation.

$$BMI = \frac{weight_{kg}}{height_m \times height_m} = \frac{weight_{lb}}{height_{in} \times height_{in}} \times 703$$