COEN 160 OO Analysis, Design and Programming Winter2017

Lab 7 (80 pts)

In this lab, you will work with Java 2D Graphics API to make custom drawings.

Refs: Custom Painting

Java 2D Graphics

Using Eclipse, create a project called Lab6.

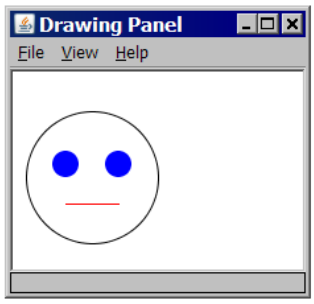
Copy the posted files

Compile the program in **DrawingExample.java** and run the program. You will see a few shapes displayed in the window and examine the code.

Use this as a reference for Exercises 1-4. 2D primitives

Use the code (incomplete) in file, **MyArtDemo.java** and add the methods as required for the exercises to the **Drawing Panel** class in the program.

Exercise 1 (20 pts)



In this exercise, you will draw a **Face** as shown below.

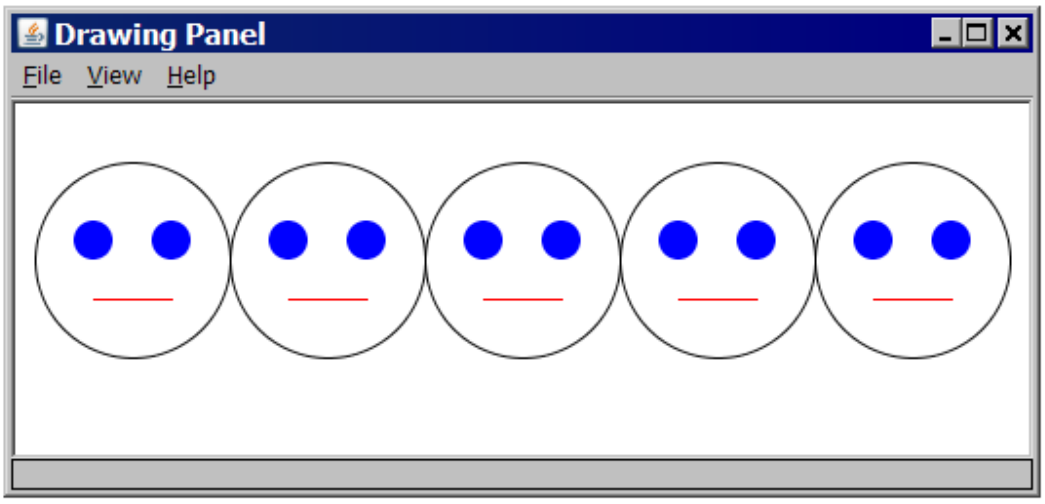
Use these values for the dimensions:

- window (this is the panel on which you will draw) size: Select a height and a width of your choice.
- Face: A circle of 100 px diameter; top-left corner at (20, 30)
- eyes: blue circles, 20 px diameter; Position them appropriately
- mouth: A red line from (choose the x,y values of the start point) to (x,y values of the end point)

Define the code in a method called **drawFace() in DrawingPanel class.** Choose the necessary parameters.

Exercise 2 (20 pts)

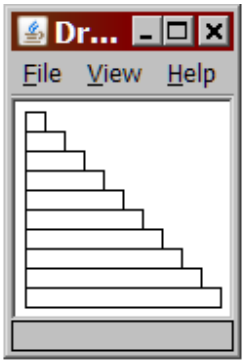
In this exercise, you will draw a **no. of Faces** as shown below:



Without changing the **drawFace()** method, use a loop to call the method and draw the no. of faces (choose a number).

Exercise 3 (20 pts)

In this exercise, you will draw a **Staircase** as shown below:

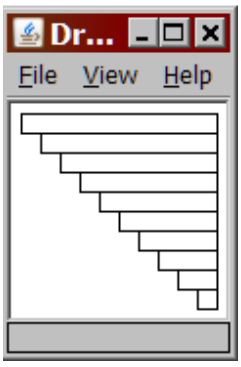


The top step is 10 by 10 in size and the next step is 10px wider than the previous one, for a total of 10 steps.

Define the code in a method called **drawStairase() in DrawingPanel class.** Choose the necessary parameters. Define an extra parameter to pass in a Color object to color the stairs.

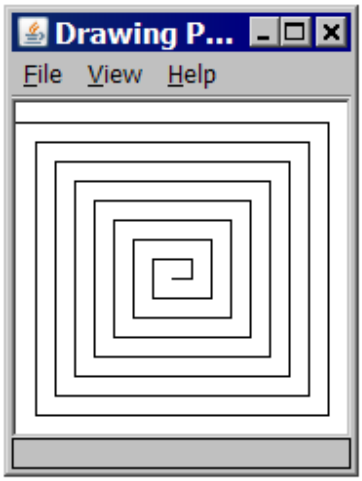
Exercise 4 (20 pts)

Without changing the code in **drawStairase() in DrawingPanel class** and by passing appropriate values to the parameters, can you draw the staircase in the picture below?



Bonus exercise (10 pts) – Do it when you have time left ☺

In this exercise, you will draw a **Spiral** as shown below:



The "spiral" lines start from (0, 10), going right 160, down 150, left 150, up 140, right 140, down 130, left 130, up 120, ...

Define the code in a method called **drawSpiral() in DrawingPanel class.** Choose the necessary parameters. Define an extra parameter to pass in a Color object to color the stairs.