

Using AWT and Swing

Due Date: 11:59 PM, September 4, 2019

Objectives

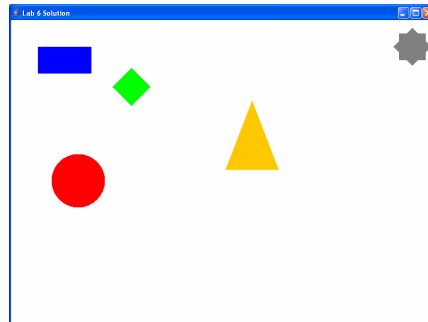
When you complete this assignment you will be able to:

- Write a Java program which uses AWT and Swing.
- Create subclasses of the JFrame, JPanel and other classes.

Assignment

Using the supplied standard JFrame subclass and JPanel subclass, you should be able to compile and execute a program which will display on the screen a single circle of some color. You can find the BlueJ IDE at <http://bluej.org> if you choose to use it. You should look at the code for the SmartEllipse class attached to this assignment. Once you get the circle to display on the screen, add to it a rectangle of a different color in a different location. You will need to create a SmartRectangle class, add an instance of this new class to your JPanel and then finally add drawing the rectangle object to the paintComponent method of your JPanel subclass to get a rectangle to appear in the application window. Now for a more of a challenge, add to it a diamond, which is a square that has been rotated 45 degrees ($\frac{\pi}{4}$ radians, that is). The diamond should also be in a different place and a different color from the other two shapes. Add to this a triangle which again is in a different place and a different color from the other shapes. The triangle should be an object of the Polygon class or a subclass of Polygon (see the Java API documentation online at <https://docs.oracle.com/javase/8/docs/api/>). You should see that Polygons are created by adding points to the object which determine its shape. Of course, you will need to calculate the position of the three points of your triangle and add them to your polygon object to get a triangle to appear on the screen. Finally add to the screen a gray colored star in the upper right corner of the window (two squares in the same location with one rotated $\frac{\pi}{4}$ radians).

Your final screen might look like this!



Note: Shape objects default to a size of zero by zero pixels. If you think you're creating the objects correctly and painting them to the JPanel but can't see them, make sure you set the size.

Grading

You are free to get whatever help you need in lab class to complete the assignment correctly, short of having someone else do it for you or copying someone else's work (i.e. you must type in the code yourself). If you are unable to turn the work in during the lab class, you must complete it and submit it by 11:59PM that evening. Lab assignments should be submitted to Moodle.