

Java for Non Majors

CGS 3416: Spring 2016

Homework 8: 100 points + 50 extra credit points

Due date: 11:59 PM 04/21/2016

Objective

The purpose of this assignment is to exercise your familiarity with GUI programming and the Swing and awt libraries. For this assignment, you're required to turn in one program that involves 2D graphics in Java. You might want to use an IDE to write this. Graphics don't run on the command line easily.

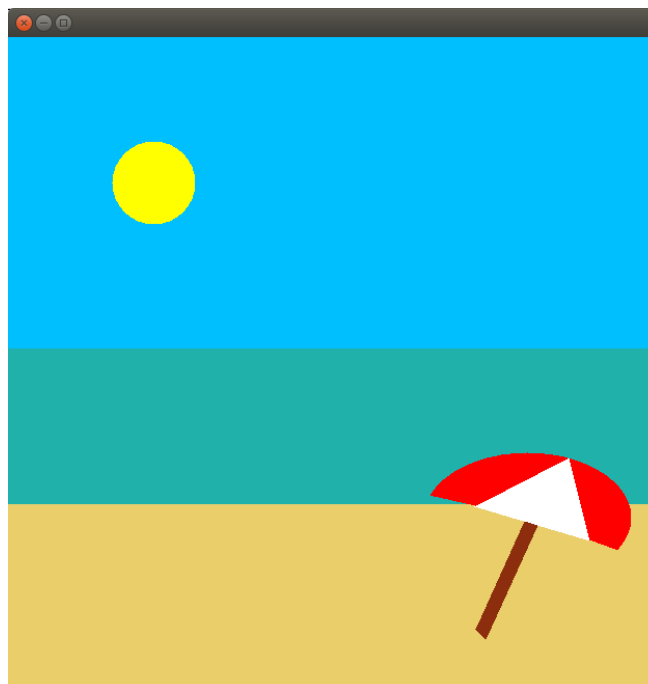
Please email your file `AtTheBeach.java` to `jayarama@cs.fsu.edu`

Problem

You have been commissioned by one Drew Saso, hipster extraordinaire, to draw a picture of the beach for his cat. However, it has to be done digitally (paint on canvas is too mainstream). Since the cat is going to be the judge of the picture, you want to keep it as simple as possible. This scene is just going to show sun, sand and a solitary beach umbrella. You decide to do this with a Java Swing application. Hopefully, your feline client will be easy to please.

Specifications

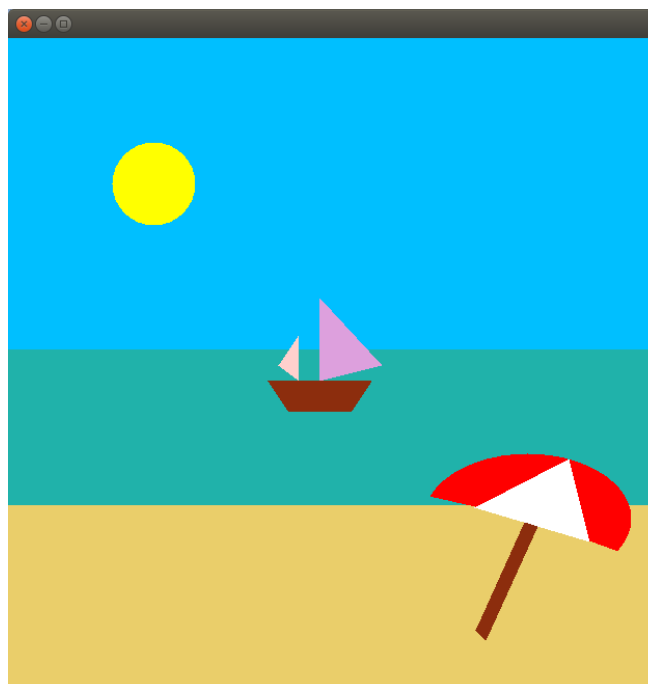
- This program should be called `AtTheBeach.java`.
- For this program you are required to write 2 classes. The classes should be in the same file.
- Please follow the given naming guidelines. The expected output should be similar to



- Define a class called **BeachCanvas**.
 - Define a public method called **paint**. This takes one argument of type **Graphics** and returns nothing. (5 points)
 - Set the color to a sandy brown. Suggested RGB value : 234 206 106. Define a polygon with the vertices at (0, 450), (0, 630), (630, 630) and (630,450). Draw this polygon. (10 points)
 - Set the color to sea green. Suggested RGB value : 32 178 170. Define a polygon with the vertices at (0, 300), (0, 450), (630, 450) and (630,300). Draw this polygon. (10 points)
 - Set the color to sky blue. Suggested RGB value : 0 191 255. Define a polygon with the vertices at (0, 0), (0, 300), (630, 300) and (630, 0). Draw this polygon. (10 points)
 - Set the color to yellow. Suggested RGB value : 255 255 0. Draw a circle that is confined to the rectangle beginning at (100,100) with a radius of 80. (10 points)
 - Set the color to red. Suggested RGB value : 255 0 0. Draw a filled arc section confined within the rectangle beginning at (400,400) which is 200 long and 125 high, from the angle 330 to the angle 190. (10 points)
 - Set the color to a very light gray. Suggested RGB value : 252 252 252. Define a polygon with the vertices at (540, 405), (449, 452) and (560, 485). Draw this polygon. (10 points)
 - Set the color to a dark brown. Suggested RGB value : 140, 45, 13. Define a polygon with the vertices at (497,466), (450,570), (460, 580) and (510, 470). Draw this polygon. (10 points)
- Define a class called **AtTheBeach**.
 - Create a **JFrame** and set the bounds to 30 30 630 630. (5 points)
 - Add an object of **BeachCanvas** to the frame and set to to be visible. (10 points)
- Describe which part of the scene you're drawing with each geometric figure. Please include comments wherever appropriate. (10 points)

Extra Credit - 50 points

You get 50 points extra credit for drawing a sailboat in the water. You just need to add three extra polygons in your paint method. The output should be similar to



Generic Guidelines

- Please add your name and FSUID as comments on the top of your program.
- Please make sure you're only using the concepts already discussed in class. These assignments are used to determine if you passed a certain learning milestone. So, please follow the specifications. Using concepts that are not in the specifications will result in a score of 0 points for that particular specification.
- For this program, you are restricted to using the JFrames, Graphics and Polygons classes. You can only use polygons and the basic geometric figures available under the Graphics class - rectangle, arc, oval, polygon and line.
- Please make sure your code is readable and well documented.
- Make sure to compile and run your program before you turn it in. Compilation errors can be costly.
- You might want to use an IDE for this assignment, since getting GUI programs to compile on the command line is hard, and is near impossible for linprog.