SE350: Spring 2018

Homework #3: Shape Popper

Assigned: **For Monday Class (902 & 910)** - Monday April 23rd
For Wednesday Class (901) Wednesday April 25th
Due: **For Monday Class (902 & 910)-**Tuesday May 8th at midnight
For Wednesday Class (901) Thursday May 10th

Objective:

Write a JavaFX program from scratch (but very similar to what we have implemented in Lab3) which implements Composite design pattern.
You will use JavaFX mouse event handler to create objects (circles and rectangles) on a canvas (your JavaFX stage) using your mouse. You will then extend your code to implement the composite design pattern which dragging a container moves all circles within it.

Note: I have shown my working example in class on April 16th and April 18th for Wednesday classes, if there is any ambiguity please watch that lecture for recorded instructions. If still not clear please contact me.

Functionality Requirements:

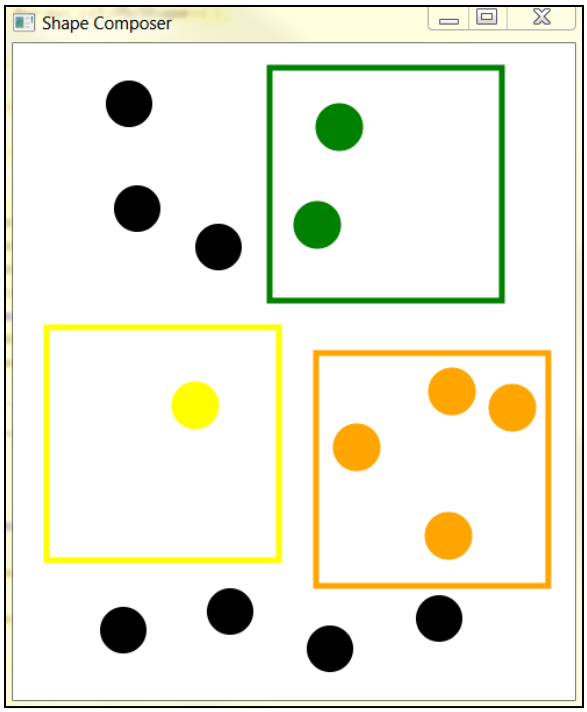
1) Your program shall allow user to add black circles by primary click action and add randomly colored rectangles by right clicking.
2) Your program shall allow user to drag a black circle into a rectangular container.
3) Your program shall changes the color of the circle to its container's color once it is placed within a container.
4) Your program shall drag all circles within a container with it if the container is dragged.

Stretch Suggestions

For some of you this will be easier than others. If you are looking for additional learning opportunities here they are:

- You can set the color of circles back to default if they are taken out from the containers.
- You can add handling code for other properties of the mouse for example if the mouse moves over a circle within a container it shows its default color and when it exits it sets it back to the container's color.

Here is my finished example:



How to submit: All homework for this course must be submitted to D2L.

Points: The assignment is graded out of 50 points. For posting to D2L the points will be divided by 5 to produce a score out of 10. i.e. if you score 40 points you will receive 8 D2L points.

Points will be broken down as follows:

1. **10 points** – A UML class diagram of your solution. I will NOT accept computer generated after-the-fact sketches. You can sketch your UML on paper and take a photo of it if you wish, or use a tool such as Visio. Why? Because thinking about your design in advance is an essential development skill.
2. **5 points** – Journal (ONE short paragraph explaining your design decisions)
3. **35 points** – Functioning code which complies with the design requirements. Points may be deducted for reasons such as incorrect use of observer pattern, missing/incorrect key handler, zero documentation, poor coding decisions, missing functionality. You will receive a list explaining why any points were deducted.
4. **Late Penalty** – 10% penalty if turn in within 48 hours after the deadline.
   20% penalty if turn in within 7 days after the deadline. I do not accept assignments after 7 days of the deadline.

What and how to submit?

On D2L under assignemnt1:

a. A folder called “Source” and place the source code into it.
b. Instead of the executable jar file just submit a screen shot of your stage and submit.
c. Your UML class diagram sketch.
d. Your one paragraph.