Project 4: Drawing

Submit Assignment

Due Jul 25 by 11:59pm   **Points** 100   **Submitting** a file upload   **File Types** zip and java
Available until Jul 25 at 11:59pm

Create a GUI drawing application using JavaFX (without SceneBuilder).

Your drawing application should function as follows:

- When the user clicks into the drawing space, the pen is activated.
  - The user can now move the mouse to draw.
- When the user clicks again, the pen is de-activated and no longer draws.
- **Important Note**: The user does **not** click-and-drag to draw.
- The functionality is: a) click once to turn on, b) move to draw, c) click once to turn off.

Your program should function in this way and have the following features:

1. The user can select from three different pen colors.
2. The program displays a status of whether the pen is on or off (in "draw" mode or "off").
3. There is a clear button that clears the entire drawing space.
   - Hint: think about emptying a list!

Here is an executable jar sample file. This is a click-and-run file that will open up the sample GUI program. Note that your program does **not** have to look exactly like mine- this is just an example so you can see the functionality. My sample program has Extra Credit A implemented, but not Extra Credit B.

DrawingSample.jar 📄

My suggestion is to write this program is stages.

- For example, first get the basic layout of all the visual components set up (the pen status, the drawing space, the control buttons).
- Second, get the drawing feature working so that it draws anytime the mouse moves.
- Third, add support for the click on/click off.
- Fourth, add support for the colors.
- Fifth, add the clear button.
- You don't have to follow this order, but I recommend taking this kind of a "layered" approach to get each part working one at a time before adding on additional functionality.

Extra Credit A: An Eraser (15 points)

Add support for an eraser. When the eraser is activated, the user can remove previously drawn points from the drawing space. For full extra credit, the points should actually be **removed** (not just "covered up").

To complete this extra credit, add a third state for the pen: it is now draw/off/erase. (Hint: consider using an enum!)

Hint: use an iterator and check out the "contains" method in the Node class!

Extra Credit B: Extra Feature (10 points)

Add an additional drawing functionality. This must be different from simply choosing another pen color- that will not count for any extra credit. Be creative!

Submission

- Upload your .java file (or zip the .java files together if you have more than one file) and upload that file.
- You will receive no credit for files that do not compile.
- You can work in groups of up to four students on all projects. You are required to work in a group for at least one project.
  - If you work in a group, **submit only one submission** and include all names in the Canvas comment box of that submission.