CECS 220 Assignment #2

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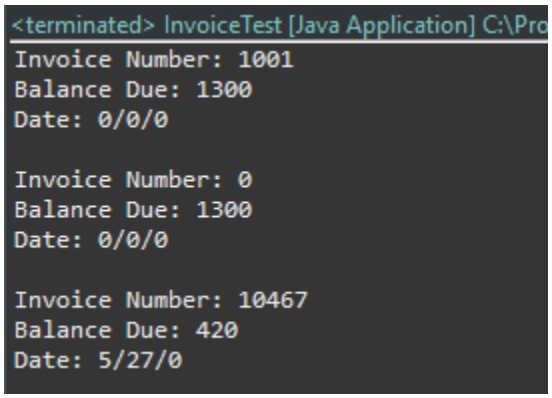
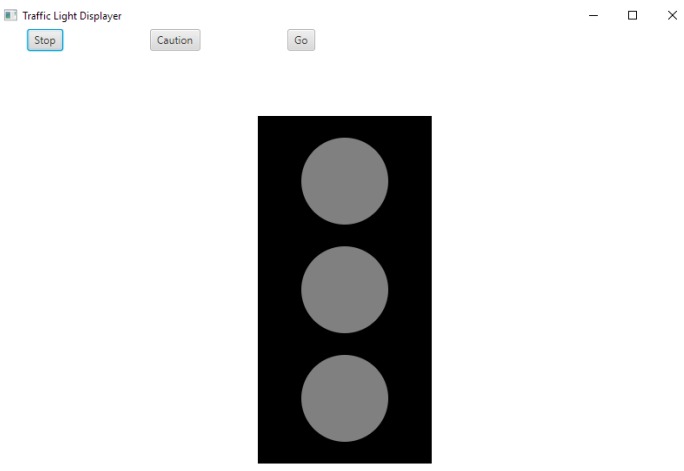
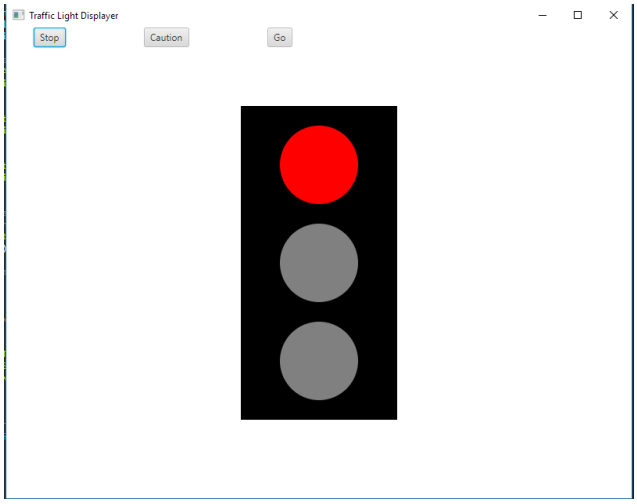
To solve Problem #1: Invoice, first create a class named Invoice and set up a constructor which sets parameters equal to invoice number, balance due, month, day, and year. Each parameter beside balance due has an if statement which only allows the parameter to be set if it is within the requirements specified, else it will set to 0. Next a toString method must be added to Invoice class, create a string method named Format. In this method, strings are created which provide captions for the numbers then the toString method is used to convert the integers to strings. These strings are combined with end line strings, then returns a formatted multi-line string. Next, create a class called InvoiceTest with a static main void which will be used to check that the limits are met for Invoice. First, create 3 Invoice objects which have parameters set above, below, and within the limits. The following screenshot is of the code working within the limits and outside the limits.

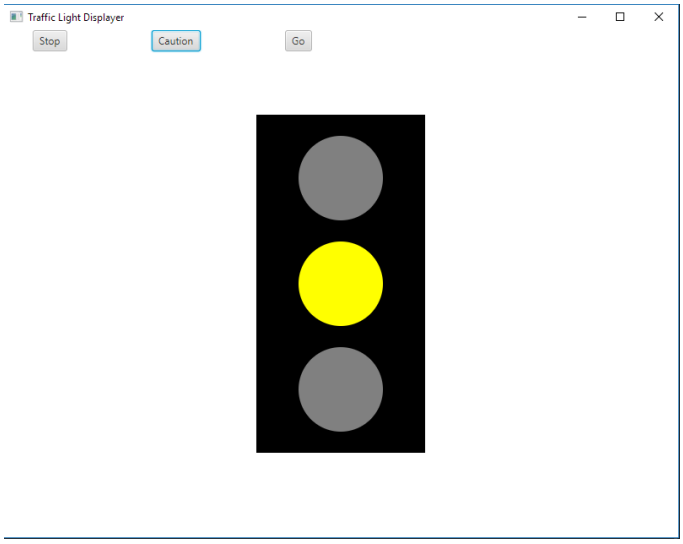


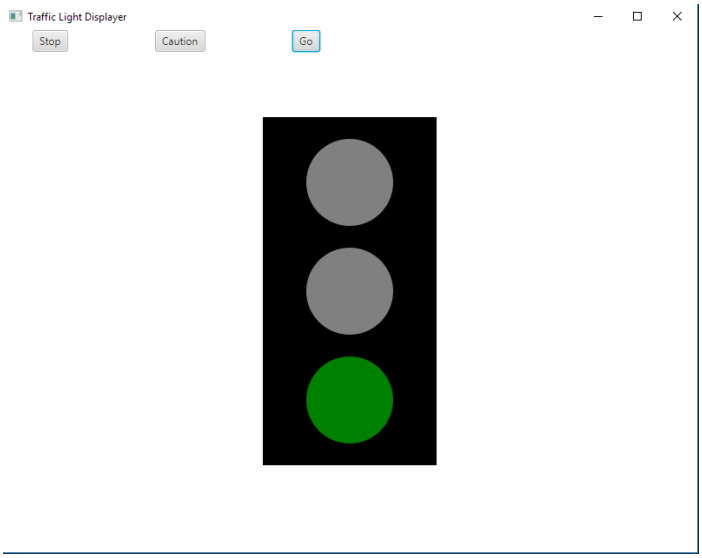
To solve Problem #2: Traffic Light, first create a class named TrafficLight and import JavaFX color, shape, and pane. Next, create an enumeration named State which will be used later for the SwitchState method. Now, create 1 rectangle object named box, and 3 circle objects named redlight, yellowlight, and greenlight. Set the circles to be aligned on the rectangle and have the red light on top, then yellow, then green. Back to the SwitchState method, it takes a parameter called pState of the type State. Next set up if statements which check pState for STOP, CAUTION, and GO then changes the fill color of the lights making the selected one the appropriate color and the others back to grey. Next,

create the TrafficLightDisplayer class that extends application, which will display the geometry in a window. Import JavaFX application, geometry pos, scene group, scene, button, color, stage, state from TrafficLight, and lastly FlowPane. Create a TrafficLight object named displayer and 3 Button objects called stopButton, cautionButton, and goButton which are all named after their names. Next, set up a JavaFX start method with Stage primaryStage, then setFill the colors of displayer's rectangle to black and circles to grey. Now, the buttons must be set up so that they change the color of the lights. To do this, use the setOnAction method which uses the SwitchState from TrafficLight and sets State to STOP, CAUTION, or GO which will change color of the lights and set the off lights to grey. Next, create a FlowPane named pane which will display the buttons and position them. Use setAlignment and setHgap methods to properly align the buttons. Lastly, set displayer's circles, rectangles, and pane to the Group root. Set Scene scene to new scene adding root and creating a white background of 800 by 600 pixels. Set the title to Traffic Light Displayer, setScene to scene, show the primaryStage, then finally set up a public static void main that uses launch(args) to launch the JavaFX application without an IDE. The following are of the traffic light off, red light, yellow light, and green light.




Traffic Light Displayer
Stop
Caution
Go


Traffic Light Displayer
Stop
Caution
Go


Traffic Light Displayer
Stop
Caution
Go