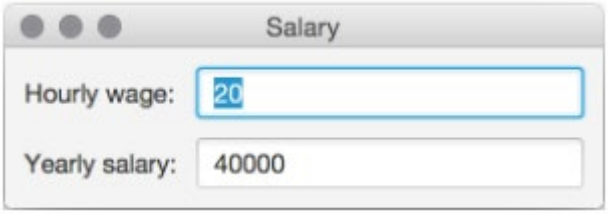
Practical Lab Week 8
Objective: the objective of this lab is to practice JavaFX basics and scene builder usage.

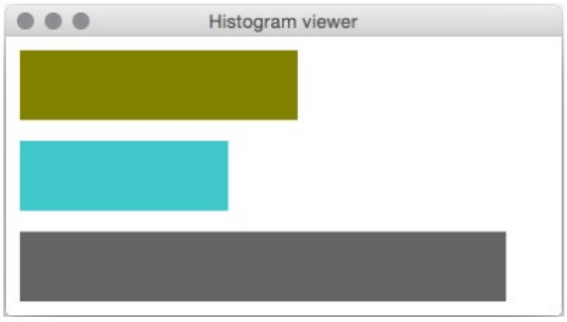
1. Complete the following program which uses a grid pane to present the salary of a staff in hourly wage and yearly salary.




```
import javafx.application.Application;
import javafx.geometry.Insets;
import javafx.stage.Stage;
import javafx.scene.Scene;
import javafx.scene.control.Label;
import javafx.scene.control.TextField;
import javafx.scene.layout.GridPane;

public class SalaryLabelGuiFx extends Application {
   @Override
   public void start(Stage applicationStage) {
      int hourlyWage;
      int yearlySalary;
      Scene scene = null;          // Scene contains all content
      GridPane gridPane = null;    // Positions components within scene
      Label wageLabel = null;      // Label for hourly salary
      Label salaryLabel = null;    // Label for yearly salary
      TextField salField = null;   // Displays yearly salary
      TextField wageField = null; // Displays hourly wage
      Insets gridPadding = null;

      gridPane = new GridPane();
      scene = new Scene(gridPane);

      // Calculate yearly salary
      hourlyWage = 20;
      yearlySalary = hourlyWage * 40 * 50;

      // Set hourly and yearly salary label
      // Your code goes here

      // Create wage and salary text fields
      // Your code goes here


       // add labels and text fields in grid pane.
      // Your code goes here



      gridPadding = new Insets(10, 10, 10, 10);
      gridPane.setPadding(gridPadding);
      gridPane.setHgap(10);
```

```
        gridPane.setVgap(10);

        applicationStage.setScene(scene);     // Set window's scene
        applicationStage.setTitle("Salary"); // Set window's title
        applicationStage.show();              // Display window
    }

    public static void main(String [] args) {
        launch(args); // Launch application
    }
}
```

2. Complete the program below to draw a simple histogram with three bins as shown in the figure




```
import javafx.application.Application;
import javafx.stage.Stage;
import javafx.scene.Scene;
import javafx.scene.layout.Pane;
import javafx.scene.canvas.Canvas;
import javafx.scene.canvas.GraphicsContext;
import javafx.scene.paint.Color;

public class HistogramViewerFx extends Application {
   @Override
   public void start(Stage applicationStage) {
      Pane pane = new Pane();                    // Create an empty pane
      Scene scene = new Scene(pane);             // Create a scene
containing the pane
      Canvas canvas = new Canvas(400, 200);      // Create a canvas in
which to draw

      // Get the canvas' graphics context to draw
      GraphicsContext graphicsContext = canvas.getGraphicsContext2D();

      // Draw 1st bin as an olive colored rectangle at (10,10)
      // with width = 200 and height = 50
      // with olive color rgb code in (128,128,0)
      // Your code goes here

      // Draw 2nd bin as a teal blue rectangle at (10,75)
      // with width = 150 and height = 50
      // with teal blue rgb code in (0,200,200)
      // Your code goes here
```

```
        // Draw 3rd bin as a grey rectangle at (10,140)
        // with width = 350 and height = 50
        // with grey rgb code in (100,100,100)
        // Your code goes here

        pane.getChildren().add(canvas);                 // Add canvas to pane
        applicationStage.setTitle("Histogram viewer"); // Set window's title
        applicationStage.setScene(scene);               // Set window's scene
        applicationStage.show();                        // Display window
    }

    public static void main(String [] args) {
        launch(args); // Launch application
    }
}
```

3. Create the Canvas in Exercise 2 in Scene Builder. Then load the scene in Java.

4. You are given an ArrayList of Person objects, where each Person has two attributes "firstName" and "lastName". Create a scene in JavaFx which displays the array with a table. A sample output is shown below:


```
public class Person {

    private String firstName = null;
    private String lastName = null;

    public Person() {
    }

    public Person(String firstName, String lastName) {
        this.firstName = firstName;
        this.lastName = lastName;
```

```
    }

    public String getFirstName() {
        return firstName;
    }

    public void setFirstName(String firstName) {
        this.firstName = firstName;
    }

    public String getLastName() {
        return lastName;
    }

    public void setLastName(String lastName) {
        this.lastName = lastName;
    }
}

import java.io.IOException;
import java.util.ArrayList;
import javafx.application.Application;
import javafx.scene.Scene;
import javafx.scene.control.TableView;
import javafx.scene.control.TableColumn;
import javafx.scene.control.cell.PropertyValueFactory;
import javafx.scene.layout.VBox;
import javafx.stage.Stage;

public class TableViewer extends Application {
      @Override // Override the start in the Application
      public void start(Stage primaryStage) throws IOException {
            // Create a pane and set its properties
            ArrayList<Person> people = new ArrayList<>();
            people.add(new Person("John", "Doe"));
            people.add(new Person("Jane", "Deer"));
            people.add(new Person("Amy", "Lee"));

            // Your code goes here

            // Create a scene and place it in the stage
            VBox vbox = new VBox(table);
            Scene scene = new Scene(vbox);
            primaryStage.setTitle("My Table");
            primaryStage.setScene(scene);
            primaryStage.show();
      }
      public static void main(String[] args) {
            Application.launch(args);
      }


}
```