Java, December 2, Lab Activity 8

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Lab Activity-8

Deadline 03/12/2021 at 12.00pm for 100%, for 70% at 10.59pm 03/12/2021

Develop the JavaFX application to use the following UI controls

(i)   Check box or radio buttons

(ii)   Label, tooltip, textField

(iii)   Buttons with an image

(iv)   Scroll bar(both horizontal and vertical)

(v)   Menus(some standard menus)

Solution:

Main.java

```java
package application;
import java.io.FileInputStream;
import java.io.FileNotFoundException;

import javafx.application.Application;
import javafx.beans.value.ChangeListener;
import javafx.beans.value.ObservableValue;
import javafx.geometry.Insets;
import javafx.geometry.Orientation;
import javafx.scene.Group;
import javafx.scene.Scene;
import javafx.scene.control.Button;
import javafx.scene.control.Label;
import javafx.scene.control.RadioButton;
import javafx.scene.control.ScrollBar;
import javafx.scene.control.TextField;
import javafx.scene.control.Toggle;
import javafx.scene.control.ToggleGroup;
import javafx.scene.control.Tooltip;
import javafx.scene.image.Image;
import javafx.scene.image.ImageView;
import javafx.scene.layout.GridPane;
import javafx.scene.layout.HBox;
```

```java
import javafx.scene.layout.VBox;
import javafx.scene.paint.Color;
import javafx.stage.Stage;

//import javafx.scene.control.ScrollPane;
//import javafx.scene.control.ScrollPane.ScrollBarPolicy;

public class Main extends Application {
  public static void main(String[] args) {
    launch(args);
  }

  @Override // Override the start method in the Application class
  public void start(Stage stage) throws FileNotFoundException {
    stage.setTitle("Radio Button");
    Scene scene = new Scene(new Group());
    stage.setWidth(800);
    stage.setHeight(800);

    final ToggleGroup group = new ToggleGroup(); // Create a ToggleGroup

    //Creating Radio Buttons

    RadioButton rb1 = new RadioButton("A");
    rb1.setToggleGroup(group);
    rb1.setUserData("A");

    RadioButton rb2 = new RadioButton("B");
    rb2.setToggleGroup(group);
    rb2.setUserData("B");

    RadioButton rb3 = new RadioButton("C");
    rb3.setToggleGroup(group);
    rb3.setUserData("C");

    //Creating VBox & Hbox and adding Radio Buttons to it

    group.selectedToggleProperty().addListener(new ChangeListener<Toggle>() {
      public void changed(ObservableValue<? extends Toggle> ov,
          Toggle old_toggle, Toggle new_toggle) {
        if (group.getSelectedToggle() != null) {
          System.out.println(group.getSelectedToggle().getUserData().toString
());
        }
      }
```

```java
});

ScrollBar s1 = new ScrollBar();
s1.setMax(500);
s1.setMin(0);
s1.setValue(100);
s1.setUnitIncrement(30);
s1.setBlockIncrement(35);


s1.setOrientation(Orientation.VERTICAL);



FileInputStream input = new FileInputStream("src/application/java.png");
Image image = new Image(input);
ImageView imageView = new ImageView(image);
imageView.setFitHeight(80);
imageView.setPreserveRatio(true);
Button button = new Button("Yolo",imageView);

button.setTranslateX(200);
button.setTranslateY(50);
button.setPrefSize(80, 80);



TextField tf = new TextField (); // Create a TextField
tf.setText("Label");
tf.clear();
GridPane grid = new GridPane();
grid.setVgap(4);
grid.setHgap(10);
grid.setPadding(new Insets(5, 5, 5, 5));
grid.add(new Label("To: "), 0, 0);
grid.add(tf, 1, 0);

Tooltip tooltip = new Tooltip(); // Create a Tooltip
tooltip.setText("Tooltip");
Label label1 = new Label("Radio Button");
label1.setTextFill(Color.web("#0076a3"));
Tooltip.install(label1, tooltip);
HBox hbox = new HBox();
VBox vbox = new VBox();

vbox.getChildren().add(rb1); // Add Radio Buttons to HBox
vbox.getChildren().add(rb2);
vbox.getChildren().add(rb3);
```

```java
    vbox.setSpacing(10);
    hbox.getChildren().add(s1);
    hbox.getChildren().add(button);
    hbox.getChildren().add(grid);
    hbox.getChildren().add((label1));
    hbox.getChildren().add(vbox);
    hbox.setSpacing(50);


    hbox.setPadding(new Insets(20, 10, 10, 10)); // Set padding of HBox

    ((Group) scene.getRoot()).getChildren().add(hbox); // Add HBox to the
scene
    stage.setScene(scene);
    stage.show();
  }
}
```

<mark>Menu.java</mark>

```java
package application;

import javafx.application.Application;
import javafx.application.Platform;
import javafx.scene.Scene;
import javafx.scene.control.CheckMenuItem;
import javafx.scene.control.Menu;
import javafx.scene.control.MenuBar;
import javafx.scene.control.MenuItem;
import javafx.scene.control.RadioMenuItem;
import javafx.scene.control.SeparatorMenuItem;
import javafx.scene.control.ToggleGroup;
import javafx.scene.layout.BorderPane;
import javafx.scene.paint.Color;
import javafx.stage.Stage;

//import javafx.scene.control.Menu;
//import javafx.scene.control.MenuBar;
//import javafx.scene.control.MenuItem;
//import javafx.scene.control.SeparatorMenuItem;
//import javafx.scene.control.ToggleGroup;
//import javafx.scene.layout.BorderPane;
```

```java
public class menu extends Application {

    @Override
    public void start(Stage primaryStage) {
        BorderPane root = new BorderPane();
        Scene scene = new Scene(root, 300, 250, Color.WHITE);

        MenuBar menuBar = new MenuBar();
        menuBar.prefWidthProperty().bind(primaryStage.widthProperty());
        root.setTop(menuBar);

        // File menu - new, save, exit
        Menu fileMenu = new Menu("File");
        MenuItem newMenuItem = new MenuItem("New");
        MenuItem saveMenuItem = new MenuItem("Save");
        MenuItem exitMenuItem = new MenuItem("Exit");
        exitMenuItem.setOnAction(actionEvent -> Platform.exit()); // exit the
application

        fileMenu.getItems().addAll(newMenuItem, saveMenuItem,
            new SeparatorMenuItem(), exitMenuItem); // add items to menu

        Menu webMenu = new Menu("Web");
        CheckMenuItem htmlMenuItem = new CheckMenuItem("HTML"); // checkable
        htmlMenuItem.setSelected(true);
        webMenu.getItems().add(htmlMenuItem);

        CheckMenuItem cssMenuItem = new CheckMenuItem("CSS"); // checkable
        cssMenuItem.setSelected(true);
        webMenu.getItems().add(cssMenuItem);

        Menu sqlMenu = new Menu("SQL");
        ToggleGroup tGroup = new ToggleGroup();
        RadioMenuItem mysqlItem = new RadioMenuItem("MySQL"); // radio
        mysqlItem.setToggleGroup(tGroup);

        RadioMenuItem oracleItem = new RadioMenuItem("Oracle"); // radio
        oracleItem.setToggleGroup(tGroup);
        oracleItem.setSelected(true);

        sqlMenu.getItems().addAll(mysqlItem, oracleItem,
            new SeparatorMenuItem());
```

```java
Menu tutorialManeu = new Menu("Tutorial"); // submenu
tutorialManeu.getItems().addAll(
    new CheckMenuItem("Java"),
    new CheckMenuItem("JavaFX"),
    new CheckMenuItem("Swing"));

sqlMenu.getItems().add(tutorialManeu); // add submenu

menuBar.getMenus().addAll(fileMenu, webMenu, sqlMenu); // add menus

primaryStage.setScene(scene); // set scene
primaryStage.show();
}
public static void main(String[] args) {
    launch(args);
}
}
```
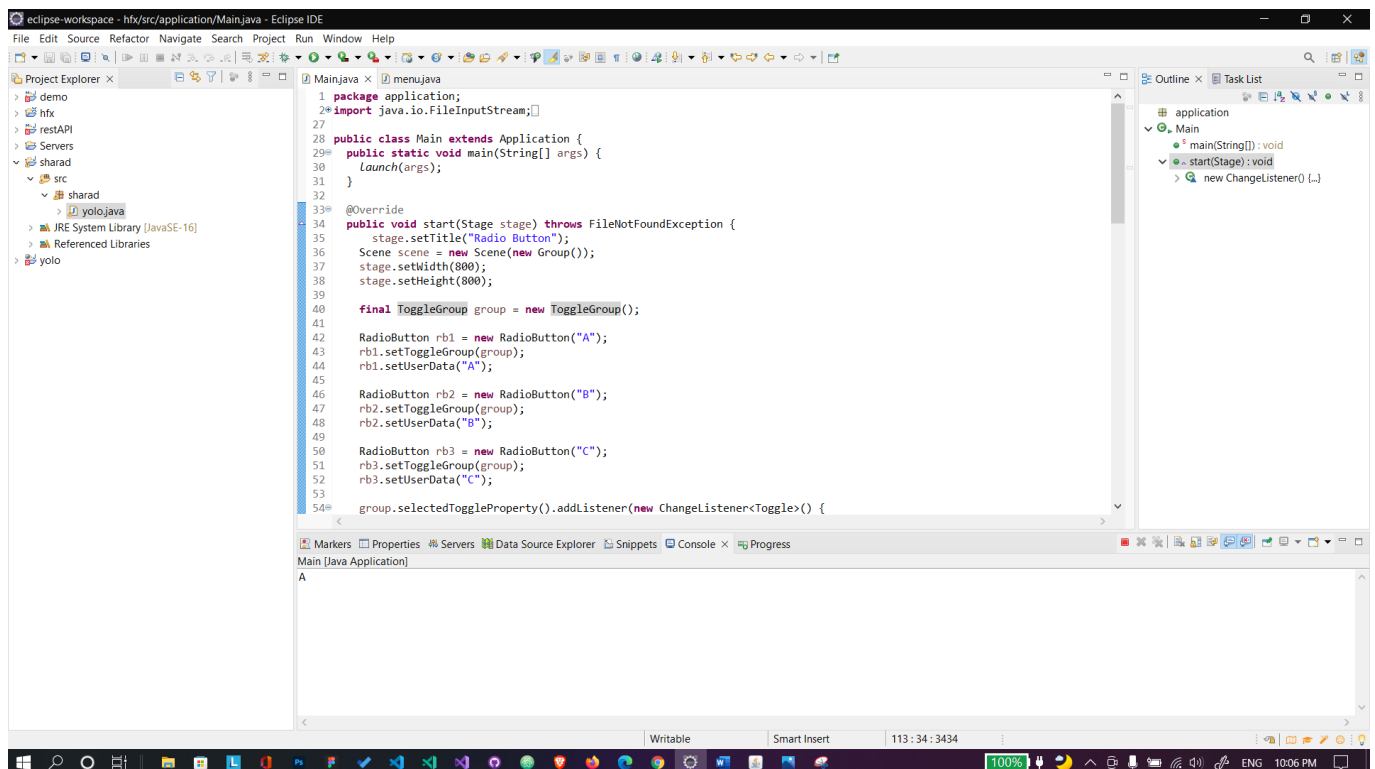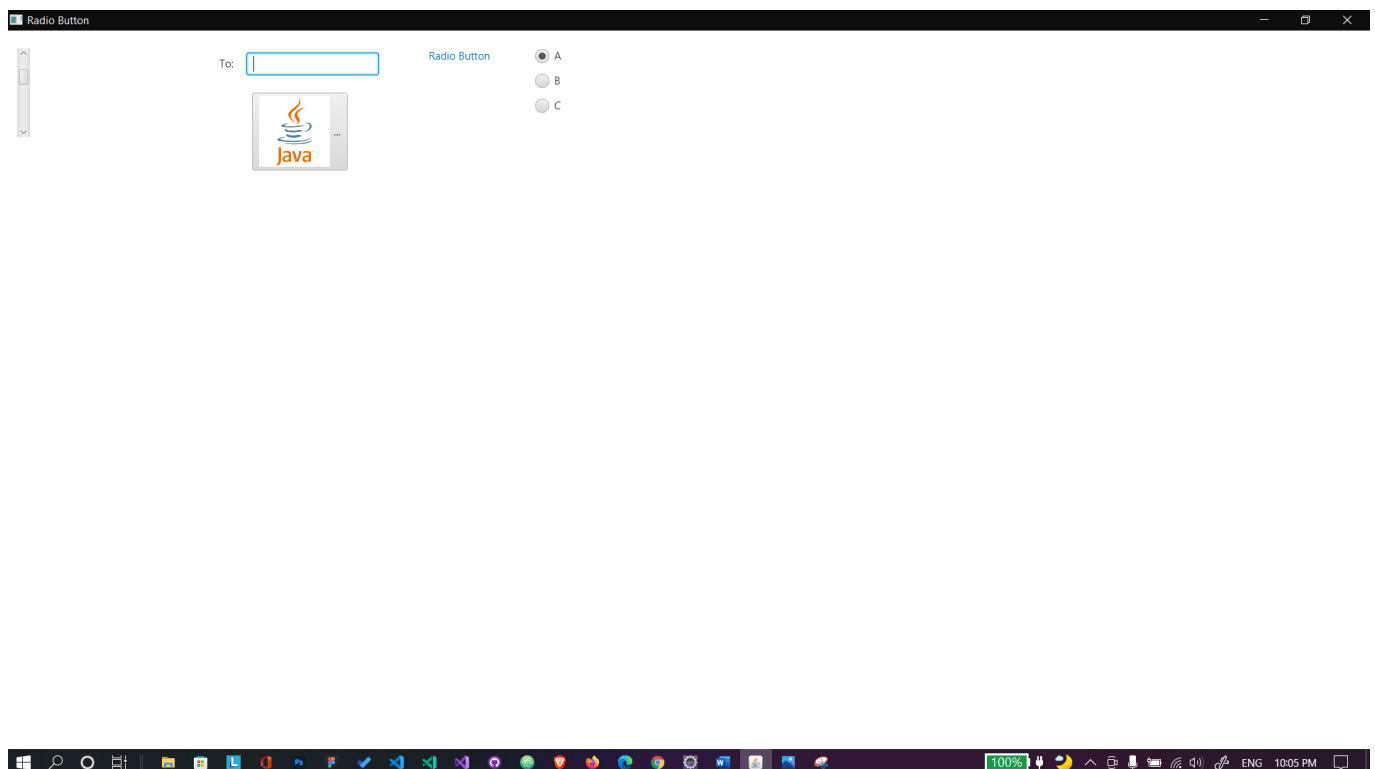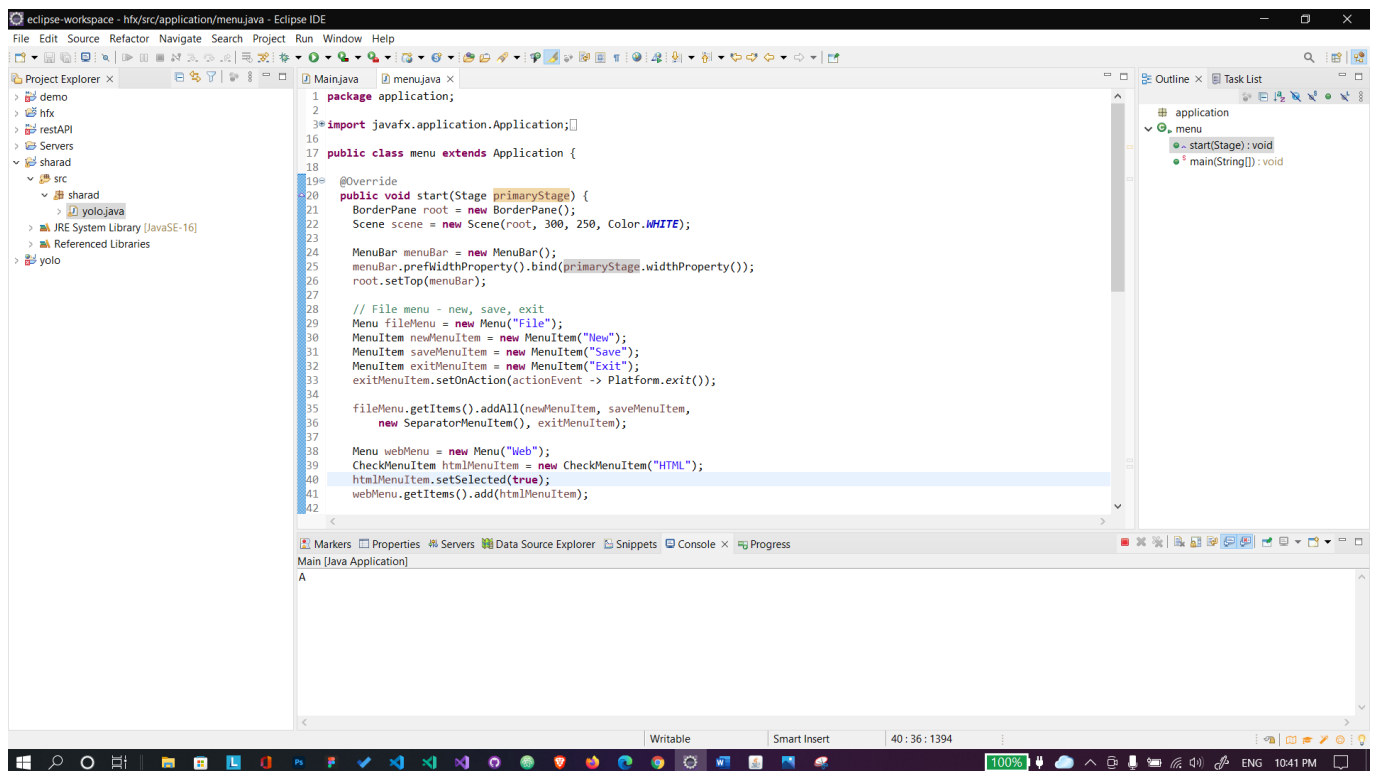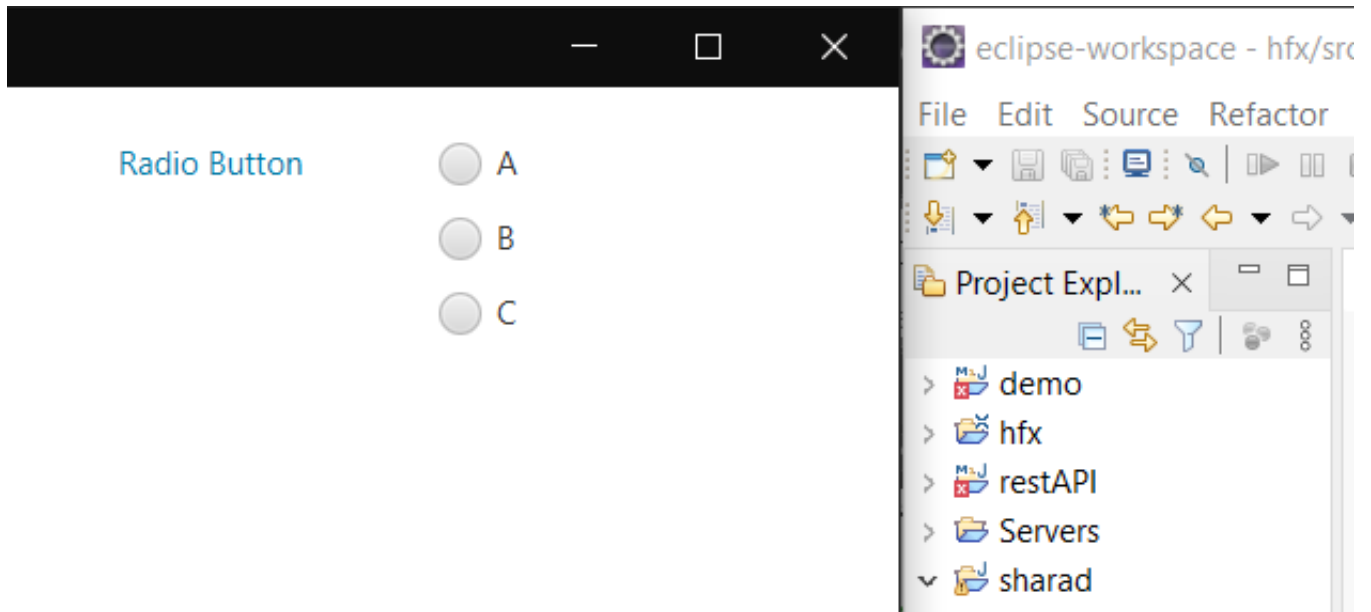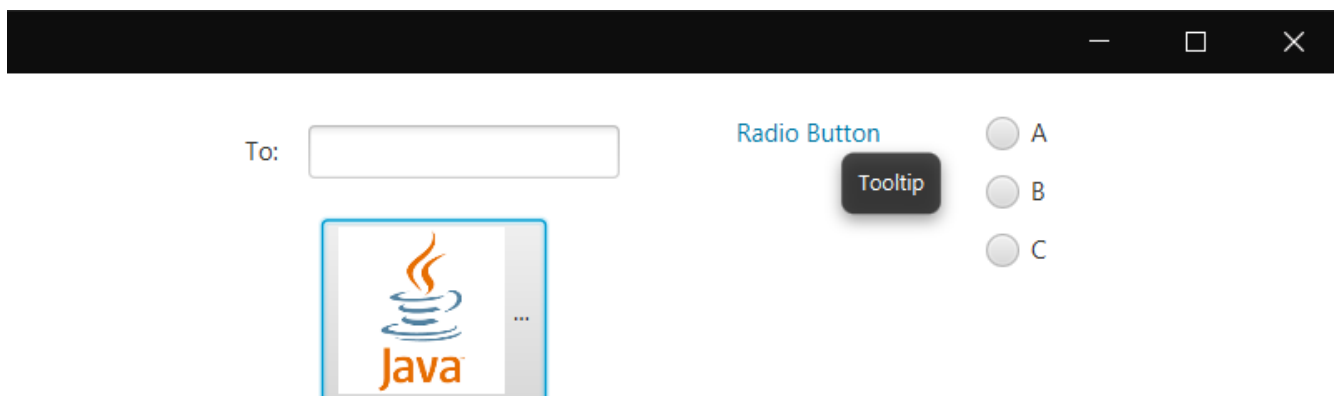
Screenshots:

```java
package application;

import javafx.application.Application;

public class menu extends Application {

    @Override
    public void start(Stage primaryStage) {
        BorderPane root = new BorderPane();
        Scene scene = new Scene(root, 300, 250, Color.WHITE);

        MenuBar menuBar = new MenuBar();
        menuBar.prefWidthProperty().bind(primaryStage.widthProperty());
        root.setTop(menuBar);

        // File menu - new, save, exit
        Menu fileMenu = new Menu("File");
        MenuItem newMenuItem = new MenuItem("New");
        MenuItem saveMenuItem = new MenuItem("Save");
        MenuItem exitMenuItem = new MenuItem("Exit");
        exitMenuItem.setOnAction(actionEvent -> Platform.exit());

        fileMenu.getItems().addAll(newMenuItem, saveMenuItem,
            new SeparatorMenuItem(), exitMenuItem);

        Menu webMenu = new Menu("Web");
        CheckMenuItem htmlMenuItem = new CheckMenuItem("HTML");
        htmlMenuItem.setSelected(true);
        webMenu.getItems().add(htmlMenuItem);
```

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- Radio buttons:

- tooltip:

- textfield:

To:

- button with an image:

- Scrollbar

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- Menus