OOP LAB

Week 8 Assignment Submission

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Batch B1

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1. Write a JavaFX application program to do the following: Display the message "Welcome to JavaFX programming" using Label in the Scene. Set the text color of the Label to Magenta. Set the title of the Stage to "This is the first JavaFX Application". Set the width and height of the Scene to 500 and 200 respectively. Use FlowPane layout and set the hgap and ygap, of the FlowPane to desired values.

The program will accept an integer from the user in a text field and display the multiplication table (up to number 10) for that number.

Code:

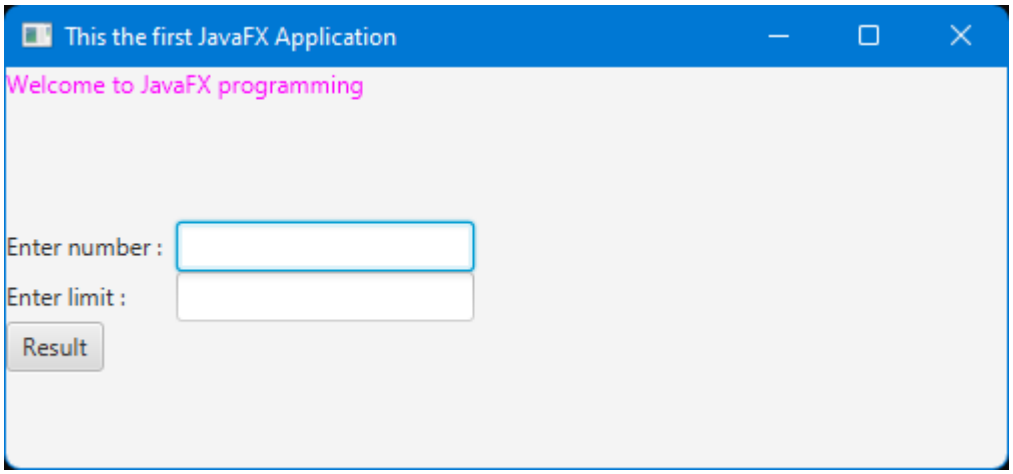
```
import javafx.application.*;
import javafx.scene.*;
import javafx.scene.layout.*;
import javafx.scene.control.*;
import javafx.event.*;
import javafx.geometry.*;
import javafx.stage.*;
import javafx.scene.paint.Color;
```

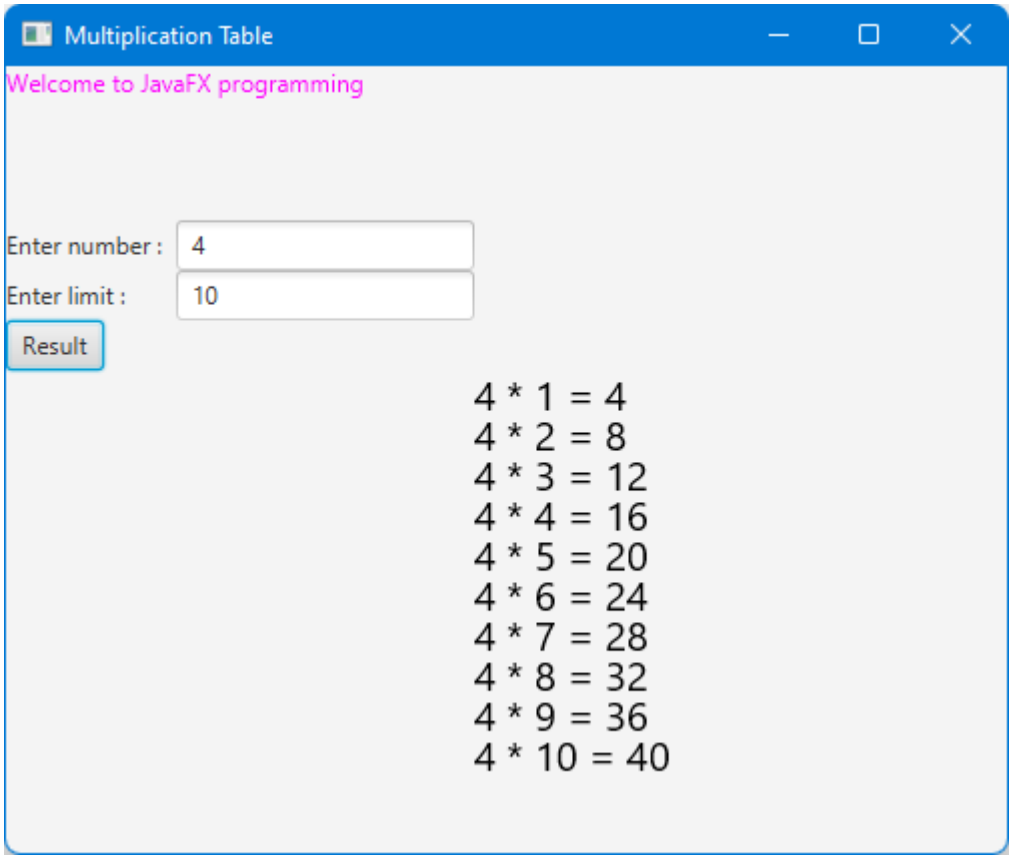
```
import javafx.scene.text.*;
import javafx.scene.canvas.Canvas;
import javafx.scene.canvas.GraphicsContext;
import javafx.event.EventHandler;
import javafx.event.ActionEvent;

public class q1 extends Application {
   public static void main(String args[]) {
      launch(args);
   }

   public void start(Stage myStage) {
      myStage.setTitle("This the first JavaFX Application");
      FlowPane rootnode = new FlowPane();

      Scene myScene = new Scene(rootnode, 500, 200);
      myStage.setScene(myScene);
      Label l1 = new Label("Welcome to JavaFX programming");

      l1.setTextFill(Color.MAGENTA);

      rootnode.setHgap(40);
      rootnode.setVgap(60);
      rootnode.getChildren().add(l1);
      myStage.show();
```

```
Label n1 = new Label("Enter number :  ");
Label n2 = new Label("Enter limit :  ");
GridPane grid = new GridPane();
TextField tf = new TextField();
TextField tf1 = new TextField();
Button b1 = new Button("Result");
Canvas canvas = new Canvas(200, 200);
GraphicsContext gc = canvas.getGraphicsContext2D();
b1.setOnAction(new EventHandler<ActionEvent>() {
   @Override
   public void handle(ActionEvent arg0) {
      myStage.setTitle("Multiplication Table");
      gc.clearRect(0, 0, 400, 200);
      gc.setFont(new Font(20));
      int n = Integer.parseInt(tf.getText());
      int lim = Integer.parseInt(tf1.getText());
      int x = 0, y = 20;
      for (int i = 1; i <= 10; i++, y += 20) {
         gc.fillText(n + " * " + i + " = " + (n * i), x, y);
      }

   }
});
grid.addRow(0, n1, tf);
grid.addRow(1, n2, tf1);
```

```
        grid.addRow(2, b1);
        grid.add(canvas, 2, 3);

        rootnode.getChildren().add(grid);

        myStage.show();

    }
}
```

Sample input/output:





2. Write a JavaFX application program that obtains two floating point numbers in two text fields from the user and displays the sum, product, difference and quotient of these numbers using Canvas on clicking compute button with a calculator image placed on it.

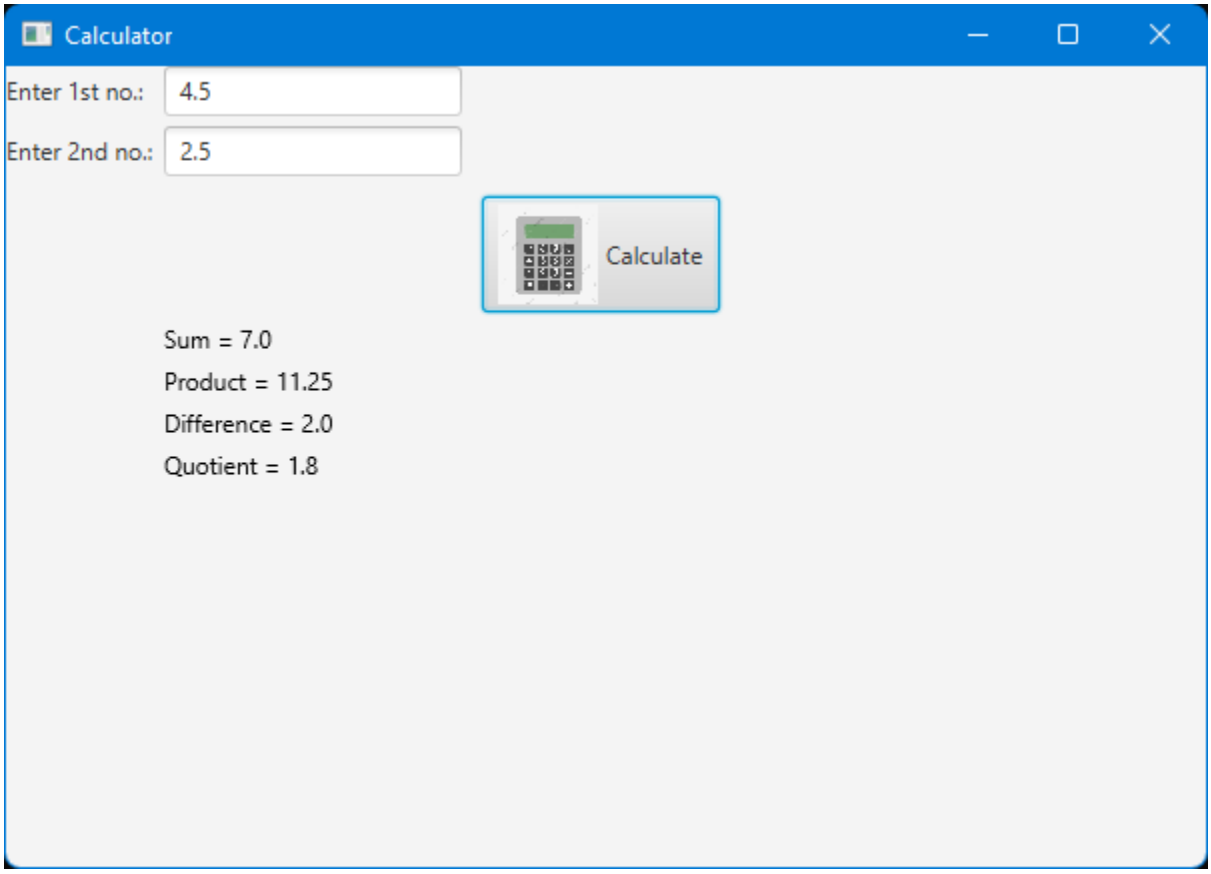
Code:

```
import javafx.application.Application;

import javafx.stage.Stage;

import javafx.scene.*;

import javafx.scene.image.*;

import javafx.scene.layout.*;

import javafx.scene.control.*;

import javafx.scene.paint.*;
```

```
import javafx.scene.text.*;
import javafx.geometry.*;
import javafx.event.*;
import java.util.*;

public class q2 extends Application {
   public static void main(String args[]) {
      launch(args);
   }

   public void start(Stage myStage) {
      myStage.setTitle("Calculator");
      GridPane grid = new GridPane();
      Label l1 = new Label("Enter 1st no.:");
      Label l2 = new Label("Enter 2nd no.:");
      Text t1 = new Text();
      Text t2 = new Text();
      Text t3 = new Text();
      Text t4 = new Text();
      TextField tf1 = new TextField();
      tf1.setText("");
      TextField tf2 = new TextField();
      tf2.setText("");
      ImageView img = new ImageView("calculator.jpg");
      img.setFitHeight(50);
      img.setFitWidth(50);
```

```
        Button b1 = new Button("Calculate", img);
        grid.addRow(0, l1, tf1);
        grid.addRow(1, l2, tf2);
        grid.add(b1, 3, 3);
        grid.add(t1, 1, 4);
        grid.add(t2, 1, 5);
        grid.add(t3, 1, 6);
        grid.add(t4, 1, 7);
        grid.setVgap(5);
        grid.setHgap(5);
        b1.setOnAction(new EventHandler<ActionEvent>() {
           public void handle(ActionEvent ae) {
              float x = Float.parseFloat(tf1.getText());
              float y = Float.parseFloat(tf2.getText());
              t1.setText("Sum = " + (x + y));
              t2.setText("Product = " + (x * y));
              t3.setText("Difference = " + Math.abs(x - y));
              t4.setText("Quotient = " + (Math.max(x, y) / Math.min(x, y)));
           }
        });
        Scene s = new Scene(grid, 600, 400);
        myStage.setScene(s);
        myStage.show();
     }
}
```

Sample input/output:



3. Write a JavaFX program to display a window as shown below. Use TextField for UserName and PasswordField for Password input. On click of "Sign in" Button the message "Welcome UserName" should be displayed in a Text Control Use GridPane layout for the application.

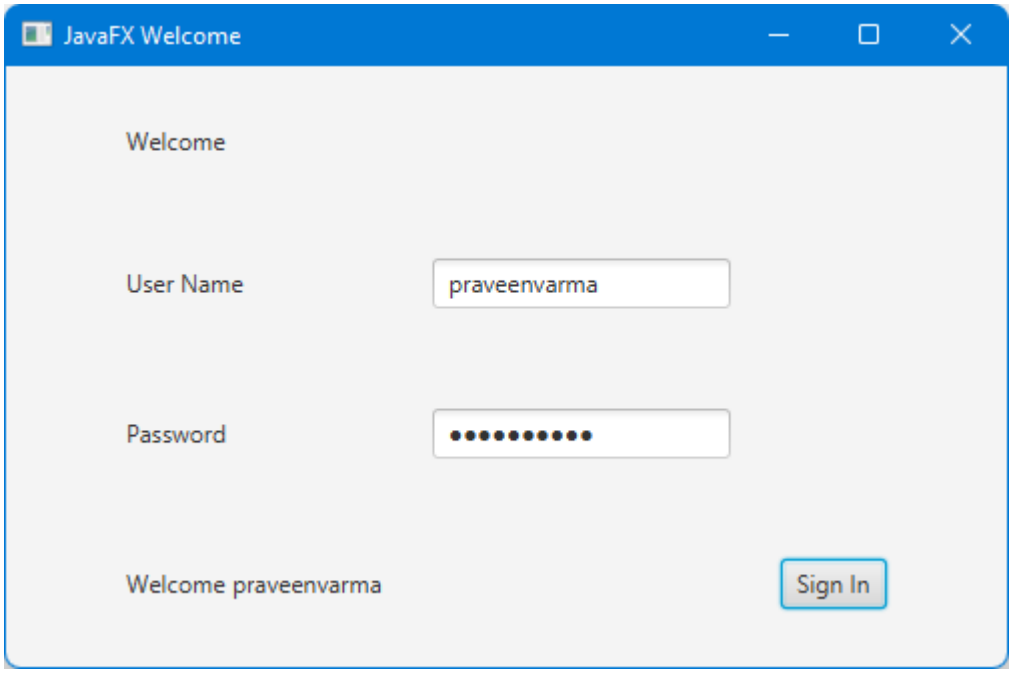
Code:

```
import javafx.application.*;

import javafx.scene.*;

import javafx.scene.layout.*;

import javafx.scene.control.*;
```

```
import javafx.event.*;
import javafx.geometry.*;
import javafx.stage.*;

public class q3 extends Application {
   Label lbl1, lbl2, lbl3, lbl4;
   TextField tf1;
   PasswordField tf2;

   public static void main(String args[]) {
      launch(args);
   }

   public void start(Stage myStage) {
      myStage.setTitle("JavaFX Welcome");
      GridPane rootnode = new GridPane();
      rootnode.setMinSize(500, 300);
      rootnode.setVgap(50);
      rootnode.setHgap(25);
      rootnode.setAlignment(Pos.CENTER);
      Scene myScene = new Scene(rootnode);
      myStage.setScene(myScene);

      lbl1 = new Label("Welcome");
      lbl2 = new Label("User Name");
      lbl3 = new Label("Password");
```

```
        lbl4 = new Label("");

        tf1 = new TextField();
        tf2 = new PasswordField();

        Button btn = new Button("Sign In");
        rootnode.add(lbl1, 0, 0);
        rootnode.add(lbl2, 0, 1);
        rootnode.add(lbl3, 0, 2);
        rootnode.add(tf1, 1, 1);
        rootnode.add(tf2, 1, 2);
        rootnode.add(lbl4, 0, 3);
        rootnode.add(btn, 2, 3);
        btn.setOnAction(new EventHandler<ActionEvent>() {
            public void handle(ActionEvent ae) {
                lbl4.setText("Welcome " + tf1.getText());
            }
        });
        myStage.show();
    }
}
```

Sample input/output:


JavaFX Welcome
Welcome
User Name
praveenvarma
Password
Welcome praveenvarma
Sign In

THANK YOU!