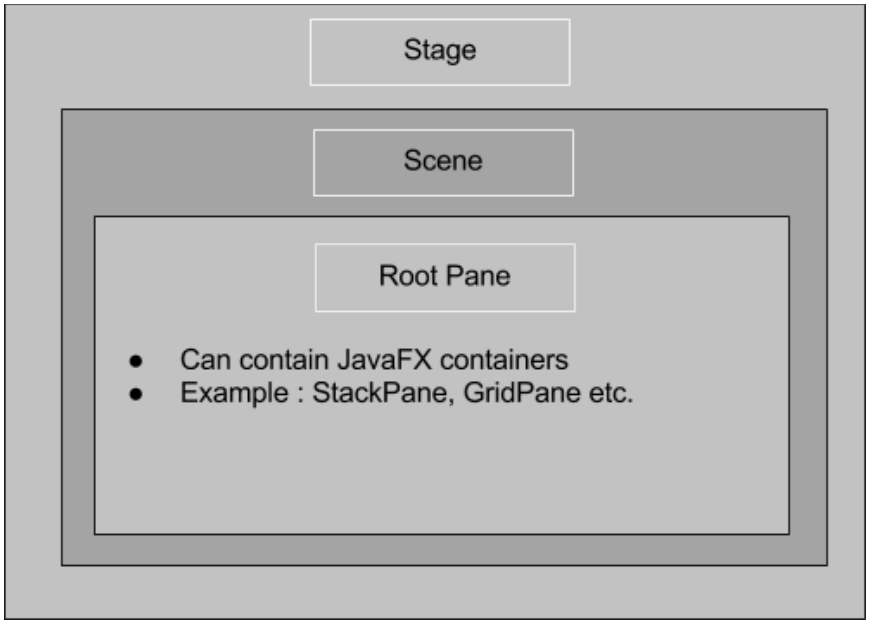
COMS/SE 319: Software Construction and User Interface
Fall 2018
LAB Activity 6 – JavaFX

JavaFX is a set of graphics and media packages that enable developers to design, create, test, debug, and deploy rich client applications that operate consistently across diverse platforms. See what JavaFX capable of in JavaFX Overview.

JavaFX Architecture



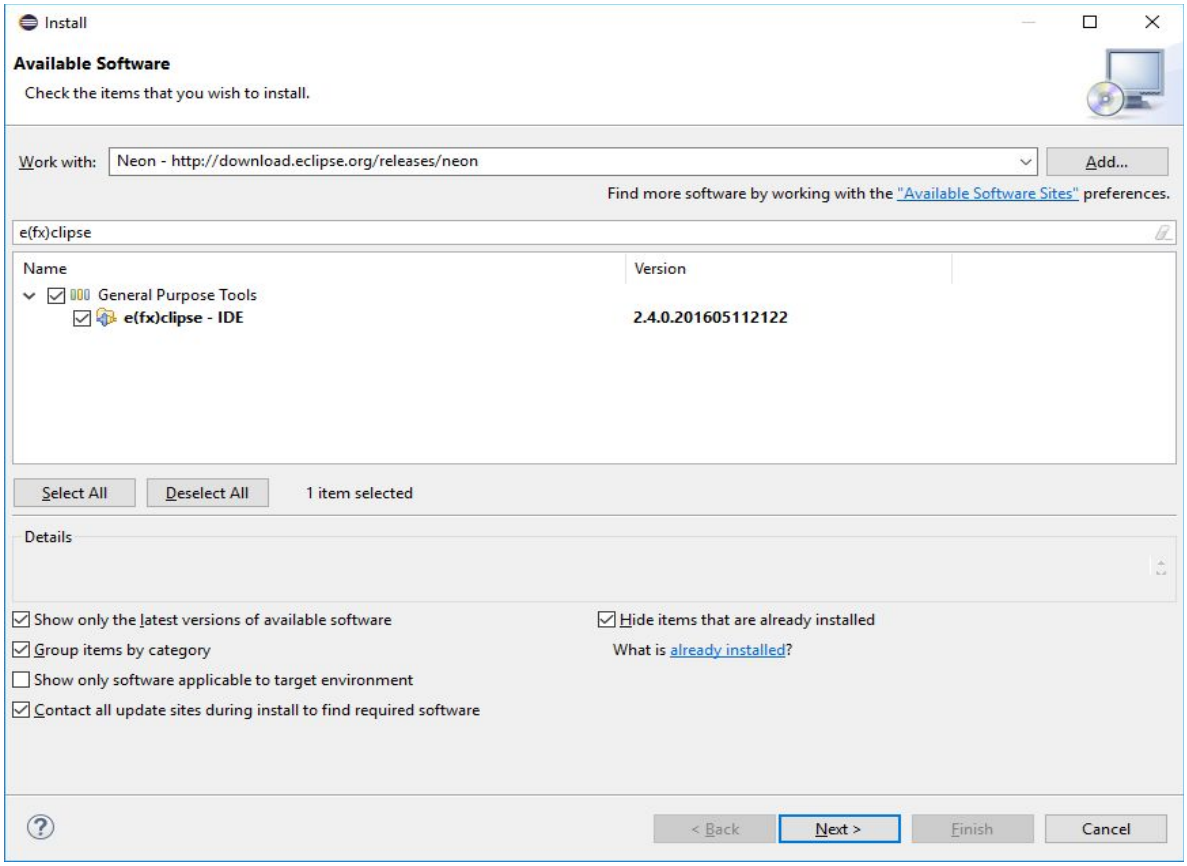
- **Stage**: This is the outermost container of the application and contains the entire program.

- **Scene**: The object directly contained by the stage. Just like a theatre, a scene can only exist inside a stage and a stage can have only one scene at any given time. When the story changes, the play goes to a NEW scene. In the program when you want to switch to another view you can also have the Stage change to a different Scene.

- **Root Pane/Container**: The container can contain other parts of the application like buttons, labels, textfields, etc. Depending on how we want to layout our apps, the root container can be represented by a number of JavaFX containers such as the StackPane, GridPane, BorderPane, FlowPane, etc. More about Root Pane can be found in here.

Installation

1. Click Help->Install New Software.
2. Select Eclipse version to Work with.
3. In the filter enter e(fx)clipse.
4. Restart Eclipse after installation.



Task 1:

Let's check whether we properly installed javaFX by running following program.

1. Create a new javaFX project (File ->New-> Project->JavaFX project)
2. Create **JavaFXExample1.java** and copy the following code.

```java
import javafx.application.Application;
import javafx.event.ActionEvent;
import javafx.event.EventHandler;
import javafx.scene.Scene;
import javafx.scene.control.Button;
import javafx.scene.layout.StackPane;
import javafx.stage.Stage;


public class JavaFXExample1 extends Application {

   @Override
   public void start(Stage primaryStage) {
       Button bt = new Button("Click Me");


       StackPane frame = new StackPane();
       frame.getChildren().add(bt);

       bt.setOnAction(new EventHandler<ActionEvent>() {

           @Override
               public void handle(ActionEvent e) {
               System.out.println("javaFX says Hello !!");
            }

            });

       Scene scene = new Scene(frame, 300, 250);

       primaryStage.setTitle("Hello World!");
       primaryStage.setScene(scene);
       primaryStage.show();
   }


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

}
```

After running the code please answer the following Attendance quiz question in Canvas.

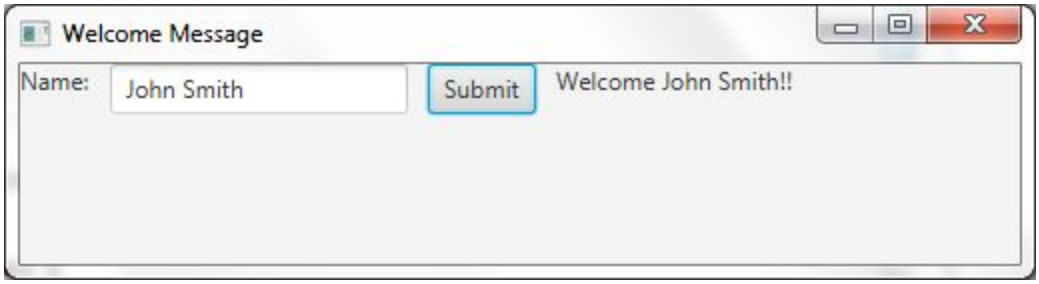
How to change the title of the JavaFXExample1 output stage to "Example 1"?

Task 2:

Complete EventHandler for **Submit** button click in provided **JavaFXExample2.java**

Program should print Welcome message if a name is provided in text box. Otherwise print an error message "You have not entered name."

[You can read the text in text box using getText() and write to label using setText()]

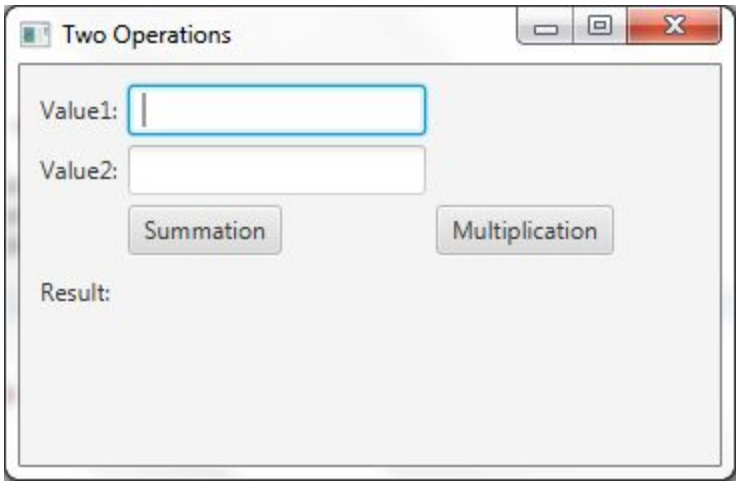


After running the code please answer the following Attendance quiz question in Canvas.

setOnAction **method sets the action details when the button "submit" is clicked.**
True or False?

Task 3:

Complete the provided **JavaFXExample3.java.**
You can use "result" label to print the answer.



After running the code please answer the following Attendance quiz question in Canvas.

Will this code be sufficient for handling summation in the given JavaFXExample3?

```
sum.setOnAction(new EventHandler<ActionEvent>() {
                  @Override
                  public void handle(ActionEvent event) {
                        try {

result.setText((Double.parseDouble(value1.getText()) +
Double.parseDouble(value2.getText())) + "");
                        } catch (NumberFormatException e) {
                              result.setText("Invalid Inputs");
                        }
                  }
            });
```

You can find more about JavaFX UI Controls from JavaFX Documentation. Also there are other ways to build javaFX UI controls. Scene builder http://gluonhq.com/products/scene-builder/ is one of them.