**Sources:**

**MS Bing Chat Copilot**

**+Contributors:**

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**To help divide your JavaFX + SceneBuilder combination project into many modules through separate files and folders**, here’s are some steps to consider:

1)Let’s say your project contains so many tools from top navigation bar, poster, slideshows, badges, and so on. Each tool like that contains many syntaxes and statements.

=>You must separate them into different files and folders.

**2)You can create folders inside application folder and put controller java, fxml, css, or other files into it, then import them into your Main.java file**

**a)We will examine some code in Main.java file first to make sure we understand what’s going on with it:**

**package** application;

**import** java.io.\*;

**import** javafx.application.Application;

**import** javafx.stage.Stage;

**import** javafx.scene.Scene;

**import** javafx.fxml.FXMLLoader;

**import** javafx.scene.Parent;

**public** **class** **Main** **extends** Application {

**private** **static** **Scene** *scene*;

**@Override**

**public** **void** **start**(**Stage** stage) **throws** **IOException** {

*scene* = **new** **Scene**(***loadFXML***(**"primary"**), **640**, **480**);

stage.**setScene**(*scene*);

stage.**show**();

}

**static** **void** **setRoot**(**String** fxml) **throws** **IOException** {

*scene*.**setRoot**(***loadFXML***(fxml));

}

**private** **static** Parent **loadFXML**(**String** fxml) **throws** **IOException** {

**FXMLLoader** **fxmlLoader** = **new** **FXMLLoader**(**Main**.**class**.**getResource**(fxml + **".fxml"**));

**return** fxmlLoader.**load**();

}

**public** **static** **void** **main**(**String**[] args) {

***launch***();

}

}

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**According to the information above, the line Main.class.getResource() can be used to specify the path to your fxml especially when it is placed in different folders**

\*The example above shows that your fxml file is placed in the same folder with your Main.java file

\*Let’s say you have a **TopNavigationBar.fxml** file that is placed in **MainPageScene/TopNavigationBar** folder, you should write the **Main.class.getResource()** like this:

**Main.class.getResource(“MainPageScene/TopNavigationBar/”+fxml+“.fxml”)**

**Then, adjust the code inside this statement**

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The scene should looks like this:

**scene = new Scene(loadFXML(“TopNavigationBar”),640,480);**

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**This code demonstrates a modular approach to UI management in JavaFX, making it easier to handle dynamic content changes.**

**\*Notice that the syntaxes inside Main.java file above is just for program that deals with only 1 fxml file.**

If you’re dealing with many fxml files, you can look at the example program below (you don’t have to know everything about it, just pay attention to how I add CSS, fxml files into it)

**package** application;

**import** java.io.\*;

**import** javafx.application.Application;

**import** javafx.stage.Stage;

**import** javafx.scene.Scene;

**import** javafx.scene.layout.BorderPane;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.layout.HBox;

**import** javafx.fxml.FXMLLoader;

**import** javafx.scene.Parent;

**public** **class** Main **extends** Application {

**private** **static** Scene scene;

**private** **static** BorderPane borderPane1;

**private** **static** VBox borderPane1\_centerContainer;

**@**Override

**public** **void** **start**(Stage **stage**) **throws** IOException {

borderPane1 = **new** BorderPane();

borderPane1.setTop(loadFXML(**"MainPageScene/TopNavigationBar/"**,**"TopNavigationBarFXML"**));

borderPane1\_centerContainer = **new** VBox();

borderPane1\_centerContainer.getChildren().add(loadFXML(**"MainPageScene/FirstPosterContainer/"**,**"FirstPosterContainerFXML"**));

borderPane1.setCenter(borderPane1\_centerContainer);

borderPane1.getStylesheets().add(getClass().getResource(**"MainPageScene/TopNavigationBar/TopNavigationBar1.css"**).toExternalForm());

borderPane1.getStylesheets().add(getClass().getResource(**"MainPageScene/FirstPosterContainer/FirstPosterContainer.css"**).toExternalForm());

scene = **new** Scene(borderPane1, **1280**, **960**);

stage.setScene(scene);

stage.setTitle(**"RQT Real Estate"**);

stage.show();

}

**static** **void** **setRoot**() **throws** IOException {

scene.setRoot(borderPane1);

}

**private** **static** Parent **loadFXML**(String **path**, String **fxml**) **throws** IOException {

FXMLLoader **fxmlLoader** = **new** FXMLLoader(Main.**class**.getResource(path+fxml + **".fxml"**));

**return** fxmlLoader.load();

}

**public** **static** **void** **main**(String[] **args**) {

launch();

}

}

My directory hierarchy is like this:

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**The output is like this:**

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I’m not going to include the contents of all of the files in this project here, but the main idea that I want you to focus on through the Main.java file above is that:

+The main scene contains BorderPane tool

+BorderPane contains the top navigation bar with data comes from

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+BorderPane also contains the first poster container at the center with data comes from

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=>Modularize your project like above can help you insert contents from many pages into your main page and make it easier to manage and handle data across your app through specific files and folders

**b)Now, we will examine code in controller java files**

Let’s say I have a file called **PrimaryController.java,** and here is the codes inside it

**package** application;

Notice that if you place **PrimaryController.java file** in any **subfolder** of the **application folder**, let’s assume that I place it in **Primary folder**, then I should write the first line of this **PrimaryController.java file** as **package application.Primary;**

**import** java.io.IOException;

**import** javafx.fxml.FXML;

**import** javafx.scene.control.Label;

**import** javafx.scene.control.Button;

**import** javafx.scene.image.Image;

**import** javafx.scene.image.ImageView;

**public** **class** **PrimaryController** {

**@FXML**

**Label** label1;

**@FXML**

**ImageView** imageView1;

**@FXML**

**Button** button1;

**@FXML**

**Button** button2;

**@FXML**

**Label** label2;

**@FXML**

**public** **void** **button1Activate**() **throws** **IOException** {

label1.**setText**(**"Welcome"**);

}

**@FXML**

**public** **void** **button2Activate**() **throws** **IOException** {

label1.**setText**(**"Hello"**);

}

}

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**c)Finally, we will examine code in fxml file**

Let’s say I have a file called **primary.fxml** that is placed in the same folder as **Main.java** file, and here’s the codes inside it

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<?import javafx.scene.control.Button?>

<?import javafx.scene.control.Label?>

<?import javafx.scene.image.Image?>

<?import javafx.scene.image.ImageView?>

<?import javafx.scene.layout.BorderPane?>

<BorderPane maxHeight=*"-Infinity"* maxWidth=*"-Infinity"* minHeight=*"-Infinity"* minWidth=*"-Infinity"* prefHeight=*"400.0"* prefWidth=*"400.0"* xmlns=*"http://javafx.com/javafx/23.0.1"* xmlns:fx=*"http://javafx.com/fxml/1"*

fx:controller=*"application.PrimaryController"*>

<left>

<Button fx:id=*"button1"* mnemonicParsing=*"false"* onAction=*"#button1Activate"* text=*"Button1"* BorderPane.alignment=*"CENTER"* />

</left>

<center>

<ImageView fx:id=*"imageView1"* fitHeight=*"150.0"* fitWidth=*"200.0"* pickOnBounds=*"true"* preserveRatio=*"true"* BorderPane.alignment=*"CENTER"*>

<image>

<Image url=*"@../../wallpaper2.jpg"* />

</image>

</ImageView>

</center>

<right>

<Button fx:id=*"button2"* mnemonicParsing=*"false"* onAction=*"#button2Activate"* text=*"Button2"* BorderPane.alignment=*"CENTER"* />

</right>

<top>

<Label fx:id=*"label1"* text=*"Label"* BorderPane.alignment=*"CENTER"* />

</top>

<bottom>

<Label fx:id=*"label2"* text=*"Label"* BorderPane.alignment=*"CENTER"* />

</bottom>

</BorderPane>

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Notice the line **fx:controller**, if your controller java file is placed in separate folder from **Main.java** file, then you should adjust the value for **fx:controller** so that it connects to it.

Ex:

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If your **TopNavigationBar.fxml** is placed within the same folder with your controller **TopNavigationBarController.java** file, you may specify the **fx:controller** property like

**fx:controller=”application.MainPageScene.TopNavigationBar.TopNavigationBarController”**

In addition, notice that because your **project’s module** does not explicitly allow the **javafx.fxml module** to access the **application.MainPageScene.TopNavigationBar package**. In **Java's module system**, access to packages must be explicitly granted when reflection is involved, as is the case with **JavaFX's FXMLLoader.**

**=>**You need to update **module-info.java file** within your main project directory

Ex:

**module** RQT\_Real\_Estate {

**requires** javafx.controls;

**requires** javafx.fxml;

**opens** application **to** javafx.graphics, javafx.fxml;

**opens** application.MainPageScene.TopNavigationBar **to** javafx.graphics, javafx.fxml;

}

The final line opens the package containing your controller (application.MainPageScene.TopNavigationBar) to the javafx.graphics, and javafx.fxml module

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In order to understand more about the module-info.java file, please go to document **How\_Eclipse\_interacts\_with\_JavaFX\_and\_SceneBuilder.docx**

\*Next

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**\*Now back to the content of our fxml file**

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<left>

<Button fx:id="button1" mnemonicParsing="false" onAction="#button1Activate" text="Button1" BorderPane.alignment="CENTER" />

</left>

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<center>

<ImageView fx:id="imageView1" fitHeight="150.0" fitWidth="200.0" pickOnBounds="true" preserveRatio="true" BorderPane.alignment="CENTER">

<image>

<Image url="@../../wallpaper2.jpg" />

</image>

</ImageView>

</center>

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<right>

<Button fx:id="button2" mnemonicParsing="false" onAction="#button2Activate" text="Button2" BorderPane.alignment="CENTER" />

</right>

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These components are linked to the PrimaryController, where you can define methods and logic to handle user interactions.

**\*Summary:**

In this document, you learned how to separate the contents of your project into different modules based on the way we examined the codes from Main.java, controller java files, FXML files, and module-info.java file