

# COMP20050 - Software Engineering Project II

## JavaFX Scene Builder

**Ravi Reddy Manumachu**  
ravi.manumachu@ucd.ie



UCD School of Computer Science.

Scoil na Ríomheolaíochta  
UCD.

# Outline (Learning Objectives)

- Become familiar with the features in **Scene Builder**.
- Build a JavaFX application using **Scene Builder**.



# User Guide and Tutorial

- User guide:
  - <https://docs.oracle.com/javase/8/scene-builder-2/user-guide/index.html>
- Tutorial:
  - <https://docs.oracle.com/javase/8/scene-builder-2/get-started-tutorial/index.html>



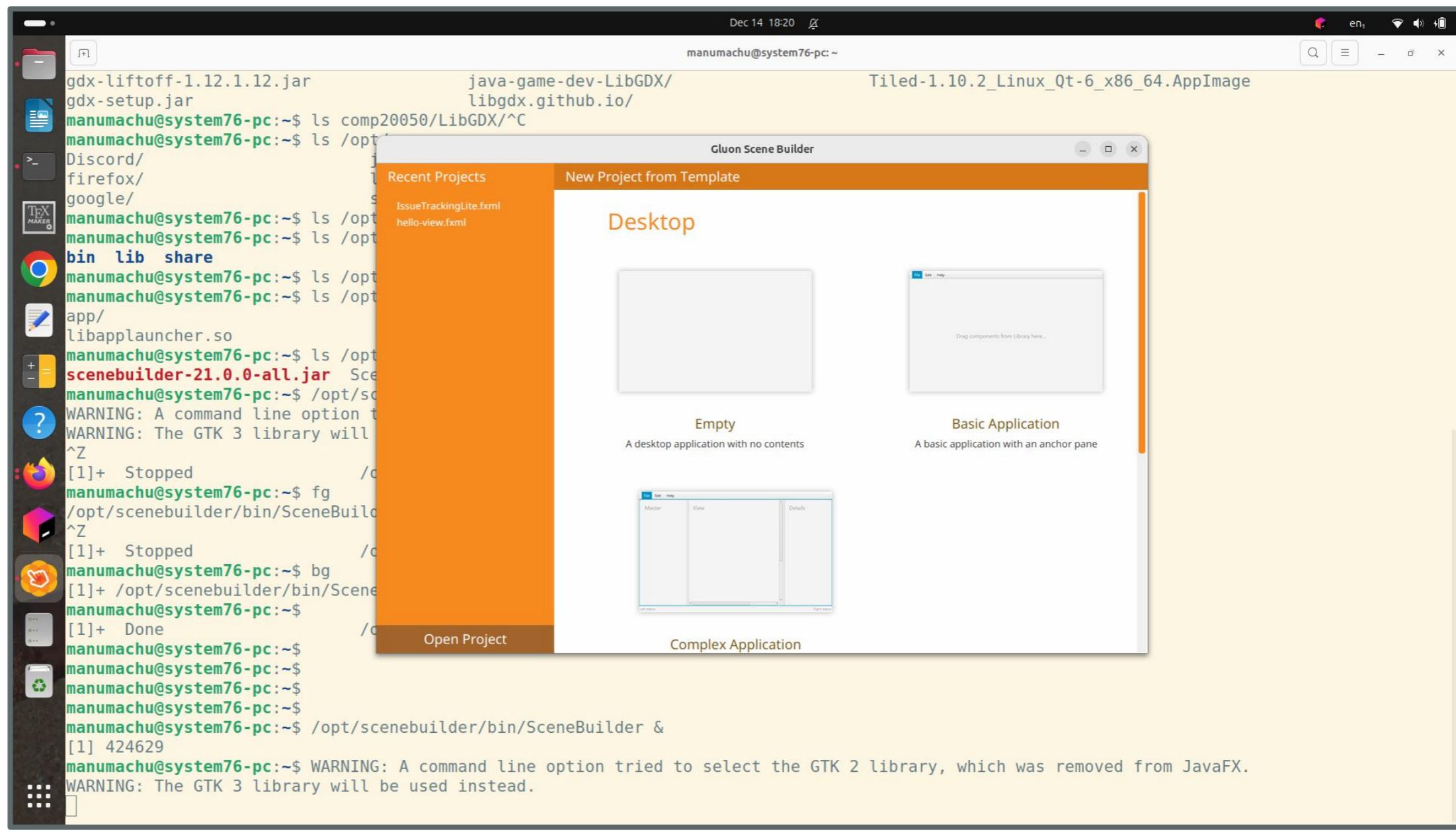
# JavaFX IssueTracking Application Using Scene Builder



# JavaFX Scene Builder Launch

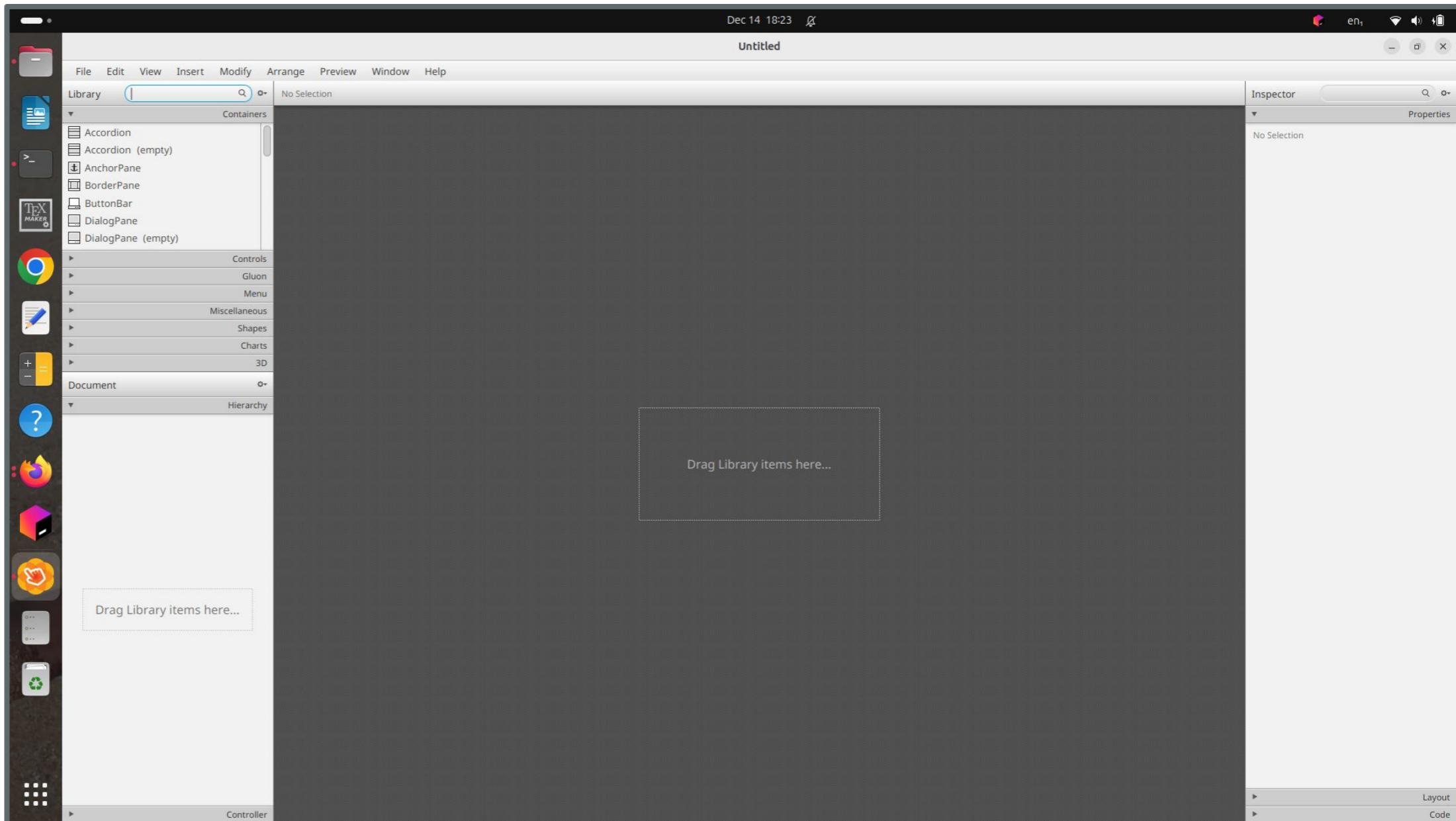
- On my Ubuntu system I use the following command to launch Scene Builder.

**shell\$ /opt/scenebuilder/bin/SceneBuilder &**



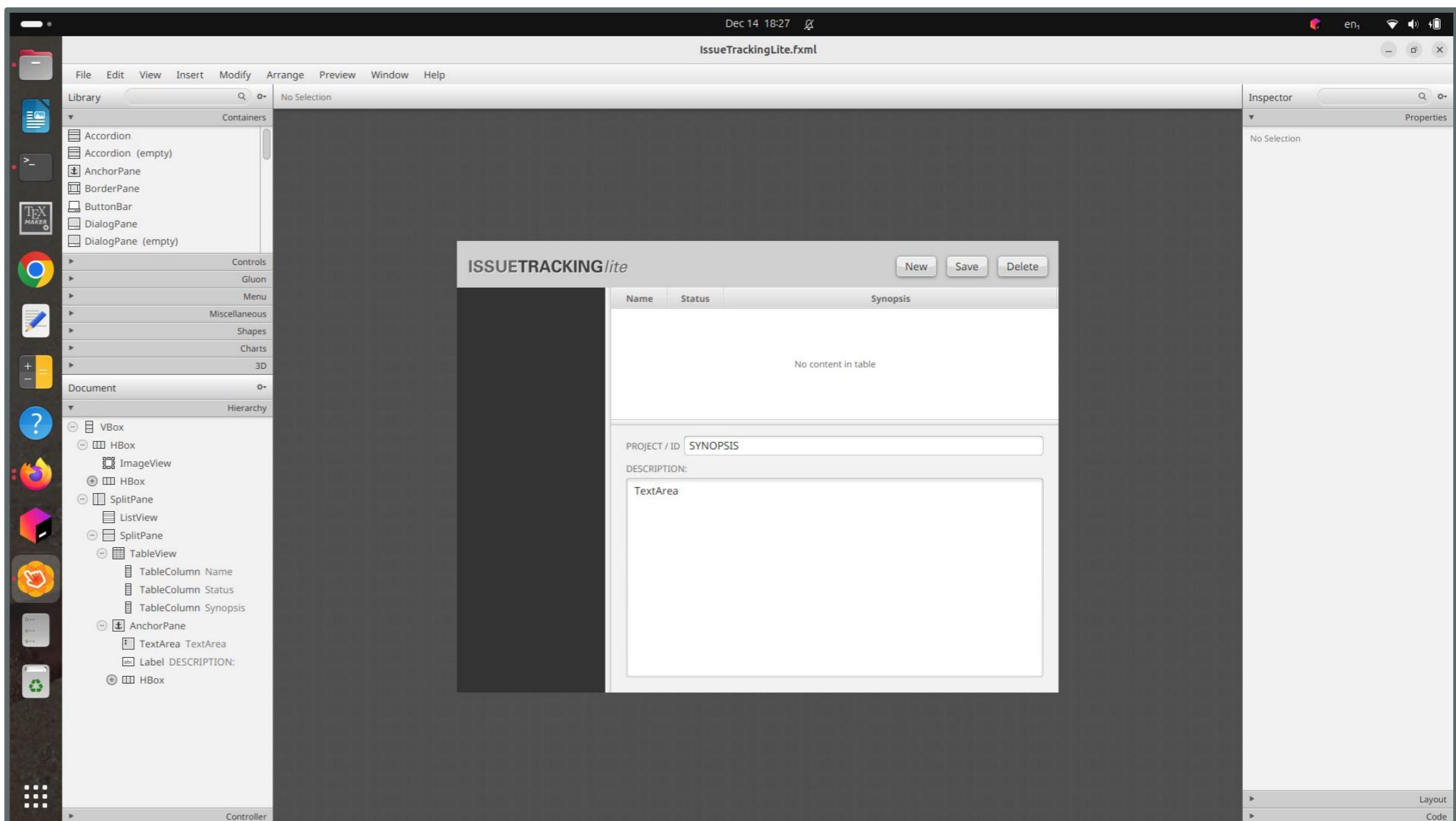
# JavaFX Scene Builder Startup Window

- Click **Empty**.



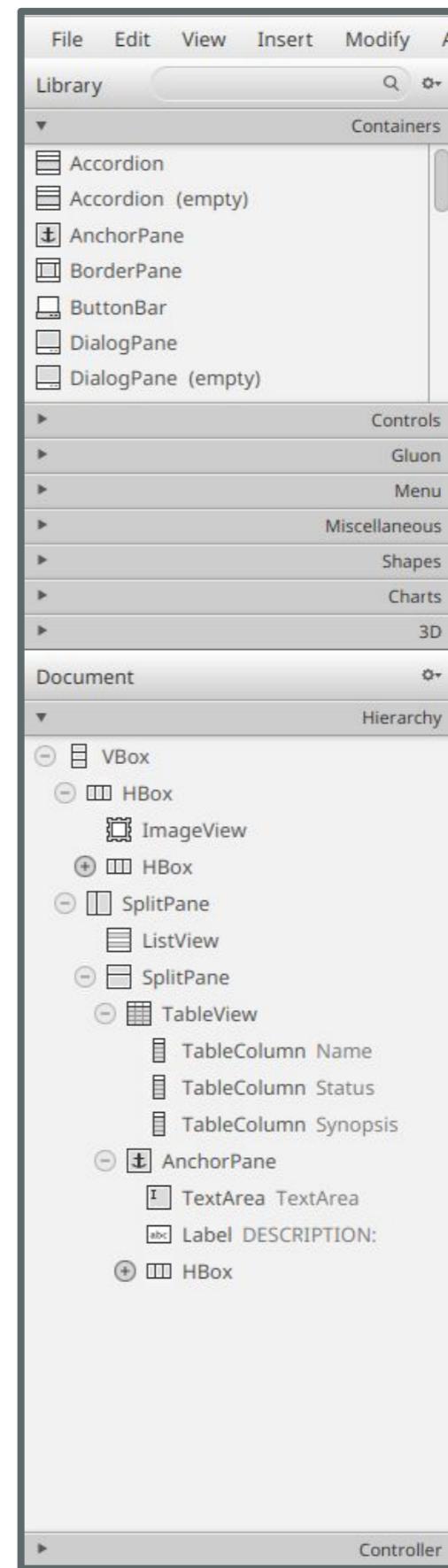
# JavaFX Scene Builder Startup Window

- Click **File -> Open**.
- Navigate to the **IssueTrackingLite** directory and select **IssueTrackingLite.fxml**.



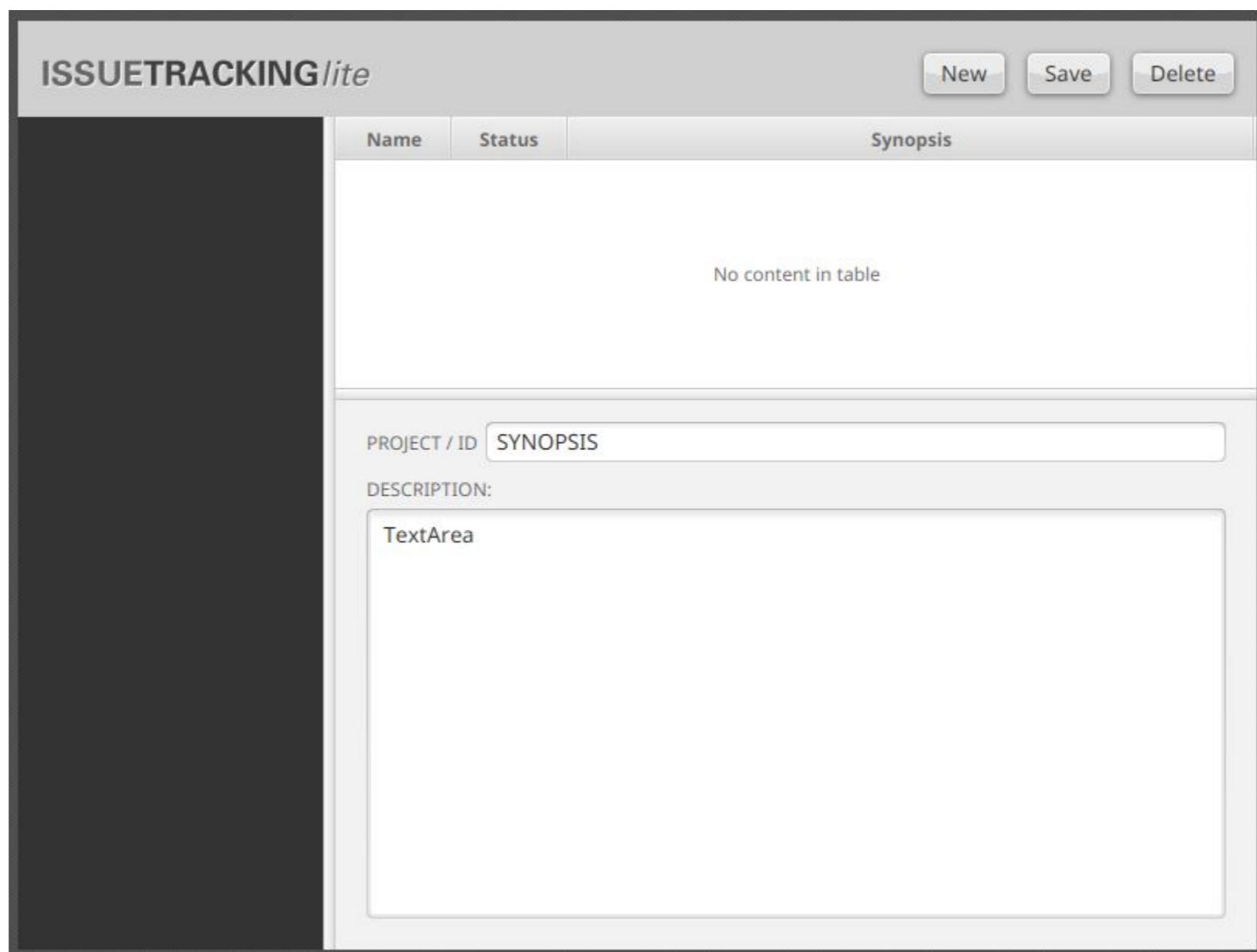
# Library and Document Panels

- The **Library Panel** lists the available JavaFX GUI elements or controls that you can use to build your FXML layout.
- The **Document Panel** contains the Hierarchy section, which displays a tree view representation of the FXML layout that you are building in the Content panel.



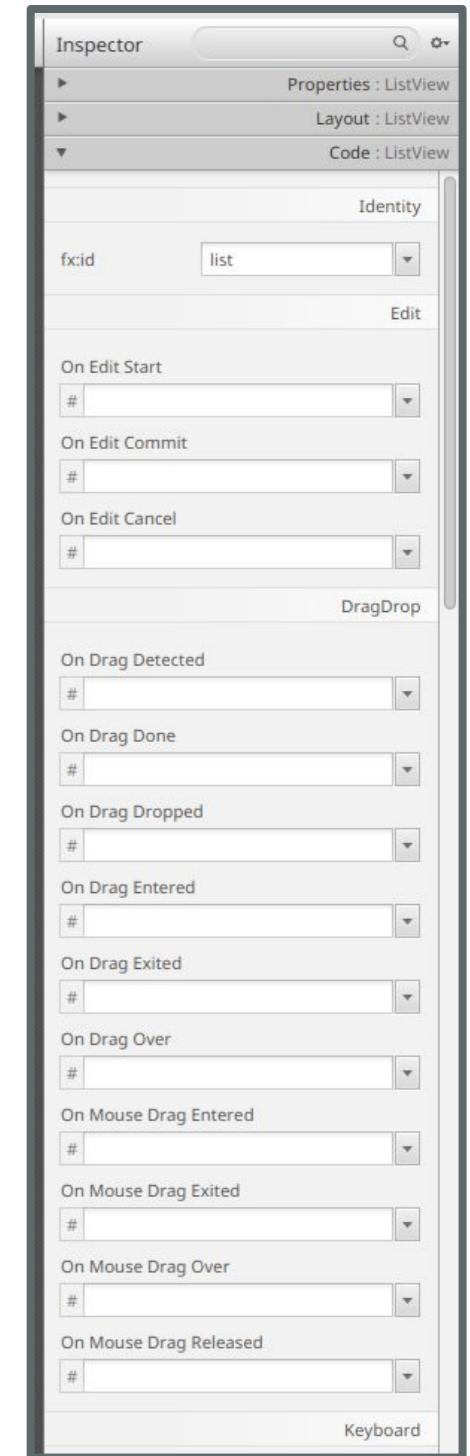
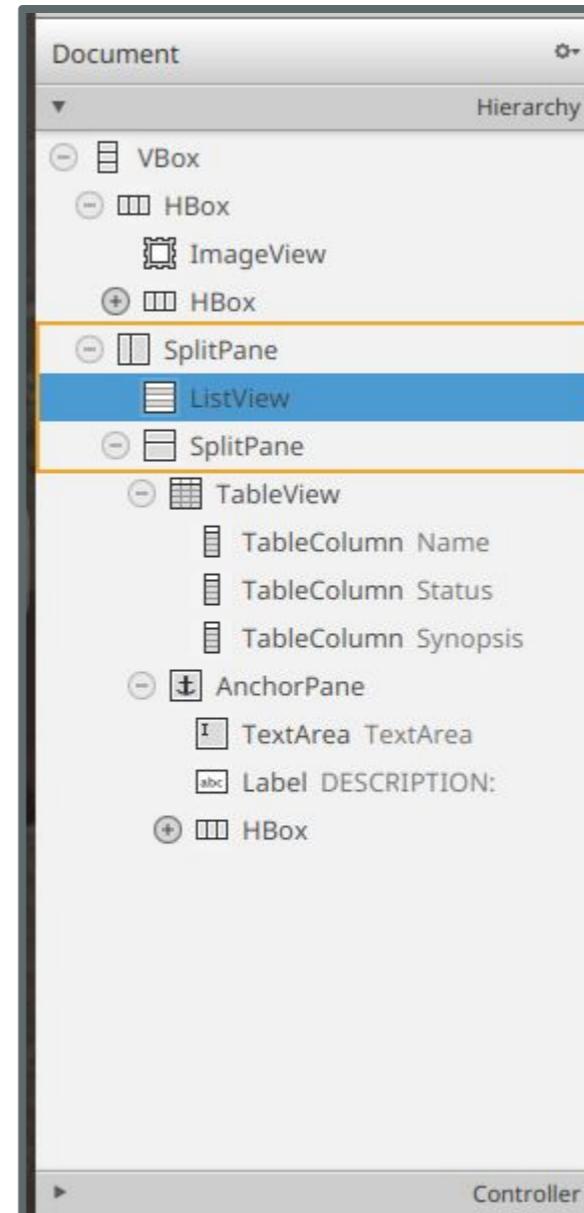
# Content Panel

- The **Content Panel** is the scene container for the GUI elements that make up your FXML layout.



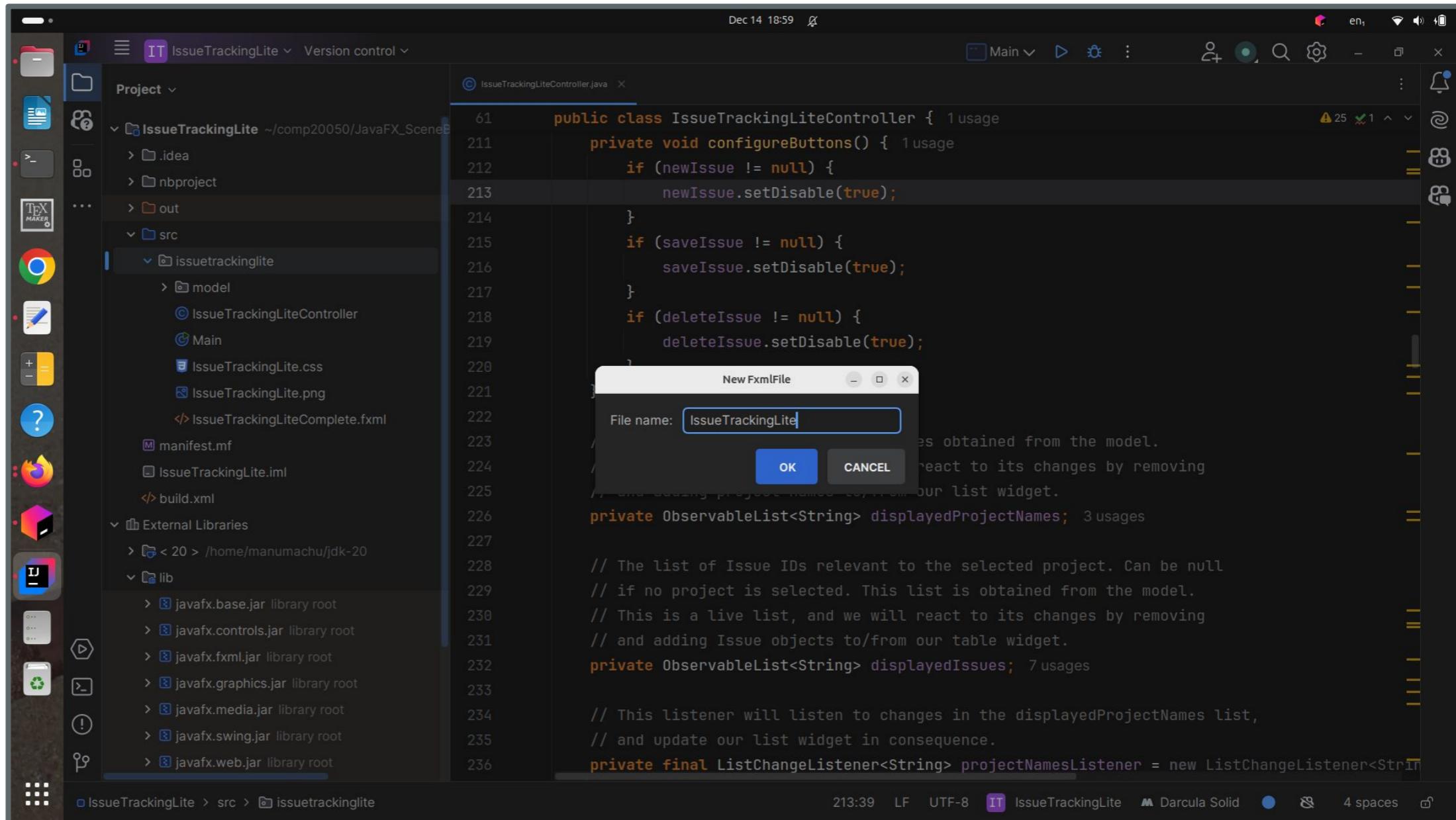
# Inspector Panel

- The **Inspector Panel** contains the Properties, Layout, and Code sections.
- The **Properties and Layout sections** manage the properties of the currently selected GUI element.
- The **Code section** allows to manage the event handling actions to use for the selected GUI element.



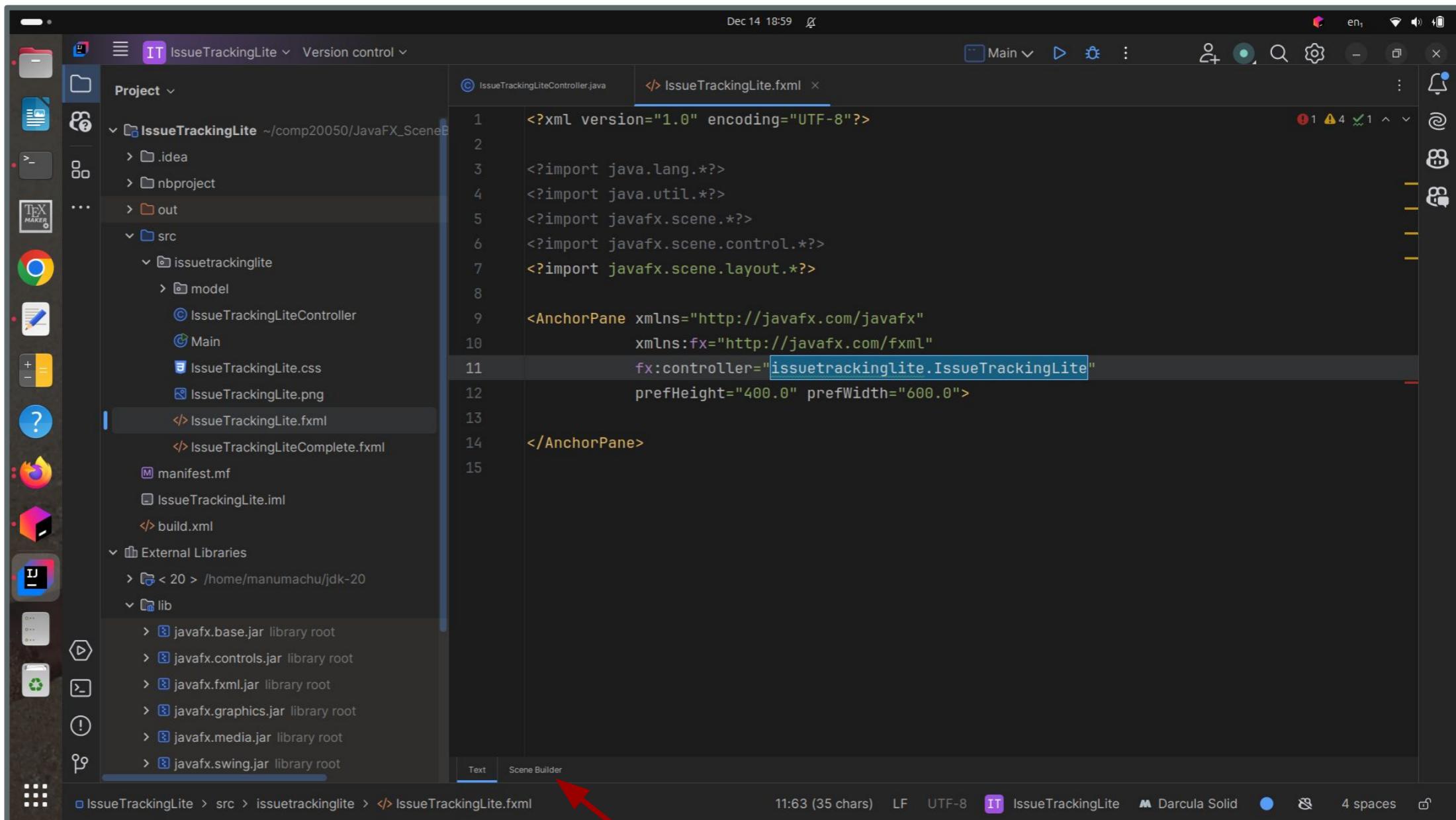
# New Fxml File

- Rename IssueTrackingLite.fxml to IssueTrackingLiteComplete.fxml.
- Right-click **issuetrackinglite** folder, select **New** and.



# Launch Scene Builder

- We want to add the GUI elements in Scene Builder.



The screenshot shows the IntelliJ IDEA interface with the following details:

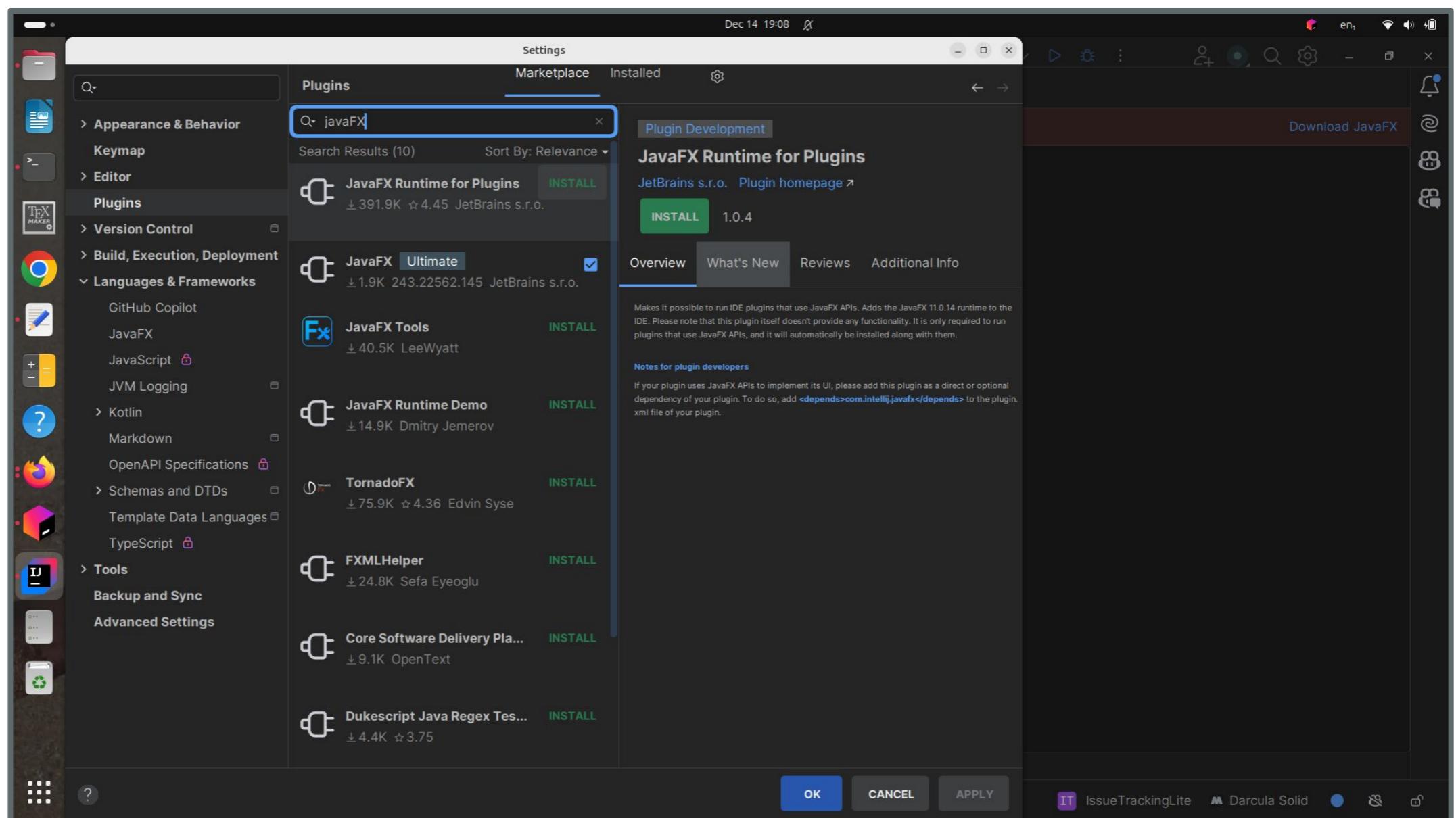
- Project View:** Shows the project structure under "IssueTrackingLite".
- Code Editor:** Displays the `IssueTrackingLite.fxml` file content, which defines an AnchorPane with imports and a controller assignment.
- Bottom Bar:** Contains tabs for "Text" and "Scene Builder". A red arrow points to the "Scene Builder" tab.
- Status Bar:** Shows file statistics (11:63 (35 chars)), encoding (UTF-8), and other build-related information.

Click the  
Scene  
Builder



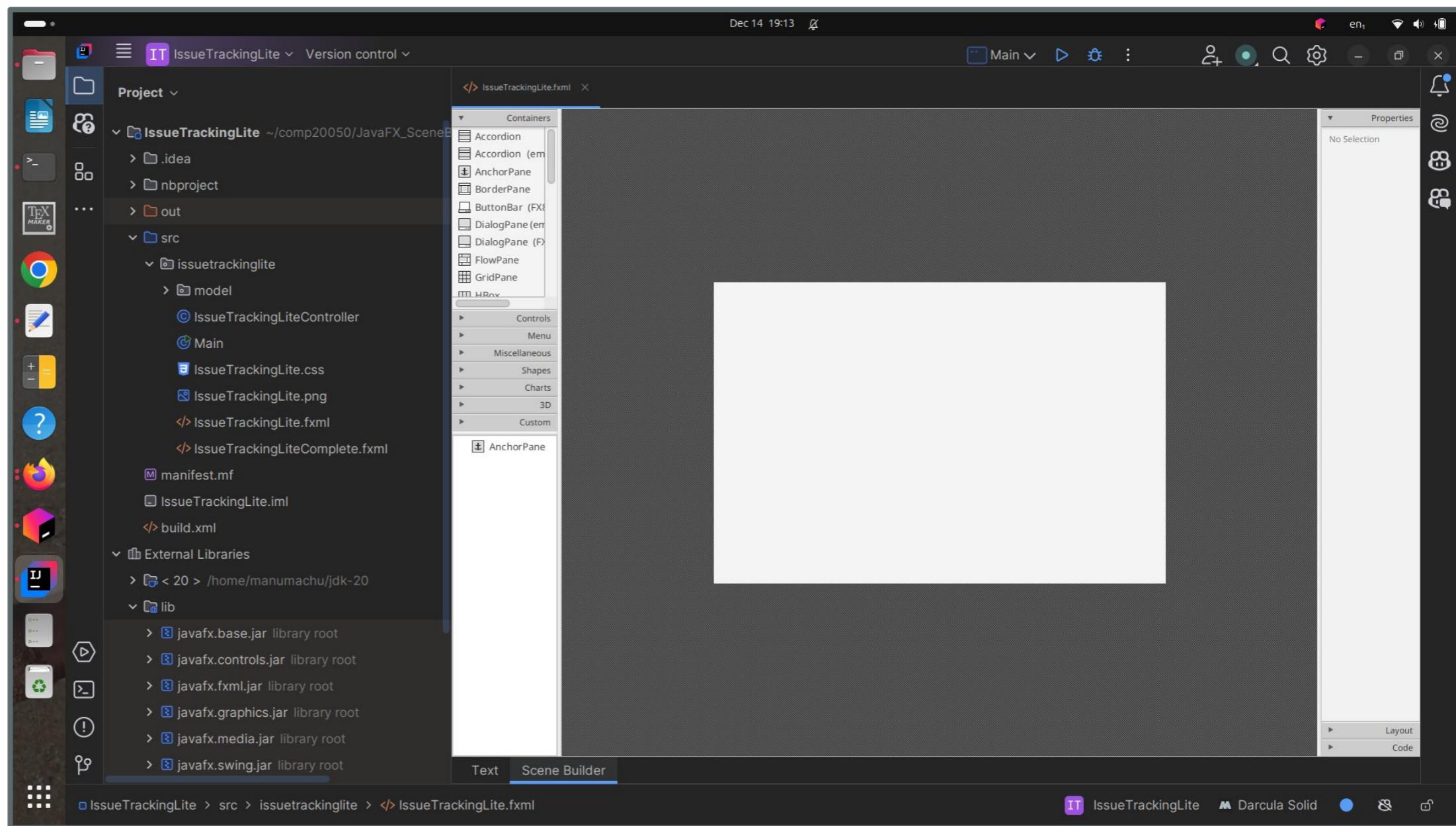
# Launch Scene Builder: Install JavaFX Plugin

- Failed to open the file in the Scene Builder.
- Click **File -> Settings -> Plugins**.
- Install **JavaFX Runtime for Plugins** and **Restart IDE**.



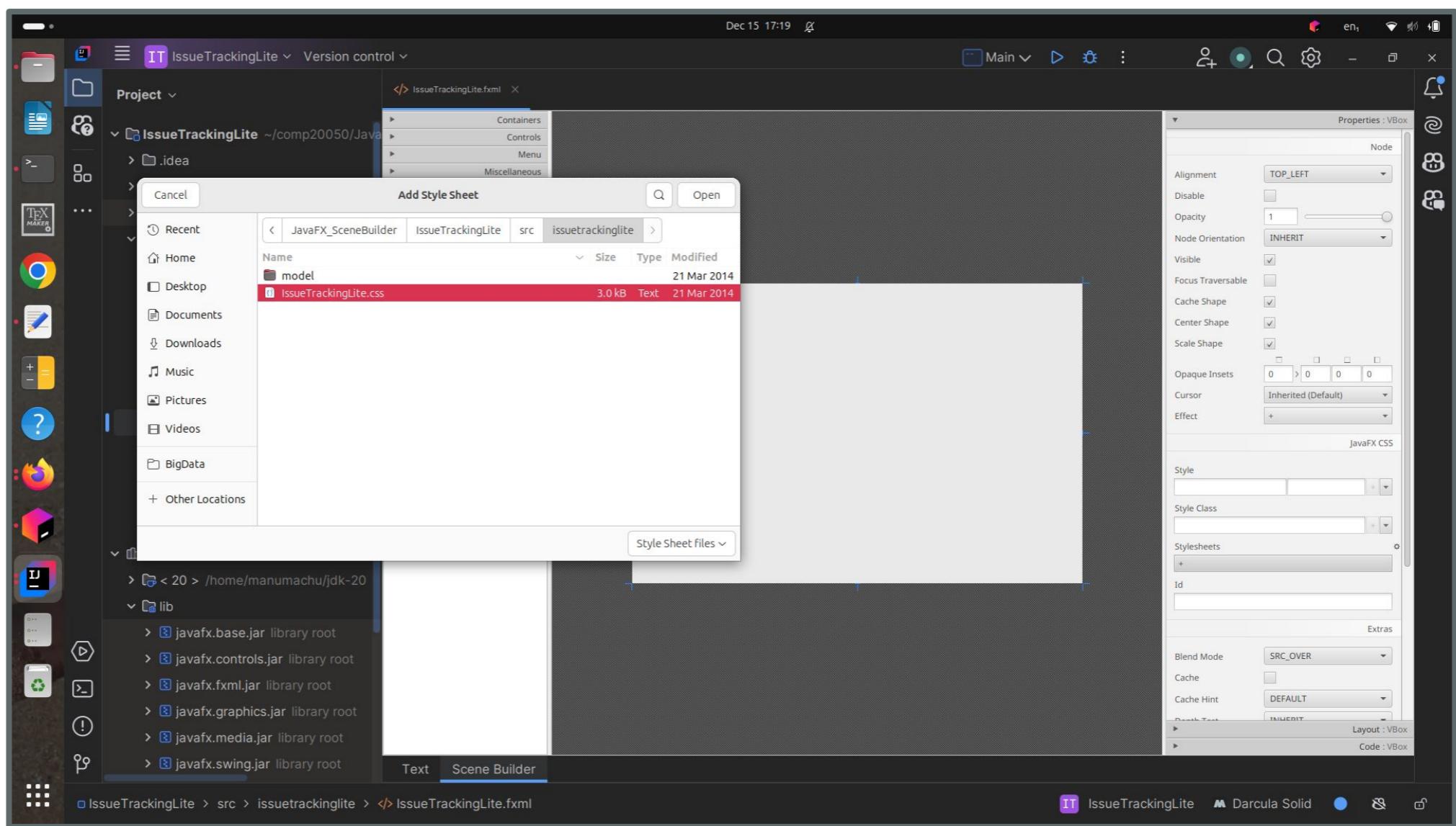
# Add VBox Root Container

- Delete the AnchorPane.
- Drag a **VBox container** from the Library panel to the **Content panel**.



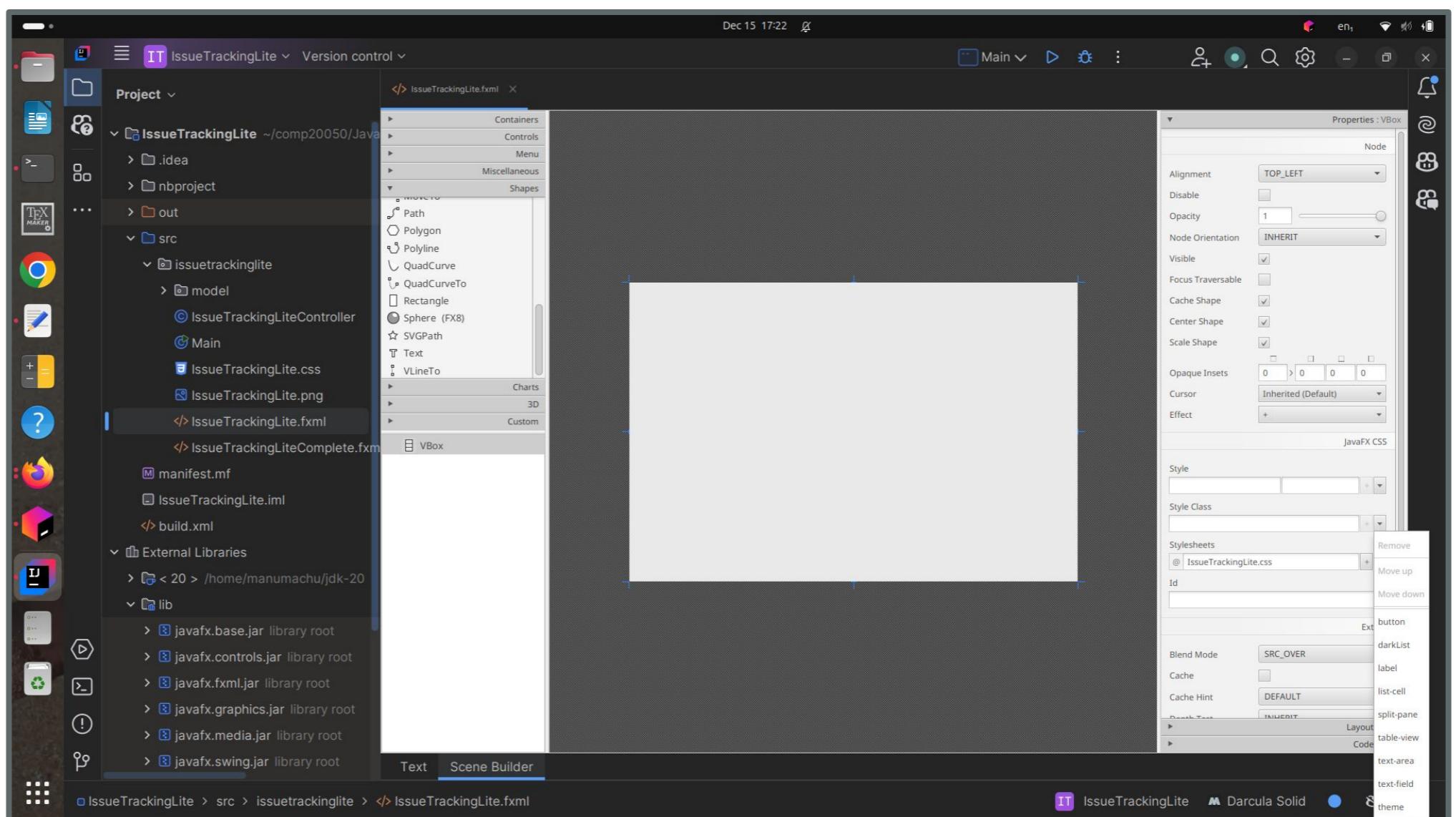
# Set CSS

- In the Properties section of the Inspector panel, go to the JavaFX CSS section, locate the Stylesheets text field.
- Click the button with the plus sign (+) symbol.
- In the Add Style Sheet dialog box, navigate to where you extracted the IssueTrackingLite sample file.
- Open the issuetrackinglite folder and select the IssueTrackingLite.css file. Click Open.



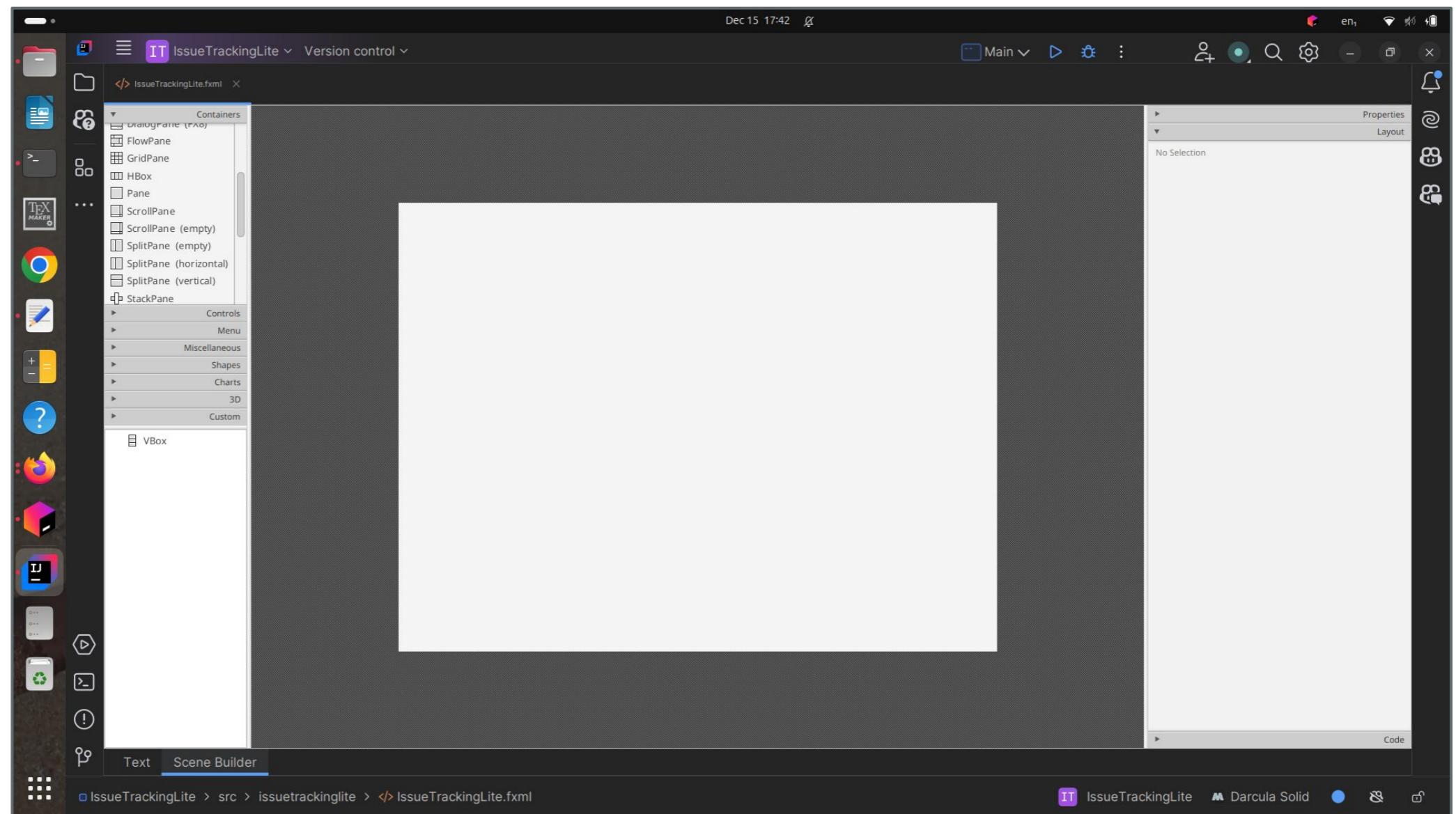
# Set Style Class

- Ensure that the root VBox container is still selected in the Hierarchy panel.
- In the Properties section of the Inspector panel, locate the Style Class text field and click the drop-down arrow.
- The list of style classes is retrieved from the IssueTrackingLite.css file.
- Select **theme**.



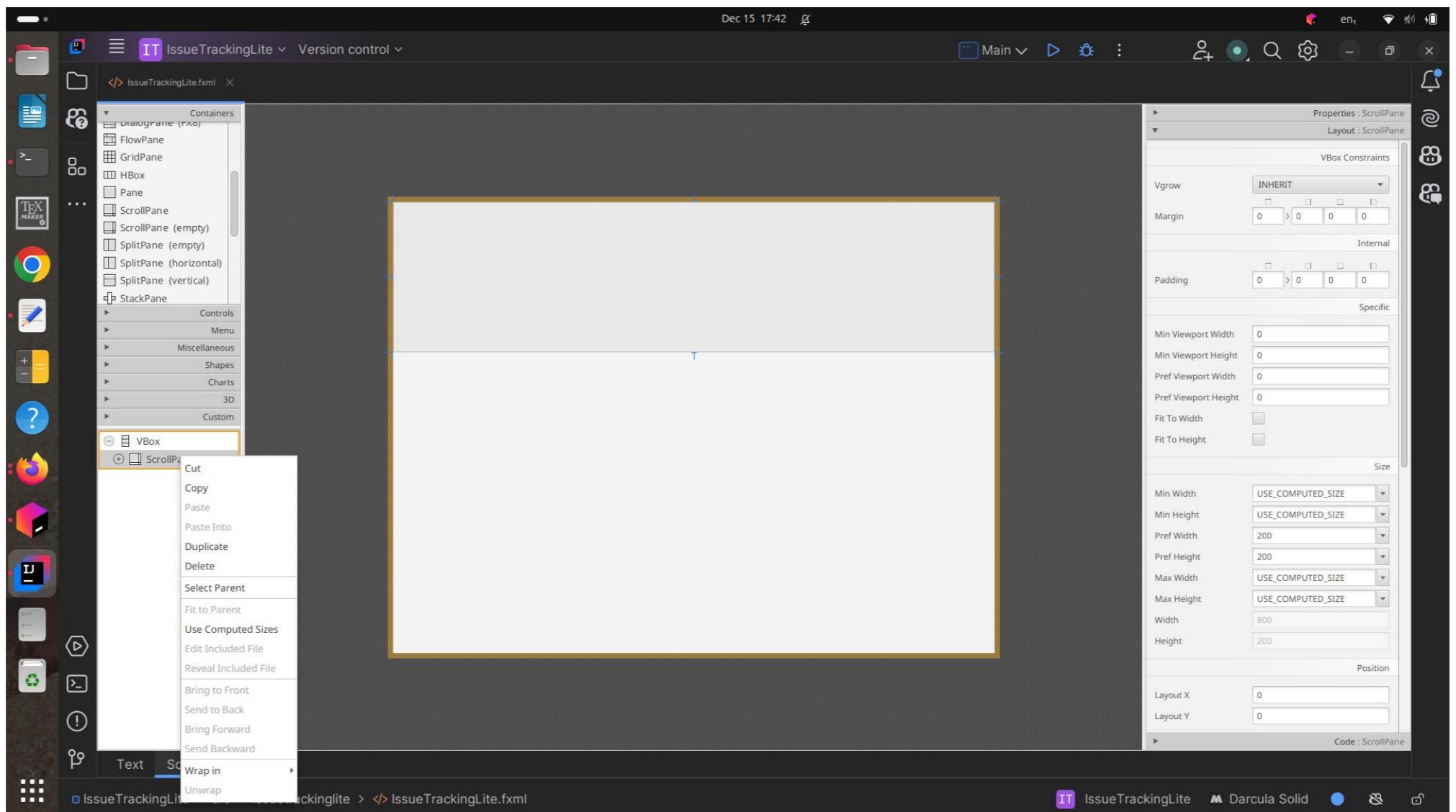
# Resize the Scene

- In the Inspector panel, select the Layout section. In the Size section, change the Pref Width and Height property values to 800 and 600.
- Change the Min Width, Min Height, Max Width, and Max Height property values to USE\_COMPUTED\_SIZE.
- To resize, double-click the IssueTrackingLite.fxml tab.



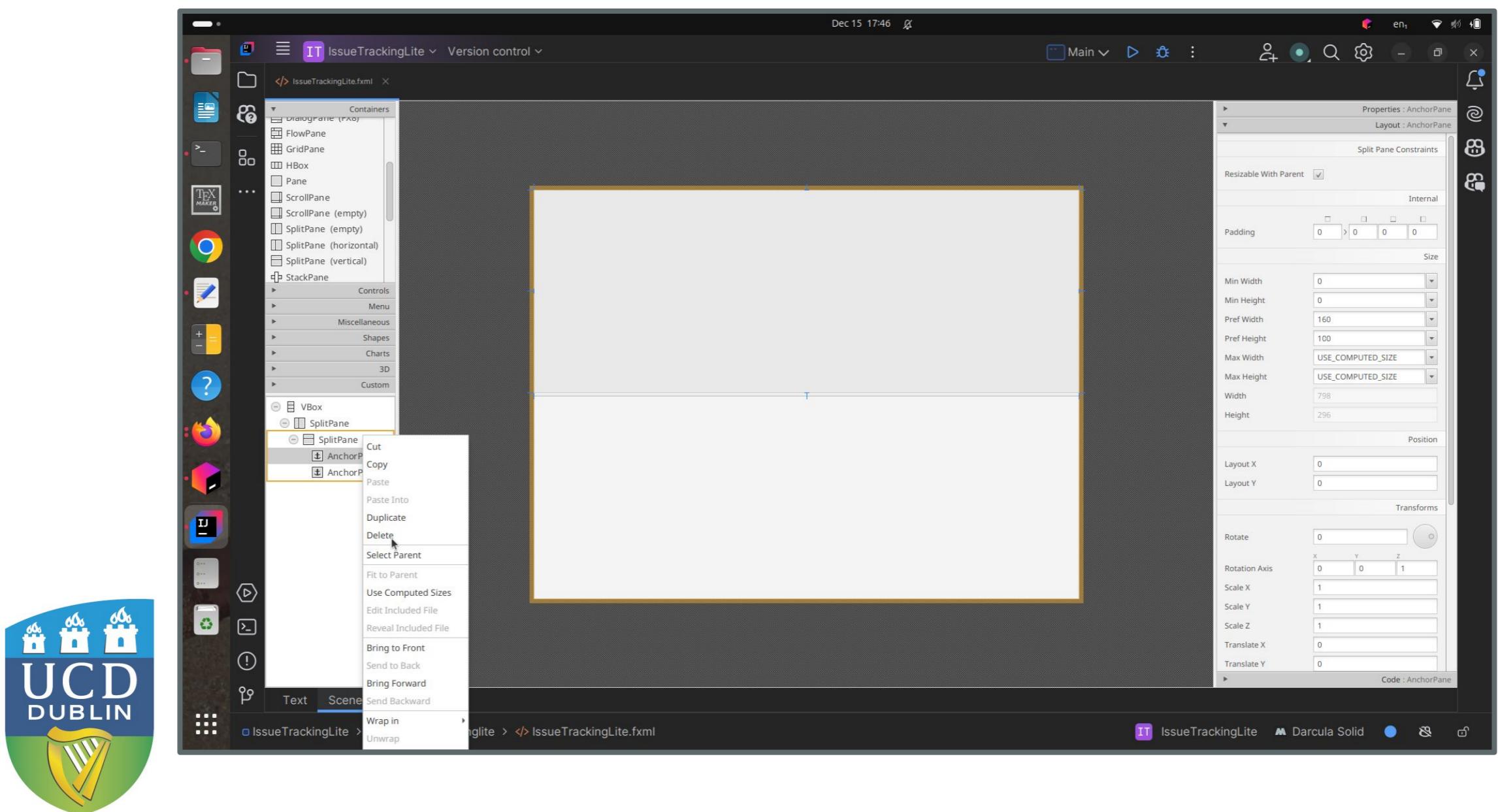
# Create Base Panes (1/2)

- From the Library panel, drag a SplitPane (empty) container and drop it inside the VBox element.
- Select the Split Pane, right-click using the mouse and select **Use Computed Sizes**.
- In the Inspector panel, select the Layout section. Set the **Vgrow** property value to **ALWAYS**.



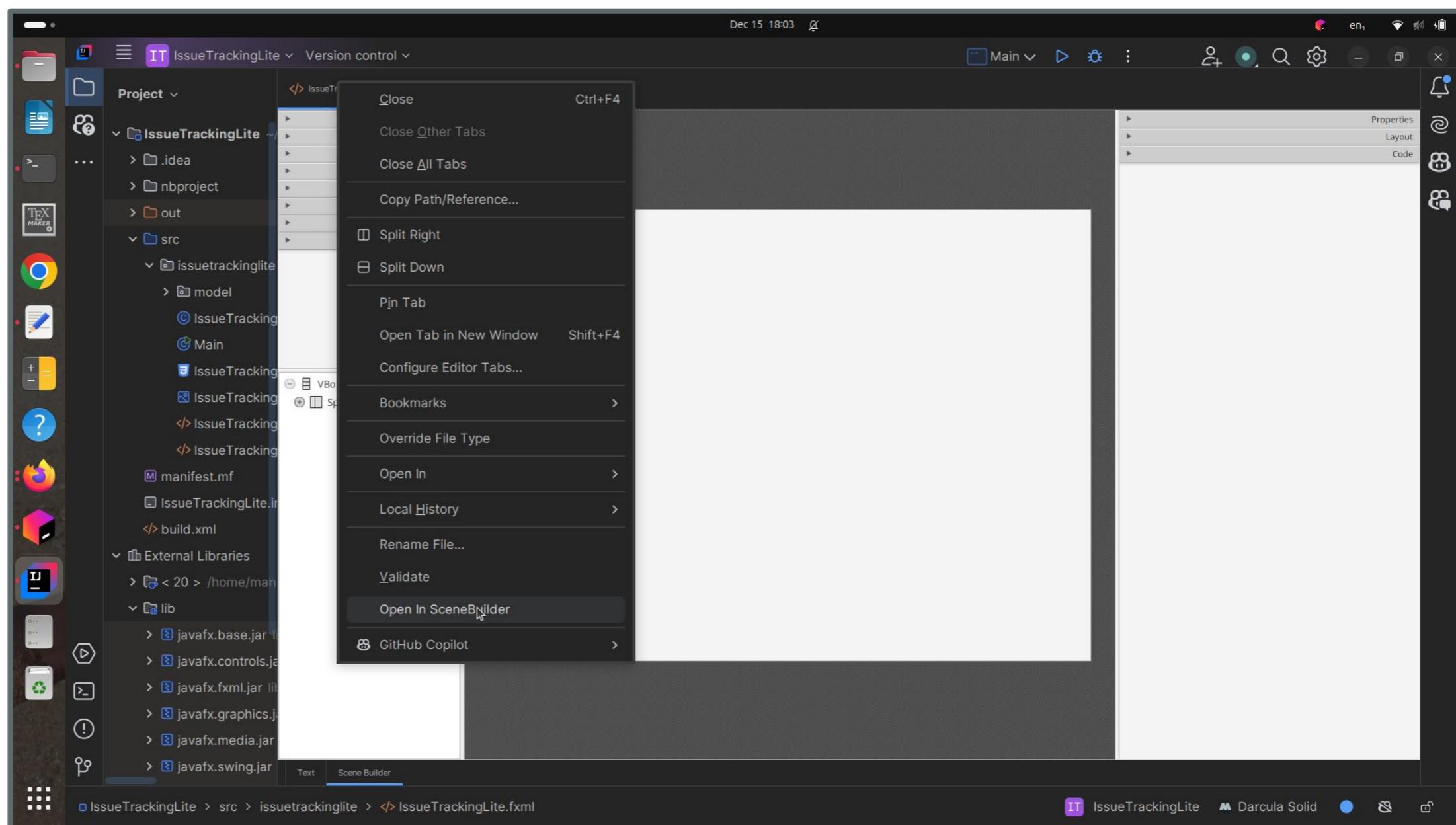
# Create Base Panes (2/2)

- From the Library panel's Containers section, drag a SplitPane (vertical) element and drop it into the previously added SplitPane.
- Select the Split Pane, right-click using the Mouse and Use Computed Sizes.
- Expand the second SplitPane container element, right-click the first AnchorPane node and select Delete from the contextual menu.
- Select the remaining AnchorPane, right-click using the Mouse and Use Computed Sizes.



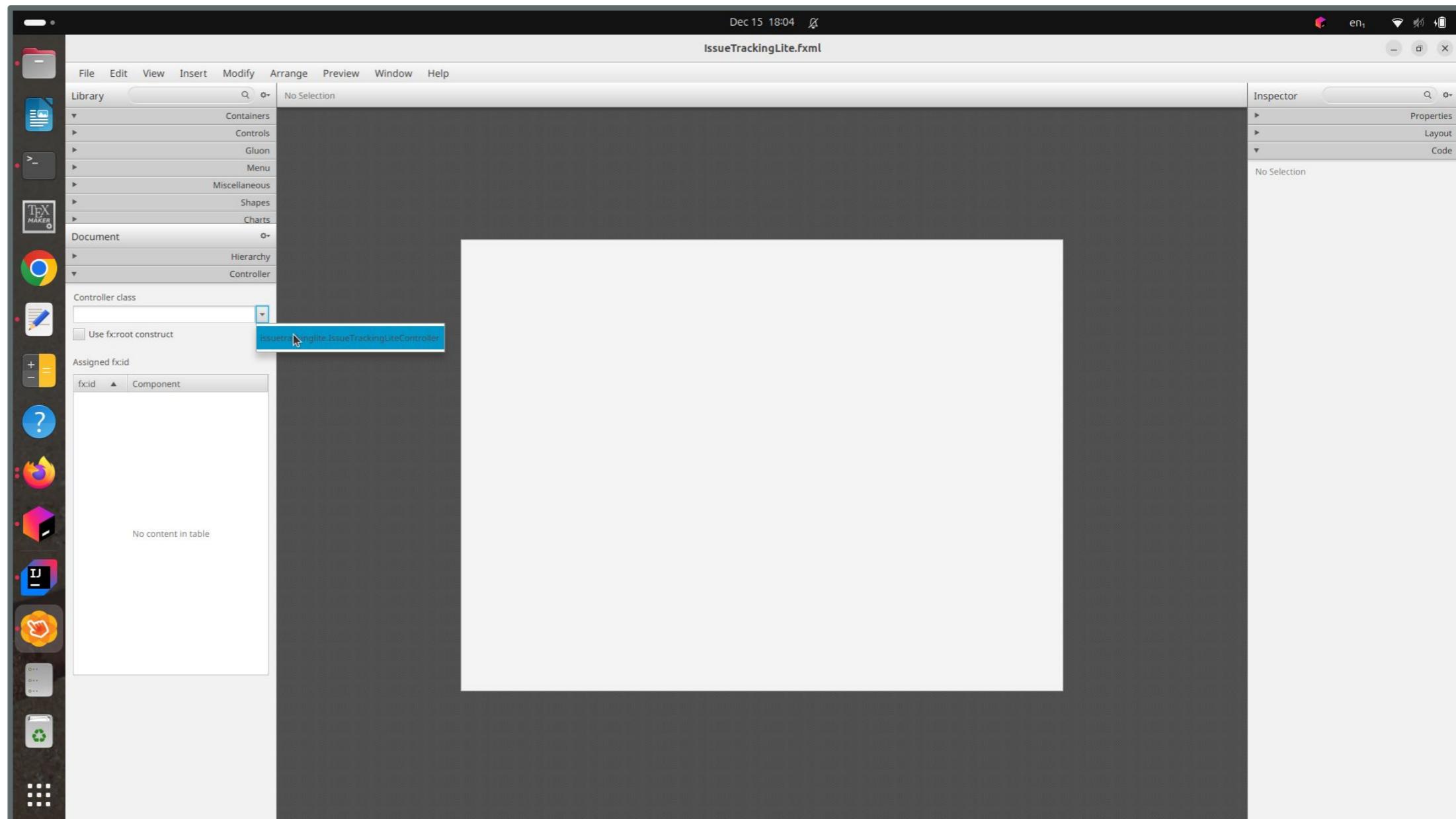
# Bind GUI to the Application Logic

- Right-click IssueTrackingLite.fxml and **Select Open in SceneBuilder**.



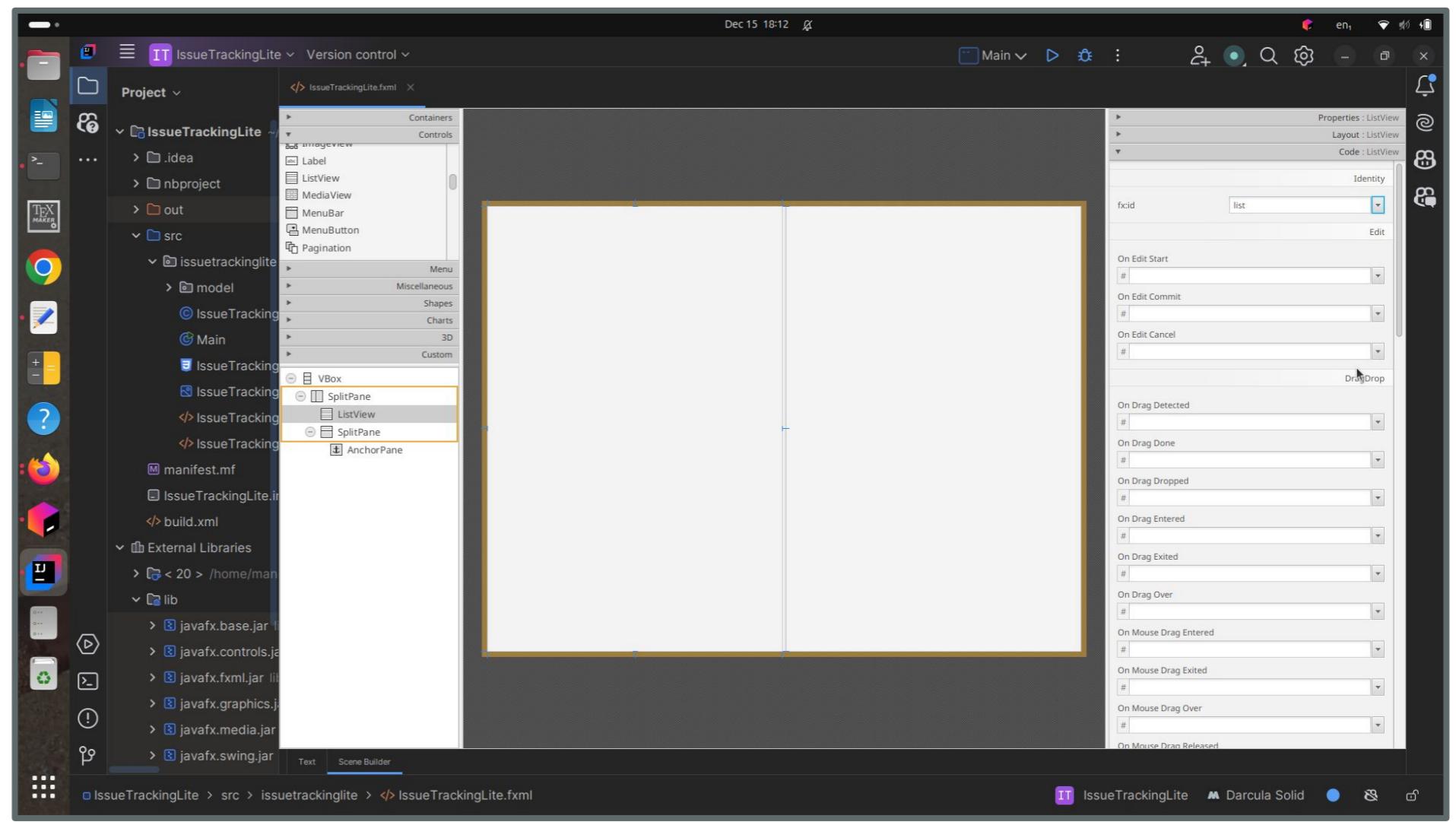
# Set the Controller

- In the Document panel, select the **Controller** section.
- Set the value in the Controller class text field to `issuetrackinglite.IssueTrackingLiteController`.
- Click **File -> Save**.



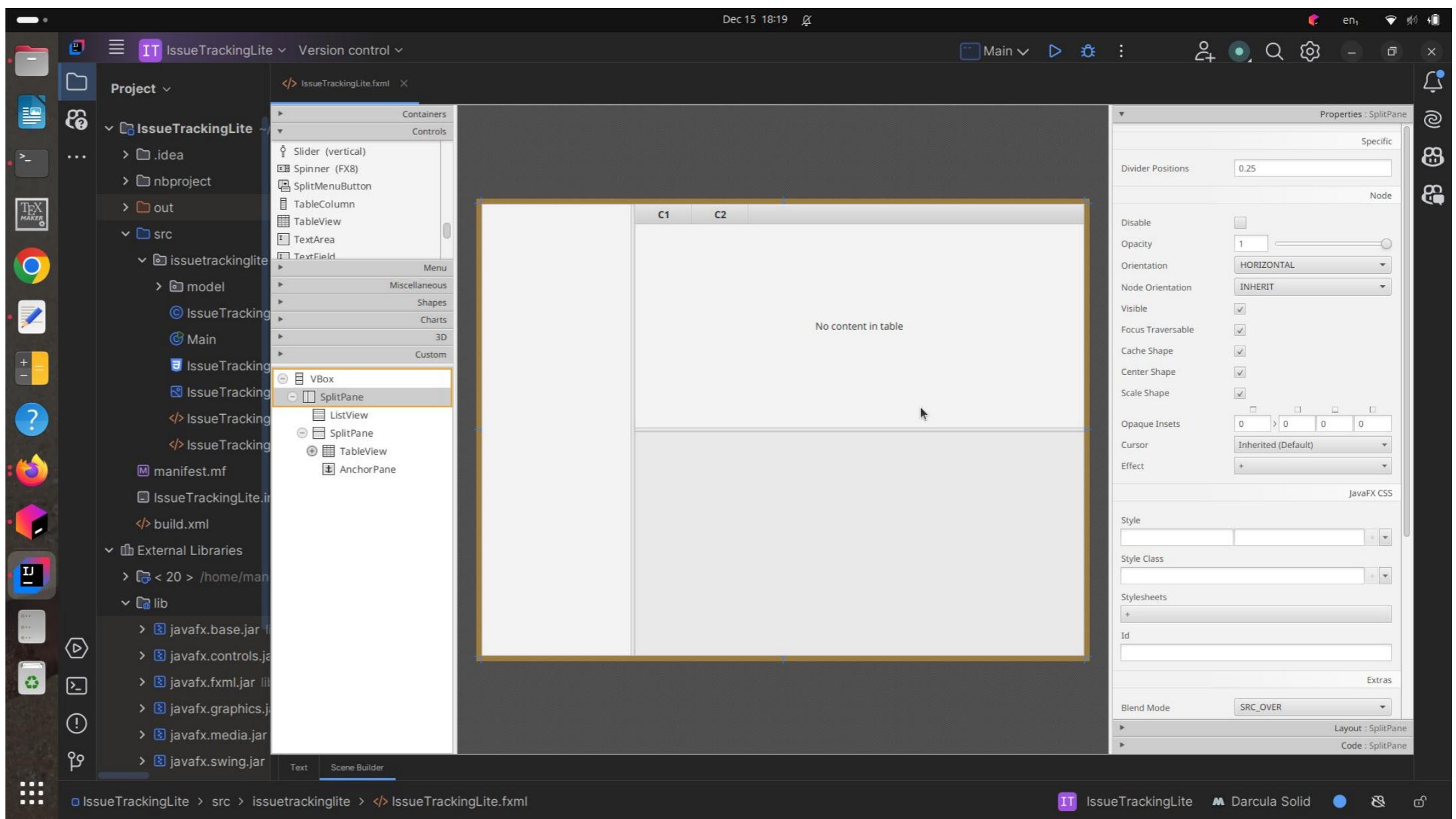
# Add the List View

- Drag a ListView control from the Library panel and drop into the first SplitPane node in the Hierarchy panel.
- For the ListView control, right-click using the Mouse and Use Computed Sizes.
- Click the Code section of the Inspector panel. In the fx:id field, select the choice button and select list from the drop-down list.
- Click the Layout section of the Inspector panel. Locate the Split Pane Constraints subsection and uncheck the Resizable With Parent check box.



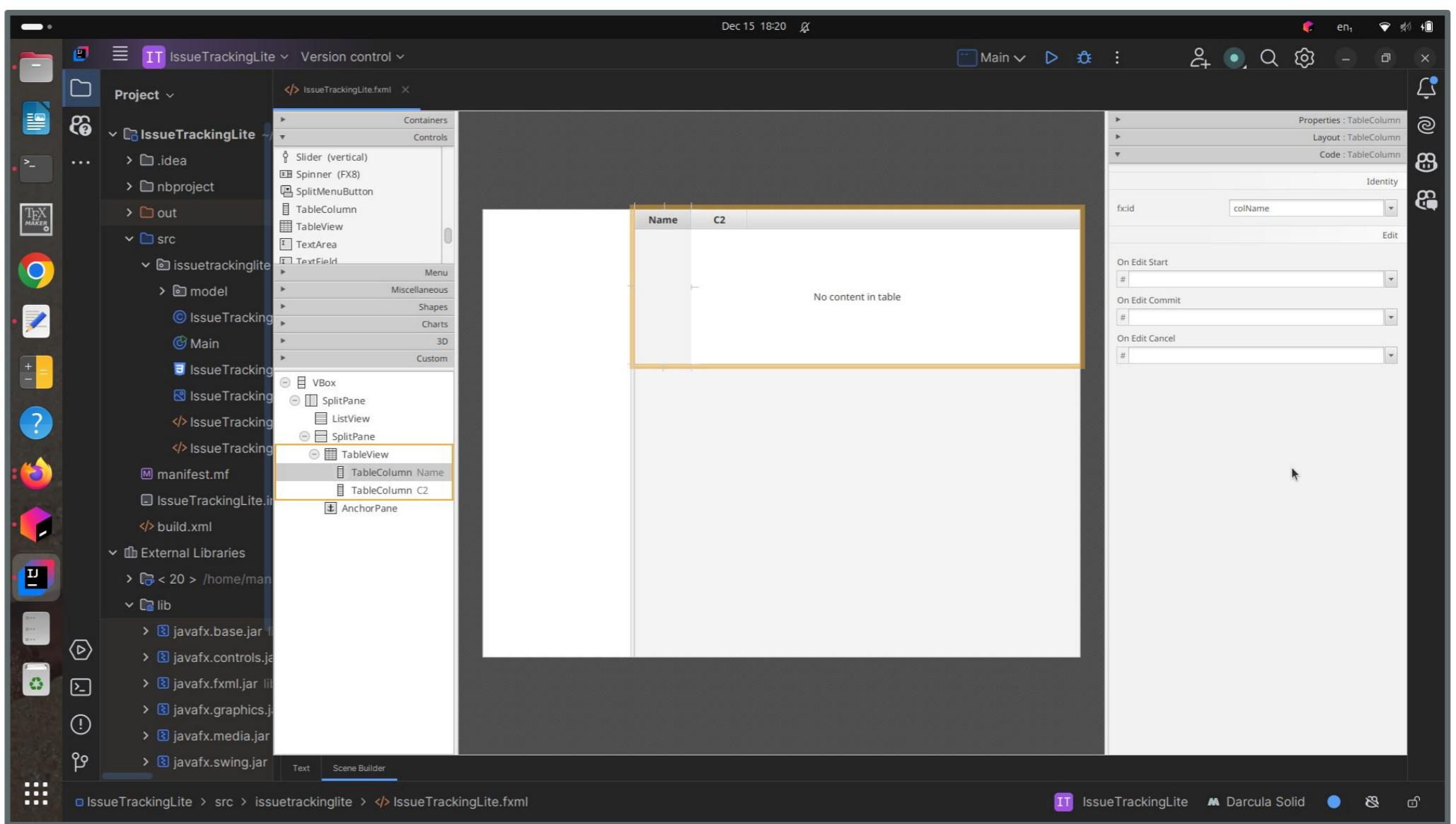
# Add the Table View

- The Table View control will be used to display the list of issues.
- Drag and drop it inside the second SplitPane element just above the AnchorPane.
- Right-click and select **Use Computed Sizes**.
- Click the Code section of the Inspector panel, select **table** in the fx:id text field.



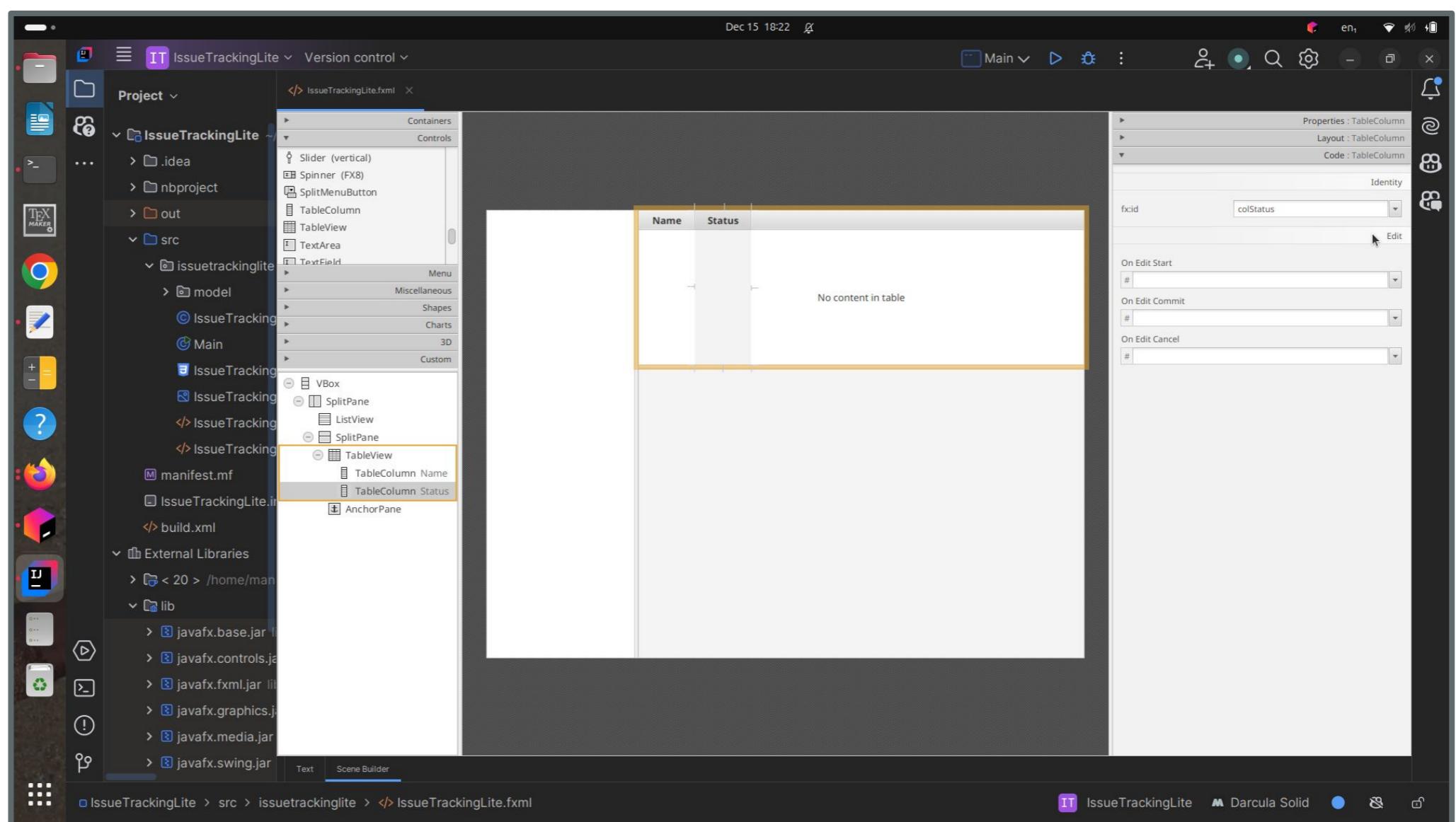
# Table View Properties

- Set the properties of the two columns in the table view.
- In the Content panel, double-click the C1 column title and type Name to replace the default value.
- In the Code section of the Inspector panel, select colName from the fx:id field's drop-down list.



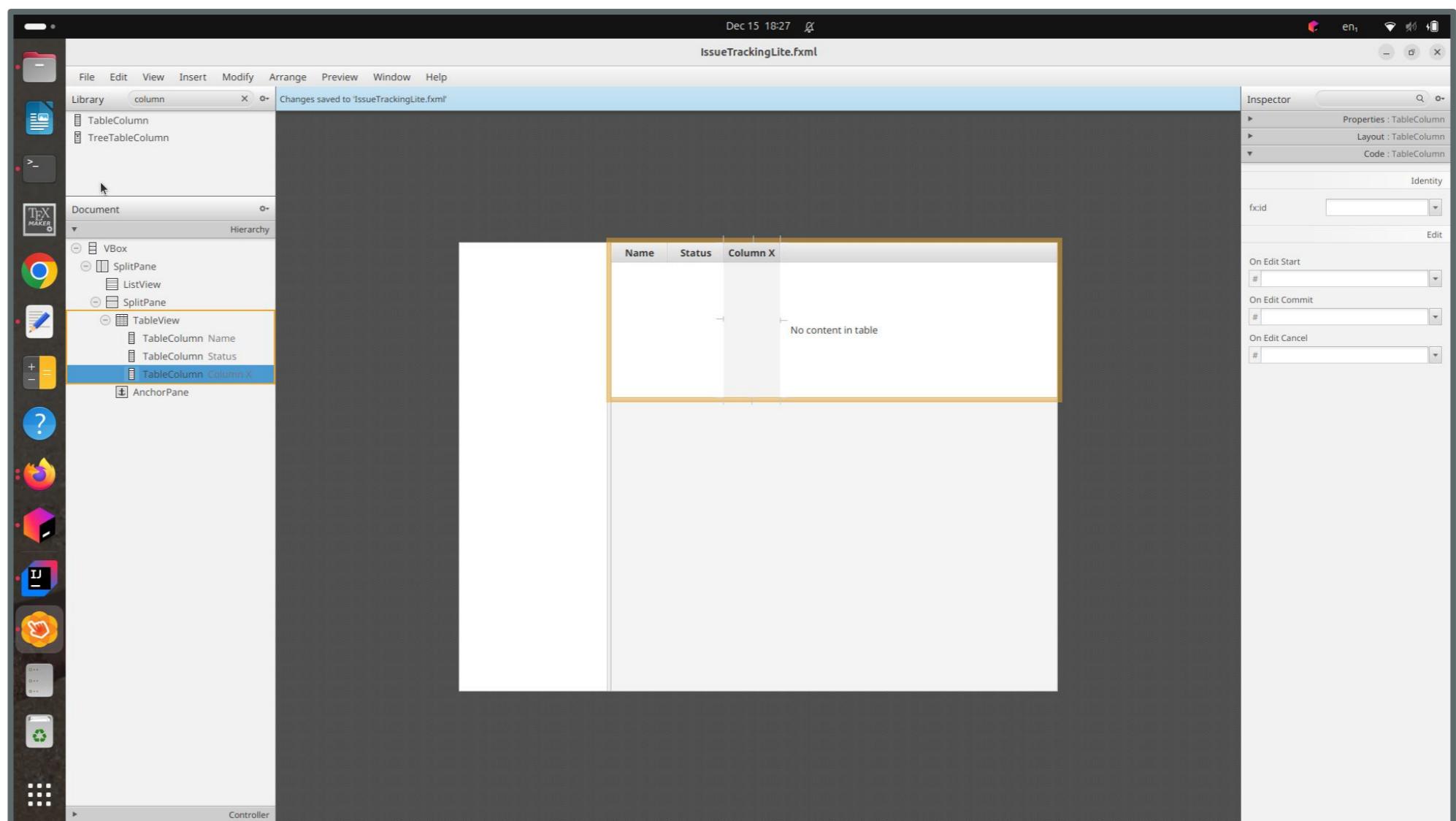
# Table View Properties

- Double-click the C2 text in the row for the second TableColumn component, type in Status and select colStatus from the fx:id field's drop-down list.



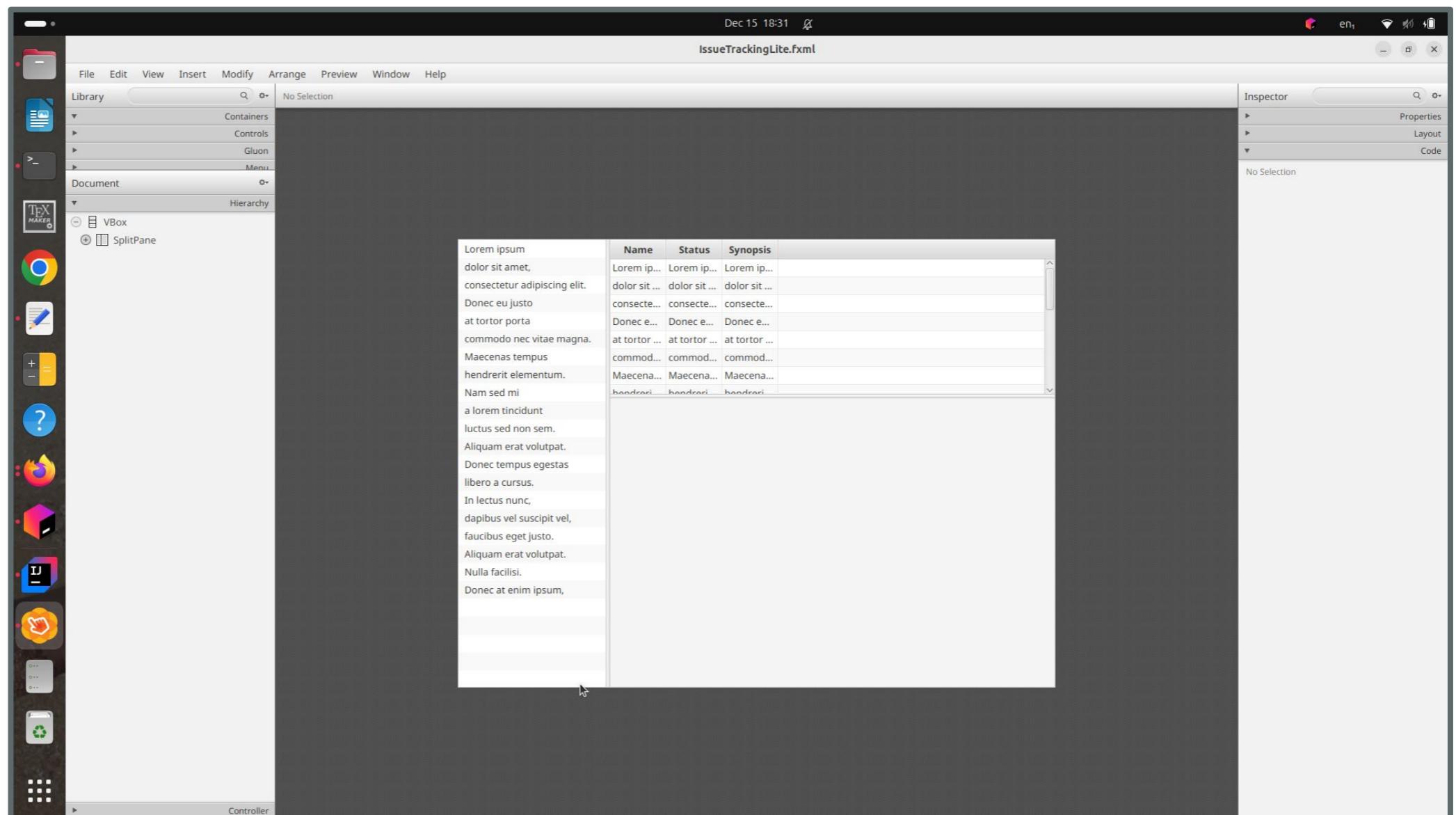
# Adding a Column to Table View

- Launch Scene Builder. Select the TableColumn control, drag and drop it inside the table view in the Content panel.
- In the Content panel, double-click the new column title and type **Synopsis** to replace the default value.
- In the Code section of the Inspector panel, select **colSynopsis** from the fx:id field's drop-down list.



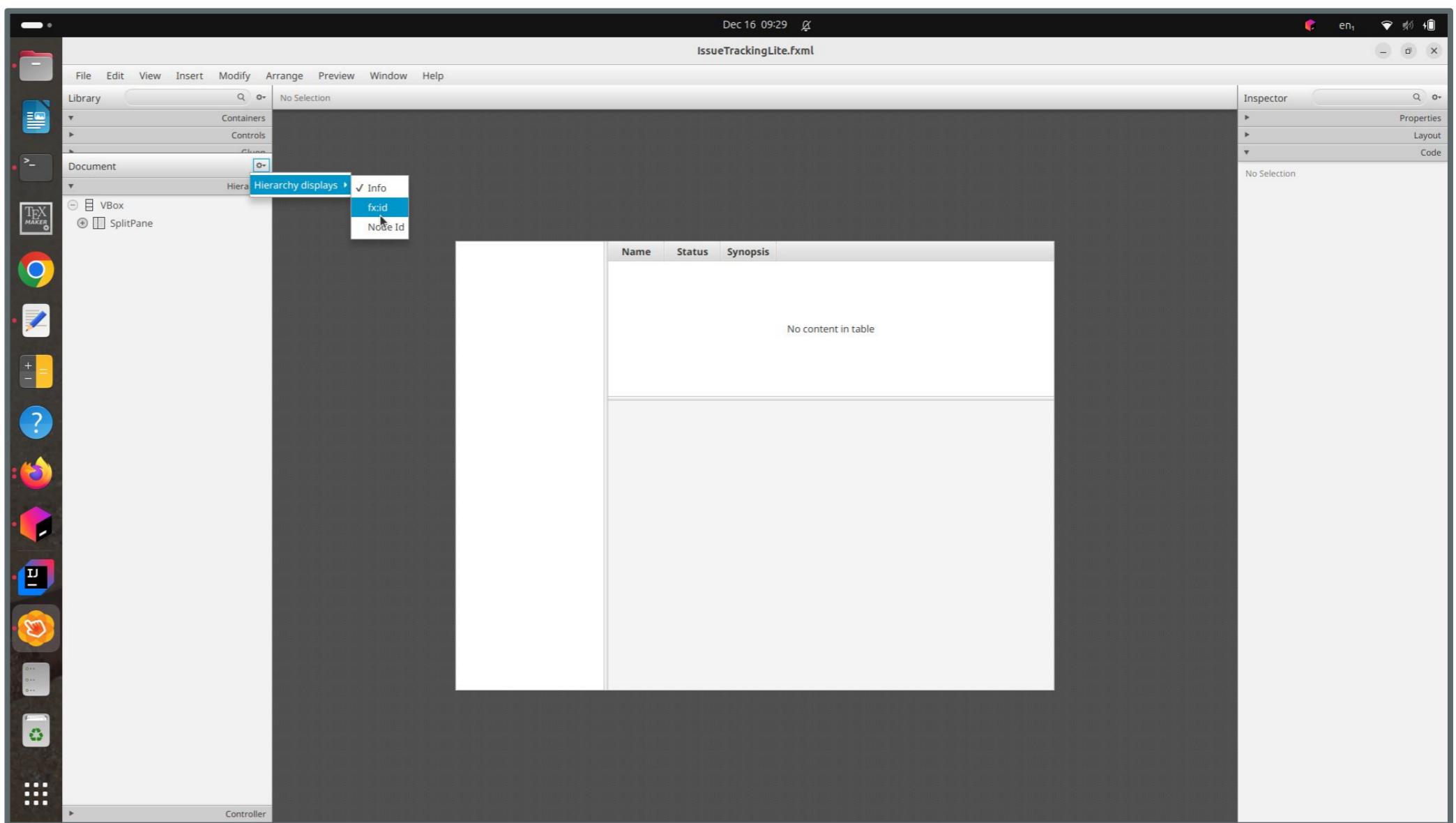
# Populate With Sample Data

- Launch Scene Builder. From the Menu bar, select View and then Show Sample Data.
- Notice that the list view and the table view elements in the Content panel are populated with sample data.
- Select View and then Hide Sample Data from the Menu bar to turn off the display of the sample data.



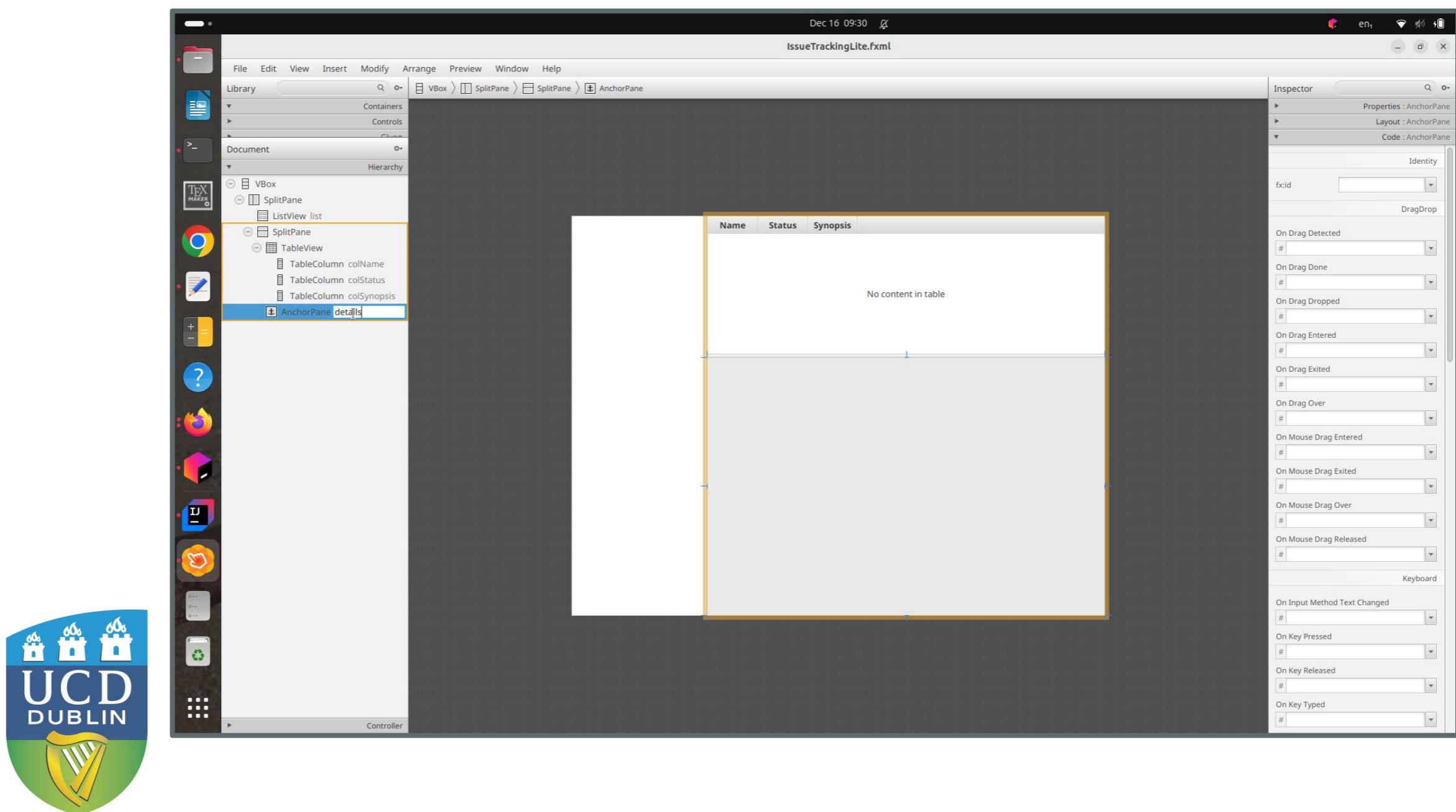
# GUI Components for the Details

- Click the menu button on the top right corner of the Hierarchy panel and select Show fx:id.
- The Hierarchy panel now displays the fx:id values next to the elements.



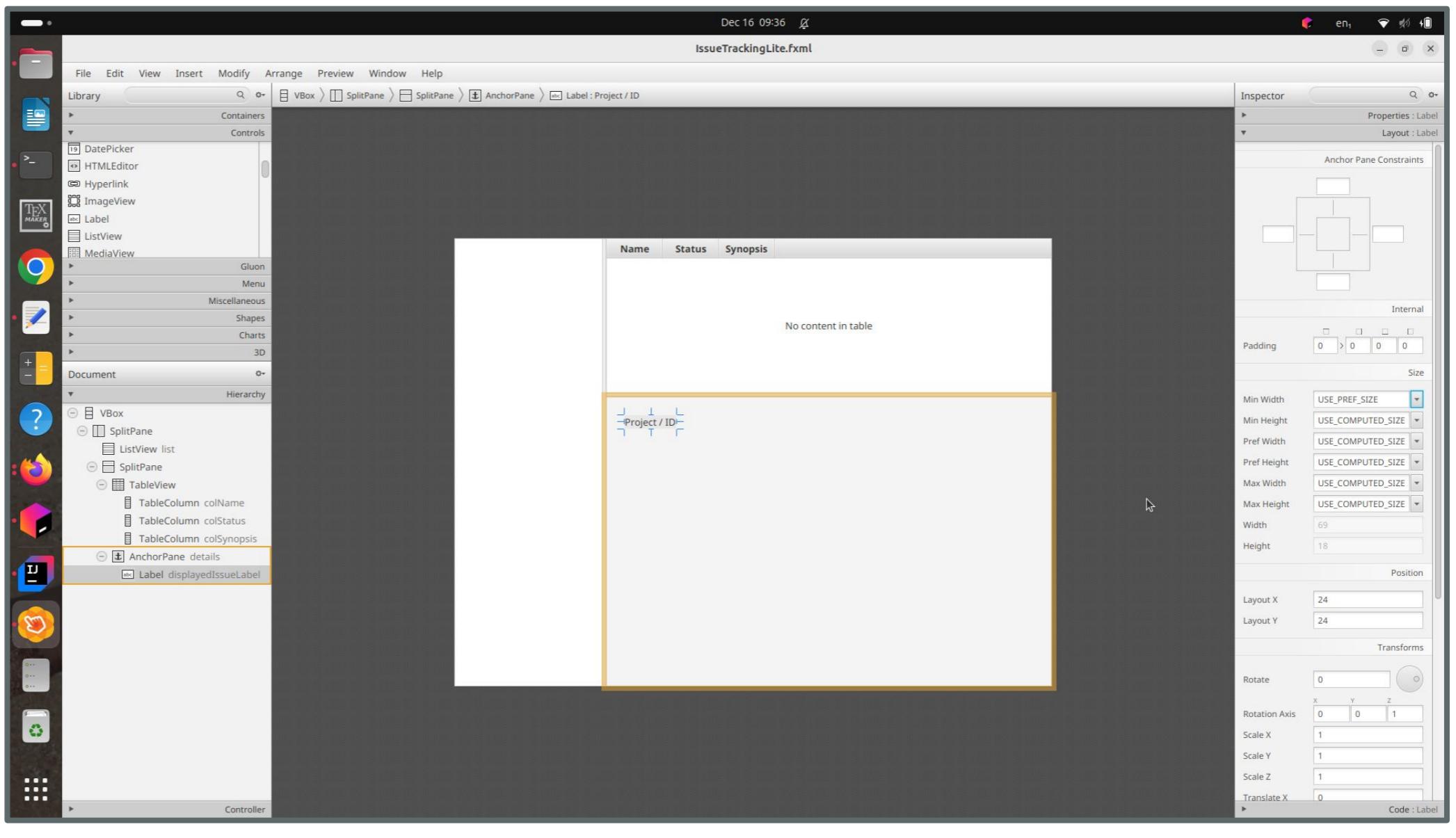
# AnchorPane Details

- In the Hierarchy panel, select the node for the only AnchorPane element.
- Double-click the right side of the row for the AnchorPane element to enter the **fx:id** inline edit mode.
- Enter **details** in the inline text editor for the fx:id text property.



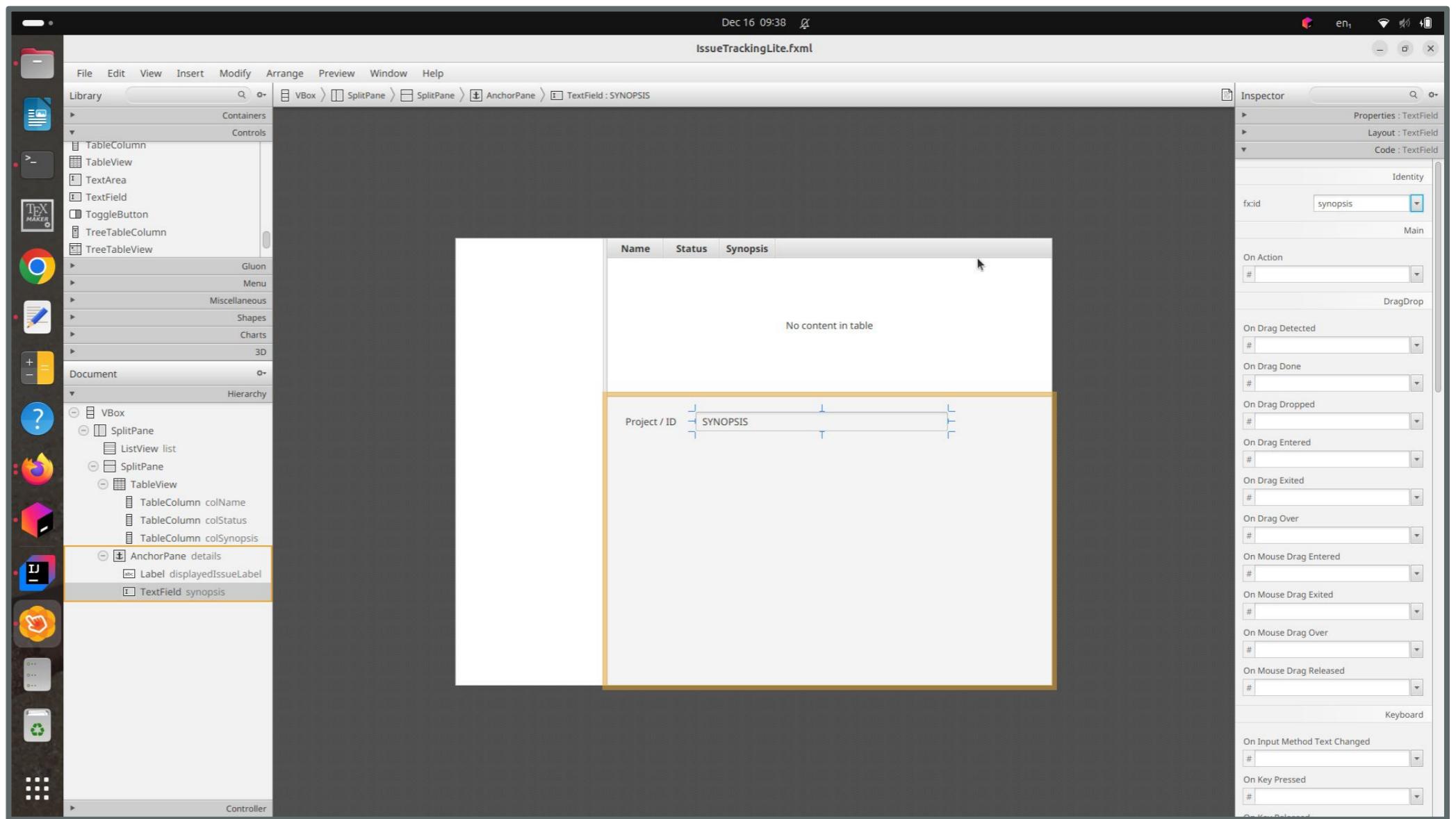
# Add Label to AnchorPane

- In the Controls section of the Library panel, drag and drop the Label element on the upper left corner of the details area.
- In the Content panel, double-click the new Label element and enter **PROJECT / ID** in the Text property field.
- In the Code section of the Inspector panel, select **displayedIssueLabel** in the **fx:id** field.
- In the Layout section of the Inspector panel, set the value of Min Width to **USE\_PREF\_SIZE**.



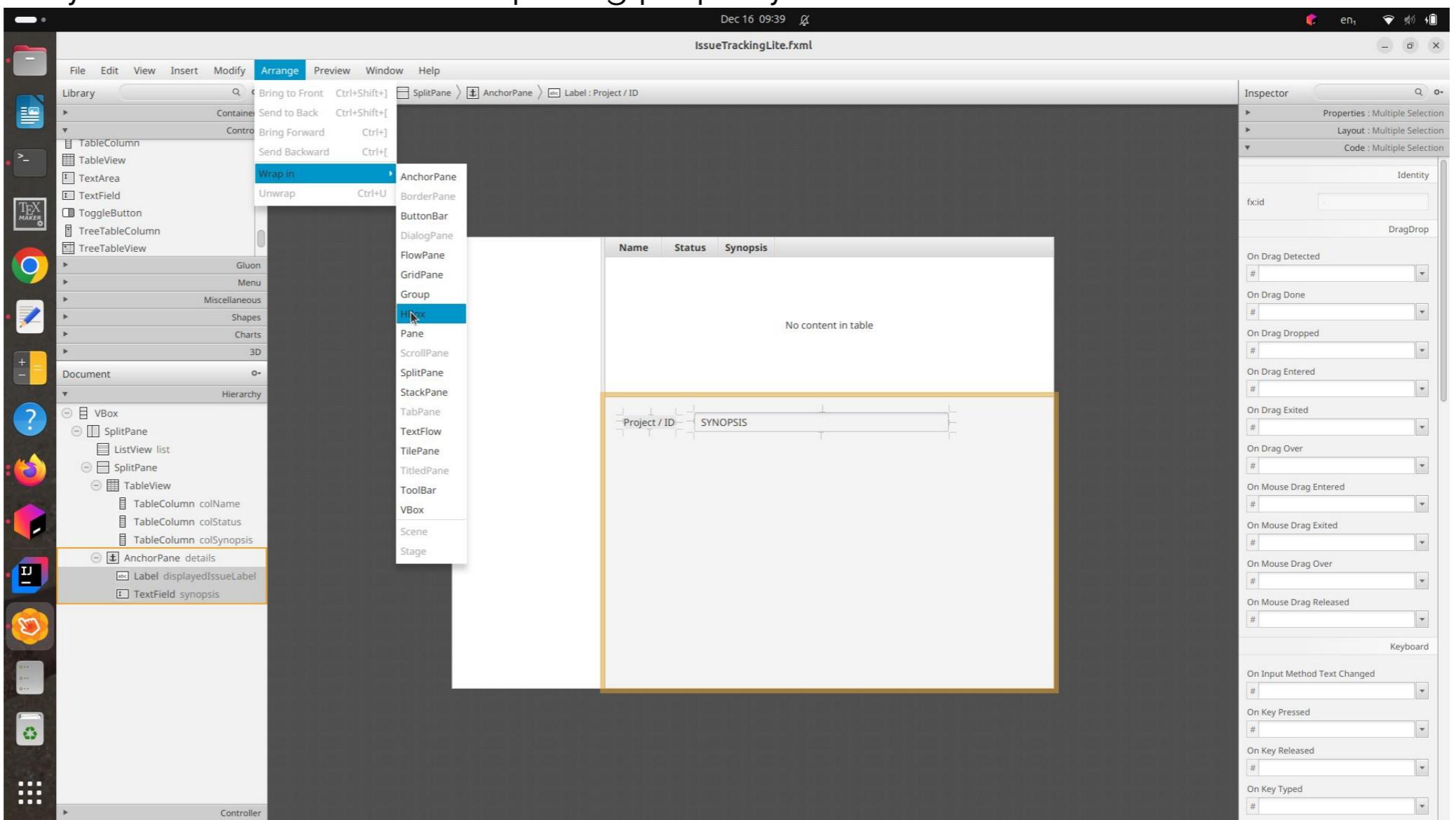
# Add Text Field to AnchorPane

- From the Library panel, drag a Text Field control and drop it to the right side of the Label you just added.
- Double-click the Text Field element in the Content panel and enter SYNOPSIS.
- In the Code section of the Inspector panel, select synopsis for the fx:id field.



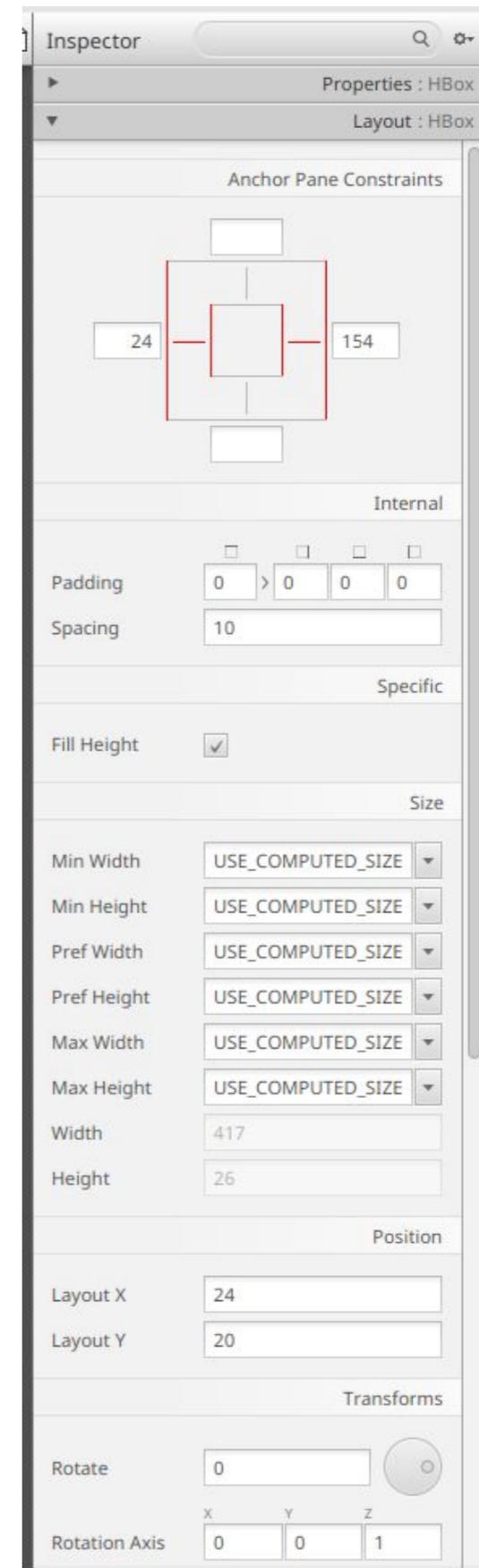
# Grouping the Label and Text Field

- In the Content panel, hold the Ctrl key to select the PROJECT/ID label and SYNOPSIS textfield components.
- From the Menu bar, select Arrange, then Wrap in, and then HBox from the submenu.
- In the Properties section of the Inspector panel, select CENTER for the Alignment property value of the HBox element.
- Click the Layout section and set the Spacing property value to 10.



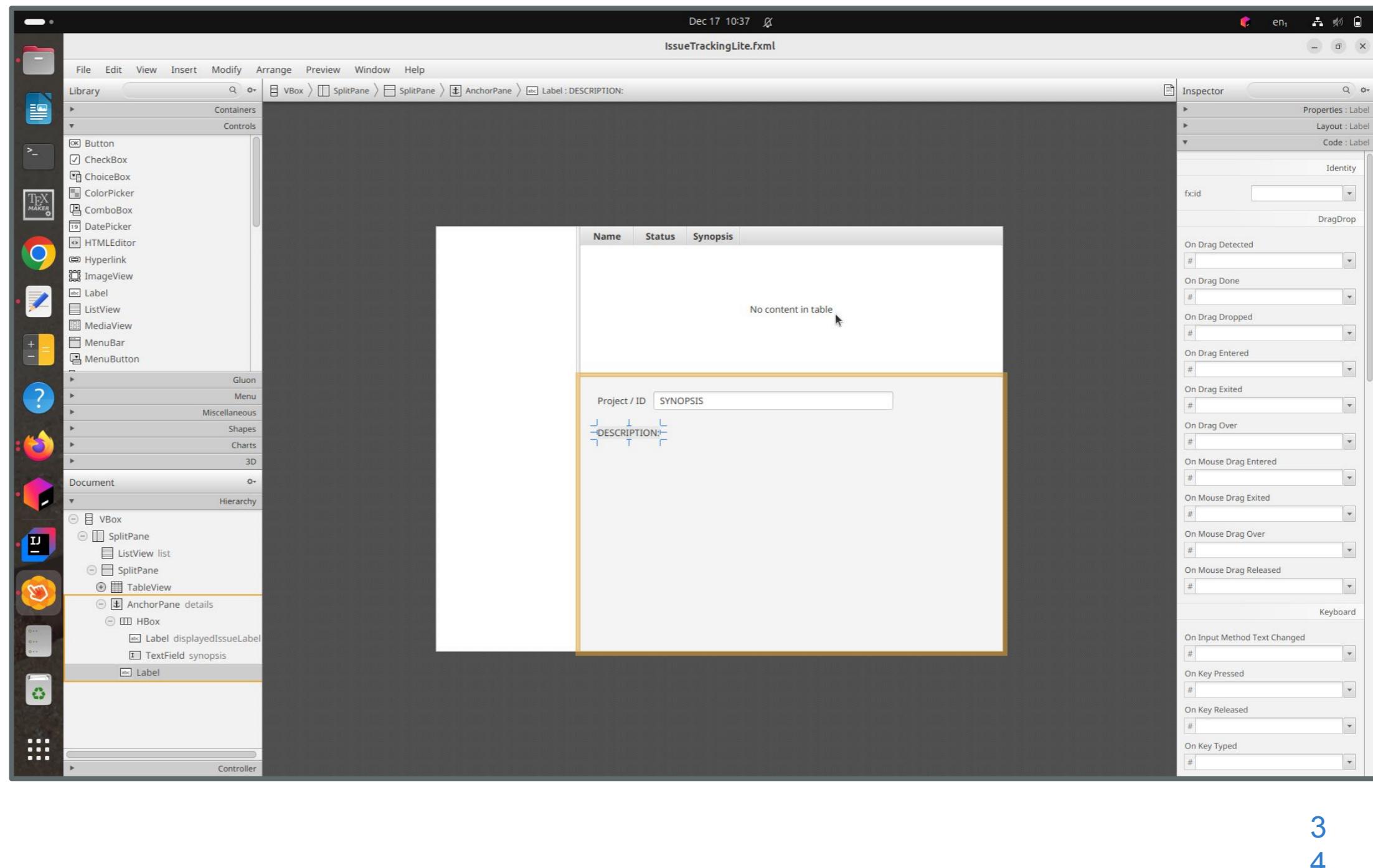
# Grouping the Label and Text Field

- In the AnchorPane Constraints sub-section, click the left and right black anchor lines.
- This action anchors the HBox element's right and left borders to its container and ensures that when the window is resized, the HBox element is also resized.
- In the Hierarchy panel, select the row for the TextField SYNOPSIS element and locate the HBox Constraints sub-section. Set the Hgrow property to **ALWAYS**.



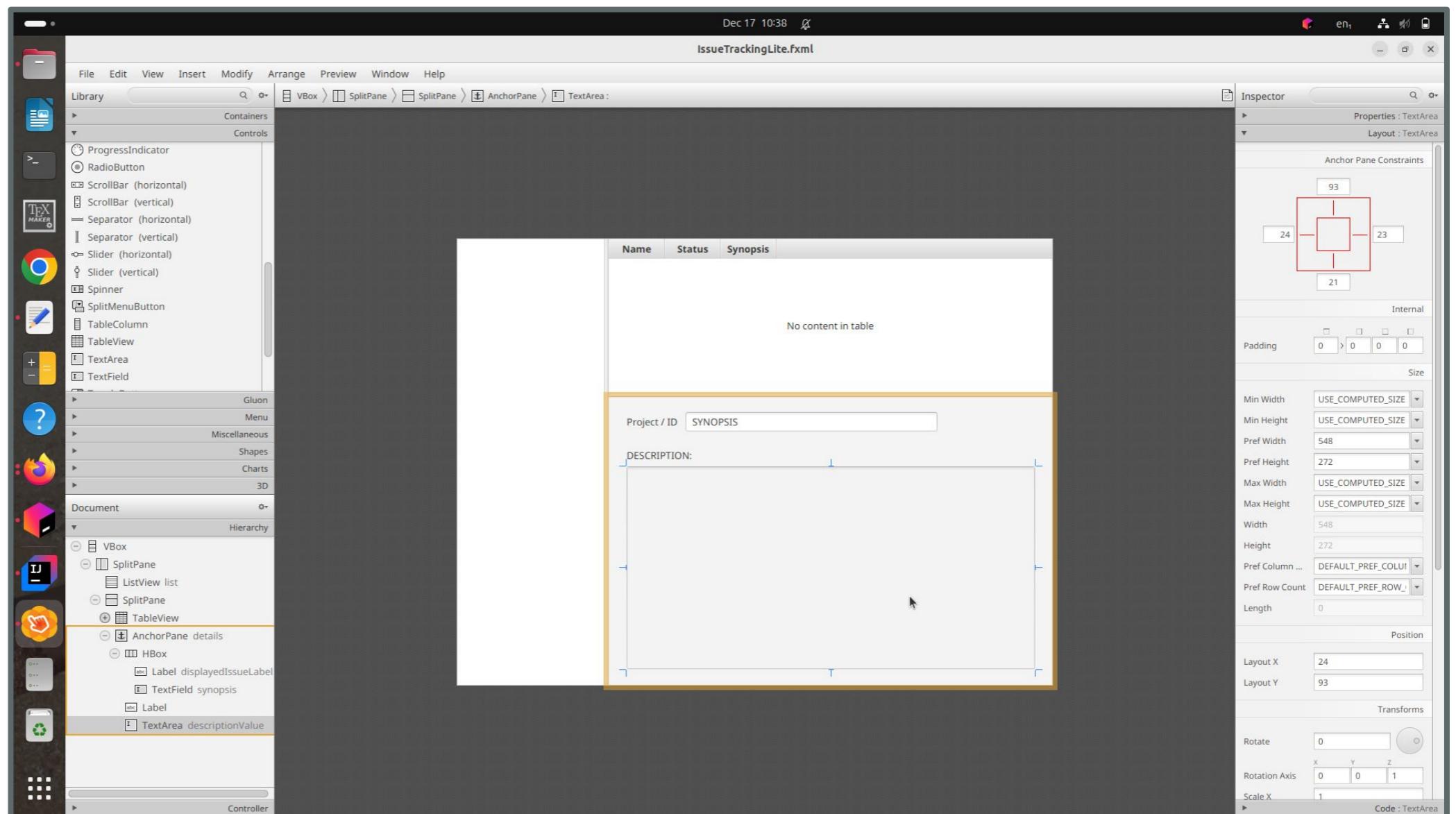
# Label and TextField in Details

- From the Controls section of the Library panel, drag and drop a label to the Content panel below the project ID and synopsis row.
- Double-click the Label and enter **DESCRIPTION:**.



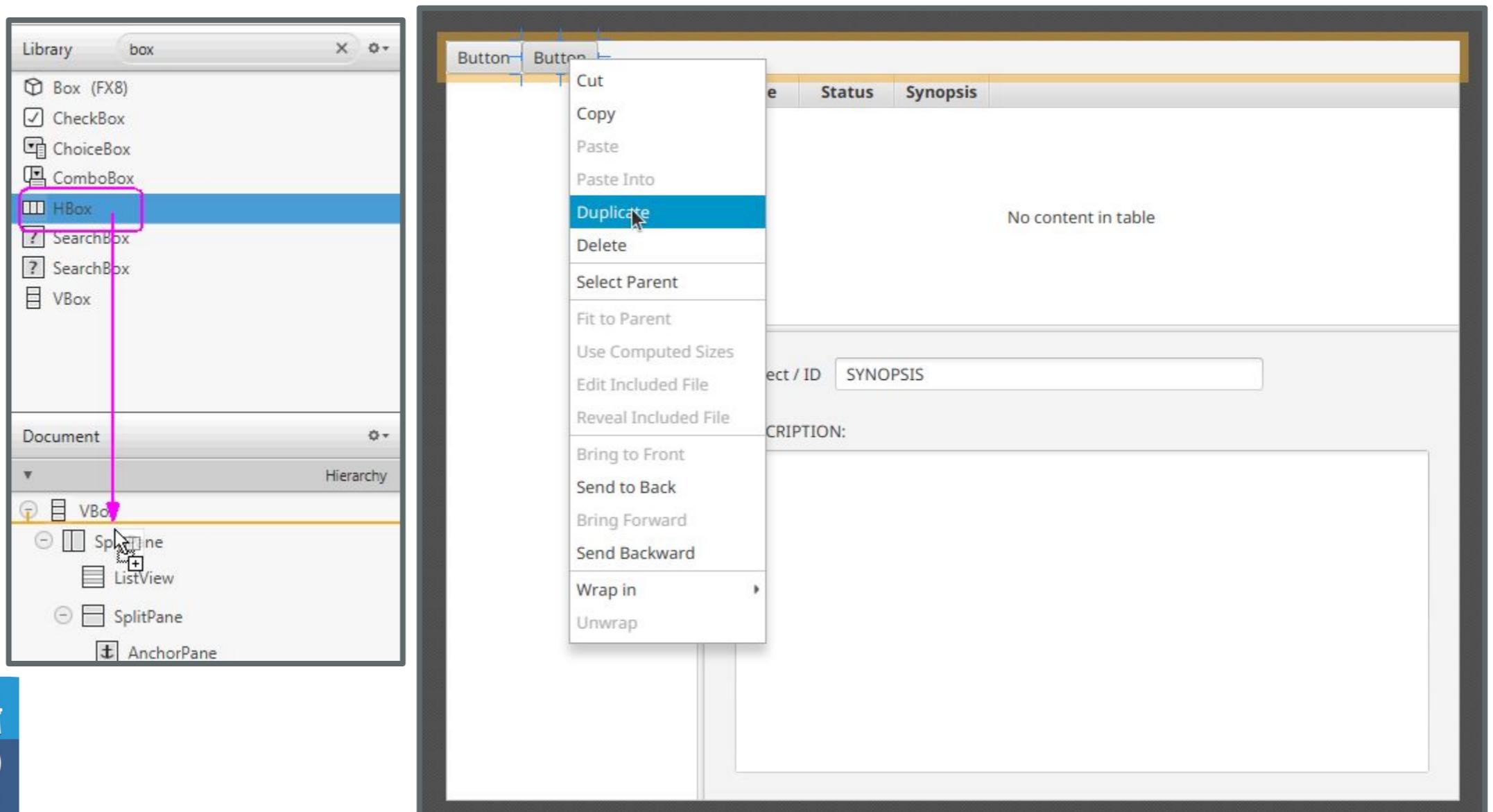
# Label and TextField in Details

- Drag and drop a Text Area below the label that you just added. In the Layout section of the Inspector panel, locate the Anchor Pane Constraints and click the left, top, right, and bottom black anchor lines.
- In the Code section of the Inspector panel, select descriptionValue for the fx:id field.
- In the Content panel, click and drag the Text Area element to increase its size and fill the remaining space in the details section.



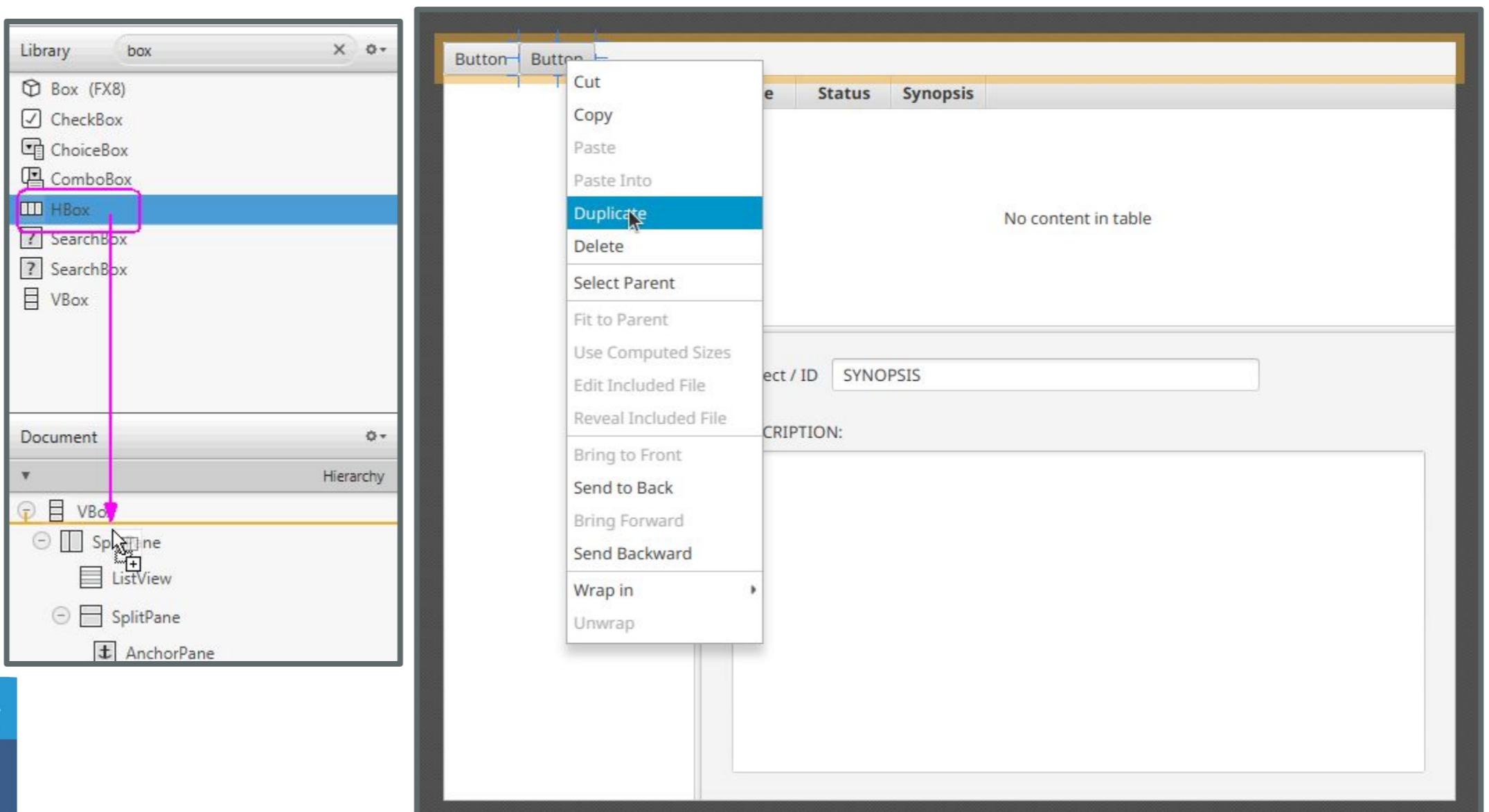
# Add the ToolBar

- The toolbar will contain three buttons and one image file.
- Add three buttons to the toolbar. From the Library panel, drag and drop a Button in the HBox node.
- In the Content panel, right-click the new Button and select Duplicate to add a second button. Repeat to add the third button to the toolbar.



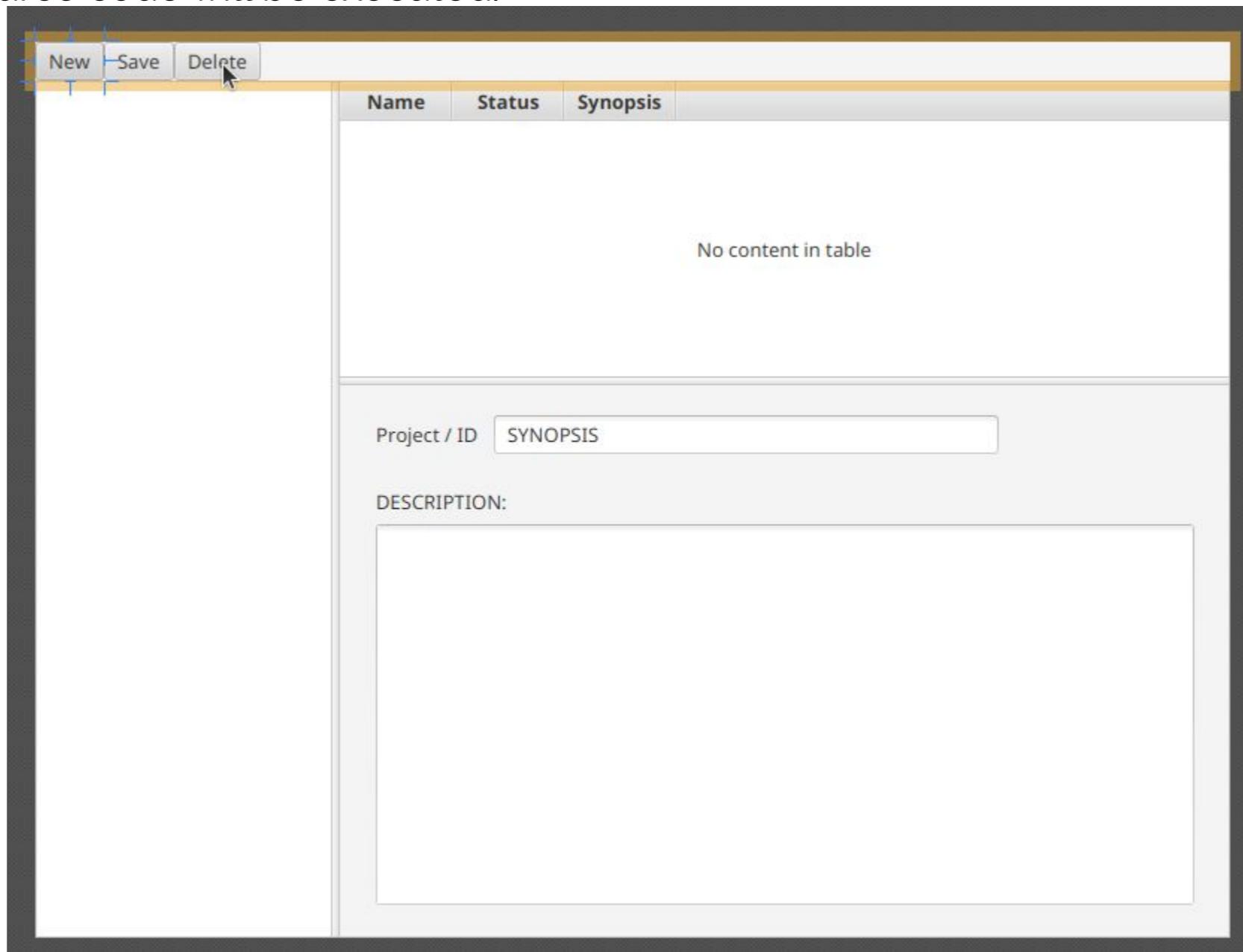
# Add the ToolBar

- The toolbar will contain three buttons and one image file.
- Add three buttons to the toolbar. From the Library panel, drag and drop a Button in the HBox node.
- In the Content panel, right-click the new Button and select Duplicate to add a second button. Repeat to add the third button to the toolbar.



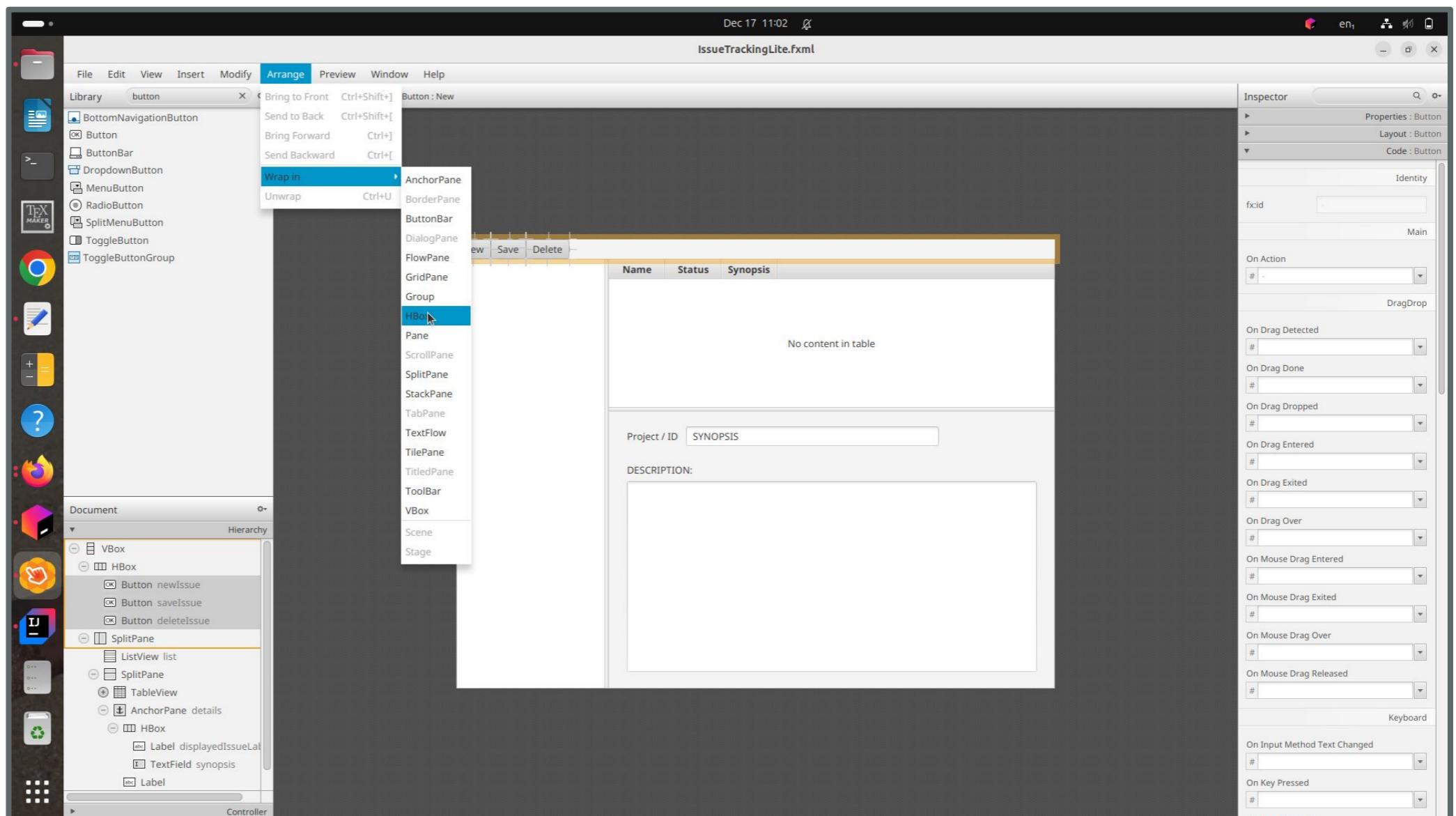
# Edit ToolBar Buttons

- Double-click the buttons and enter New, Save and Delete in the text fields.
- For the New button, select newIssue for the fx:id. In the On Action field, select newIssueFired.
- Each time the New button is clicked, the public method newIssueFired(ActionEvent) in the controller source code will be executed.



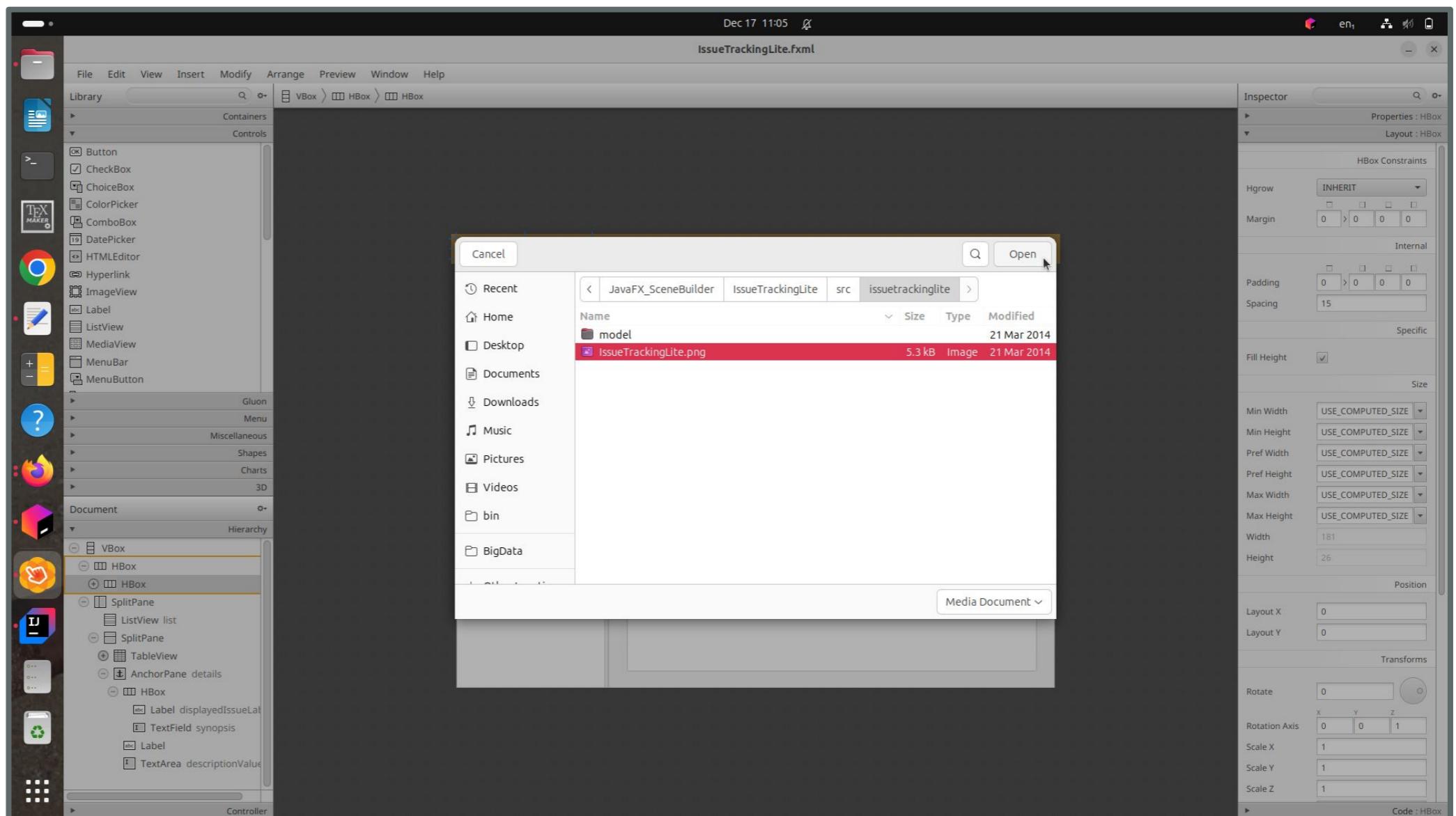
# Edit ToolBar Buttons

- For the Save button, select saveIssue for the fx:id property. In the On Action field, set the value to #saveIssueFired.
- For the Delete button, select deleteIssue for the fx:id and in the On Action field, set the value to #deleteIssueFired.
- Group the three buttons and set spacing to 15.



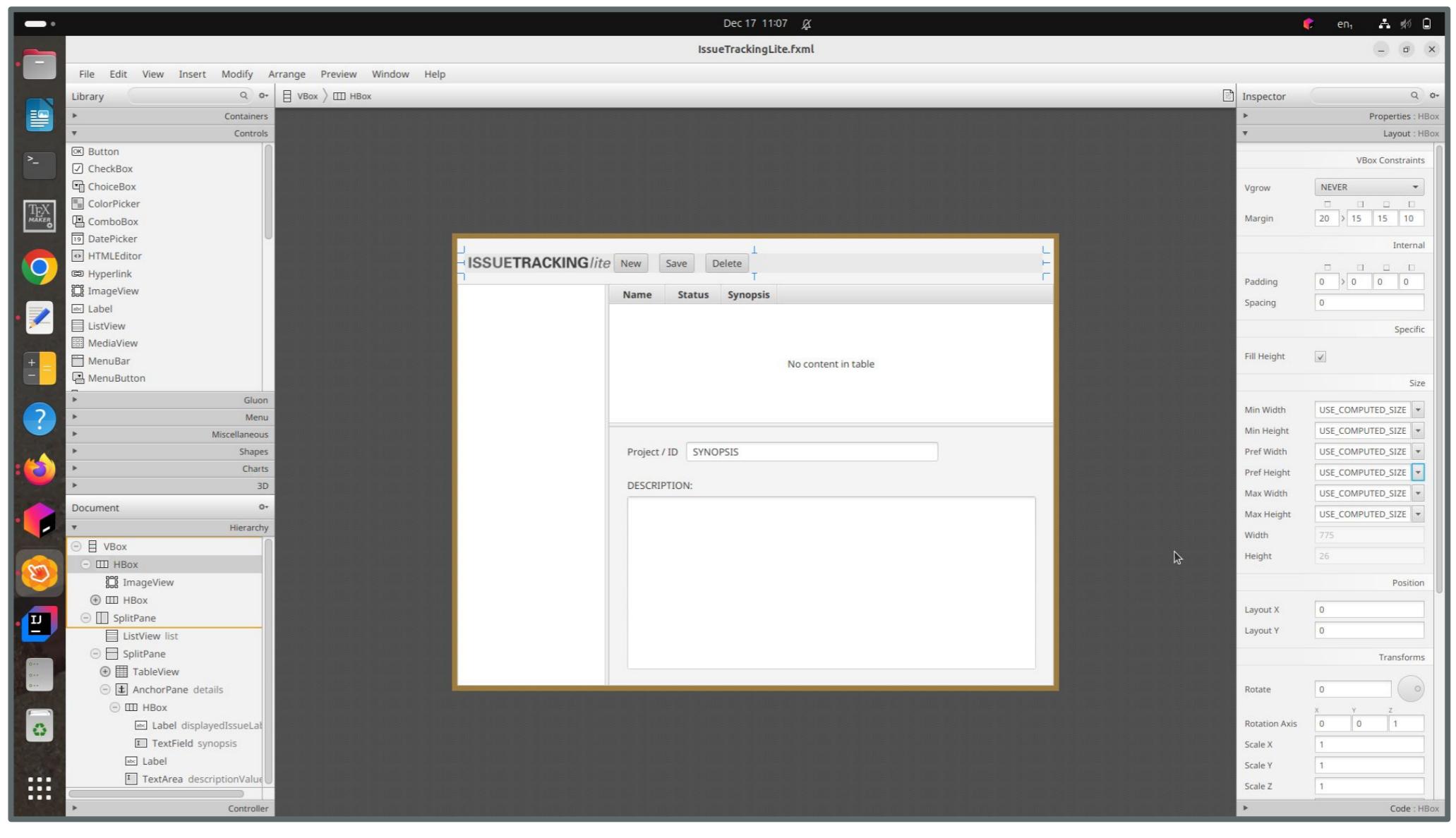
# Add Image to the Toolbar

- From the Menu bar, select File, Import, Media, and select IssueTrackingLite.png.



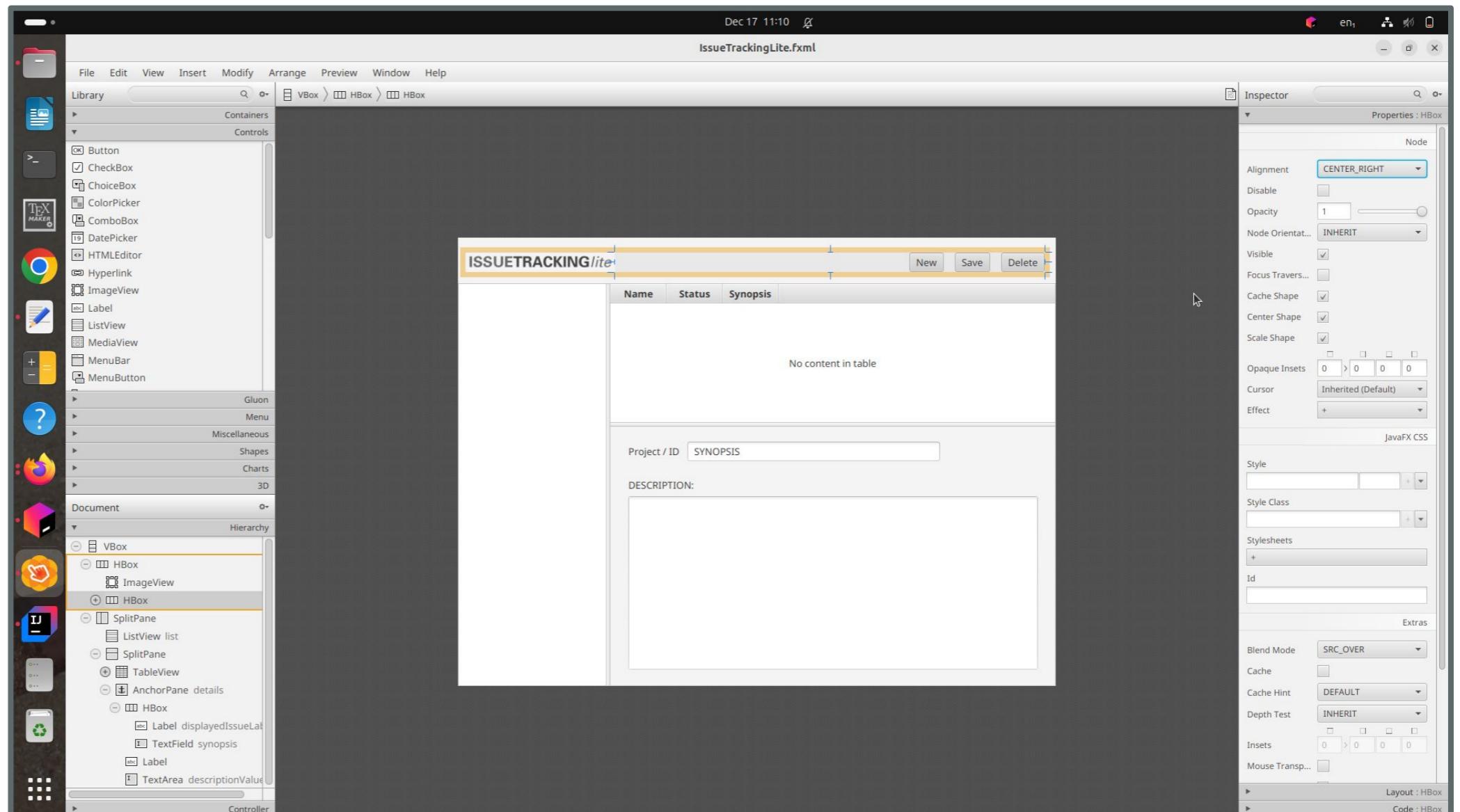
# Modify the First HBox container

- Select the row for the top HBox container. Click the Layout section and in the VBox Constraints sub-section, set the Vgrow property value to NEVER.
- Change the default values for the Margin property to 20, 15, 15, and 10, respectively.
- In the Size sub-section, change the prefWidth and prefHeight default values to USE\_COMPUTED\_SIZE.



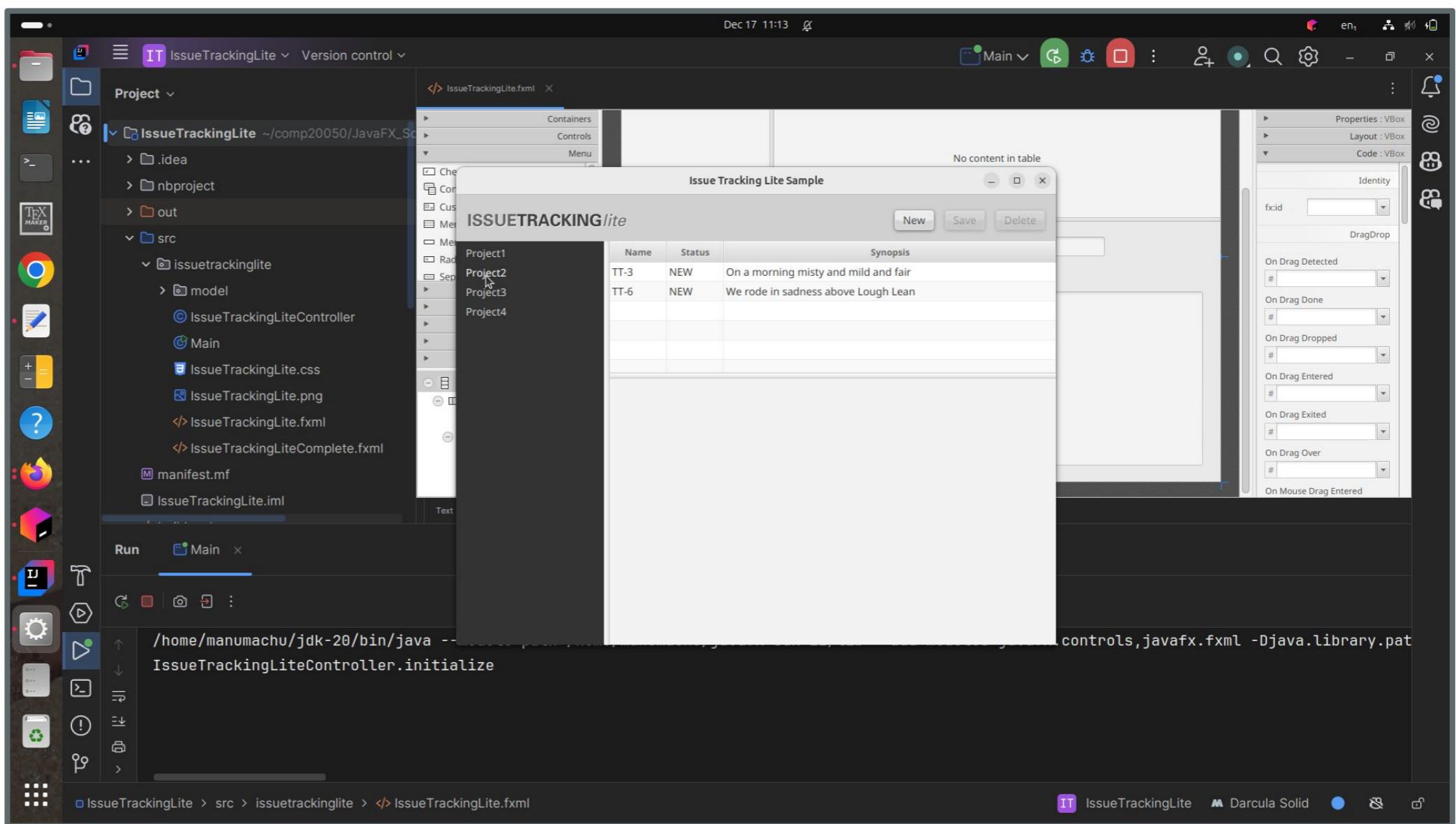
# Modify the Second HBox container

- In the Hierarchy panel, select the HBox element that contains the three buttons.
- Select the Layout section of the Inspector panel and change the value of the Hgrow property to ALWAYS.
- Select the Properties section of the Inspector panel and in the Node sub-section, change Alignment property value to CENTER\_RIGHT.



# Compile and Run

- Right-click the IssueTrackingLite project node in the Projects window and select Rebuild Module IssueTrackingLite.
- Click Run button in the top menu.



# Q&A



To follow...

**libGDX**

