



ORACLE®

FXML и SceneBuilder

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MAKE THE
FUTURE
JAVA





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Кратко о содержании доклада

Немного о JavaFX

Краткий исторический экскурс

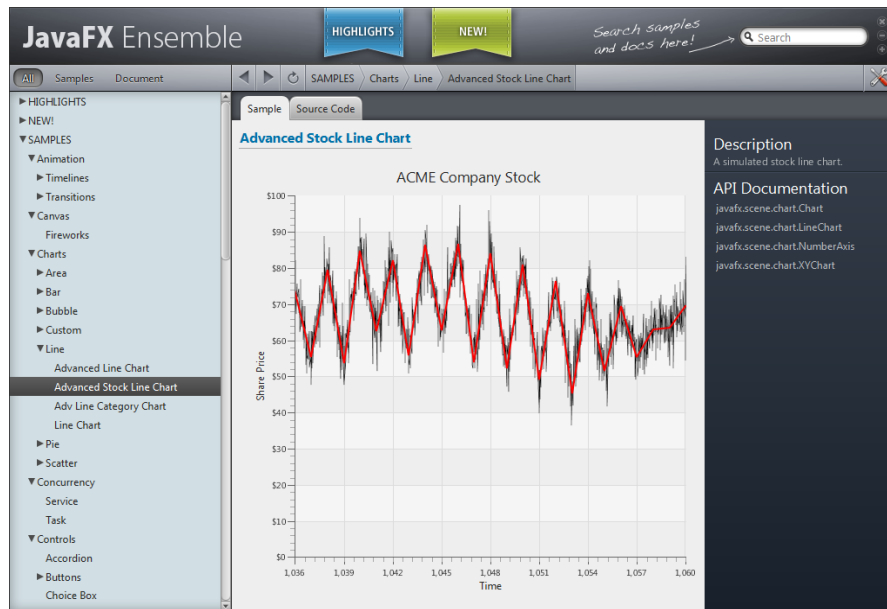
Как собрать все это вместе?

Подробнее о FXML

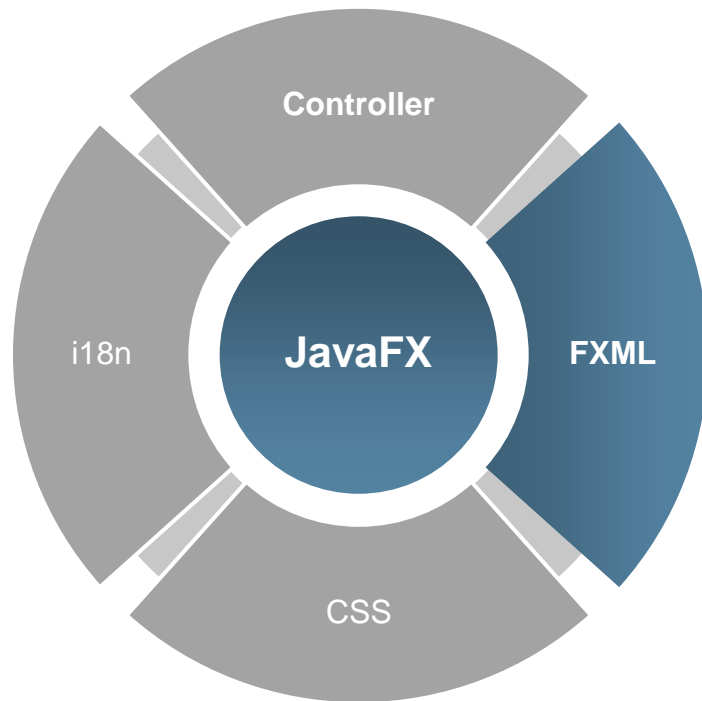
Краткая демонстрация по созданию GUI с использованием SceneBuilder

Что такое JavaFX

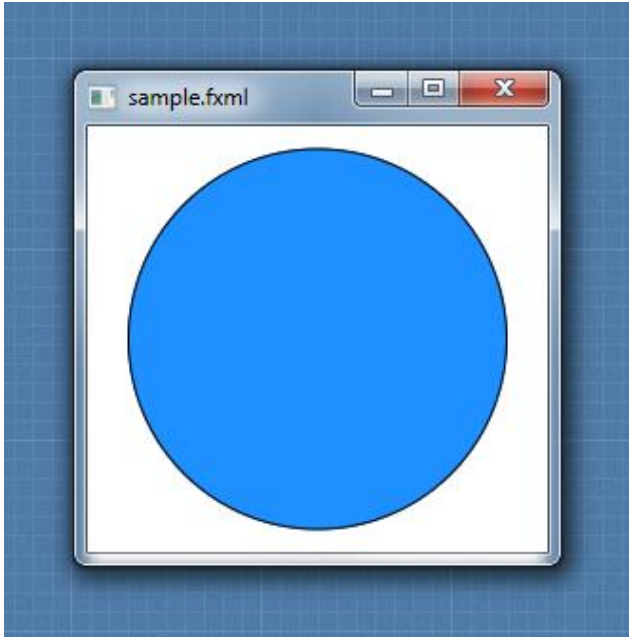
Новое поколение UI на Java
Богатый набор компонентов
Быстрый графический движок
Быстро, красиво, удобно и надежно



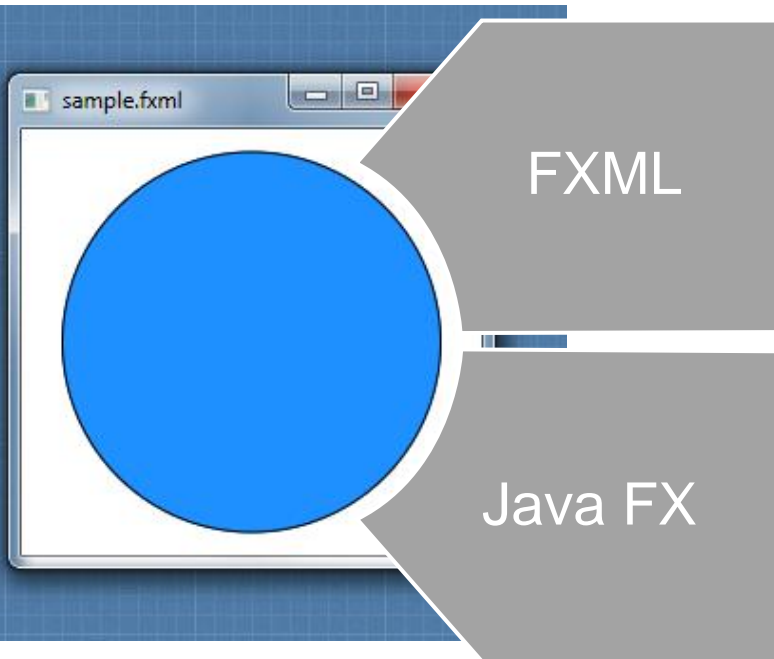
Разделяй и властвуй



Hello, FXML world!



Hello, FXML world!



```
<StackPane xmlns:fx="http://javafx.com/fxml">
  <children>
    <Circle fill="BLUE" radius="100"
            stroke="BLACK" />
  </children>
</StackPane>
```

```
public void start(Stage stage) {
    Parent root = FXMLLoader.load(
        getClass().getResource("sample.fxml"));

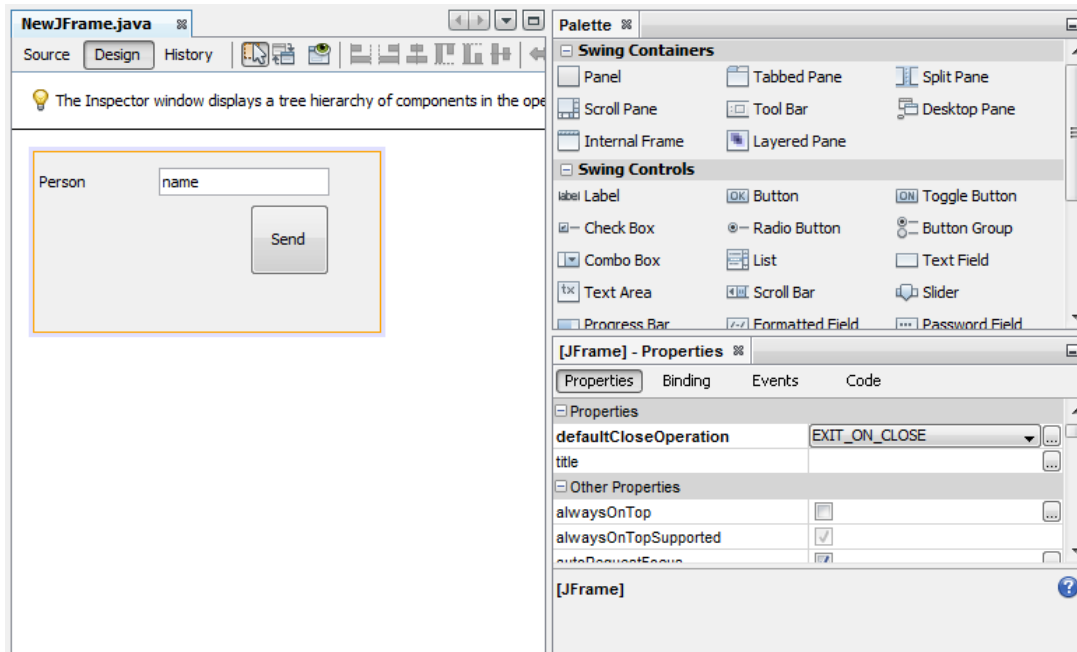
    stage.setScene(new Scene(root));
    stage.show();
}
```


Зачем это всё? Экскурс в прошлое

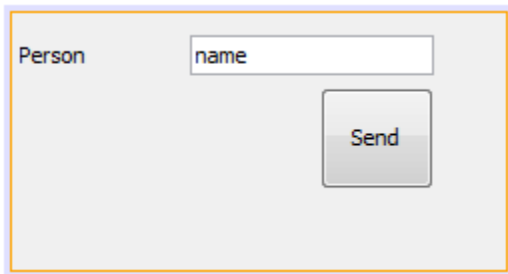


Swing layout

Встроенный в NetBeans редактор Swing UI



Swing layout



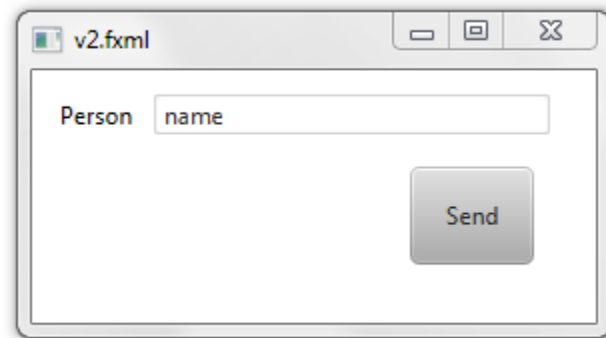
```
javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addGap(4, 4, 4)
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
                .addComponent(jButton1)
                .addGroup(layout.createSequentialGroup()
                    .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 81
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED_SIZE
                            .addContainerGap(189, Short.MAX_VALUE))
                    )
            )
        )
);
layout.setVerticalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addContainerGap()
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jLabel1)
                .addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED_SIZE, java
                    .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                    .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 51, javax.s
                        .addContainerGap(212, Short.MAX_VALUE))
            )
        )
);
```



FXML

Аналогичный дизайн
средствами FXML

```
<AnchorPane id="AnchorPane">
  <children>
    <Label id="label1" layoutX="14" layoutY="14" text="Person" />
    <TextField layoutX="60" layoutY="11" prefWidth="200" text="name" />
    <Button id="button1" layoutX="189" layoutY="48" text="Send" />
  </children>
</AnchorPane>
```



FXML

Сила Стрелочек



Controller

demo.fxml

```
<AnchorPane xmlns:fx="http://javafx.com/fxml" fx:controller="demo.Controller">
  <children>
    <TextField fx:id="tfName" text="name" />
    <Button text="Click Me" onAction="#handleButtonAction"/>
  </children>
</AnchorPane>
```

demo/Controller.java

```
@FXML
private TextField tfName;

@FXML
private void handleButtonAction(ActionEvent event) {
    System.out.println("Name: " + tfName.getText());
}
```



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CSS

demo.css

```
.myButton { -fx-background-color: red; }
```

demo.fxml

```
<AnchorPane xmlns:fx="http://javafx.com/fxml" fx:controller="demo.Controller">
  <children>
    <TextField fx:id="tfName" text="name" />
    <Button text="Click Me" onAction="#handleButtonAction" styleClass="myButton"/>
  </children>
</AnchorPane>
```

demo/Controller.java

```
@FXML
private TextField tfName;

@FXML
private void handleButtonAction(ActionEvent event)
{ System.out.println("Name: " + tfName.getText()); }
```



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i18n

demo.properties

```
txt=name  
btnName=Click Me
```

demo.css

```
.myButton { -fx-background-color: red; }
```

demo.fxml

```
<AnchorPane xmlns:fx="http://javafx.com/fxml" fx:controller="demo.Controller">  
  <children>  
    <TextField fx:id="tfName" text="%txt" />  
    <Button text="%btnName" onAction="#handleButtonAction" styleClass="myButton"/>  
  </children>  
</AnchorPane>
```

demo/Controller.java

```
@FXML  
private TextField tfName;  
  
@FXML  
private void handleButtonAction(ActionEvent event)  
{ System.out.println("Name: " + tfName.getText()); }
```



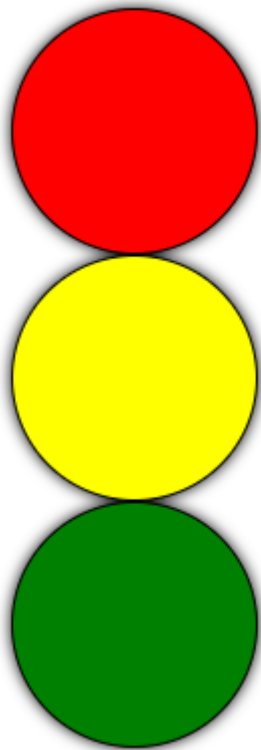
Код, связывающий все части воедино

```
public class Demo extends Application {  
  
    @Override  
    public void start(Stage stage) throws Exception {  
        Parent root = FXMLLoader.load(  
            getClass().getResource("demo.fxml"),  
            ResourceBundle.getBundle("demo"));  
  
        Scene scene = new Scene(root);  
        scene.getStylesheets().add(  
            getClass().getResource("demo.css").toExternalForm());  
        stage.setScene(scene);  
        stage.show();  
    }  
}
```

Подробнее о самом языке

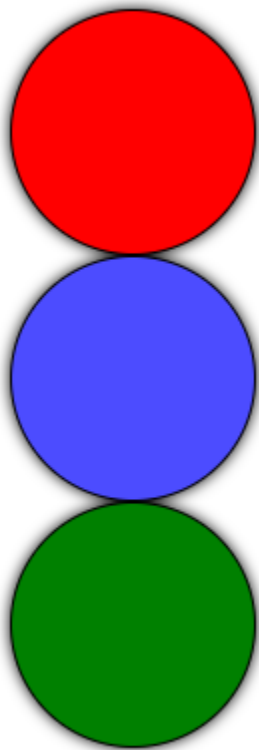


Графика



```
<VBox>
  <children>
    <Circle fill="RED" radius="61.0" stroke="BLACK" />
    <Circle fill="YELLOW" radius="61.0" stroke="BLACK" />
    <Circle fill="GREEN" radius="61.0" stroke="BLACK" />
  </children>
  <effect>
    <DropShadow />
  </effect>
</VBox>
```

Переменные



```
<VBox xmlns:fx="http://javafx.com/fxml" >
  <fx:define>
    <Color fx:id="myColor">
      <red>0.3</red>
      <green>0.3</green>
      <blue>1.0</blue>
    </Color>
  </fx:define>
  <children>
    <Circle fill="RED" radius="61.0" stroke="BLACK"/>
    <Circle fill="$myColor" radius="61.0" stroke="BLACK"/>
    <Circle fill="GREEN" radius="61.0" stroke="BLACK"/>
  </children>
  <effect>
    <DropShadow />
  </effect>
</VBox>
```



More features

Includes

```
<VBox xmlns:fx="http://javafx.com/fxml">
  <children>
    <fx:include source="my_button.fxml"/>
  </children>
</VBox>
```

Location resolution

```
<ImageView>
  <image>
    <Image url="@my_image.png"/>
  </image>
</ImageView>
```

Expressions

```
<TextField fx:id="textField"/>
<Label text="{textField.text}"/>
```



Scripting

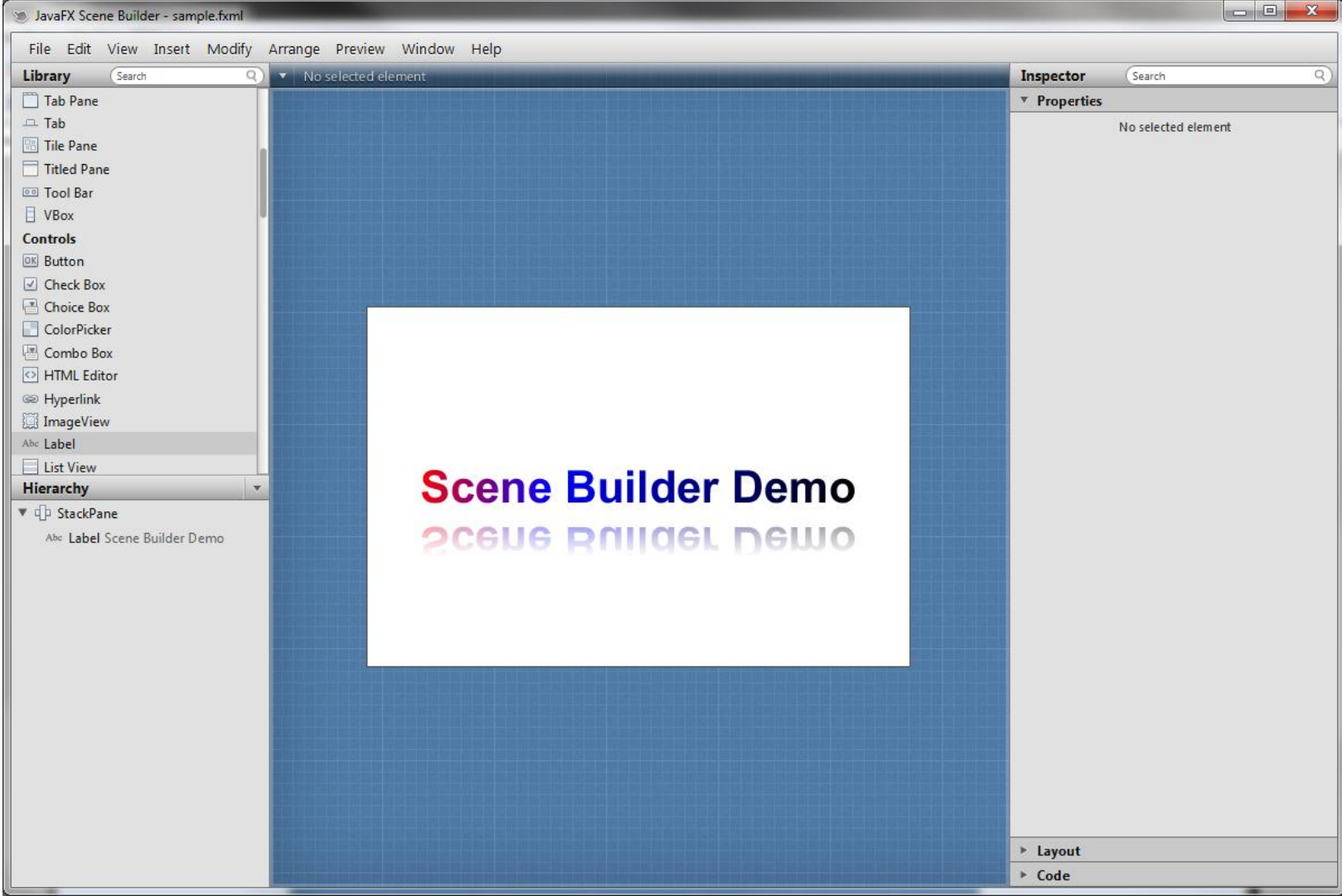
Javascript

Groovy

Closure

etc

```
<?language javascript?>
<AnchorPane xmlns:fx="http://javafx.com/fxml">
  <fx:script>
    function handleButtonAction() {
      tfName.setText("Calling the JavaScript!");
    }
  </fx:script>
  <children>
    <TextField fx:id="tfName" text="name" />
    <Button text="Click Me"
onAction="handleButtonAction(event)" />
  </children>
</AnchorPane>
```



Полезные ссылки

Блог Jerome Cambon

<https://blogs.oracle.com/jeromec/category/JavaFX+Scene+Builder>

JavaFX docs

<http://docs.oracle.com/javafx/>

Scene Builder user guide

http://docs.oracle.com/javafx/scenebuilder/1/user_guide/jsbpub-user_guide.htm

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