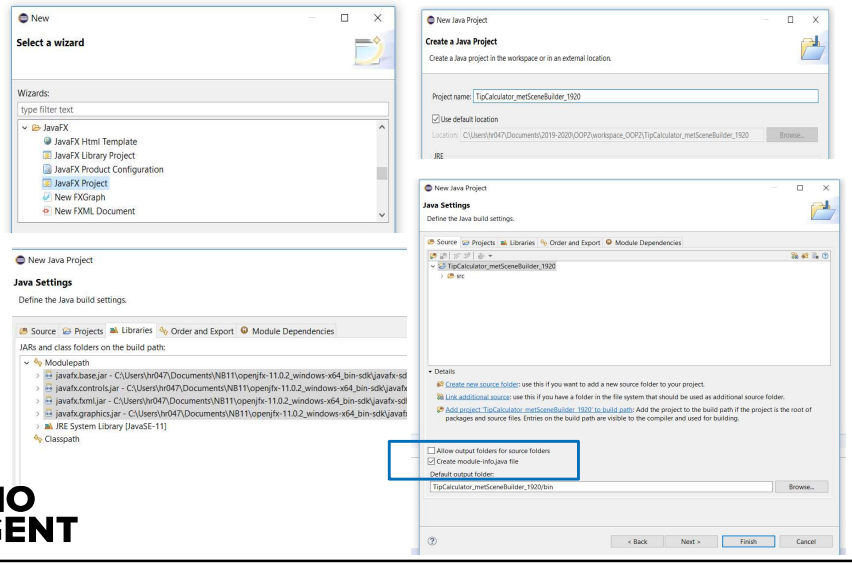
TipCalculator met Scene Builder

Stappenplan

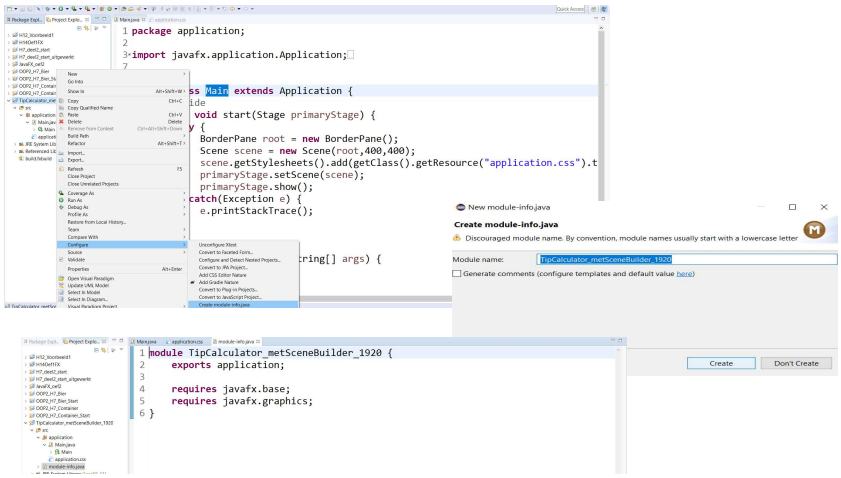
HO GENT

JavaFX project maken



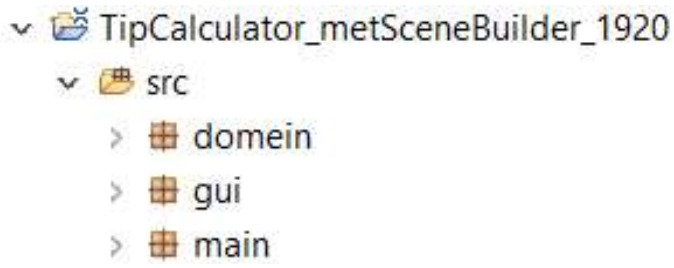
HO GENT

module-info.java toevoegen



HO GENT

Packages



HO GENT

Domeinklasse

```
1   package domein;
2
3   import java.math.BigDecimal;
4
5   public class TipCalculator
6   {
7       private BigDecimal amount;
8
9       public TipCalculator()
10      {
11          this (new BigDecimal(0));
12      }
13
14      public TipCalculator(BigDecimal amount)
15      {
16          setAmount(amount);
17      }
18
```

HO GENT

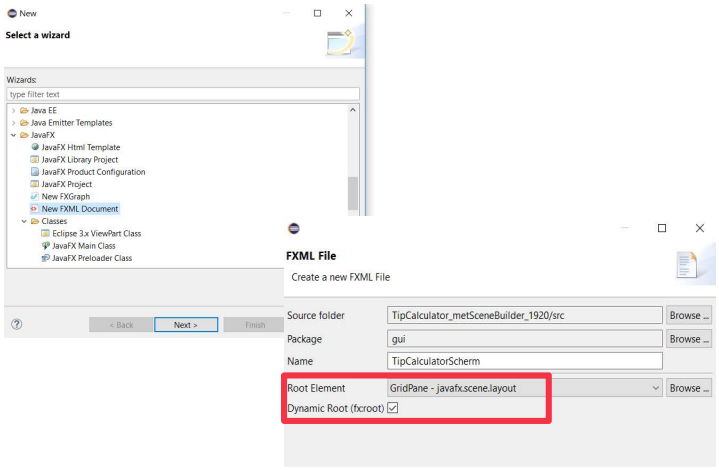
5

```
19      public BigDecimal getAmount()
20      {
21          return amount;
22      }
23
24      public final void setAmount(BigDecimal amount)
25      {
26          if(amount.doubleValue() < 0)
27              throw new IllegalArgumentException
28                  ("Geen negatief bedrag toegelaten!");
29          this.amount = amount;
30      }
31
32      public BigDecimal calculateTip(BigDecimal percentage)
33      {
34          return amount.multiply(percentage);
35      }
36  }
```

HO GENT

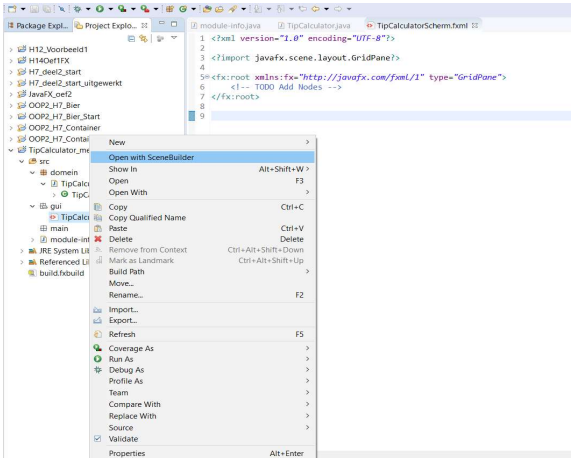
6

FXML maken in gui



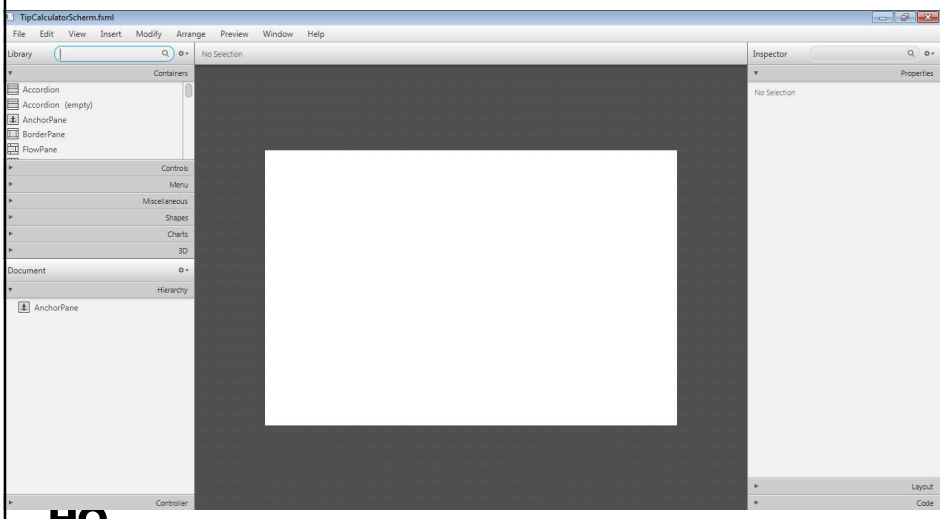
HO GENT

Openen van Scene Builder – rechtermuisklik .fxml



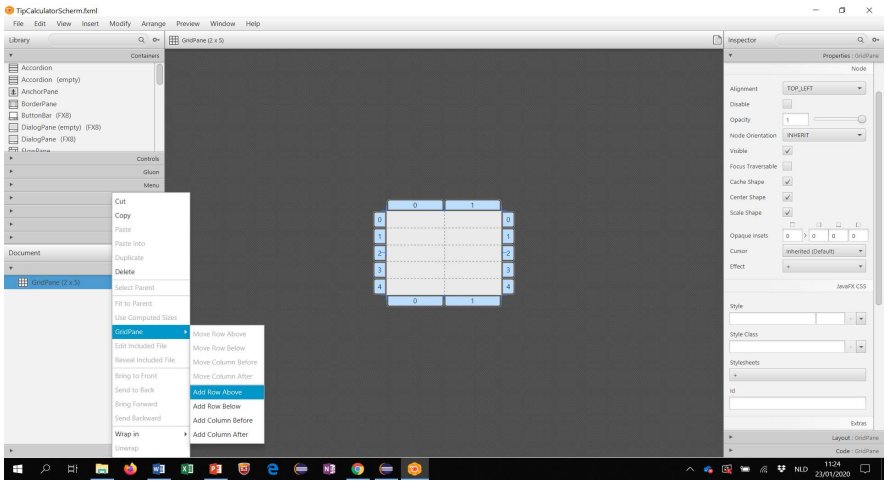
HO GENT

SceneBuilder –
indien GridPane niet geselecteerd bij creatie fxml



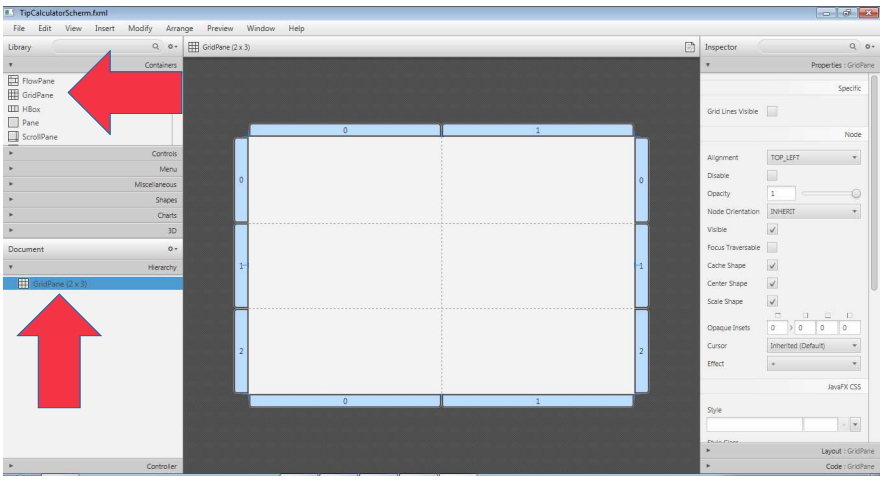
HO GENT

SceneBuilder –
indien GridPane geselecteerd bij creatie fxml



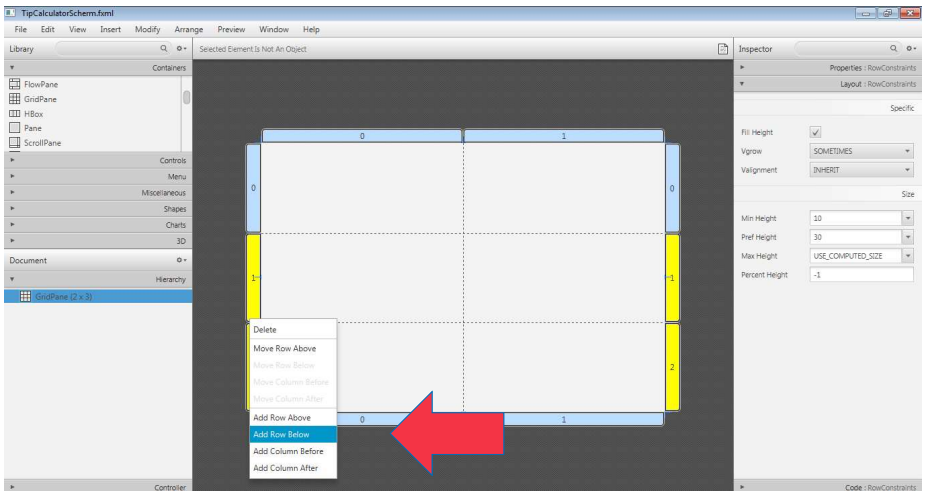
HO GENT

Stap 1 : GridPane

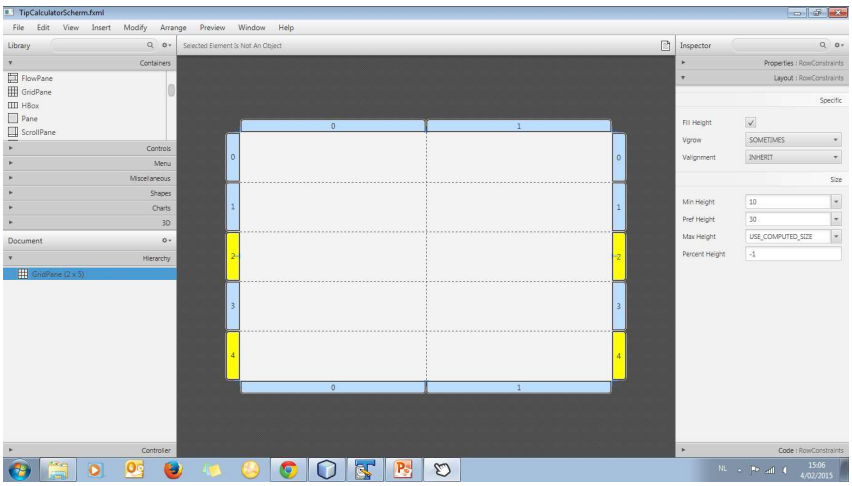


HO GENT

Stap 2 : 2 rijen toevoegen

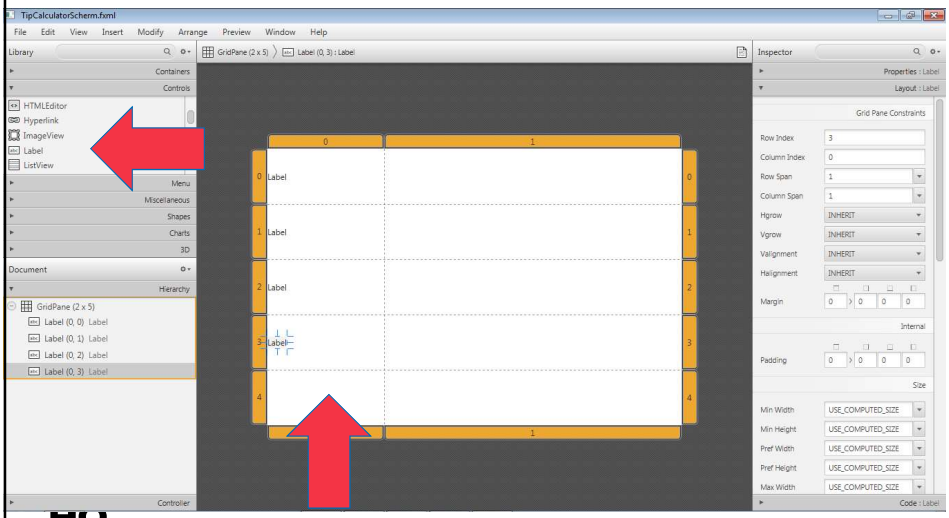


HO GENT



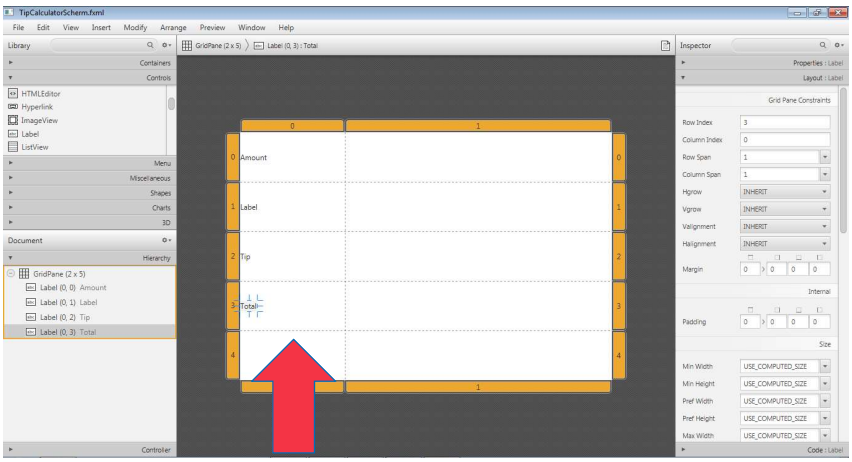
HO GENT

Stap 3: 4 labels plaatsen



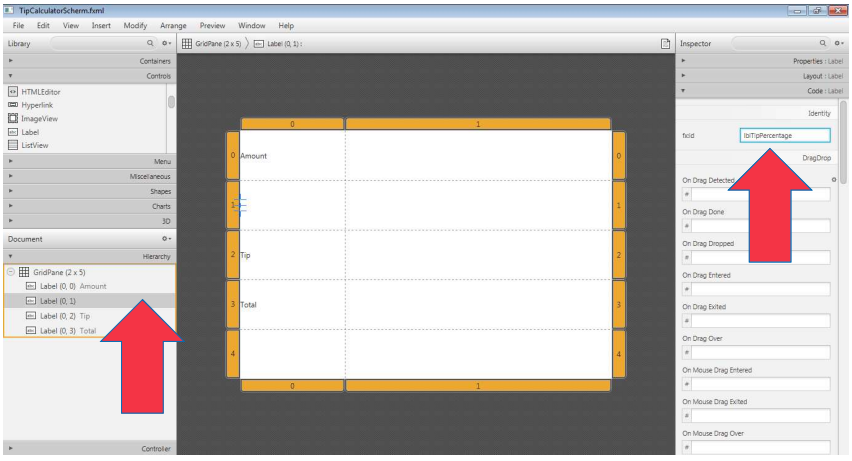
HO GENT

Tekst op labels aanpassen via property text



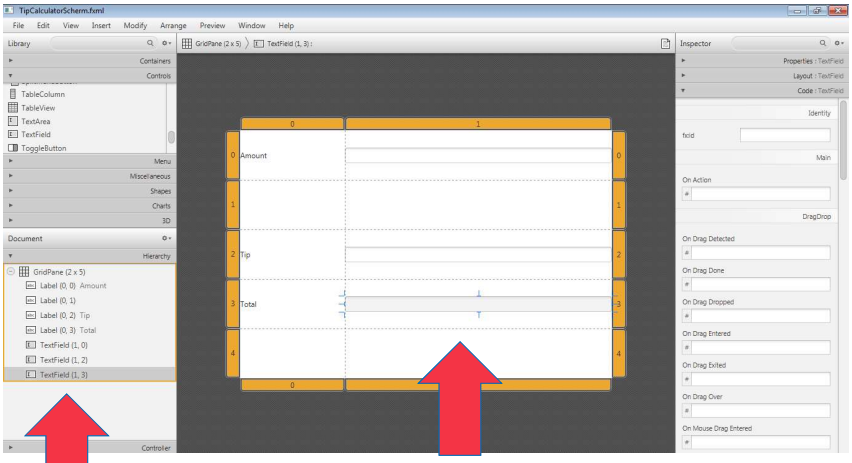
HO GENT

Aan 2de label id lblTipPercentage geven



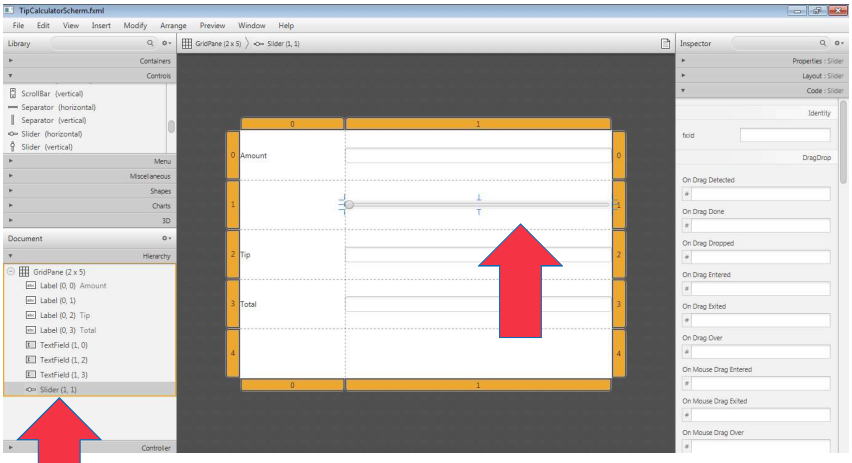
HO GENT

3 Textfields toevoegen



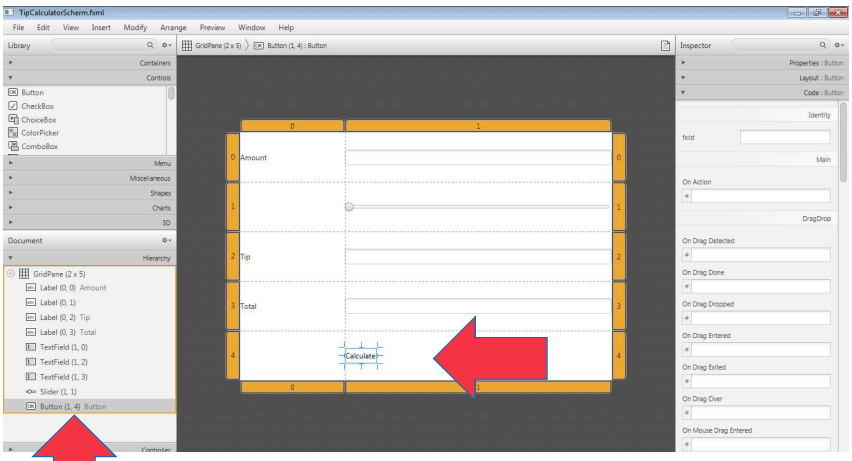
HO GENT

Horizontale slider toevoegen



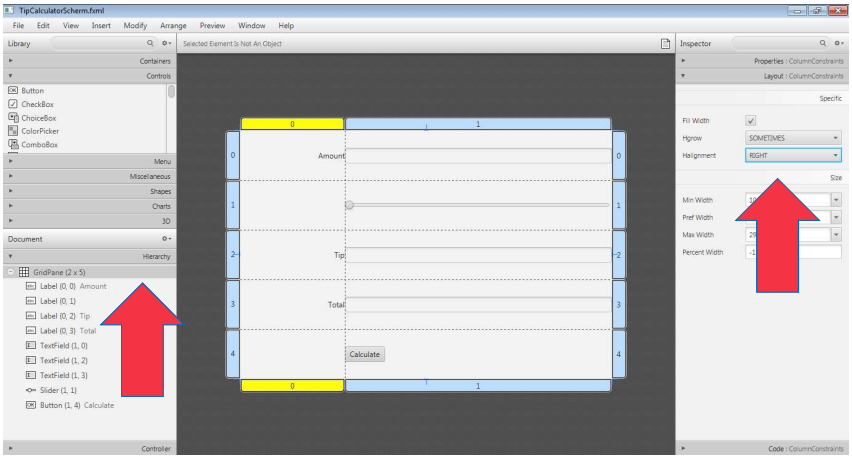
HO GENT

Button met tekst “Calculate” toevoegen



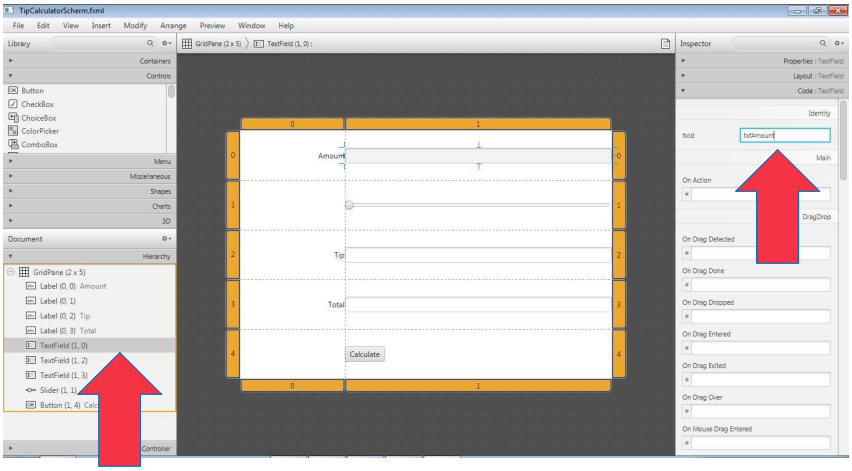
HO GENT

Stap 4: kolom 1 aanklikken



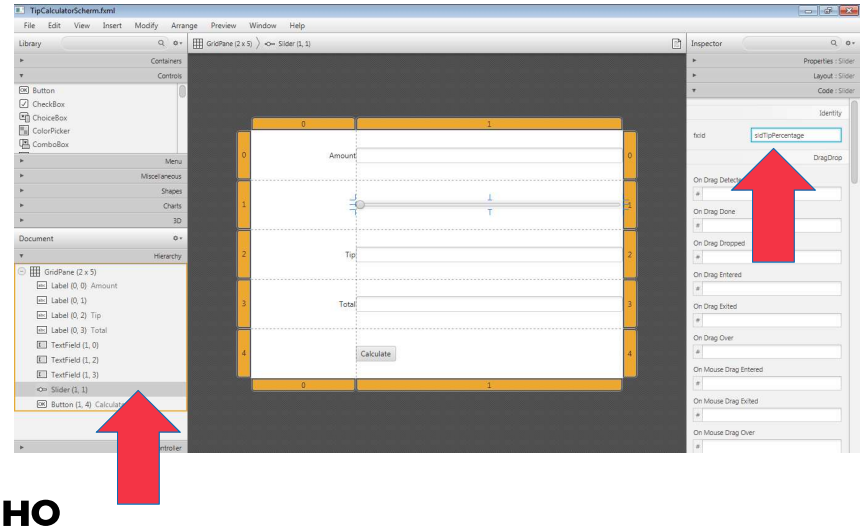
HO GENT

id txfAmount aan 1ste textfield geven



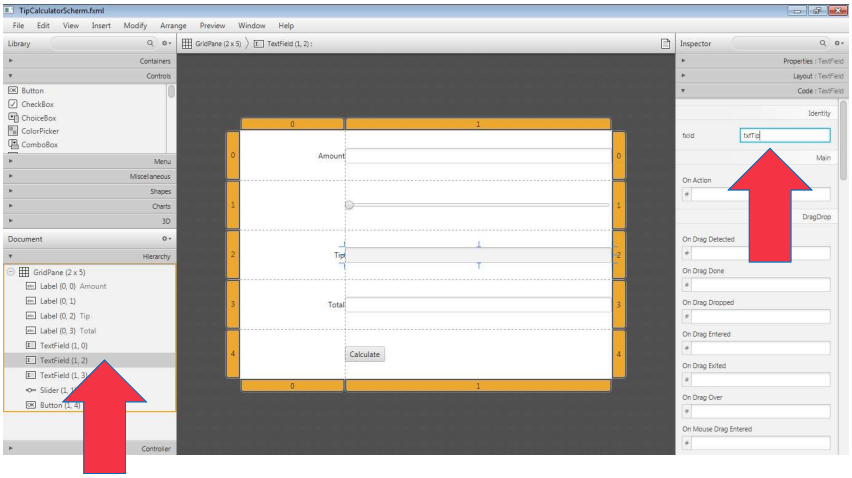
HO GENT

id sldTipPercentage aan slider geven



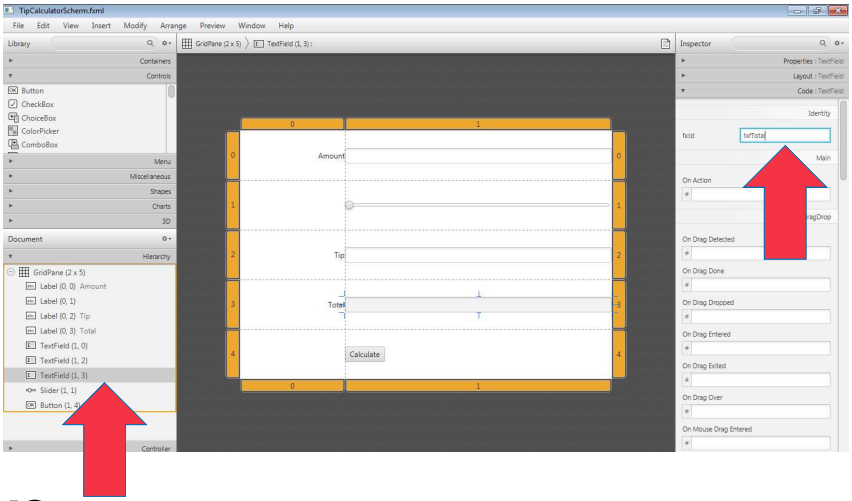
HO GENT

id txfTip aan 2de textfield geven



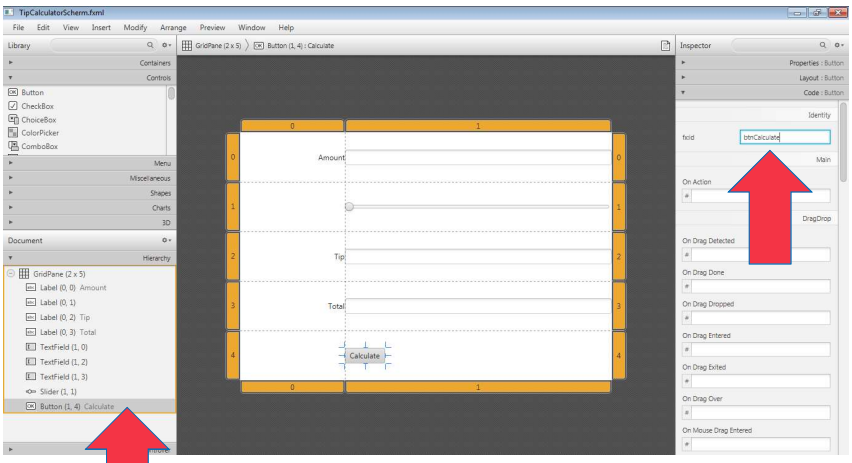
HO GENT

id txfTotal aan 3de textfield geven



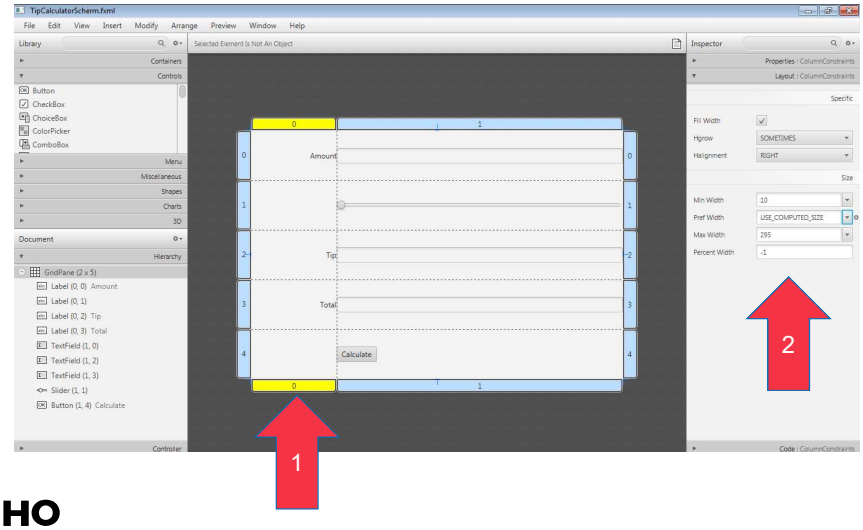
HO GENT

id btnCalculate aan button geven

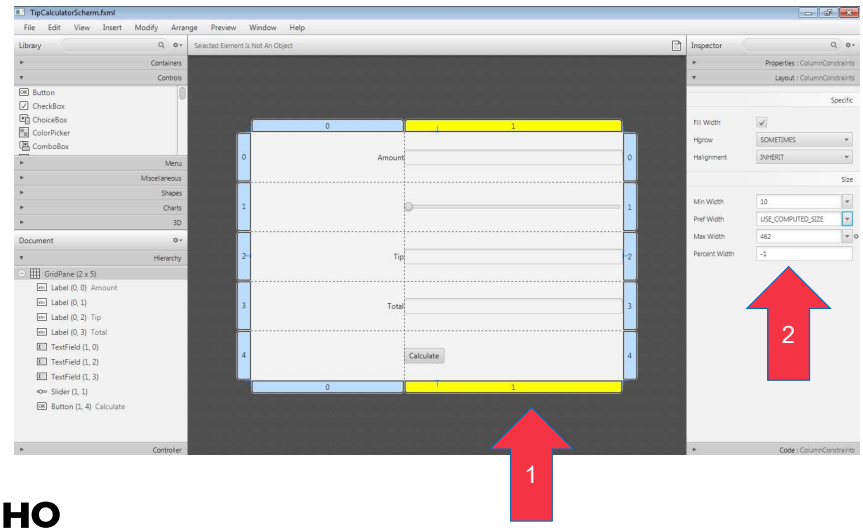


HO GENT

Stap 5: gegevens kolommen wijzigen

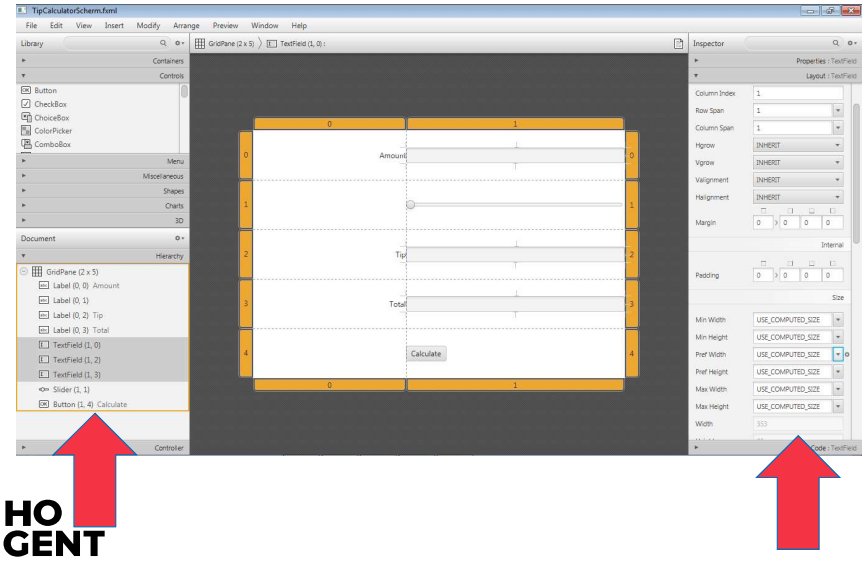


HO GENT



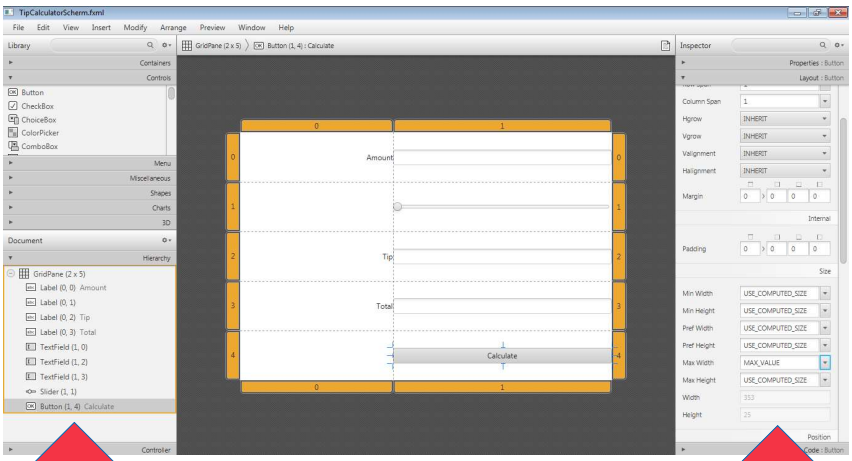
HO GENT

Stap 6: gegevens Textfields wijzigen



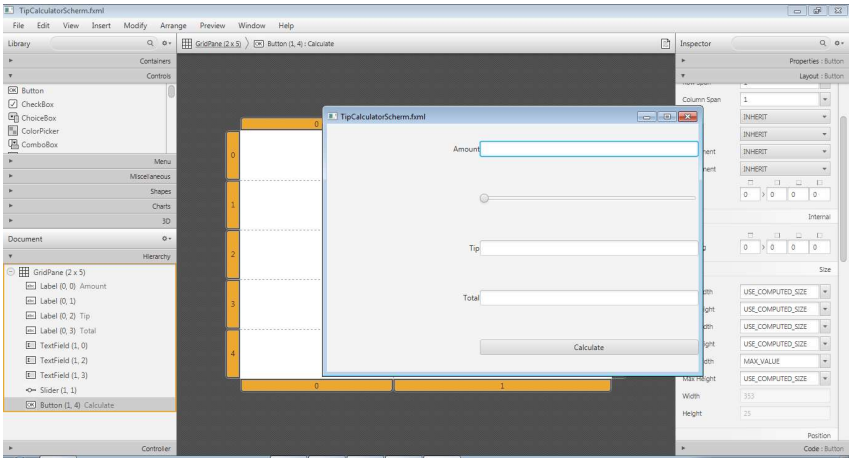
HO GENT

Stap 7: gegevens Button wijzigen



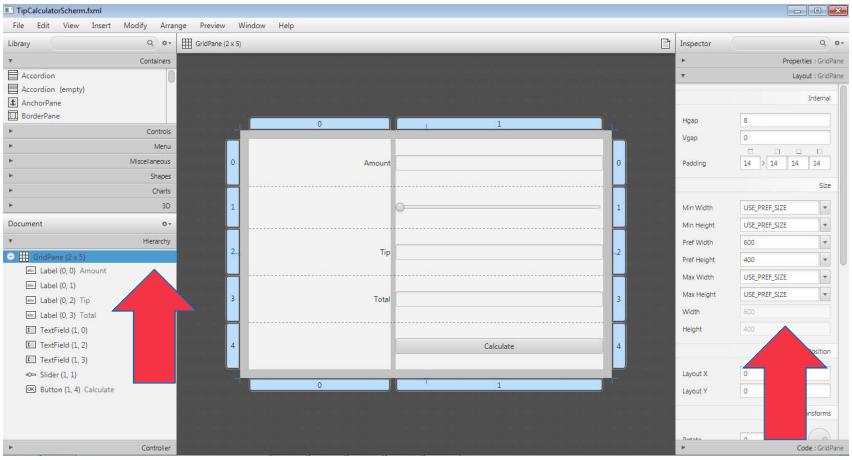
HO GENT

Preview

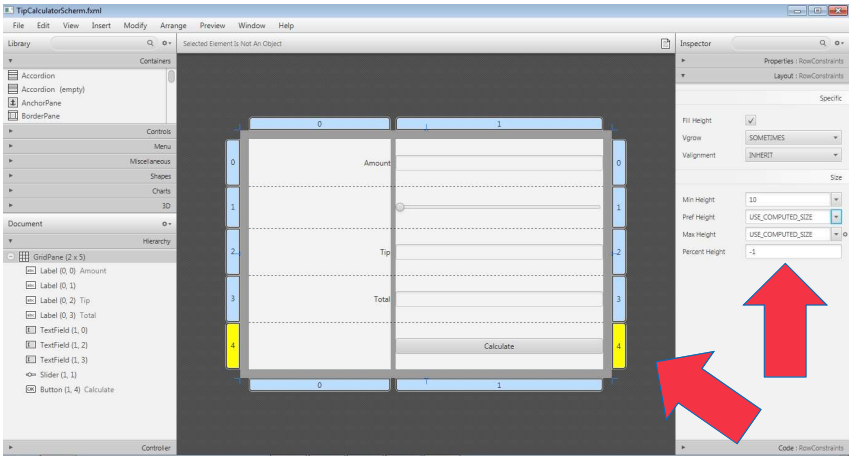


HO GENT

Stap 8: gegevens GridPane wijzigen

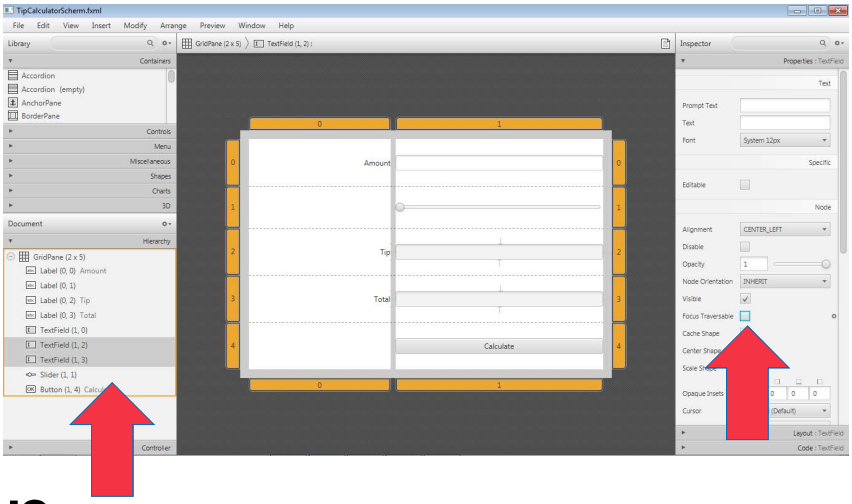


HO GENT



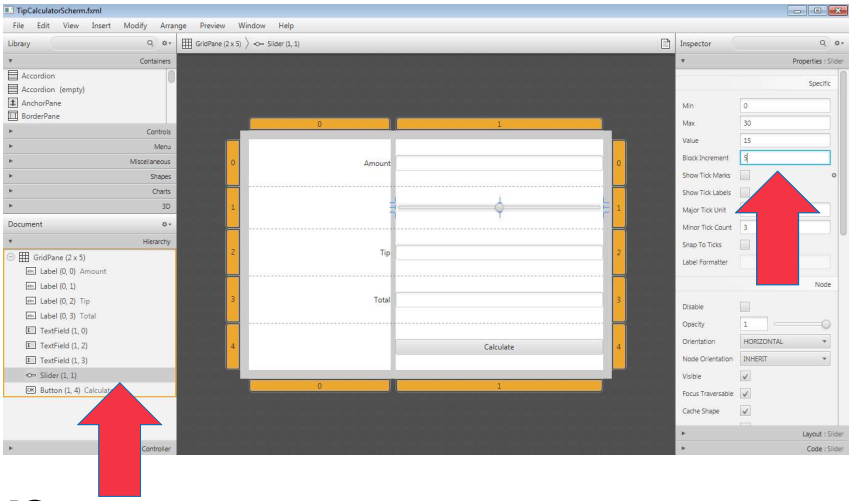
HO GENT

Stap 9: TextFields niet aanklikbaar

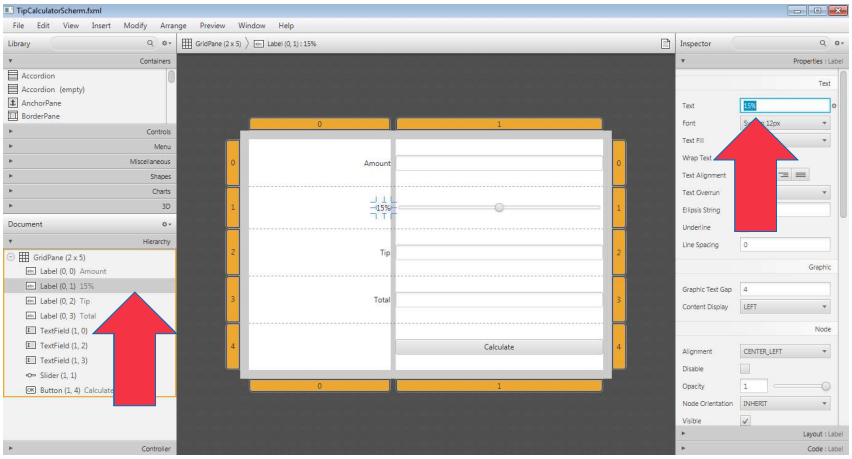


HO GENT

Stap 10: Slider aanpassen

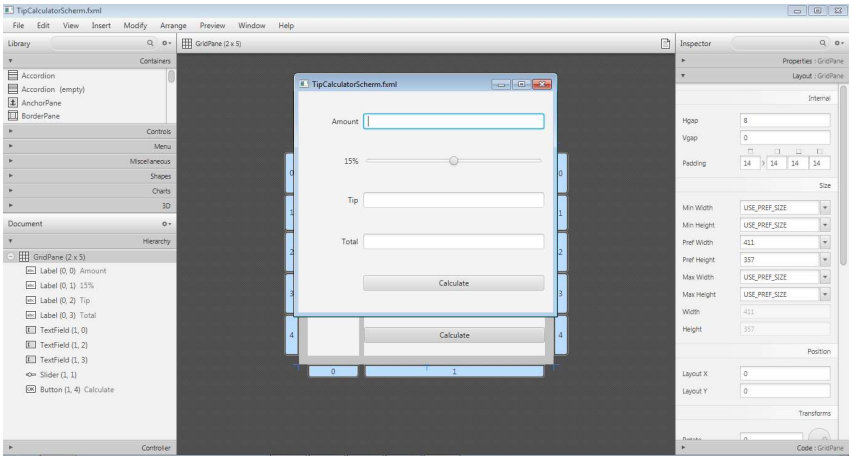


HO GENT



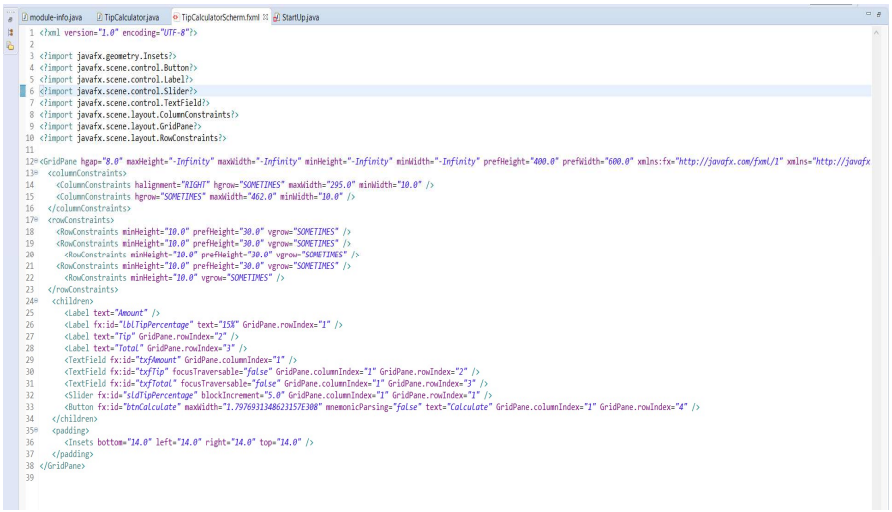
HO GENT

Preview



HO GENT

FXML door SceneBuilder gegenereerd



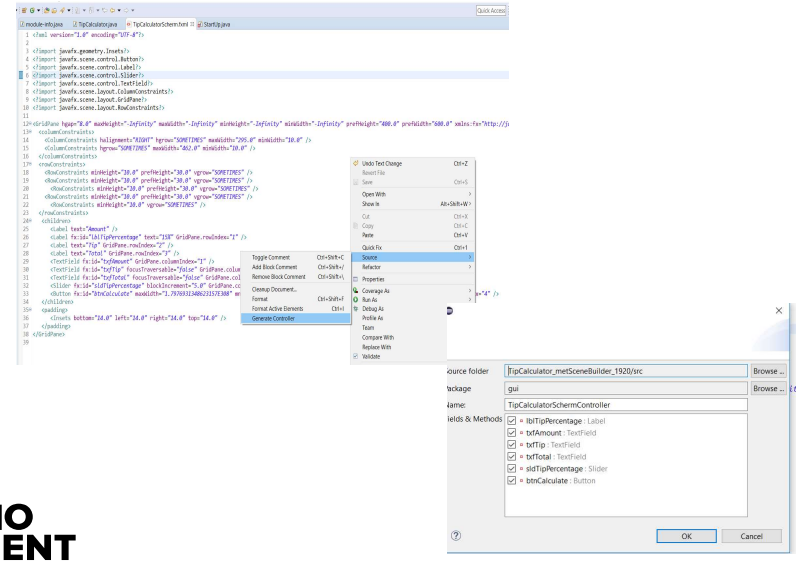
```
<?xml version="1.0" encoding="UTF-8"?>

<?import javafx.geometry.Insets?>
<?import javafx.scene.control.Button?>
<?import javafx.scene.control.Label?>
<?import javafx.scene.control.Slider?>
<?import javafx.scene.control.TextField?>
<?import javafx.scene.layout.ColumnConstraints?>
<?import javafx.scene.layout.GridPane?>
<?import javafx.scene.layout.RowConstraints?>

<GridPane hgap="8.0" maxHeight="-Infinity" maxWidth="-Infinity" minHeight="-Infinity" minWidth="-Infinity" prefHeight="400.0" prefWidth="600.0" xmlns:fx="http://javafx.com/fxml/1" xmlns="http://javafx
  <columnConstraints>
    <ColumnConstraints halignment="RIGHT" hgrow="SOMETIMES" maxWidth="295.0" minWidth="10.0" />
    <ColumnConstraints hgrow="SOMETIMES" maxWidth="462.0" minWidth="10.0" />
  </columnConstraints>
  <rowConstraints>
    <RowConstraints minHeight="10.0" prefHeight="30.0" vgrow="SOMETIMES" />
    <RowConstraints minHeight="10.0" prefHeight="30.0" vgrow="SOMETIMES" />
      <RowConstraints minHeight="10.0" prefHeight="30.0" vgrow="SOMETIMES" />
    <RowConstraints minHeight="10.0" prefHeight="30.0" vgrow="SOMETIMES" />
      <RowConstraints minHeight="10.0" vgrow="SOMETIMES" />
  </rowConstraints>
  <children>
      <Label text="Amount" />
      <Label fx:id="lblTipPercentage" text="15%" GridPane.rowIndex="1" />
      <Label text="Tip" GridPane.rowIndex="2" />
      <Label text="Total" GridPane.rowIndex="3" />
      <TextField fx:id="txfAmount" GridPane.columnIndex="1" />
      <TextField fx:id="txfTip" focusTraversable="false" GridPane.columnIndex="1" GridPane.rowIndex="2" />
      <TextField fx:id="txfTotal" focusTraversable="false" GridPane.columnIndex="1" GridPane.rowIndex="3" />
      <Slider fx:id="sldTipPercentage" blockIncrement="5.0" GridPane.columnIndex="1" GridPane.rowIndex="1" />
      <Button fx:id="btnCalculate" maxWidth="1.7976931348623157E308" mnemonicParsing="false" text="Calculate" GridPane.columnIndex="1" GridPane.rowIndex="4" />
  </children>
  <padding>
    <Insets bottom="14.0" left="14.0" right="14.0" top="14.0" />
  </padding>
</GridPane>
```

HO GENT

Controller aanmaken



HO GENT

Controller aanpassen

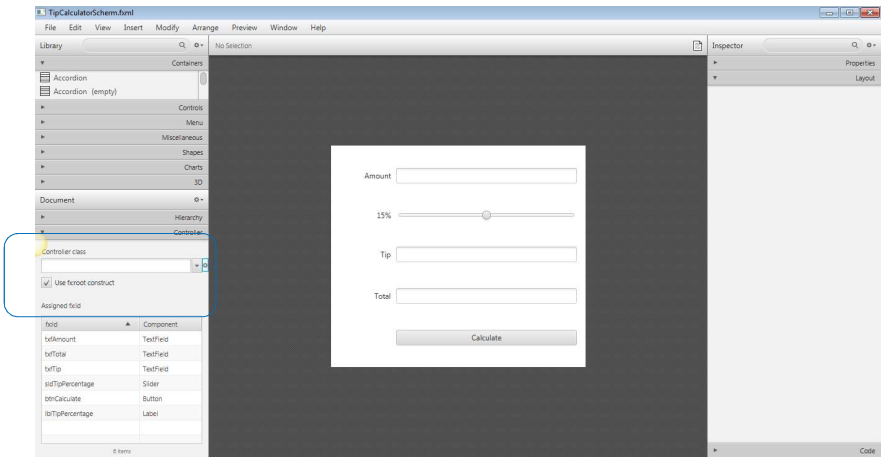
```
public class TipCalculatorSchermController extends GridPane
{
    @FXML
    private Label lblTipPercentage;
    @FXML
    private TextField txfAmount;
    @FXML
    private TextField txfTip;
    @FXML
    private TextField txfTotal;
    @FXML
    private Slider sldTipPercentage;
    @FXML
    private Button btnCalculate;
```

HO GENT

TipCalculatorSchermController

```
private TipCalculator domeinController;
public TipCalculatorSchermController (TipCalculator dc)
{
    this.domeinController = dc;
    FXMLLoader loader = new
        FXMLLoader(getClass().getResource("TipCalculatorScherm.fxml"));
    loader.setRoot(this);
    loader.setController(this);
    try
    {
        loader.load();
    }
    catch (IOException ex)
    {
        throw new RuntimeException(ex);
    }
}
```

HO GENT



HO GENT

StartUp in main-package

```
public class StartUp extends Application
{
   @Override
   public void start(Stage primaryStage) throws Exception
   {
      TipCalculator dc = new TipCalculator();

       Scene scene = new Scene(new TipCalculatorSchermController(dc));
       primaryStage.setScene(scene);
       primaryStage.setTitle("TipCalculator");

       primaryStage.show();
   }

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

}
```

HO GENT

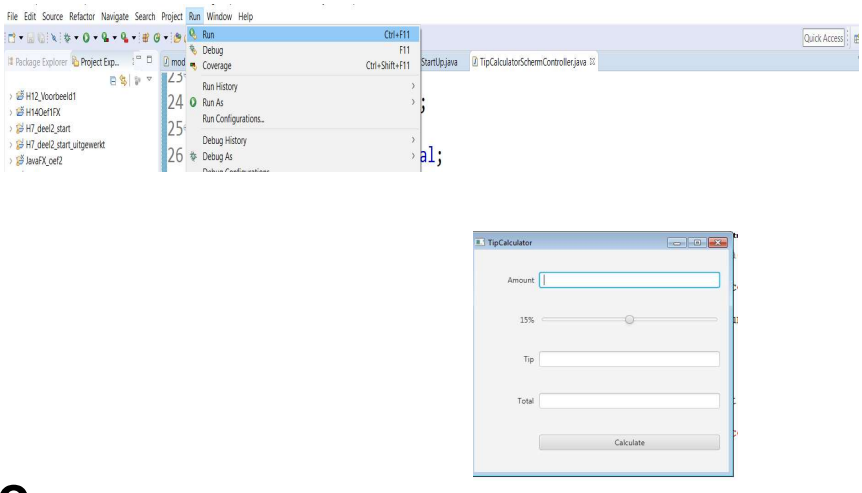
module-info.java aanpassen

TipCalculatorSchermController.java | TipCalculatorScherm.fxml | *module-info.java | StartUp.java

```
1 module TipCalculator_metSceneBuilder_1920 {
2
3     requires javafx.base;
4     requires javafx.graphics;
5     requires javafx.fxml;
6     requires javafx.controls;
7
8     opens main to javafx.graphics,javafx.fxml;
9     opens gui to javafx.graphics,javafx.fxml;
10 }
```

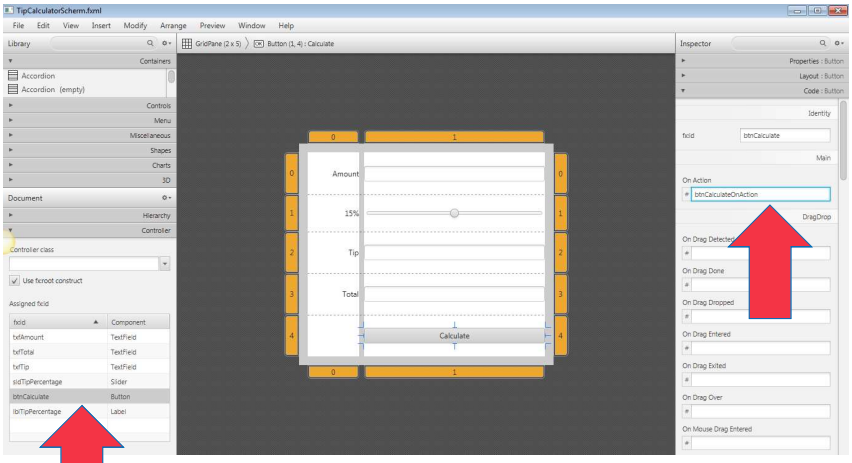
HO GENT

Run



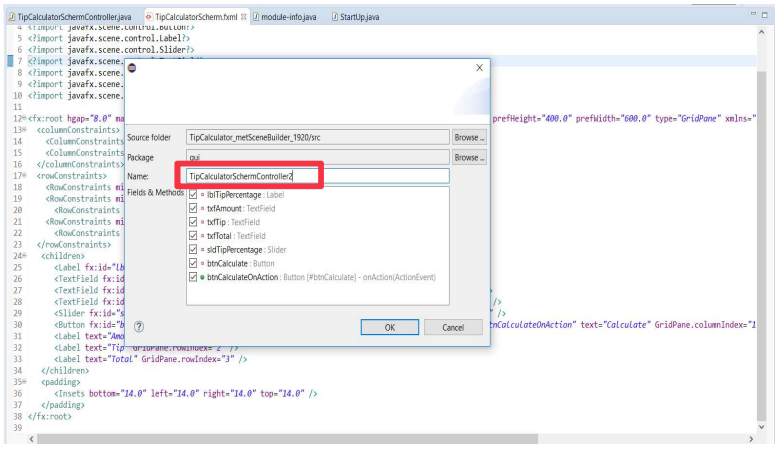
HO GENT

ActionEvent



HO GENT

Controller opnieuw genereren



HO GENT

btnCalculateOnAction

```
67      @FXML
68      private void btnCalculateOnAction(ActionEvent event)
69      {
70          try
71          {
72              BigDecimal amount = new BigDecimal(txfAmount.getText());
73              domeinController.setAmount(amount);
74              BigDecimal tip = domeinController.calculateTip(
75                      BigDecimal.valueOf(Math.floor(sldTipPercentage.getValue())/100));
76              txfTip.setText(String.format("%.2f", tip));
77              txfTotal.setText(String.format("%.2f", amount.add(tip)));
78          }
79          catch (NumberFormatException ex)
80          {
81              txfAmount.setText("Enter amount");
82              txfAmount.selectAll();
83              txfAmount.requestFocus();
84          }
85          catch (IllegalArgumentException iex)
86          {
87              txfAmount.setText(iex.getMessage());
88              txfAmount.selectAll();
89              txfAmount.requestFocus();
90          }
91      }
```

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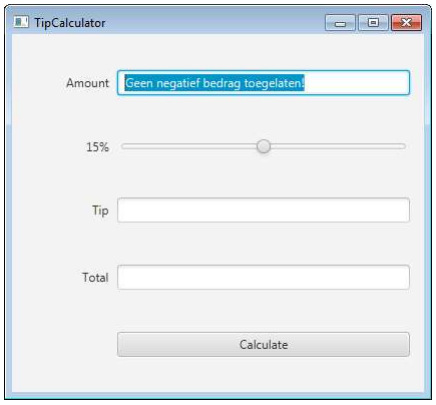

HO GENT

Constructor aanvullen met

```
52          sldTipPercentage.valueProperty().addListener(
                    new ChangeListener<Number>()
54                  {
55                      @Override
                        public void changed(ObservableValue<? extends Number> ov,
57                              Number oldValue, Number newValue)
58                      {
59                          BigDecimal tipPercentage
60                          = BigDecimal.valueOf(newValue.intValue());
61                          lblTipPercentage.setText(String.format("%s%%",tipPercentage));
62                      }
63                  }
64          );
```

HO GENT

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