

public void start(Stage primaryStage)

```
//declarations  
stage = primaryStage  
scene1 = inputScene()  
scene2 = outputScene()
```

primaryStage.setScene(scene1)

primaryStage.setTitle("Base Converter")

primaryStage.setWidth(420)

primaryStage.show()

return

public Scene inputScene()

```
//declarations
numberTextField = TextField()
base1TextField = TextField()
base2TextField = TextField()
radioGroup1 = ToggleGroup()
radioGroup2 = ToggleGroup()
errorLabel = Label()
```

```
//declarations
Button calcButton = Button("Convert")
Button resetButton = Button("Reset")
Label promptLabel = Label("Enter a Number:")
Label convertFromLabel = Label("Base to Convert From:")
Label convertToLabel = Label("Base to Convert To:")
Label otherBase1Label = Label("Enter other base (1-16):")
Label otherBase2Label = Label("Enter other base (1-16):")
```

```
//declarations
HBox promptHBox = HBox(10, promptLabel, numberTextField)
HBox otherBase1Box = HBox(10, otherBase1Label, base1TextField)
HBox otherBase2Box = HBox(10, otherBase2Label, base2TextField)
VBox radioVBox1 = VBox(5, convertFromLabel, binaryButton1, ternaryButton1, octalButton1,
    decimalButton1, hexadecimalButton1, otherButton1,
    otherBase1Box)
VBox radioVBox2 = VBox(5, convertToLabel, binaryButton2, ternaryButton2, octalButton2,
    decimalButton2, hexadecimalButton2, otherButton2,
    otherBase2Box)
HBox radioBoxes = HBox(0, radioVBox1, radioVBox2)
HBox buttonsBox = HBox(25, resetButton, calcButton)
VBox mainVBox = VBox(20, promptHBox, radioBoxes, errorLabel, buttonsBox)
```

```
binaryButton1.setToggleGroup(radioGroup1)
ternaryButton1.setToggleGroup(radioGroup1)
octalButton1.setToggleGroup(radioGroup1)
decimalButton1.setToggleGroup(radioGroup1)
hexadecimalButton1.setToggleGroup(radioGroup1)
otherButton1.setToggleGroup(radioGroup1)
```

```
binaryButton2.setToggleGroup(radioGroup2)
ternaryButton2.setToggleGroup(radioGroup2)
octalButton2.setToggleGroup(radioGroup2)
decimalButton2.setToggleGroup(radioGroup2)
hexadecimalButton2.setToggleGroup(radioGroup2)
otherButton2.setToggleGroup(radioGroup2)
```

```
base1TextField.setPrefWidth(40)
base2TextField.setPrefWidth(40)
```

```
radioVBox1.setMinWidth(200)
radioVBox2.setMinWidth(200)
```

```
buttonsBox.setAlignment(Pos.CENTER)
mainVBox.setAlignment(Pos.CENTER)
mainVBox.setPadding(Insets(10))
```

```
numberTextField.textProperty().addListener(textFieldListener())
otherBase1Box.visibleProperty().bind(otherButton1.selectedProperty())
otherBase2Box.visibleProperty().bind(otherButton2.selectedProperty())
```

```
calcButton.setOnAction(CalcButtonHandler())
resetButton.setOnAction(resetButtonHandler())
```

return Scene(mainVBox)