Retail Price Calculator

The course project of (2025W) Object-Oriented Programming-2477-WA

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Question of the project:

Create a GUI application where the user enters the wholesale cost of an item and its markup percentage into text fields. (For example, if an item's wholesale cost is $5 and its markup percentage is 100 percent, then its retail price is $10.) The application should have a button that displays the item's retail price when clicked. Create the GUI programmatically. Do not use FXML.

Report with screenshots of outputs and Java Codes (Pages 3-5 of this report):

Inputs:

This application provides a clean and interactive GUI where users input:

1) The wholesale cost of an item.

2) The markup percentage.

Programmatic GUI:

All GUI elements (labels, text fields, button, result label) are created directly in Java code using JavaFX.

User Input Handling:

The application uses TextField components for numeric input. Input validation is implemented using a try-catch block to handle incorrect or non-numeric values.

Retail Price Calculation:

The retail price is calculated when the button is clicked, and the result is displayed in a formatted label (with two decimal points).

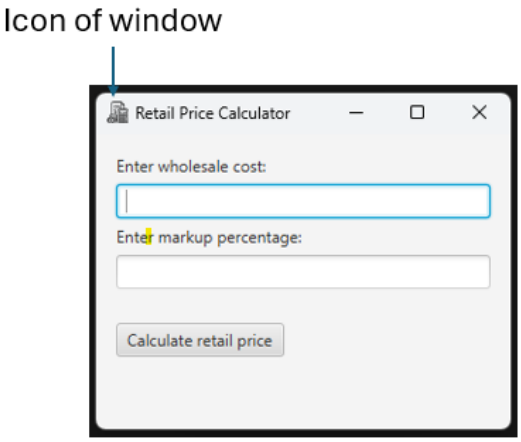
Layout and Styling:

A VBox layout organizes components vertically with spacing and padding for better visual appeal. Additional margin is added above the button for separation.

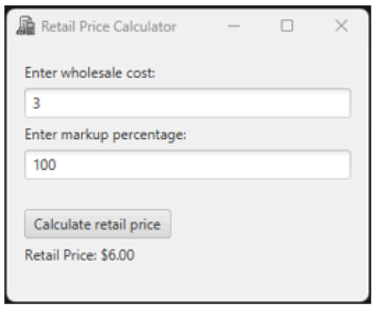
Window Customization:

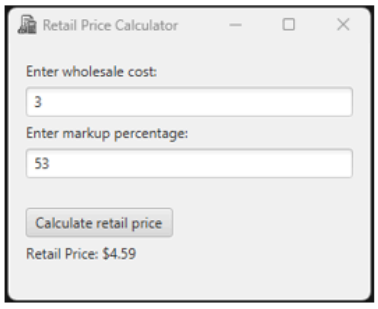
Custom window title: "Retail Price Calculator".

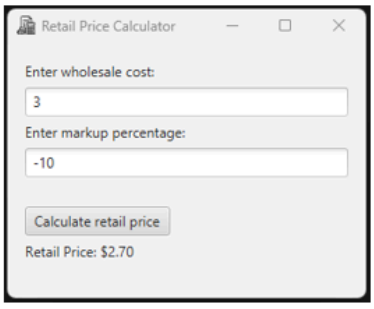
Custom icon is added using an image resource /icon.png.

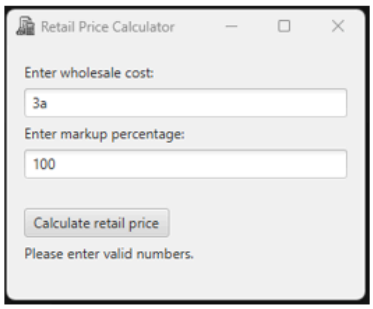


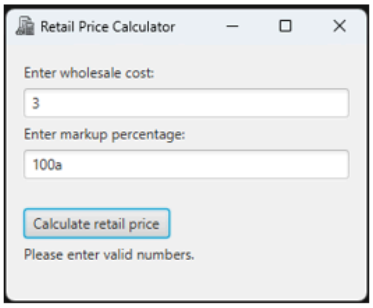
Screenshots of the outputs with different inputs:

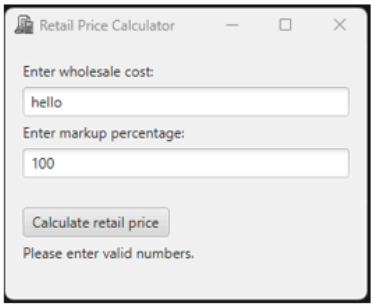




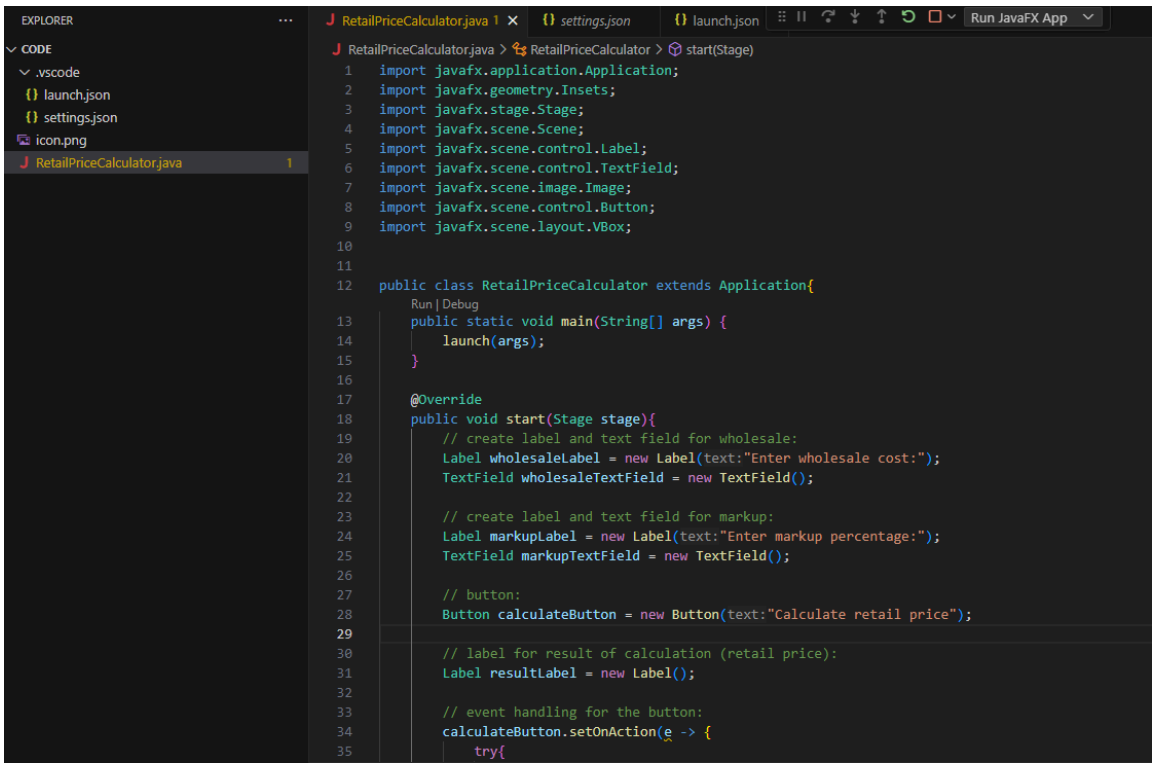








Screenshots of Java code (This page and next page):



RetailPriceCalculator.java 1 | settings.json | launch.json | Run JavaFX App

RetailPriceCalculator.java > RetailPriceCalculator > start(Stage)

```
12  public class RetailPriceCalculator extends Application{
17      @Override
18      public void start(Stage stage){
19          // create label and text field for wholesale:
20          Label wholesaleLabel = new Label(text:"Enter wholesale cost:");
21          TextField wholesaleTextField = new TextField();
22
23          // create label and text field for markup:
24          Label markupLabel = new Label(text:"Enter markup percentage:");
25          TextField markupTextField = new TextField();
26
27          // button:
28          Button calculateButton = new Button(text:"Calculate retail price");
29
30          // label for result of calculation (retail price):
31          Label resultLabel = new Label();
32
33          // event handling for the button:
34          calculateButton.setOnAction(e -> {
35              try{
36                  // read the entered numbers:
37                  double wholesaleCost = Double.parseDouble(wholesaleTextField.getText());
38                  double markupPercentage = Double.parseDouble(markupTextField.getText());
39
40                  // calculate the retail price:
41                  double retailPrice = wholesaleCost * (1 + (markupPercentage / 100));
42                  resultLabel.setText(String.format(format:"Retail Price: $%.2f", retailPrice));
43              }
44              catch(NumberFormatException ex){
45                  resultLabel.setText(value:"Please enter valid numbers.");
46              }
47          });
48
49          // layout of the wholesale:
50          VBox box = new VBox(5, wholesaleLabel, wholesaleTextField, markupLabel, markupTextField, calculateButton, resultLabel);
51
```

RetailPriceCalculator.java 1 | settings.json | launch.json | Run JavaFX App

RetailPriceCalculator.java > RetailPriceCalculator > start(Stage)

```
12  public class RetailPriceCalculator extends Application{
18      public void start(Stage stage){
42                  resultLabel.setText(String.format(format:"Retail Price: $%.2f", retailPrice));
43              }
44              catch(NumberFormatException ex){
45                  resultLabel.setText(value:"Please enter valid numbers.");
46              }
47          });
48
49          // layout of the wholesale:
50          VBox box = new VBox(5, wholesaleLabel, wholesaleTextField, markupLabel, markupTextField, calculateButton, resultLabel);
51
52          // padding (gap) around the box:
53          box.setStyle("-fx-padding: 15px;");
54
55          // add extra space above the button:
56          VBox.setMargin(calculateButton, new Insets(20, 0, 0, 0));
57
58          // scene (and size of window):
59          Scene scene = new Scene(box, 300, 200);
60
61          // title of window:
62          stage.setTitle("Retail Price Calculator");
63
64          // icon of window:
65          stage.getIcons().add(new Image(getClass().getResourceAsStream(name:"/icon.png")));
66
67          // set scene for the stage:
68          stage.setScene(scene);
69
70          // show the stage:
71          stage.show();
72      }
73  }
74
```