

## **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.

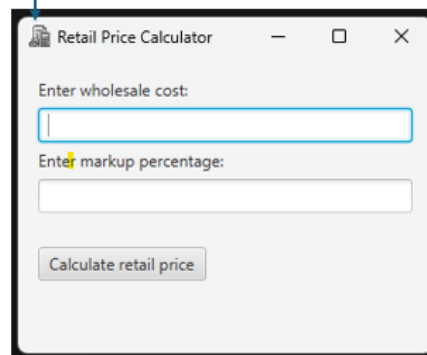
### Window Customization:

Custom window title: "Retail Price Calculator".

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



Icon of window



### Screenshots of the outputs with different inputs:

Retail Price Calculator

Enter wholesale cost:  
3

Enter markup percentage:  
100

Calculate retail price

Retail Price: \$6.00

Retail Price Calculator

Enter wholesale cost:  
3

Enter markup percentage:  
53

Calculate retail price

Retail Price: \$4.59

Retail Price Calculator

Enter wholesale cost:  
3

Enter markup percentage:  
-10

Calculate retail price

Retail Price: \$2.70

Retail Price Calculator

Enter wholesale cost:  
3a

Enter markup percentage:  
100

Calculate retail price

Please enter valid numbers.

Retail Price Calculator

Enter wholesale cost:  
3

Enter markup percentage:  
100a

Calculate retail price

Please enter valid numbers.

Retail Price Calculator

Enter wholesale cost:  
hello

Enter markup percentage:  
100

Calculate retail price

Please enter valid numbers.

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

```

EXPLORER
CODE
  .vscode
    launch.json
    settings.json
    icon.png
  RetailPriceCalculator.java

J RetailPriceCalculator.java | x settings.json | launch.json | Run JavaFX App
J RetailPriceCalculator.java > RetailPriceCalculator > start(Stage)
1  import javafx.application.Application;
2  import javafx.geometry.Insets;
3  import javafx.stage.Stage;
4  import javafx.scene.Scene;
5  import javafx.scene.control.Label;
6  import javafx.scene.control.TextField;
7  import javafx.scene.image.Image;
8  import javafx.scene.control.Button;
9  import javafx.scene.layout.VBox;
10
11
12  public class RetailPriceCalculator extends Application{
13      Run | Debug
14      public static void main(String[] args) {
15          launch(args);
16      }
17
18      @Override
19      public void start(Stage stage){
20          // create label and text field for wholesale:
21          Label wholesaleLabel = new Label(text:"Enter wholesale cost:");
22          TextField wholesaleTextField = new TextField();
23
24          // create label and text field for markup:
25          Label markupLabel = new Label(text:"Enter markup percentage:");
26          TextField markupTextField = new TextField();
27
28          // button:
29          Button calculateButton = new Button(text:"Calculate retail price");
30
31          // label for result of calculation (retail price):
32          Label resultLabel = new Label();
33
34          // event handling for the button:
35          calculateButton.setOnAction(e -> {
36              try{

```

```

J RetailPriceCalculator.java x {} settings.json {} launch.json {} Run JavaFX App
J 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

```

```

J RetailPriceCalculator.java x {} settings.json {} launch.json {} Run JavaFX App
J 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

```

