


I. Modify the Line Item application

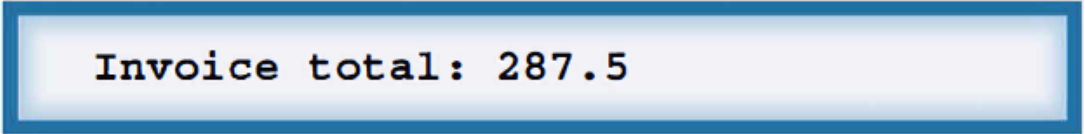
In this exercise, you'll use some of the skills that you learned to modify the Line Item application.

1. Open the project named ex7_Lineitem as provided. Then, review the code for this project and run it until you understand how it works.
2. Open the Product class. Use the float type instead of the double type for the price. To do that, you need to modify the declaration for the instance variable, the constructor that sets the price, the getPrice method, and the setPrice method.
3. Open the Lineitem class. Modify the getTotal method so it returns a float type instead of a double type.
4. Open the ProductDB class. Modify the statements that use the setPrice method so they pass float literals instead of double literals.
5. Run the application to make sure it still works correctly.
6. Before the while loop, declare a counter variable of the byte type. After the code that displays the line item, use the increment operator to increment the counter variable. After the while loop, display the number of line items that the user entered. For example, for 2 line items, display a message like this:



Number of line items: 2

7. Before the while loop, declare a total variable of the float type. After the code that displays the line item, use the compound addition operator to add the total for the line item to the total variable. After the while loop, display the total like this:



Invoice total: 287.5

8. Before the while loop, declare one variable of the float type that stores the largest line item and another variable of the float type that stores the smallest line item. After displaying the line item, use the max and min methods of the Math class to update the values for the largest and smallest line items. After the loop, display the total like this:

Largest line item: 172.5
Smallest line item: 100.0

To get this to work correctly, you need to initialize the minimum value to a very large value. Also, within the min and max methods of the Math class, you need to cast the value that's returned by the getTotal method of the Lineitem class to a float value.

II. Modify the Invoice application to use the BigDecimal class

In this exercise, you'll modify the Invoice application so it uses the BigDecimal class to perform calculations.

1. Open the project named ex7_Invoice as provided. Then, review the code for this project.
2. Run the application and test it with a range of subtotal values including a subtotal value of 100.05. Note that the totals all add up correctly.
3. Remove the statement that rounds the sales tax.
4. Run the application and test it by entering a subtotal value of 100.05. Note that the totals don't add up correctly.
5. Modify the code so it uses the methods of the BigDecimal class to perform all of the rounding, multiplication, addition, and subtractions that needs to be done for this application. In other words, don't use the arithmetic operators for multiplication (*), addition (+), or subtraction (-). Make sure to round numbers up to 2 decimal places wherever that's necessary.
6. Run the application and test it by entering a subtotal value of 100.05. The totals should add up correctly.