

# COP-2250 Java Programming

## Programming Assignment 1

FIU Knight Foundation School of Computing & Information Sciences

### 1 Problem Specification

For this programming assignment, you will be completing the implementation of a java program for the checkout system of a grocery store which sells rice by pound, eggs by the dozen, and French bread by loaf.

Your program must first print out the following message on screen:

“Welcome to the checkout system of Awesome Grocery Store!

Please enter the weight of rice in pounds: ”

After the user enters the weight of rice using keyboard, your program will print out the following message on screen:

“Now, enter the number of eggs: ”

After the user enters the number of eggs using keyboard, your program will print out the following message on screen:

“Now, enter the number of loafs of French bread: ”

After the user enters the number of loafs of French bread using keyboard, your program will calculate the total cost of sold items excluding tax (called SUBTOTAL), total tax, and total cost including tax (called TOTAL) and print out the following message on screen:

“Here is your receipt:

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SUBTOTAL: \$X

TAX: \$Y

TOTAL: \$Z”

where X, Y, and Z are the calculated values of subtotal, tax, and total cost (respectively) represented in *dollars with two digits after the decimal point*.

In order to calculate the subtotal, tax, and total cost, you need to assume that:

- Cost of rice per pound is \$1.25
- Cost of egg per dozen is \$14.75

- Cost of French bread per loaf is \$2.75
- Tax percentage is 6.75%

## 2 A Numerical Example

To illustrate how to calculate the subtotal, tax, and total cost, let's consider the following scenario:

The user wants to generate the receipt for selling 2.65 lbs of rice, 30 eggs, and 5 loafs of French bread. Here is how the subtotal (X) is calculated:

$$\text{cost of rice} = 2.65 \times 1.25 = 3.3125$$

$$\text{cost of eggs} = \frac{30}{12} \times 14.75 = 36.875$$

$$\text{cost of French bread} = 5 \times 2.75 = 13.75$$

$$\text{subTotal} = \text{cost of rice} + \text{cost of eggs} + \text{cost of French bread} = 53.9375$$

Then, it's time to find the tax amount (Y) this way:

$$\text{tax} = \frac{6.75}{100} \times \text{subTotal} = \frac{6.75}{100} \times 53.9375 = 3.64078125$$

Finally, the total cost (Z) is calculated this way:

$$\text{total} = \text{subtotal} + \text{tax} = 53.9375 + 3.64078125 = 57.57828125$$

Therefore, the receipt in this scenario looks like this:

<p>“Here is your receipt:</p> <hr/> <p>SUBTOTAL: \$53.94  TAX: \$3.64  TOTAL: \$57.58”</p>
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## 3 Submissions

You need to submit a single file named “GroceryStoreCheckout.java”. The incomplete file is posted on Canvas along with this assignment specification.

## 4 Grading Criteria

- Code readability: 10%
- Using comments to explain every line of the program: 10%

- Correctness of Java syntax (no compilation error): 10%
- Proper scan of System.in: 10%
- Proper usage of variables: 10%
- Correctness of calculation formulas: 20%
- Proper print of messages on screen: 20%
- Passing all of tests: 10%