

Java for Non Majors

CGS 3416: Spring 2020
Department of Computer Science, Florida State University

Homework 1: 100 points

Due date: 11:59 PM 01/30/2020

Objective

The purpose of this assignment is to test your familiarity with Java I/O statements and if-else statements. This assignment also tests your understanding of the basics of Java programming and execution, like top-down control flows, translating the logical solution to a problem into code, and integrating the new concepts you just learned with the older concepts, including data types and variables, declaration, initialization and assignments, arithmetic operators, etc.

Please submit your file "`Coffee.java`" to Canvas

The Problem

Starbucks is having a sale of epic proportions. They're offering a discount on every purchase exceeding \$5. The catch: it is a one day sale. So, one has to make the most of it today, or lose out on all the potential coffee savings. To add to this incentive, they have decided to reward their loyal customers with discounts proportional to their degree of loyalty. If a customer has made a certain number of purchases in the last month, they will get a higher discount rate. The discount rates are as shown in the table below.

Number of purchases	Discount Rate (in %)
0	5
1-5	10
6-10	15
11-15	20
16 -20	25
21 and higher	30

Please note that the purchase has to exceed \$5 for the discount to apply.

You have to help Starbucks develop a command line Java application that accepts the customer's name, the current sale amount, and the number of purchases in the last month, and calculate the discount to be applied and finally print the receipt.

Specifications

- Create a class with the appropriate name. All of the code should be in the main method. (10 points)
- Create the variables required for the customer's name, current sale amount, and the number of previous purchases. (10 points)
- Print the appropriate prompts and read in the values from the user. (20 points)
- Use the given table to determine the correct discount rate and calculate the discount and the amount to be paid. (40 points)
- Display the receipt in the format shown in the sample runs. (10 points)
- Please include comments wherever appropriate. (10 points)

Sample Runs

Regular text is what's printed by your program. Underlined text is user input, shown here as a sample. You will not be printing the underlined parts in your program.

Also, there are 24 stars in the rows of stars, just so you know. That need not be exact. I just require a row of stars. You can have 20 or 30 or any other reasonable number.

It is alright if you're off by a cent. That might happen depending on the way you approach the problem and rounding.

Sample Run 1

```
Welcome to Starbucks.  
Please enter your name: Brian B Bryan  
Please enter the current purchase amount: $ 12.78  
Please enter the number of purchases in the last month: 14  
*****  
Receipt for Brian B Bryan  
You get a 20% discount.  
Total amount due: $ 10.22  
You saved $ 2.56  
*****
```

Sample Run 2

```
Welcome to Starbucks.  
Please enter your name: Sheldon J Plankton  
Please enter the current purchase amount: $ 3.25  
Please enter the number of purchases in the last month: 32  
*****  
Receipt for Sheldon J Plankton  
You get a 0% discount.  
Total amount due: $ 3.25  
You saved $ 0.00  
*****
```

Generic Guidelines

- Please add your name and FSUID as comments on the top of your program.
- Please make sure that you're conforming to specifications (program name, print statements, expected inputs and outputs etc.). Your output must match the sample output exactly (especially the literal text on print statements).
- Please make sure your code is readable and well documented.
- Please make sure you've compiled and run your program before you turn it in. If your program does not compile, a grade 0 will be awarded.