CSE21 : Project #1

Create a new class called Shop (Shop.java) to do all your work. You may work in pairs or by yourself. The expectation is that you work on the project outside of lab time but you may certainly use any extra time in lab this week. Your partner can be in any section, both of you will make your own submission while noting your collaborator/partner in the text box of the submission.

You have been hired by a consultant firm to work on a shop program. It will have a very simple interface with 4 options (Shop.java):

- Setup shop
- Buy items
- List of items purchased
- Checkout

The idea is that the user should follow the sequence of setting up shop then letting the customer purchase items and check out. Each of the options should utilize at least one **method** each (4 methods minimum for the project). You may use more as you find necessary but this project should illustrate competence in method usage. It looks like this for intro:

```
This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:
```

Setup Shop (I)

1. Ask for the number of items to sell
2. For each item
    a. Ask the name of the item (one word)
    b. Ask the price of the item
3. Discount
    a. Ask for the threshold (over which amount to give discount)
    b. Ask for the rate (how much % discount)
4. User can run setup multiple times so keep the latest version

Buy Items (II)

1. If setup is not done yet then tell customer to setup shop first

2. For each item
    a. Ask the amount they wish to purchase
3. User can purchase multiple times so only process the latest order (think of init() from labs)

List of Items (III)

1. If setup is not done yet then tell customer to setup shop first
2. If setup is done but the customer hasn't bought anything then ask to buy first
3. For each item purchased (non-zero amount)
    a. Display amount purchase and price per item

Check Out (IV)

1. If setup is not done yet then tell customer to setup shop first
2. If setup is done but the customer hasn't bought anything then ask to buy first
3. Display the summary
    a. Sub Total
    b. Discount
    c. Total
4. End the program

Your job is to fool-proof that program so if the customer does not follow the ascribed order then there should be guidance on what to do first. Here is a sample of this behavior:

```
This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:2

Shop is not setup yet!

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:4

Shop is not setup yet!

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:
```

The program will keep asking the 4 main questions until the user decides to setup Shop. Here is a sample run with one misstep by the customer:

```
This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:1
Please enter the number of items: 2
Enter name of product 0 :Shampoo
Enter price of product 0 :13.13
Enter name of product 1 :Conditioner
Enter price of product 1 :10.99
Please enter the amount to qualify for discount: 100
Please enter the discount rate(0.1 for 10%): .05
This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:3

Try again: You have not bought anything

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:2

Enter the amount of Shampoo : 10
Enter the amount of Conditioner : 20

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:3

10 count of Shampoo @ 13.13 = $131.3
20 count of Conditioner @ 10.99 = $219.8

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:4

Thanks for coming!
Sub Total: $351.1
-Discount: $17.555000000000003
Total    : $333.545
```

Sample of purchasing multiple times with different amounts:

```
This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:1
Please enter the number of items: 3

Enter name of product 0 :Shampoo
Enter price of product 0 :10.99
Enter name of product 1 :Conditioner
Enter price of product 1 :6.99
Enter name of product 2 :Combo
Enter price of product 2 :12.99
Please enter the amount to qualify for discount: 50
Please enter the discount rate(0.1 for 10%): .1

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:2

Enter the amount of Shampoo : 1
Enter the amount of Conditioner : 1
Enter the amount of Combo : 1

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:3

1 count of Shampoo @ 10.99 = $10.99
1 count of Conditioner @ 6.99 = $6.99
1 count of Combo @ 12.99 = $12.99

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:2

Enter the amount of Shampoo : 0
Enter the amount of Conditioner : 1
Enter the amount of Combo : 0

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:3
```

```
1 count of Conditioner @ 6.99 = $6.99

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:2

Enter the amount of Shampoo : 1
Enter the amount of Conditioner : 0
Enter the amount of Combo : 1

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:3

1 count of Shampoo @ 10.99 = $10.99
1 count of Combo @ 12.99 = $12.99

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:4

Thanks for coming!
Sub Total: $23.98
-Discount: $0.0
Total    : $23.98
```

The user might enter inputs other than 1-4 so must catch it like this:

```
This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:5

Error: Do not know 5

This program supports 4 functions:
      1. Setup Shop
      2. Buy
      3. List Items
      4. Checkout
Please choose the function you want:
```

The requirements for this project are listed (I-IV) at the beginning of this document. Sub items are numbered 1-4 so what you will need to provide for this project are the test cases for each requirement as part of your submission. You can include this in your submission. For example:

I - 1, Created quantities of 1, 2 and 10 to sell
II – 3, Ordered 5 of item 1 first time but did not purchase when ordering again, checked the output items to make sure it's 0 instead of 5 (no corruption of the orders)
III - 1, Input 3 before 1
III - 2, Input 3 before 2

You will need this for EVERY requirement and how you tested for each portion of the project. NOTE: above example is very incomplete. Put this writeup into a file called Test_cases.txt or doc. This should purely be a list of all the different test cases you have created yourself and used to verify your program is correct.

You will also include a log (copy and paste from the Console output) into a file called Test_cases.log. This is merely all the tests you listed in the txt/doc file and showing us that you have actually ran them yourself. So it is a list of different inputs and their results in one big file. You can copy the console outputs one run after another in the order of the Test_cases.txt.

What to hand in

- Completed Shop.java
- List of test cases for each requirement in Test_cases.txt/doc
- Test case logs in Test_cases.log
- Partner's name in the submission text box if any