BIRZEIT UNIVERSITY

Computer Science Dept.
Comp231

Final Project :

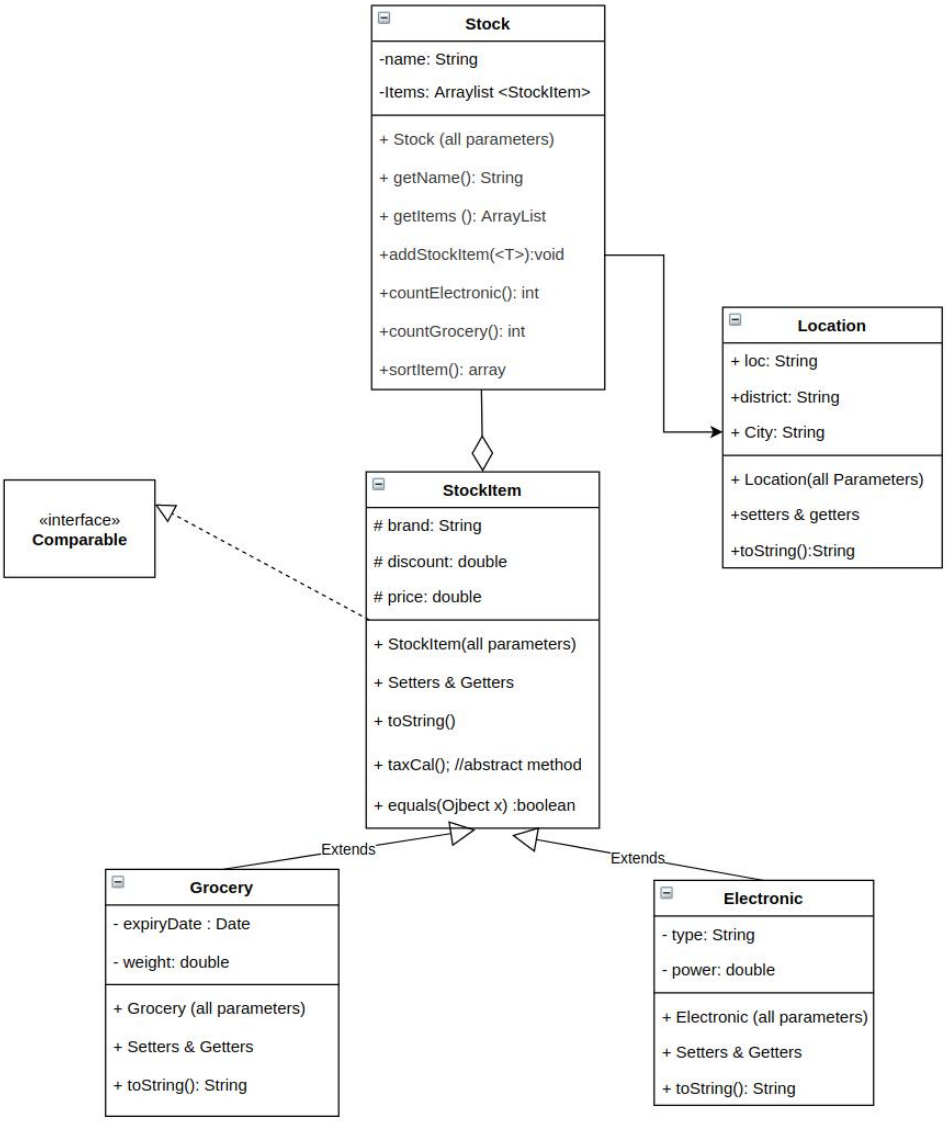
Objectives:

1. Java concepts (Chapter1- Chapter 13)

Note: YOU CAN'T USE ANY OTHER CONCEPT OUTSIDE THIS CHAPTERS (WILL NEVER BE GRADED).

Specification Submission:

1. *Online through ITC.*
2. *What to submit: Your own well-structured and **well-commented** JAVA files (.java)*
3. *Upload All Java files under submission section.*



Given the above UML of project, Write a complete java program as the following

[15 pts] Implement the class StockItem,Implements comparable interface, stock items are compared based on their prices **which contains:**

1. A constructor which accepts all required arguments
2. Set & get method for each data attribute.
3. equals() method return true when two objects of stock items have same price and same type .
4. A toString() method which returns a String contains StockItem object as follows (brand, price and discount, if discount grater than zero).

   Assume the object is a Panasonic VF-700 whose price is $130 and discount= 0.05. The toString() method returns:

   Panasonic VF-700 ($130) has discount = 5%

   Assume the object is a Sony NV-500 whose price is $530 and discount= 0.0. The toString() method returns:

   Sony NV-500 ($530)

5. Stock items are comparable object that are compared based on pair brand.

[15pts] Implement the Grocery class as described in the class diagram.

1. A constructor which accepts all required arguments (5 parameters)
2. Set & get method for each data attribute.
3. calcTax() method which returns a double after tax calculate with constant 5.75%
4. Override toString method which return a string contains all as follows

   Candia Milk 2L ($2.5) has discount = 10%, expiry Year = 2022, Weight (1.75Kg)

   after discount price is $2.25 , after tax included ($3.544)

   Dettol 500ml ($5) , expiry Year = 2025 , Weight(0.45Kg), after tax included ($7.875)

[15 pts] Implement the Electronic class as described in the class diagram.

1. A constructor which accepts all required arguments (5 parameters)
2. Set & get method for each data attribute.
3. calcTax() method which returns a double after tax calculate with constant 16.5%
4. A toString() method which returns a String containing **all attributes of Electronics** as follows:

   Sony ($550) discount = 10% (in Home Appliances) 1800Watt

   After discount price is $495, after tax included ($576.675)

[15 pts] Implement the class Stock, which contains:

1. A constructor which accepts the name and create an array of stock items
2. The following methods:

    a. getName: returns the name of stock
    b. getItems: returns an array of stock Items
    c. addStockItem: to add an Electronic/Grocery item to array
    d. countElectronic: gives the number to electronic item
    e. countGrocery: gives the number to Grocery item
    f. SortItem(): return an array of stock item sorted descending order based on brand.

Part II: Driver Class

Question [40 points]

Write a test/driver program to:

1. [2.5 pts] Create a **stock** object named "Al-Mashhadawi". with address (Lacasa Mall ,Arehan, Ramallah)
2. [2.5 pts] Create a menu to let user chose from (point 3- 7)
3. [10 pts] Read data : Fill the **stock** with Grocery and Electronics read from *"data.txt"* file.

File has the following data format:

Grocery,Dettol 500ml,1.5,7.5,2022,0.45
*Electronics ,*Panasonic VF-700*,25,750,in Home Appliances,1800*
Grocery,Candia Milk 500ml,1.25,5.5,2023,0.350
*Electronics ,*Sony NV-500*,0,950,in Home Appliances,2500*
Electronics ,Apple iPhone -8,15,650,in Home Appliances,1200
Electronics ,E100,0,1650,out Home Appliances,1800
...

4. [5 pts] Allow user to enter Grocery or Electronics items to ArrayList and save the new stock items back to "*data.txt*" file.
5. [10 pts] Print all expired Grocery items (that have an expiry date less than current date).(**Note : You have to use Calender class**)
6. [5 pts] Get the brands, type and price after discount of Electronics items having discount, print the result at console
7. [5 pts]Print all stock items sorted by brand in descending, print result at "*report.txt*" file.