CS 202: IT Workshop I
Mid semester Lab examination
17 October 2022

Class hierarchy 1: “User” is class and it has two subclasses “Admin” and “General”.

Class hierarchy 2: “Item” is a class and it has two subclasses “FoodItem” and “NonFoodItem”. There are two more classes “Sell” and “Return”.

The data members of the classes are as follows.

User (userID, name, dateOfBirth, Address, PAN)

Admin (dateOfJoining, salary, permissibleOperations)

General (dateOfJoining, salary, dutyHourPerDay)

Item (itemCode, price, AvailableQty)

FoodItem (dateOfExpiry)

NonFoodItem (returnCount)

Sell (dateOfSell, itemCode, quantity, totalAmount)

Return (dateOfReturn, itemCode, quantity, returnAmount)

System supports following operations:

For Admin user:

i) addNewStock (item): This will add a new item to the system
[Hint: create a new object of Item class and add in an arraylist]

ii) deleteStock (itemcode): This will delete an existing item (represented by itemcode) from the system. Before deleting, it should ensure that available quantity is zero.
[Hint: remove the object with itemCode itemcode from the arraylist]

iii) modifyStock (itemcode): This will update an Item details (it may be price or availableQty). Item is identified by itemcode.
[Hint: search in the arraylist with itemcode and update]

For General user:

i) sellItem (itemcode, quantity): This indicates selling of an item.
[Hint: create a new object of Sell class and add into arraylist, call modifyStock() with appropriate parameters]

ii) returnItem (itemcode, quantity): This indicates return of an item. The system should not accept a return in case of a food item.
[Hint: create a new object of Return class and add into arraylist, call modifyStock() with appropriate parameters]

iii) displayStock (itemcode): Displays the details of the item indicated by itemcode
[Hint: search arraylist and display]

iv) displaySell (startDate, endDate): Displays the details of the sold items within the date range
[Hint: search arraylist with dateOfSell falling in the range]

Define all the classes with appropriate variable names and method names. You may assume appropriate datatype for the fields. You may also use static fields wherever applicable. You may also assume additional fields as appropriate. [20]

Implement all the methods with proper logic. [50]

The application should support command line execution as follows. [10+10]

Application Admin Manojit

The operation options under Admin user will be shown and proceed. Keep an option to exit.

Application General Manojit

The operation options under General user will be shown and the application will run. Keep an option to exit.