

## CS 202: Lab Assignment IX

### Exception handling

Class hierarchy1: “User” is class and it has two subclasses “Admin” and “General”.

Class hierarchy2: “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]

**Exception:** *While adding an item, in case the user enters any not integer value for available quantity, it should throw an Arithmetic exception and prompts the user to re-enter as long as an integer value is entered.*

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 itemCodeitemcode from the arraylist]

**Exception:** *In case the item is not found, system should raise an exception saying that the item is not available.*

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]

**Exception:** In case the item is not found, system should raise an exception saying that the item is not available and it gives another chance to enter the item code.

**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.

[Hint: create a new object of Return class and add into arraylist, call modifyStock() with appropriate parameters]

**Exception:** The system should not accept a return in case of a food item. In case a food item is tried to return, an exception "FoodItemReturnException" is to be thrown and to be dealt accordingly.

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]

**Exception:** The date range cannot be more than 6 months. In such case, an exception is to be thrown and to be handled properly.