COMP 1451 Assignment 3

In this assignment we will deal with abstract classes and Interfaces.

Continuing from Assignment 2 we will refactor our Account hierarchy and add another level of program functionality to access account information.

Account class

• The Account class will become an abstract class.

• The addTransactionInfo(String) method we become an abstract method. Each subclass will now hold its own implementation of the addTransactionInfo(String) method. Each impelemntation should be different in some way.

• subtractFromBalance(double amount) will also become abstract. Each subtype implementation will be unique.

• You will have to adjust how the ArrayList<String> in Account is now accessed from the subclasses. Think about best practices and encapsulation.

Reporter interface

This is an interface that will be implemented by the BankReport class. It will define the following methods:

• void displayByCode(HashMap records, String prefix)

• void displayAllCodes(HashMap records)

• void displayInactiveCodes(HashMap records)

BankReport class

This is a new class that will implement the Reporter methods to display information about the Accounts currently set up with the bank.

• displayByCode(HashMap records, String prefix)   will take a reference to the HashMap that contains all the Accounts in the bank and the prefix code that we used to identify each Account subtype. eg call. displayByCode(theBank, "gl") Only the account numbers that hold the prefix code specified will be displayed.

• displayAllCodes(HashMap records)   will display all the active Accounts in the bank. The output will be displayed sorted by account number.

• displayInactiveCodes(HashMap records) will display only the inactive accounts in the bank, sorted by account number descending.

• Another method, public void displayAccountTotals(HashMap theBank) will display a formatted dollar value which is the sum of all account balances in the bank.

ATM class

• ATM   will now feature a submenu for Bank Employees.

• If a user logs in as a bank employee they will be presented with a menu that will allow them to access the report functions described above.

• The bank employee menu will list the options 1 to 4 to match the report functions stated above.

• Bank employees will not be allowed to alter account information

• Bank employee login will be "admin" and "admin" for both username and password

• There is no need for a separate class to support bank employees. All that is required is to check the login info provided and direct that user to the employee menu where appropriate.

Due the night before session 11 at 11:59pm. Submission format is the usual ZIP file that includes all the project files.