Queen Mary University of London
School of Electronic Engineering and Computer Science

EBU6304: Software Engineering

Lab 1: Java Inheritance Revision

Exercise 1:
Recall the BankAccount class you studied in your year 2 EBU4201 Java Programming module. (please refer to the extracted lecture notes). Write the BankAccount class, compile and run it.

Exercise 2:
Based on the basic BankAccount class, implement the following story. You should:

1. Draw a class diagram that show the relationship of the classes and the attributes and operations of each class. Use Inheritance and Polymorphism.
2. Write the Java code of each class.
3. Test each class.

A Bank Account has account number, account name and balance. Customers can pay in to the account, withdraw money from the account and check balance. A Current Account is a type of Bank Account that has an overdraft limit. Default overdraft limit is 500 yuan.

A Bank is a collection of accounts (can be normal Bank Account or Current Account). It can open new accounts, close accounts and operate on each account. Current Accounts get a message if they are in overdraft state.

Exercise 3:
Based on the work you've done in Exercise 1 and 2, implement the following story.
You should:

1. Draw a class diagram that show the relationship of the classes and the attributes and operations of each class. Use Inheritance and Polymorphism.
2. Write the Java code of each class.
3. Test each class.

A Saving Account is a type of Bank Account, a minimum 7 days' notice must be given before any withdrawal can be made.

Modify the Bank so that it can also operate on Saving Accounts. Add a "Suspend" function to the Bank so no transactions are allowed if an account is suspended.