

## **SE 317: Lab 7**

### **The ATM Machine and the Utility Company**

In this assignment you will build and test an ATM machine. The machine will allow user access to their bank accounts and manage their money transfer and bill payment. The bank has the following rules:

1- Checking Account:

- The user can have one checking account
- The user can deposit up to \$5000 per day to this account using one or more transactions
- The user can withdraw a maximum of \$500 per day using one or more transactions
- The user can transfer any amount of money from their checking account to their saving account
- The user can use this account to pay bills to their utility company
- The user can check the balance in their checking account
- The bank does not allow overdraft, the balance can NOT be negative.

2- Saving Account:

- The user can have one saving account
- The user can deposit up to \$5000 per day using one or more transactions
- The user can NOT withdraw any money from this account
- The user can transfer up to \$100 per day from their saving account to their checking account using one or more transactions
- The user can NOT use this account to pay bills
- The user can check the balance in their saving account
- The bank does not allow overdraft, the balance can NOT be negative

The Utility Company

- The user has access to their utility company
- Using their account number, the user can log on to their utility account and check their bill payment history, including the last 3 paid bills
- The user can also check the next bill payment amount and due date

Deliverables:

1- Source code

- a. Use exception handling and add appropriate comments to your code
- b. Use appropriate persistent storage structures for the bank and the utility company
- c. Interaction I/O will be done using command line
- d. Add a Read-me file of how to deploy and use your assignment
- e. Use your own software code components

2- Screenshots of multiple steps of user actions and the corresponding output

3- A comprehensive test plan of your software, including:

- a. Test designs and execution of your code functions and algorithms, storage structures, and user actions for handling the functionalities of their two bank accounts and the utility company (valid and invalid transactions will be covered in your tests)
- b. For data storage: Test null storage, null element with multiple elements, null single element, incompatible types, empty elements as well as two normal cases (single and multiple elements).
- c. Test outcomes (screen shots and description)
- d. Sufficient transactions for testing

**Additional details and Q&A will be discussed in class.**

Good luck,