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CS 3331 – Advanced Object-Oriented Programming – Fall 2020
Dr. Mejia
Programing Assignment 1

I confirm that the work of this assignment is completely my own. By turning in this assignment, I declare that I did not receive unauthorized assistance. Moreover, all deliverables including, but not limited to the source code, lab report and output files were written and produced by me alone.

1. Program Explanation

For this assignment, our task was to create a bank program in which a user can use its different functionalities such as deposit money withdraw money and transfer money between accounts. This program should guide the user into how to use the program and all the transactions should be written into a file called the transactions.txt.

In order to complete this project we were asked to make a class called Checking in which we would store the information for one account, such as the name of the owner, the amount of many, or if it is a checking account or savings account. Additionally, I created a new class called ATM, in which all the checking information will be store and the logic for the transactions would be occurring.

The main class will create an ATM instance and this one will welcome the user to the user interface and then the program will run into the menu loop until the user decides to exit the program. There are many options on the many for the user to choose such as deposit and transfer money, depending on what option is chosen the action will be taken and the loop will choose the many once more.

2. What did I learn?

On this lab I learned how to implement Junit testing for a program in which the user has to user has to input from the terminal. Also, I got a lot of practice implementing a menu system which will have to loop for the program to run until the user desires. My solution uses a set to store the Checking instances but I think that a better approach might have been to store these into a map with the account number as the key in order for the user to find the account that they are looking for in constant time.

For this lab assignment I ended up working for around 10-15 hours including all the planning that I had to do, the testing, and the learning of new concepts.

3. Solution Design

At first I created the Checking class which was one of the main requirements of the lab and then implemented the ATM class that had a HashSet in which I stored all the Checkings from the BankUsers file which I assumed to be formatted correctly with all the necessary input and also

have the name BankUsers. Then I divided the program into different methods inside the ATM to call each method whenever the user chooses an option to do in the options menu. Which will always call another function called listener which will ask for the user input and choose the appropriate option.

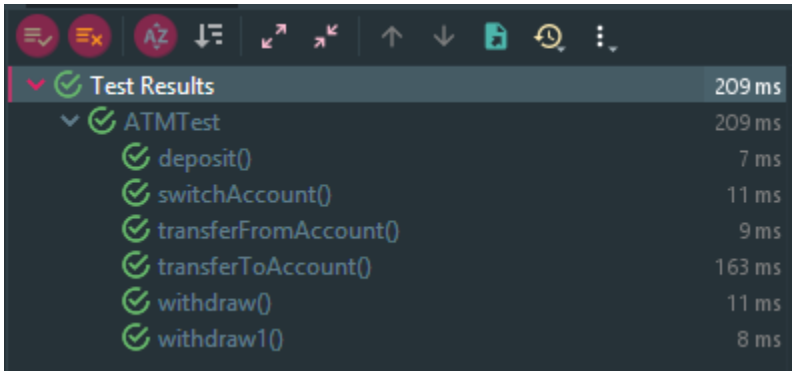
4. Testing

To test my program, I used Junit testing to test the expected output of a function to happen when the user uses certain inputs in the program and I tested every method and every output to make sure that when I change something into the code it does not break the code. Also, I used manual testing to see how smooth the menu experience of the user will be, I was testing weird inputs in order to see what kind of exceptions were being handle and if one of them was not handled then I will fix it by giving the user a proper message and continuing the program.

5. Test results

For my test I used System.setIn in order to simulate user input from the console and the I would use the Junit function assertEquals to see if the expected value of certain checking amounts is the same as what should be expected and If one of this methods does not work then the program will tell me.

Junit results



Example of transition log

```
Disney bank transaction logs!
Mickey Mouse deposited 50.0$
Mickey Mouse withdrew 25.0$
Mickey Mouse transferred 50.0$ to Minnie Mouse
Minnie Mouse withdrew 60.19$
```