

Name: Andrew Rodriguez

Date: February 23, 2021

CS 3331 – Advanced Object-Oriented Programming – Spring 2021

Instructor: Dr. Daniel Mejia

Assignment: Programming Assignment 3

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**

In this section, explain the overview of the assignment.

What did you do?

For this assignment, I continued to work on my bank program. I added more functionality which includes logging in as a bank manager, reading action logs from an excel, and implementing a bank statement class

How did you tackle the problem?

I used the second programming assignment as a starting point and really dialed in what needed to be fixed. I looked at what worked well and what didn't. At this point my code was running well, I had a few errors as far as exception handling goes so I first fixed the issues from assignment two and went from there.

What techniques did you use to solve the problem?

For this programming assignment, I think my approach was the best so far. I knew and understood the code I had previously written and that helped me figure out what steps were the ones in the right direction. I tackled each question being asked as they came along and did not move forward until I was 100% complete. The only task I wasn't able to complete in full was bank statement.

Did you break the problem into smaller problems? Explain.

Yes, I did, the easiest way to approach this problem was to break it into the smaller problems. Looking at the pdf for this assignment one might think that there is no way we could complete the tasks at hand. But when you divide the parts in segments and really focus to what's being asked at each step a long pdf suddenly turns into short segments of feasible tasks.

### **2. What did I learn?**

What did you learn as a result of this assignment?

For one, as stated before, Dr. Mejia does not make it easy for us to complete in a short amount of time. This assignments require thought and time. They are designed to make

you think like a real programmer, I would assume that this is what coding is like in the real world, no text book questions, just some problems that need to be solved using code. How can my solution be improved?

My solution can be improved by more precise planning and more studying. I believe that in general those two things will always provide a clearer and construct program. There isn't anything I can say I could have done differently to make my program better. Just more time would improve my endeavors.

What ideas do I have about another way to solve the problem?

While there are many other ways to solve the problem I feel like my approach was the most appropriate. Another way I could have solved this problem was to tackle easy problems first then spend more time on the harder aspects of it. I think I wasted a lot of time going in an orderly fashion in regards to how the questions were arranged. I could have saved more time should I have seen which questions make more sense to complete first.

How long did it take me to complete this lab assignment?

While I did not procrastinate as bad this time around I still did start late. I started about 5 days before the due date. I don't think it shows in my code however because I honestly feel like I have a decent program despite my efforts.

### **3. Solution Design**

What did I do in this program?

As stated, I tackled this problem in small chunks. I didn't plan as well as I should have though. Some parts of the assignment would have made more sense to complete first as they would have provided greater insight to the tasks at hand. I was able to complete it but I did have to adjust code at each step to suit the functionality of later question better.

What was my approach to solving this problem?

My approach was to start with what worked well from programming assignment two and fix any errors that were present in it. Like I said I already had a very solid platform to build upon so going question by question wasn't as hard as previous assignments.

What data structures did I use? Why?

For this problem I did not use any complex data structures. The only real one I used was a list to store each Disney character and their attributes which included basic person info and each of their bank accounts. Most of the processes were done in the methods in the accounts class so I did not need to store any data.

What assumptions, if any, did I make?

I assumed that each person had at least one of each account. I also assumed that there would be very minimal user mistakes during the runBank class. In addition I assumed that each person knew the first and last name of who they wanted to pay and not their account information. Two very important assumptions regard how files are to be handled I only got my code to work when I took away commas from the address and made empty spaces null in the action log.

#### **4. Testing**

How did I test my program?

I tested my program through framework testing mostly I would tackle the problem and not really run it until I felt like it was complete. Obviously I would see errors as they arose and I would fix them knowing that when I did run my code I would only have errors from file handling.

Did I use black-box, white-box testing, or both? Why?

I mostly did white box testing. I don't see a situation where anyone would use black box testing since we all are aware of what needs to happen in the code, and we run it ourselves into the main. We tested for logic rather than behavior, or at least I assume most people did.

Did I test my solution enough? How can my testing practices be improved?

For this specific assignment I personally feel I could have tested my solution more. This time around I focused more on the action log rather than real user interaction. I do feel like there could be bugs in the bank manager section but only future testing can tell.

What are the test cases I used?

The test cases I used in my program were the test where there should be no errors, meaning a user would sign in perform some tasks then sign out and get a text file of all the transactions. I also tested for when users wanted to perform multiple transaction in one go. I also tested to see if functions were being carried out correctly, meaning looking at output console in conjunction to the excel file and seeing if they matched.

Did I break my program and use that as a way to improve it?

I did not brake my problem to improve it. As stated before when an error arose I would go back the sub account class the problem came from and would solve it then move on to the next problem until there weren't any left. I think that when you break a program you make things more complicated. Obviously, you want to run cases where you suspect errors could arise but when running test I think the best way to go about it is strategic rather than behavioral.

#### **5. Test results**

Describe the results of your tests.

My test results for the most part came back as a pass. Like I Stated earlier I had a solid framework to work upon this time around. For this assignment I feel more confident in my code and can say that I don't believe that other test results would show different. I did have my partner try to break my code and he said for the most part I passed.

Include any console outputs showing your results.

I asked my partner questions that I felt were important to the code. Such as what kind of error handling did they use. And how they handled file reading.

My partner honestly had a good program, from my test there was not any errors I came across. The only thing was that his action log did not work correctly, he did explain how he would improve on it.

I tried to break it by entering invalid input, entering text that wasn't appropriate for example strings as a int, and lastly entering the wrong location for the files.

This is black box testing because while I did have the code on hand, for the most part I was going in blind and had no real sense of how the code was truly supposed to work.

```
You have deposited $5000.0 into your checkings account
6720.98
Kevin Moreno deposited $5000.0 into checking- 1061. KevinMoreno's balance for checking-1061: $6720.98

You have deposited $5000.0 into your checkings account
6122.97
Leonardo Munoz deposited $5000.0 into checking- 1062. LeonardoMunoz's balance for checking-1062: $6122.97

You have deposited $5000.0 into your checkings account
6909.57
Francisco Nolasco deposited $5000.0 into checking- 1063. FranciscoNolasco's balance for checking-1063: $6909.57

You have deposited $5000.0 into your checkings account
5733.01
Roberto Orozco deposited $5000.0 into checking- 1064. RobertoOrozco's balance for checking-1064: $5733.01

You have deposited $5000.0 into your checkings account
6267.41
Elijah Pele deposited $5000.0 into checking- 1065. ElijahPele's balance for checking-1065: $6267.41

You have deposited $5000.0 into your checkings account
6237.34
Omar Perez deposited $5000.0 into checking- 1066. OmarPerez's balance for checking-1066: $6237.34
```

```
C:\Users\andre\.jdk\openjdk-15.0.2-1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ
Where is your database located
C:\Users\andre\Desktop\CS\PATwo\src\CS 3331 - Bank Users 3.csv
Are you reading from TransactionActions?
0: No
1: Yes
0
Are you a bank manager?
0: No
1: Yes
0
Existing or new customer?
0: New
1: Existing
0
Thank you for choosing us as your bank, I will just need some basic info from you
What is your first name
|
```

Include any text document output as a result of your tests.

**Pauline Huerta withdrew \$200.0 from checking- 107. PaulineHuerta's balance for checking-107: \$252.3 – New Account**

Mickey Mouse paid Donald Duck \$30.3 from checking- 1000. MickeyMouse's balance for checking-1000: \$782.55000000000001

Juan Rabelo paid \$500000.0 into credit- 3068. JuanRabelo's balance for credit-3068: \$-1355.66

Juan Rabelo made a balance inquiry on credit- 3068. JuanRabelo's balance for checking-3068: \$-1355.66

Buzz Lightyear withdrew \$34.0 from savings- 2016. BuzzLightyear's balance for savings-2016: \$766.5

Buzz Lightyear deposited \$5000000.0 into savings- 2016. BuzzLightyear's balance for checking-2016: \$5000766.5

Bank Statement for: Andrew Rodriguez

Customer Name: Andrew Rodriguez

Customer Date of Birth:28-Aug-28

Customer ID Number73

Customer Address:500 W. University Ave El Paso TX 79968

Customer Phone Number:(915) 747-5036

Customer starting balance for checking:1885.03

Customer starting balance for savings:1693.87

Customer starting balance for credit:-764.95

1885.03

Customer end balance for checking:3240.31

1693.87

Customer end balance for savings:100.1

-764.95

Customer end balance for credit:-502.31

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