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Instructor: Professor Mejia
Assignment: Programming Lab 5

I confirm that the work of this assignment is completely our 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 my partner and I, alone.

1. Program Explanation

In this section, explain the overview of the assignment.

In this assignment we were tasked with straightening up our code along with javadoc and writing a Use Case Diagram, 3 Use Case Scenarios, a Class Diagram, a State Diagram, and finally, a powerpoint presentation to demonstrate our final product.

What did you do?

Since our code was pretty much finished, we split the work into one person coding and refining, and the other working on diagram and presentation. Afterwards, we both inspected each other's work, modified it, and tied any loose ends that were necessary.

How did you tackle the problem?

We checked for any possible weak spots on our previous code, and improved on it. Mostly everything was already done.

What techniques did you use to solve the problem?

We used divide and conquer between both of us in order to make sure we got everything done. As for the technical techniques that we used; we used singleton and template design patterns.

Did you break the problem into smaller problems? Explain.

Yes. One person primarily focused on the code while the other focused on the Diagrams and Presentation. This way, we were both being productive and did not collide with ideas.

2. What did I learn?

What did you learn as a result of this assignment?

Multiple people altering the same code with no real direction leads to more delays instead of being more productive. By agreeing in a solution before starting to code, we worked more efficient.

How can my solution be improved?

By having a set repeatable style for handling specific problems instead of seeing the same problem each time and figuring out how to handle the same problem over and over.

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

Just throw Exceptions to catch all the problems.

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

It took us about a day to straighten up and modify the code, diagrams, and presentation.

3. Solution Design

What did I do in this program?

In this program, we broke down the program into different objects. Doing it this way, allowed us to resemble the real world and allowed for extensions.

What was my approach to solving this problem?

After creating the different object classes, we agreed to store the accounts in the customers, and the customers in a HashMap to have a constant time when reading and writing customers.

What data structures did I use? Why?

We used a HashMap to store the customers since it is efficient in reading and writing to it.

What assumptions, if any, did I make?

We assumed the manager knows how the system works. We also assumed that when creating a new customer, the user inputs valid date for their information.

4. Testing

How did I test my program?

We used the Black-Box testing technique with another team, and a brute-force exhaustive technique to test all possible scenarios.

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

We used white-box testing between us to see where major problems could and have arisen. We used black-box testing with another team to see how a customer would interact with our program.

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

We tested it enough to where we are comfortable submitting it, but not completely exhaustive to where it can be used in a real bank. Our testing practices can be improved by allowing more black-box testers to try to break the code.

What are the test cases I used?

We tested extremes, negatives, as many exceptions as we could think of, and modification of input files. We mainly tested for user input because it is the most likely way to encounter problems.

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

Since the beginning, we have been testing our program as we write it in order to make sure every little piece works.

5. Test results

Describe the results of your tests.

With the new customer and the transaction reader, we had many NullPointers and InputMismatch induced errors. We later fixed them, but those are the biggest challenges we had.

Include any console outputs showing your results

We do not have any error messages to display here because we got on them right away. However, most of the errors we got were NullPointers and InputMismatches.

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

6. Reflection

Describe the process of combining code

First we had to agree on how we would tackle the issue. Then, we compared code to see what was the most similar, and then coded it. Then, what we differed on, we checked to see what would be the most efficient way to approach it. Once we agreed, we would code it. However, on Programming Assignment 4, we had a lot of clashing with code that would not mix together well. Therefore for this assignment, we agreed on what to do, then one person coded it up, and the other improved it where necessary.

Describe the process of understanding your partners code

Sitting down and having them explain every part was necessary. Then by asking questions about things we might not fully understand. Running it also helped to understand how it worked.

Describe the problems you faced, and how you solved them

Deciding between different viewpoints was hard. We both game the pros and cons of our desired solution, and mutually agreed to do it a certain way. Sometimes, meeting our ideas in the middle was the best approach.

7. Demo of another team

Who demo'd to you?

Rodrigo and Denise

Did you understand their process to perform tasks?

Yes instructions were clear.

Did they provide you with Javadoc?

Yes they provided Javadoc

Did you break their code? How?

No we did not break there code.

Did they meet all functionality requirements?

Yes they met the requirements.

8. Demo for another team

Who did you demo with?

Liala and Fabian

Did you provide them with enough information in the console prompts?

Yes. Everything was self explanatory on the console.

Did you provide them with Javadoc?

At the time of testing we did not have JavaDoc completed. Therefore we did not provide it.

Did they break your code? What did you learn from it?

Yes. That is when we found and fixed a few NullPointerException and InputMismatch Exceptions. It also showed that the new user can put anything they want and it will save it.

Did you meet all the functionality requirements?

Yes we did.

Person One Bryant

What did I do to contribute to this?

On Programming assignment 5 I primarily worked on the Use Case design and Scenarios , State diagram and class diagram as well as helping find and fix pre existing problems with the code and help implement it into the presentation

How did I help solve the problem?

I helped through hands on work as well as communicating how I would do a specific task.

How much did I do in this assignment?

I believe it was roughly a 50/50 split in the assignment.

What did I learn from working with a teammate?

Delegation of tasks is important, otherwise you just end up changing each others code and get stuck in an unproductive cycle.

Person Two Joshua

What did I do to contribute to this?

I provided coding solutions and implemented them, I did some testing as I coded along, I helped with the documents, and attempted to maximize communication with my teammate. One way to ease communication was by creating a Google Doc in which contained links to everything we were working on, as well as comments, things to do, and a section to mark if you were currently working on the assignment. I also color coordinated things Bryant commented as well as I, and marked things in red that were important information.

How did I help solve the problem?

By coming up with solutions that I had already done on previous assignments as well as new approaches. I tried to maximize time and memory complexity, but also keeping in mind the time constraints that had. I also tried to catch as many errors as I could.

How much did I do in this assignment?

I would say I did the same amount of work as Bryant, but he mostly focused on the diagrams while I patched up the code from last time.

What did I learn from working with a teammate?

It is extremely difficult to work on the same piece of code at the same time. If we would have used Git instead of Code Share, it might have been easier to see what the other was doing. However, we both are not familiar with Git. In addition, I learned how important communication is when working on code together because it can maximize the time.