

The University of Texas at El Paso
Department of Computer Science
CS 3331 – Advanced Object-Oriented Programming, Fall 2020
Programming Assignment 4

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Instructions:

This assignment should be done in pairs (2 people). Your code must be written in Java. You must submit your assignment through Blackboard. In the comments (Javadoc) of your source code (at the beginning), write the names of the members of the team, date, course, instructor, lab assignment, lab description, and honesty statement.

Scenario:

You have set up your bank. You now have many customers who are using the bank.

1. Read your partners code – “Code Review”
 - a. Understand what they did
 - b. Understand why they did it
 - c. Ask questions
 - d. Give constructive feedback
2. Combine code from both partners into a single program
 - a. Do not simply use one person’s entire code
 - b. Using Javadoc – write where each piece of code came from (i.e. Taken from Bob, Taken from Alice)
3. Ensure that the program meets all the requirements from PA3
 - a. Refactor your existing code.
 - i. Your code should handle all functionality from Programming Assignment 3 (PA3)
 - ii. Fix anything that should be corrected
 1. Are you using appropriate data structures? (Think of its complexity)
 2. Are you using objects and object interactions?
 3. Are you using appropriate algorithms?
 4. Are you using an appropriate design pattern?
 5. Does it meet the open-closed principle?

6. Etc.
 - b. Ensure bank statements can be printed for any selected member of the bank
4. Handle any new information related to the customer
 - a. From input file
5. Implement an interface called Printable
 - a. Print method (You may take in parameters if appropriate)
 - b. 2 additional methods
 - c. 2 classes should implement this interface
 - i. Consider using it as part of logging or making a bank statement (adjust your code appropriately)
6. Add a login prompt for users
 - a. When selecting “Mickey Mouse” a prompt for a password should be given
 - i. Does not have to be salted/hashed, simple functionality (if correct, enter otherwise do not let them have info on the account)
 - b. Bank managers do not need a login prompt
7. Make the prompts self-explanatory
 - a. Users should not need any background knowledge to use your bank
 - b. Think about how you may use your own bank
8. When the user has decided to exit, write a new account balance sheet (similar to the original input, except with the new values) as a csv file
9. Handle all exceptions appropriately
 - a. User cannot have negative money in an account (unless its credit)
 - b. Create one user defined exception and use it
10. Write the Javadoc for your system
 - a. Document your code (Except for getters/setters)
 - b. Generate the Javadoc for your system
11. Demo with another team, only functionality – DO NOT share code
 - a. Make sure that they understand what you’re talking about
 - i. Teams should use the Javadoc as a starting point

- b. Make sure that they cannot break your code
 - c. Teams should focus on ensuring all requirements are met (functionality)
 - d. Teams should try to break the system
12. Adjust your functionality based on the demos with your classmates
- a. Fix everything that they were able to break
 - b. Handle all exceptions gracefully
13. Write the lab report describing your work (template provided)
- a. Any assumptions made should be precisely commented in the source code and described in the lab report.
 - b. Write a section named code review discussing your partner's code and the process of combining it with yours
 - c. Write an additional section describing the demo of your classmates
 - i. What questions did you have about your classmate's functionality?
 - ii. What concerns do you have about your classmate's functionality?
 - iii. How did you try to break it?
 - 1. What test cases did you use?
 - 2. Explain why and how this is a black or white box testing
14. Bank Statement for five users (You, your partner, Your favorite Disney Character on the list, your partner's favorite Disney character on the list, a new user not yet on the list) (all in .txt format)
15. To turn in (Blackboard) –One per team by November 9th, 2020 11:59pm:
- a. Source code (.java files)
 - b. Lab report (.pdf)
 - c. New Balance Sheet (.csv)
 - d. Log file (.txt)
 - e. Five Bank Statements (.txt)
 - f. Javadoc (the entire /doc folder)