# Banking Account with login and file management

Project 3
Documentation

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for:

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Submitted to:

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This program is designed to mimic users interacting with a banking terminal. The program will create files that are used to store the user's login, password, and account balances. The files can be read when the user logs into the bank so that they can bank with all the same information they previously had. The program will let the users view their balances in both their checking and savings accounts along with withdrawing and depositing money. At the end, the user has the option to receive a receipt that shows them all of the transactions made while they were logged in.

## Program method IPO:

Bank.java class:

| public static int MainMenu | | |
|---|---|---|
| Input | Process | Output |
| User input | Let the user select from the printed menu | Returns an int |

| public static void usersSelection(int,AccountInfo,Withdraw,Deposit ) throws IOException | | |
|---|---|---|
| Input | Process | Output |
| Takes in the menu number and the objects listed above | Switch case to call the correct method/objects based on the user input from the MainMenu method | No output - Calls methods and functions |

| public static void accountBalance() throws IOException | | |
|---|---|---|
| Input | Process | Output |
| No input<br>Uses account object | Prints the current balance of the checking and savings account | Void<br>No output |

| public static void main(String[] args) throws IOException | | |
|---|---|---|
| Input | Process | Output |
| No input | Creates 6 objects that are used through the program. The while loop runs till the user decides to quit the program | No output |

Transactions.java class:

| public abstract void updateChecking(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Abstract method | Abstract method | Abstract method |

| public abstract void updateSavings(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Abstract method | Abstract method | Abstract method |

Withdraw.java class:

| public Withdraw(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Account object | Sets fields in the object to fields in the class | No output - Constructor |

| @Override<br>public void updateChecking(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Account object | Takes in an amount to be withdrawn from the checking account.<br>Checks amount to be withdrawn to make sure the amount exists | Subtracts the amount to be withdrawn from the amount in the checking account. |

| @Override<br>public void updateSavings(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Account object | Takes in an amount to be withdrawn from the savings account.<br>Checks amount to be withdrawn to make sure the amount exists | Subtracts the amount to be withdrawn from the amount in the savings account. |

Deposit.java class:

| public Deposit(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Account object | Sets fields in the object to fields in the class | No output - Constructor |

| @Override<br>public void updateChecking(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Account object | Takes in an amount to be deposited into the checking account. | Adds the amount to be deposited into the checking account. |

| @Override<br>public void updateSavings(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| Account object | Takes in an amount to be deposited into the savings account. | Adds the amount to be deposited into the savings account. |

AccountInfo.java class:

| public AccountInfo(int,int,String,String) | | |
|---|---|---|
| Input | Process | Output |
| The inputs are listed above 2 ints and 2 strings | Sets fields in the class to variables passed in | No output - Constructor |

| public AccountInfo() | | |
|---|---|---|
| Input | Process | Output |
| No input | Sets class fields to default values | No output - default constructor |

| public void addReceiptArray(String, String) | | |
|---|---|---|
| Input | Process | Output |
| Takes in two strings | Adds the two strings to the receipt ArrayList | No output |

| public int getCheckingBalance() | | |
|---|---|---|
| Input | Process | Output |
| No input | Returns the object field checkingBalance | int |

| public void setCheckingBalance(int) | | |
|---|---|---|
| Input | Process | Output |
| int | sets the object field checkingBalance | No output |

| public int getSavingBalance() | | |
|---|---|---|
| Input | Process | Output |
| No input | Returns the object field savingBalance | int |

| public void setSavingBalance(int) | | |
|---|---|---|
| Input | Process | Output |
| int | sets the object field savingsBalance | No output |

| public String getUserName() | | |
|---|---|---|
| Input | Process | Output |
| No input | Returns the object field userName | String |

| public void setUserName(String) | | |
|---|---|---|
| Input | Process | Output |
| String | sets the object field userName | No output |

| public String getPassWord() | | |
|---|---|---|
| Input | Process | Output |
| No input | Returns the object field passWord | String |

| public void setPassWord(String) | | |
|---|---|---|
| Input | Process | Output |
| String | sets the object field passWord | No output |

Login.java class

| public Login() | | |
|---|---|---|
| Input | Process | Output |
| No input | No process | Empty constructor |

| public boolean loginMessage(AccountInfo account,FileOut file) throws IOException | | |
|---|---|---|
| Input | Process | Output |
| Takes in two objects | Displays a selection for the user to choose from. Takes that selection and calls the correct method | No output - passes the objects to the login and createLogin methods |

| public boolean createLogin(AccountInfo,FileOut) throws IOException | | |
|---|---|---|
| Input | Process | Output |
| Takes in two objects | Generates two random numbers to use for the savings account and checking account balance | No output - sets fields in the AccountInfo object and passes the objects to the login method |

| public boolean login(AccountInfo account,FileOut file) throws IOException | | |
|---|---|---|
| Input | Process | Output |
| Takes in two objects | While loop so the user can log in. If the user enters incorrect info the loop runs again.<br>If statement to check if the login information matches the info in the file | Returns a boolean value |

FileOut.java class:

| public FileOut(int, int, String, String) | | |
|---|---|---|
| Input | Process | Output |
| The inputs are listed above 2 ints and 2 strings | Sets fields in the class to variables passed in | No output - Constructor |

| FileOut(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| AccountInfo object | Sets the fileType field to its default value.<br>Sets other field values based on the AccountInfo object | No output - default constructor |

| public void createAccountFile(AccountInfo) | | |
|---|---|---|
| Input | Process | Output |
| AccountInfo object | Takes the AccountInfo object and writes the current values to a file | file.txt |

| public ArrayList readAccountFile(AccountInfo) throws IOException | | |
|---|---|---|
| Input | Process | Output |
| AccountInfo object | Reads a previously created file. Saves the info into an Arraylist | Returns an ArrayList |

| public void createReceipt(AccountInfo account) throws IOException | | |
|---|---|---|
| Input | Process | Output |
| AccountInfo | Takes the AccountInfo object and writes the beginning values, transaction, and current values to a file | file.txt |