CSC 340 Final Group Project

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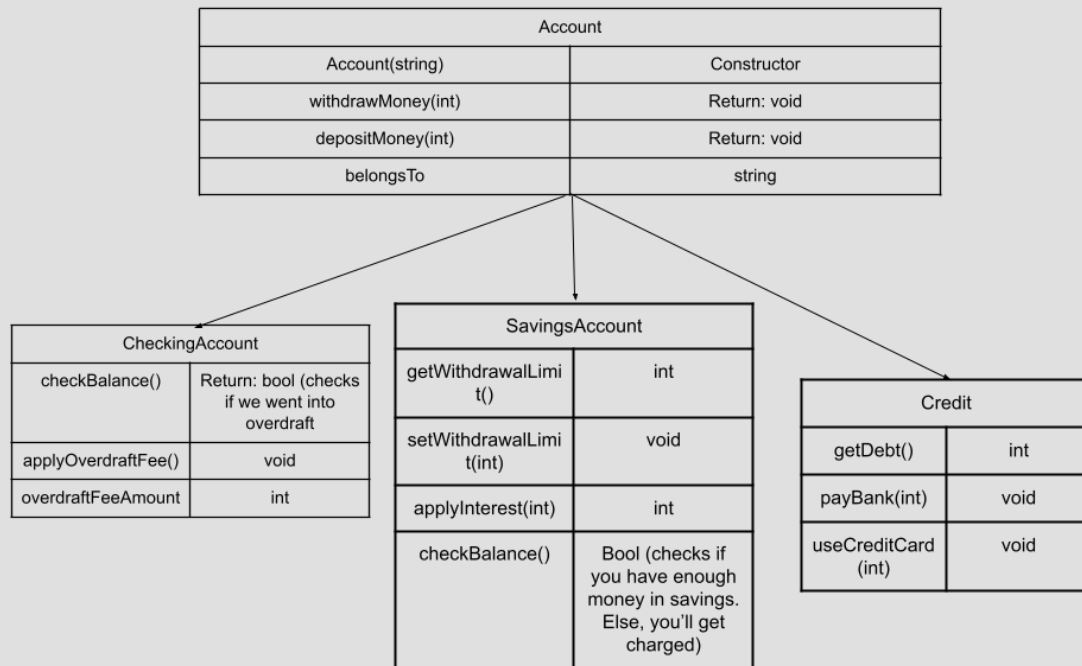By: Kyle Nguyen, Awet Fikadu, Miguel Logarta, Brandon Flores

A C++ Banking Application

- For our project we built a banking application
- Features:
- Users can log in using their email and password to access their bank accounts
- Three types of bank accounts are available:
  - Checking, Savings, and Credit
- Each Account has their own advantages and limits
- You can withdraw and deposit money into them

Checking vs. Savings vs. Credit

Checking Account	Savings Account	Credit Account
- You can withdraw often - If you go negative, you'll be charged an overdraft fee	- You have a withdrawal limit. Some banks even charge you for not having money in your savings. - You earn money from interest	- You can go into the negatives, but there's a floor (maximum amount that you can owe) - You have to pay back the bank

Inheritance Table

Account	
Account(string)	Constructor
withdrawMoney(int)	Return: void
depositMoney(int)	Return: void
belongsTo	string

CheckingAccount	
checkBalance()	Return: bool (checks if we went into overdraft
applyOverdraftFee()	void
overdraftFeeAmount	int

SavingsAccount	
getWithdrawalLimit()	int
setWithdrawalLimit(int)	void
applyInterest(int)	int
checkBalance()	Bool (checks if you have enough money in savings. Else, you'll get charged)

Credit	
getDebt()	int
payBank(int)	void
useCreditCard(int)	void

User Data

- We store data such as your username, email, password, pin, and your real government name. We can also use these values to find your bank accounts in our database

User	
username	string
accounts	vector<Account*> (This will hold a pointer to your different types of bank accounts)
email	string
password	string
pin	number
Real name	String (Your government name)

Database Files

- We store your bank accounts and user information in the following files:

Filename	Contains
Users.csv	Username, email, password, pin number
CheckingAccounts.csv	Usernames, balances, current overdraft fees
SavingsAccounts.csv	Usernames, interests, balances
CreditAccounts.csv	Usernames, debts

Additional Features

- Transfer money to another user
- Transfer money between your bank accounts
- Sign up
- Change your password / pin
- Pay overdraft fees

Results: Logging in

```
Welcome to the bank
Enter your email: alex@email.com
Enter your password: alex567
Welcome, Alex!
Please choose the account you want to access:
1. Checking
2. Savings
3. Credit
4. Go back to the main menu
```

Results: Options

```
1
Welcome to your Checkings account.
Please choose an option:
1. Withdraw
2. Deposit
3. Check balance
4. Transfer money (coming soon)
5. Send money to another user (coming soon)
6. Pay Overdraft fees
7. Change PIN
8. Go back to the account selection menu
```

Results: Checking Balance

```
Current balance: 2500
Please choose an option:
1. Withdraw
2. Deposit
3. Check balance
4. Transfer money (coming soon)
5. Send money to another user (coming soon)
6. Pay Overdraft fees
7. Change PIN
8. Go back to the account selection menu
```

Results: Depositing and Withdrawing Money

```
Enter the amount to withdraw: 500
Withdrawal successful!
New balance: 2000
Please choose an option:
1. Withdraw
2. Deposit
3. Check balance
4. Transfer money (coming soon)
5. Send money to another user (coming soon)
6. Pay Overdraft fees
7. Change PIN
8. Go back to the account selection menu
2
Enter the amount to deposit: 43
Deposit successful!
New balance: 2043
Please choose an option:
1. Withdraw
2. Deposit
3. Check balance
4. Transfer money (coming soon)
5. Send money to another user (coming soon)
6. Pay Overdraft fees
7. Change PIN
8. Go back to the account selection menu
```

Results: Paying Overdraft Fees

```
6. Pay Overdraft fees
7. Change PIN
8. Go back to the account selection menu
6
Current overdraft fees: 10
Enter the amount you want to pay: 3
Deposit successful!
New balance: 2040
Payment successful!
New overdraft fees: 7
```

Results: Changing Pin / Password

Results: Checking Interest Rate

```
Welcome to your Savings account.
Please choose an option:
1. Withdraw
2. Deposit
3. Check balance
4. Transfer money (coming soon)
5. Send money to another user (coming soon)
6. Check Savings Interest
7. Go back to the account selection menu
6
Current savings interest rate: 0.9%
Current savings balance: 900
```

References

Sources:

Geeksforgeeks.com

Cplusplus.com

Zybooks:

Coding Lab #4c (Linked List 2 of 3)

Chapter 13, Object Oriented programming: user defined classes Part I

Chapter 14, Separate files, objects and classes (Part II) inline functions, unit testing

Thank You