Missouri State University

CSC232 Final Project

BEAR Bank Software

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CSC 232 - Data Structures

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**1.Project Information**

1.1 - Project Name

* CSC232 Final Project - BEAR Bank: A console-based application that represents a bank software that allows the interaction of different user types with multiple account types.

1.2 - Team Members Information

* Vitor Freitas (vit1905@live.missouristate.edu)
* Hung Nguyen
* Huy Huynh
* Missouri State University - Fall 2020 - CSC 232

1.3 - Project GitHub Repository

* <https://github.com/vitorslaibi/CSC232_Final_Project>
* This repository included all files to run the program, history of updates to the code and different branches used during the development of the software

1.4 - Instructions to Interact with Code

* The program will be submitted in a .zip file that will include all files that are necessary to compile and run the code. The main.cpp file will drive the entire software and is the one that should be executed.
* To compile and run the program, follow those instructions:
* Type the following command, and press enter: g++ path-to-file/main.cpp -o main (It tells the c++ compiler (g++) to take the file main.cpp and make an output file called main.exe)
* -Type ./main.exe and press enter. This will execute the code.
* This a console based application, so the console will show the correspondent menu of options and the software user should enter the disired input and press enter to navigate throught and use the different functionalities of the program.

**2. Description of Features**

2.1 - Core Features

* This program represents a bank software that uses classes and data structures to define and store the multiple account types that are avaibles and allow interaction from different types of user. The application will also contain security features that will give privacy to account holders by using data encription, which will not allow administrators or bank officials to retrieve customer privte information, such as thei password.
* The first kind of user are system administrators (SystemAdmin.h), who are allowed by the program to create, modify and delete account types, enable or disable login profiles, retrieve user IDs and change account passwords. The software can also be utilized by bank officials (BankOfficial.h). Thise users have the ability to open or close customers accounts, deposit and withdraw money from then and search accounts using different account holder’s information such as name of phone number. The application can also be used by the bank acount holders, who can have multiple accounts and are able to interact and see the information related to them. The software also permit holders to retrieve their login dates and transaction story for each account type.
* As of now, customers can open three types of account and each of then will hold data about the account holder and account information, such as balance, interest rate, opening and closing day, history of transactions, among others(BankAcc.h). The initial three available account types extend the parent BankAcc.h class and are: Checking account(Chk.h) and savings account(SavAcc.h), , which have the all the functionalities above with the difference being that the checking has no interest or montly fees while the saving has a fixed interest rate set by bank officials. Lastly, the certificate of deposits (CD.h) is an account type with fixed-rate and fixed-term, Its balance will increse according to a set interest rate and the customer can withdraw the money afer the defined ther range, unless there is an early cancelation. The application also includes five spare classes(named U.h, V.h, X.h, Y.h, Z.h) that will be activated if the system administrator chooses the option to create a class
* After the application is compiled and ran, the console will ask the user whether he/she wishes to log in as a system admin, bank official or account holder and ask for their login credentials based on the choice. If successfully logged in, each user type will be provided a menu that will display all their possible interactions with the software, as discussed above. Users are allowed to perform as many operations as they wish and login/logoff of different accounts without having to exit the program.