Project 2 Design

Analysis

**Use Case 1: Login Menu**

Precondition: Program has begun

Description:

* The user will be asked to either (1) login or (2) quit
* If the user enters (1) they will be asked to enter their user id and password
* If the user enters (2) the program will end
* If the user enters anything else they will be told their input is invalid

Postcondition:

* If (1) is entered and the user signed in as an admin they will be brought to the admin menu
* If (1) is entered and the user signed in a branch staff manager, they will be brought to the manager menu
* If (2) is entered the program will end

**Use Case 2: Admin Menu**

Precondition: The user has logged in as an admin

Description:

* The user will be prompted multiple options
* The six options are (1) manage client and account information, (2) add a branch staff member (3) delete a branch staff manager (4) display branch staff (5) change password (6) quit
* If the user enters (1), then they will be brought to a management menu where they can edit client and account information
* If the user enters (2) they will be asked to enter a new username and password for each branch staff manager
* If the user enters (3) they will be asked to enter the username of the branch manager to be deleted
* If the user enters (4) a list of all the branch staff members will be displayed
* If the user enters (5) they will be asked to enter a new username and password to replace their old one
* If the user enters (6) they will be brought back to the login menu
* If the user enters anything else, they will be told that their input is invalid

Postcondition:

* If (1) was chosen, the user will be brought to the management menu
* If (2) was chosen, the user will be asked to enter a new username and password for a new user
* If (3) was chosen, the user will be asked to enter the username of a user to be deleted
* If (4) was chosen, a list of all branch staff managers will be displayed
* If (5) was chosen, the user will be asked to enter a new username and password
* If (6) was chosen, the user will be brought to the login menu
* If anything else is entered, the user will return to the same menu

**Use Case 3: Manager Menu**

Precondition: The user has logged in as a manager

Description:

* The user will be prompted with multiple options
* The three options are (1) manage client and account information, (2) change password, (3) quit
* If the user enters (1), then they will be brought to a management menu where they can edit client and account information
* If the user enters (2) they will be asked to enter a new username and password to replace their old one
* If the user enters (3) they will be brought back to the login menu
* If the user enters anything else they will be told that their input is invalid

Postcondition:

* If (1) was chosen, the user will be brought to the management menu
* If (2) was chosen, the user will be asked to enter a new username and password
* If (3) was chosen, the user will be brought to the login menu
* If anything else is entered, the user will return to the same menu

**Use Case 4: Management Menu**

Precondition: The user chose (1) at the admin or manager menu

Description:

* The user will be prompted with multiple options
* The six options are (1) add a client, (2) add an account, (3) edit client information, (4) manage an account, (5) save client and account information, (6) quit
* If the user enters (1), then they will enter the new client’s name, address, social security number, employer, and annual income
* If the user enters (2), then they will enter the client’s name and then set up their account
* If the user enters (3) then they will enter the client’s name and then will be able to edit the client’s information
* If the user enters (4) then they will enter the account number and will be prompted to either deposit or withdraw funds
* If the user enters (5) then a message will be received stating that the files have been updated
* If the user enters (6) the user will be either brought back to the admin menu or the manager menu
* If the user enters anything else, they will be told that their input in invalid

Postcondition:

* If (1) was chosen, the user will be prompted to enter the client’s information
* If (2) was chosen, the user will be prompted to enter the client’s name to set up their account
* If (3) was chosen, the user will be prompted to enter the client’s name to edit their information
* If (4) was chosen, the user will be prompted to enter an account number and will then be prompted to either deposit or withdraw funds
* If (5) was chosen, the user will receive a message stating that the files have been updated
* If (6) was chosen, the user will have returned to either the admin or manager menu
* If anything else is entered, the user will return to the same menu

Design

**Class 1: Staff Manager**

* The Staff Manager Class keeps track of all the actions that can be performed by a Branch Staff Manager. The functions of this class are setUsername(), setPassword(), getUsername(), getPassword(), addClient(), addAccount(), editInfo(), manageAccount(), saveInfo(), and changePassword(). This class has two-member variables: a string representing the username and a string representing the password.

**Class 2: Admin**

* The Admin Class keeps track of all the actions that can be performed by a Admin. The functions of this class are all of the functions from the Staff Manager Class along with addUser(), deleteUser(), and displayUser(). This class has two-member variables: a string representing the username and a string representing the password. This class uses elements from the Staff Manager Class

**Class 3: Menu**

* The Menu Class deals with every menu and the functions that go along with those menus. The functions of this class are loginOptions(), login(), quit(), adminMenu(), clientManagment(), and staffMenu(). This class uses elements from the Staff Manager and Admin class.

Testing

**Case 1: Login Test**

* This function tests the initial login process. There is a test for when the user chooses to login, when the user chooses to quit, and when the user enters an invalid input.

**Case 2: Admin Test**

* This function tests the admin menu. There is a test for when the user chooses to manage an account, a test for adding a branch member, a test for deleting a branch member, a test for displaying branch staff, a test for changing the password, a test for exiting, and a test for an invalid input

**Case 3: Manager Test**

* This function tests the Manager menu. There is a test for when the user chooses to manage an account, a test for changing the password a test for exiting, and a test for an invalid input.

**Case 4: Management Test**

* This function tests the Management Menu. There is a test for adding a client, adding an account, editing client information, managing an account, saving information, exiting, and an invalid input