TUS Bank Application

# Algorithm

Import Scanner class.

Import LocalDate class.

Import ArrayList class.

TUSATM()

1. Initialize empty array lists for
   1. tusAccounts of type Account,
   2. currentAccounts of type CurrentAccount,
   3. depositAccounts of type DepositAccount,
   4. customers of type Customer,
   5. bankOfficer of type BankOfficer,
   6. bankManager of type BankManager
2. Call the method *initalizeTestData()* to populate the array lists.
3. Display the welcome message, “Welcome to the TUS Bank App”.
4. Create a new scanner object to read in from the keyboard.
5. Display the menu options and ask the user to input a selection.
   1. “1. Customer Menu”,
   2. “2. Staff Menu”.
6. Store the input in a variable named **choice** of type int. Use the scanner method nextInt();
7. Create an if statement to filter choice,
8. If **choice** is equal to 1:
   1. Ask the user to enter their customer number, store the input in a variable named **customerNumber** of type int. Use the scanner method nextInt();
   2. Check that the customer exists in the **CustomerIO** class using the class method *getCustomer(),* store the returned values in a Customer object named **cust***.*
   3. Add the Customer object **cust** in the array list **customers.**
   4. Create a variable named **input** of type String.
   5. Use **input** to create a sentinel controlled while loop to display the menu and implement the user’s choice.
      1. Print the menu choices: "1. Make a Deposit 2. Make a Withdrawal 3. Check Account Balance 4. Exit".
      2. Read the users input using the scanner method, *next()* and store it in the variable **input***.*
      3. Use a switch statement to filter by **input**.
         1. Call the Customer class method *depositFunds()* and pass the array list, **tusAccounts** and **customerNumber**.
         2. Call the Customer class method *withdrawFunds()* and pass the array list **tusAccounts** and **customerNumber**.
         3. Call the Customer class method *checkBalance()* and pass **customerNumber** and the array lists **tusAccounts** and **customers**.
         4. Print the message “Goodbye” and exit the program using the *System.exit()* method.
         5. Set the default case to print the message “Invalid input”
9. If **choice** is equal to 2,
   1. Ask the user to enter their staff number.
   2. Read the input using the scanner method *nextInt()* and store it in a variable named **input** of type int.
   3. Use a for each loop to iterate through the array list **staffMembers**. For each Staff in the **staffMembers** collection, do the following:
      1. Create an if statement and compare **input** to match the staff id in the array list. Use the Staff class function *getStaffId().*
      2. If the staff object exists in the array list and matches the input,
      3. Create a variable named **userInput** of type String.
      4. Use **userInput** to create a sentinel controlled while loop to display the menu and implement the user’s choice.
         1. Print the staff menu: "1. Create new Customer, 2. Create New Current Account, 3. Create New Deposit Account, 4. Change Current Account AIR, 5. Change deposit Account AIR, 6. Change Overdraft, 7. Print All Accounts, 8. Create a new Bank Officer, 9. Cancel.”
         2. Read the user input with the scanner method *next (),* and assign it to **userInput;**
         3. Create a switch statement to filter by **userInput.**
            1. Call the Staff class method *createNewCustomer()* and pass **customers.**
            2. Call the Staff class method *createNewCurrentAccount()* and pass **tusAccounts.**
            3. Call the Staff class method *createNewDepositAccount()* and pass **tusAccounts.**
            4. Call the Staff class method *changeCurrentAccAIR()* and pass **tusAccounts.**
            5. Call the Staff class method *changeDepositAccAIR()* and pass **tusAccounts.**
            6. Call the Staff class method *changeOverdraft()* and pass **tusAccounts.**
            7. Call the Staff class method *printAllAccounts()* and pass **tusAccounts.**
            8. Call the method *createNewBankOfficer()* and pass **bankManagers, bankOfficers** and **staffMembers**.
            9. Print the message “Goodbye” and exit the program using the *System.exit()* method.
            10. Set the default case to print the message “Invalid input”

End of main

*createNewBankOfficer()*

1. Create a new scanner object.
2. Create a new variable named **staffId** of type int.
3. Ask the user for their staff Id.
4. Read the input using the scanner method *nextInt().*
5. Use a for each loop to iterate through the bankManagers, For each BankManager in the bankManagers collection, do the following:
   1. Create an if statement to compare staffID to the BankManager object.
   2. If the provided staff ID matched the staff id in the BankManager object, do the following:
      1. Call the BankManager class method *createBankOfficer()* and pass **bankOfficers** and **staffMembers.**
   3. Else do the following:
      1. Print the message: “Staff ID invalid”.

End of method