Banking App

Banking App is a java command-line app that manage customer's bank account and also produce a report on how many customers are signed up on each bank in NZ. This app allows the customer to withdraw and deposit money and also check to see how many balance are on their account left.

Instructions on running the App

Running the app

To run this app on the command-line, type java TestLogin to begin.

As soon as you type in the running command, you'll be directed to the main menu to choose which options would you like to do for the app. This is whether you want to view and manage your account, view overall bank usage to see which bank has the most customer, and it also has the option to view your total balance that sums all the total for each bank that you've signed up. For instance if you have both BNZ and ANZ account then this option sums both of your balance on both account to give your total balance overall.

View/manage your account

To view or manage your account, you'll need to press 1 to do this. As soon as you choose this option, you'll have to choose which available bank do you want to complete this process. For instance, if you want to view your account in BNZ you'll have to type 'BNZ' as the command to continue. After that you'll need to supply your IRD number in order to open your account. As soon as you've logged on to your account the app will print out how many balance do you have for each account in that bank that you've chosen. You'll also have the option on whether you want to withdraw, deposit or log out onto your account.

- If you want to withdraw some money on your account, you'll need to press 5 to do this. After that you'll need to supply your account number and the amount that you wish to withdraw to continue
- If you want to deposit some money on your account, you'll need to press 6 to continue. After that you'll need to supply your account number and the amount that you wish to deposit to continue.

View bank usage

To see how many customers have signed up on each bank in NZ, you'll need to press 2 to see it. This option will print out how many customers in each bank in NZ. You'll also know which bank has the most customer in NZ.

View total balance on all bank accounts that you've signed up

To view your total balance on your all bank accounts, you'll need to press 3 to see it. This option will print out how much total balance left on all of your bank accounts that you've signed up.

Quit the App

To close the app, press 4 to do so.

Example scenario: Customer wants to deposit or view his account

Customer opens the Banking App

```
jmirandilla@titanium[/home/cshome/j/jmirandilla/labs/cosc344_asgn3/program2]$ java TestLogin
url: jdbc:oracle:thin:@silver:1527:cosc344
Welcome to Banking App
Press 1 to view your account
Press 2 to view bank usage
Press 3 to view your total balance
Press 4 to quit the App
```

Customer choses to view and manage his account by pressing option 1. Now he choose BNZ to manage his account on that bank.

```
jmirandilla@titanium[/home/cshome/j/jmirandilla/labs/cosc344_asgn3/program2]$ java TestLogin
url: jdbc:oracle:thin:@silver:1527:cosc344
Welcome to Banking App
Press 1 to view your account
Press 2 to view bank usage
Press 3 to view your total balance
Press 4 to quit the App
1
You have chosen to view your account as a customer
Select which bank do you want to view
[BNZ, KiwiBank, ANZ, Westpac, ASB]
BNZ
Hello and welcome to BNZ
Please enter your IRD number to login:
```

Now he needs to supply his IRD number to log in. After typing his IRD number of 77321234, the app will print out the balance remain for each of his account in BNZ. Then he has another option on whether he wants to withdraw or deposit on his account.

```
Please enter your IRD number to login:
77321234
Your Cheque account - 34594500 is: $1300
Your Saving account - 63435211 is: $524.31
Your Saving account - 43546462 is: $90330.31
-----------------------------------------------------
Total balance of: $92154.62
Press 5 to withdraw on your account
Press 6 to deposit on your account
Press 0 to logout on your account
```

He choose to deposit $100 on his savings account by pressing option 6.

```
Press 5 to withdraw on your account
Press 6 to deposit on your account
Press 0 to logout on your account
6
Please enter your account number:
63435211
Your balance for this account is: $524.31
Please enter the amount that you wish to deposit:
100
Your new balance for this account is now: $624.31
Thank you for using BNZ
Press 1 to have another transaction or press 4 to exit the App
```

Banking App’s source code

TestLogin.java source code

```
/*
 File: TestLogin.java
 September 2015
*/

import java.io.*;
import java.util.*;
import java.sql.*;

/**
 * This program can view and manage customer’s account
 *
 * @author Jill Mirandilla
 */

public class TestLogin {
   private List<String> allBank = new ArrayList<String>();
   private List<String> allIRDnum = new ArrayList<String>();

   public static void main (String[] args) {
         new TestLogin().go();
   }

   // This is the function that does all the work
   private void go() {

         // Read pass.dat
         UserPass login = new UserPass();
         String user = login.getUserName();
         String pass = login.getPassWord();
         String host = "silver";

         Connection con = null;
         try {
            // Register the driver and connect to Oracle
     DriverManager.registerDriver
          (new oracle.jdbc.driver.OracleDriver());
     String url = "jdbc:oracle:thin:@" + host + ":1527:cosc344";
```

```
System.out.println("url: " + url);
con = DriverManager.getConnection(url, user, pass);
Statement query = con.createStatement();
//getBankUsage(query);
//getBank(query);
//System.out.println(allBank);
//getUserBalance(query, "77321234");
//getBalanceFromBank(query, "'ANZ'", "82342342");
//int newBalance = getBalanceFromAccount(query, "34594500") + 50;
//updateBalance(query, "77321234", newBalance, "34594500");
//System.out.println(getBalanceFromAccount(query, "34594500"));
//System.out.println(getBalanceFromAccount(query, "77321234"));
//double total = getTotalBalanceAccount(query, "'77321234'");
//setTotalBalance(query, total, "77321234");
System.out.println("Welcome to Banking App");
System.out.println("Press 1 to view your account");
System.out.println("Press 2 to view bank usage");
System.out.println("Press 3 to view your total balance");
System.out.println("Press 4 to quit the App");
boolean terminator = false;
while(terminator != true) {
        Scanner input = new Scanner(System.in);
    int command = input.nextInt();
        if(command == 1){
            System.out.println("You have chosen to view your account as a customer");
            getBank(query);
            System.out.println("Select which bank do you want to view");
            System.out.println(allBank);
            Scanner iBank = new Scanner(System.in);
            String bank = iBank.nextLine();
            viewAccount(bank);
            allBank.clear();
        } else if(command == 2){
            getBankUsage(query);
        } else if(command == 3){
            System.out.println("Please enter your IRD Numer: ");
            Scanner inputIRD = new Scanner(System.in);
            String irdNumber = inputIRD.nextLine();

                irdNumber = "'" + irdNumber + "'";
                getUserBalance(query, irdNumber);
        } else if(command == 4){
            terminator = true;
```

```
            System.out.println("Thank you for using Banking App.");

          } else {
             System.out.println("You have entered an invalid command. Please try again");
          }

   }

        } catch (SQLException e) {
           System.out.println(e.getMessage());
           System.exit(1);

        } finally {
           if (con != null) {
                 try {
                    con.close();
                 } catch (SQLException e) {
                    quit(e.getMessage());
                 }
           }
        }
}
// end go()

public void viewAccount(String bName) throws SQLException{
        boolean terminate = false;
        while(terminate != true){
           if(bName.equals(allBank.get(0))){
                 atm(bName);
                 terminate = true;
           } else if(bName.equals(allBank.get(1))){
                 atm(bName);
                 terminate = true;
           } else if(bName.equals(allBank.get(2))){
              atm(bName);
                 terminate = true;
           } else if(bName.equals(allBank.get(3))){
                 atm(bName);
                 terminate = true;
           } else if(bName.equals(allBank.get(4))){
                 atm(bName);
                 terminate = true;
           } else {
```

```
                System.out.println("That bank doesn't exist.");
                System.out.println("Press 1 to try again or press 4 to exit");
                terminate = true;
            }
        }

    }
    public void atm(String bank) throws SQLException{
        UserPass login = new UserPass();
        String user = login.getUserName();
        String pass = login.getPassWord();
        String host = "silver";
        Connection con = null;
        try {
            DriverManager.registerDriver(new oracle.jdbc.driver.OracleDriver());
            String url = "jdbc:oracle:thin:@" + host + ":1527:cosc344";
            con = DriverManager.getConnection(url, user, pass);
            Statement query = con.createStatement();
        System.out.println("Hello and welcome to " + bank);
        System.out.println("Please enter your IRD number to login: ");
        Scanner input = new Scanner(System.in);
        String irdNum = input.nextLine();
        irdNum = "'"+irdNum + "'";
        String bankName = "'"+ bank + "'";
        getBalanceFromBank(query,bankName, irdNum);
        System.out.println("Press 5 to withdraw on your account");
        System.out.println("Press 6 to deposit on your account");
        System.out.println("Press 0 to logout on your account");
        Scanner actionInput = new Scanner(System.in);
        int action = actionInput.nextInt();
        if(action == 5){
            System.out.println("Please enter your account number: ");
            Scanner acctInput = new Scanner(System.in);
            String acctNo = "'"+acctInput.nextLine()+"'";
            System.out.println("Your balance for this account is: $" +
getBalanceFromAccount(query, acctNo));
            System.out.println("Please enter the amount that you wish to withdraw: ");
            Scanner moneyInput = new Scanner(System.in);
            double money = (double) moneyInput.nextDouble();
            double newBalance = getBalanceFromAccount(query, acctNo) - money;
            updateBalance(query, irdNum, newBalance, acctNo);
            double total = getTotalBalanceAccount(query, irdNum);
            setTotalBalance(query, total, irdNum);
```

```
            System.out.println("Your new balance for this account is now: $"
                                + getBalanceFromAccount(query, acctNo));
            System.out.println("Thank you for using " + bank);
        } else if(action == 6){
        System.out.println("Please enter your account number: ");
        Scanner acctInput = new Scanner(System.in);
        String acctNo = acctInput.nextLine();
            System.out.println("Your balance for this account is: $" +
getBalanceFromAccount(query, acctNo));
        System.out.println("Please enter the amount that you wish to deposit: ");
        Scanner moneyInput = new Scanner(System.in);
        double money = (double) moneyInput.nextDouble();
        double newBalance = getBalanceFromAccount(query, acctNo) + money;
        updateBalance(query, irdNum, newBalance, acctNo);
        double total = getTotalBalanceAccount(query, irdNum);
        setTotalBalance(query, total, irdNum);
        System.out.println("Your new balance for this account is now: $"
                        + getBalanceFromAccount(query, acctNo));
        System.out.println("Thank you for using " + bank);
        } else if(action == 0){
            System.out.println("Thank you for using " + bank);
        } else {
            System.out.println("Invalid command. Please try again.");
        }
        System.out.println("Press 1 to have another transaction or press 4 to exit the App");

        } catch (SQLException e){
            System.out.println(e.getMessage());
            System.exit(1);
        } finally {
            if(con != null){
                try {
                    con.close();
                } catch (SQLException e){
                    quit(e.getMessage());
                }
            }
        }
    }

    public void depositBalance(){
```

```
    }

    public void withdrawBalance(){


    }



    /**
   Gets all the bank and number of customer signed up on their bank.
    */
    private void getBankUsage(Statement query) throws SQLException {
          String sql = new String( "SELECT B.NAME, COUNT(Distinct(C.IRD)) FROM
CUSTOMER C, ACCOUNT_CUSTOMER AC, BANK B, ACCOUNT A WHERE AC.IRDNUM =
C.IRD AND A.BCODE = B.ROUTINGCODE AND AC.ANUM = A.ACCTNO GROUP BY
B.NAME order by b.name asc");
          ResultSet rset = query.executeQuery(sql);
          while(rset.next()){
             System.out.println("Bank: " + rset.getString(1) + " No. of Customers: " +
rset.getString(2));
          }
    }
    /**
   Gets the total balance of the customer's account for overall bank
    */
    private void getUserBalance(Statement query, String irdNo) throws SQLException {
          String sql = new String("select name, totalbalance from customer where ird = " + irdNo);
          ResultSet rset = query.executeQuery(sql);
          while(rset.next()){
             System.out.println("Hi " + rset.getString(1));
             System.out.println("Your total balance is: $" + rset.getString(2));
          }
    }

    /**
   sets the total balance of the customer as soon as they updated their account
    */
    private void setTotalBalance(Statement q, double total, String ird) throws SQLException{
          String sql = "UPDATE customer set totalbalance = " + total + " where ird= " + ird;
          int rowsUpdated = q.executeUpdate(sql);
    }
    /**
```

```
   This will calculate the total balance that the customer had in their account
    */
    private double getTotalBalanceAccount(Statement query, String irdNo) throws
SQLException{
            String sql = new String("select balance from account, account_customer  where anum =
acctno and irdNum=" + irdNo);

            ResultSet rset = query.executeQuery(sql);
            double totalBalance = 0;
            while(rset.next()){
               totalBalance = totalBalance + rset.getDouble(1);
            }
            return totalBalance;
    }

    /*Gets the remaining balance on your bank account */
    private double getBalanceFromAccount(Statement query, String acctNo) throws
SQLException{
            String sql = new String("select balance from account a where a.acctNo = " + acctNo);
            ResultSet rset = query.executeQuery(sql);
            double balance = 0;
            while(rset.next()){
               balance = rset.getDouble(1);
            }

            return balance;

    }

    /**
   Updates your account balance on your bank account
    */
    private void updateBalance(Statement query, String irdNo, double balance, String acctNo)
throws SQLException{
            String command = "update account set balance = " + balance + "where acctNo = " +
acctNo;
            int rowsUpdated = query.executeUpdate(command);


    }

    /* Gets all the available bank */
    private void getBank(Statement query) throws SQLException{
```

```
        String sql = new String("select name from bank");
        ResultSet rset = query.executeQuery(sql);
        while(rset.next()){
           allBank.add(rset.getString(1));
        }
   }
   /**
  Gets your account from a certain bank
   */
   private void getBalanceFromBank(Statement query, String bankName, String irdNum) throws
SQLException{
        String sql = new String("select b.name, acctno, balance, c.name, type from account,
bank b, account_customer, customer c where bcode = routingcode and ird=IRDnum and aNum
= acctNo and ird = " + irdNum + " and b.name = " + bankName);
        ResultSet rset = query.executeQuery(sql);
        double totalBalance = 0;
        //System.out.println("Hi there, " + rset.getString(4));
        while(rset.next()){
           System.out.println("Your " + rset.getString(5)
                              + " account - "+ rset.getString(2)
                              + " is: $"+ rset.getString(3));
           //System.out.println(rset.getString(2) + "    " + rset.getString(3));
           totalBalance = totalBalance + rset.getDouble(3);
        }
        System.out.println("-------------------------------------------------");
        System.out.println("Total balance of: $" + totalBalance);
   }



   // Used to output an error message and exit
   private void quit(String message) {
        System.err.println(message);
        System.exit(1);
   }

} // end class TestLogin
```