

Project Presentation

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To sign up

- Sign up, then enter information.

```
--- Press 1: Sign up
--- Press 2: Log in
--- Press 3: Exit Program
--- Enter Number:
1
--- Enter 1: Continue Attempt
--- Enter 2: Return
--- Enter Number:
1
--- First Name:
Les
--- Last Name:
last
--- E-mail:
les01@gmail.com
--- Phone-Number:
1-512-111-7777
--- Home Address:
1220 Loch Loop
--- Username:
les01
--- Password:
guest123
--- Confirm Password:
guest123
--- Enter 1: Continue Attempt
--- Enter 2: Return
--- Enter Number:
2
| --- Returning
--- Press 1: Sign up
--- Press 2: Log in
--- Press 3: Exit Program
--- Enter Number:
```

Steps to perform actions in app

To Login, then enter user information. The login part contains options to view, edit information of the user.

```
---          Welcome to New Bank!          ---  
  
--- Press 1: Sign up  
--- Press 2: Log in  
--- Press 3: Exit Program  
--- Enter Number:  
2  
--- Please enter your username and password ---  
--- Enter 1: Continue Attempt  
--- Enter 2: Return  
--- Enter Number:  
1  
--- Username:  
adamSmith  
--- Password:  
Smithsonian1963  
Welcome  
--- What would you like to do? ---  
--- Press 1: View account and balance  
--- Press 2: View and edit profile  
--- Press 3: View and edit security  
--- Press 4: Log out
```

To view an Account and Balance

Welcome

--- What would you like to do? ---
--- Press 1: View account and balance
--- Press 2: View and edit profile
--- Press 3: View and edit security
--- Press 4: Log out

1

--- Enter 1: View an account
--- Enter 2: Transfer amount
--- Enter 3: Deposit amount
--- Enter 4: Create account
--- Enter 5: Return
--- Enter Number:

1

1: Savings 2: Savings --- Enter Account Number:

2

Account type: Savings

Balance: 100499.0

--- Enter 1: View an account

--- Enter 2: Transfer amount

--- Enter 3: Deposit amount

--- Enter 4: Create account

--- Enter 5: Return

--- Enter Number:

To Transfer an amount

Successful

```
1
--- Enter 1: View an account
--- Enter 2: Transfer amount
--- Enter 3: Deposit amount
--- Enter 4: Create account
--- Enter 5: Return
--- Enter Number:
2
1: Savings 2: Savings --- Enter Account Number to Transfer from:
1
1: Savings 2: Savings --- Enter Account Number to Transfer to:
2
--- How much would you like to transfer?
10000
--- What would you like to do? ---
--- Press 1: View account and balance
--- Press 2: View and edit profile
--- Press 3: View and edit security
--- Press 4: Log out
```

Unsuccessful

```
--- Enter 1: View an account
--- Enter 2: Transfer amount
--- Enter 3: Deposit amount
--- Enter 4: Create account
--- Enter 5: Return
--- Enter Number:
2
1: Savings 2: Savings --- Enter Account Number to Transfer from:
1
1: Savings 2: Savings --- Enter Account Number to Transfer to:
2
--- How much would you like to transfer?
5000000
| --- Failed trying to transfer an amount over the account's balance
--- What would you like to do? ---
--- Press 1: View account and balance
--- Press 2: View and edit profile
--- Press 3: View and edit security
--- Press 4: Log out
```

To deposit an amount

Choose options on either 3: Savings or 4: Checking for a prompt message.

```
--- What would you like to do? ---  
--- Press 1: View account and balance  
--- Press 2: View and edit profile  
--- Press 3: View and edit security  
--- Press 4: Log out  
1  
--- Enter 1: View an account  
--- Enter 2: Transfer amount  
--- Enter 3: Deposit amount  
--- Enter 4: Create account  
--- Enter 5: Return  
--- Enter Number:  
3  
1: Savings  2: Checking  3: Savings  4: Checking  --- Enter Account Number:  
4  
--- How much would you like to transfer?  
3000
```

Then, view account to see the updated information, then choose either 1: Savings or 2: Checking to view that updated information, if needed.

```
1: Savings  2: Checking  3: Savings  4: Checking  --- Enter Account Number:  
2  
Account type: Checking  
Balance: 7000.0  
--- Enter 1: View an account  
--- Enter 2: Transfer amount  
--- Enter 3: Deposit amount  
--- Enter 4: Create account  
--- Enter 5: Return  
--- Enter Number:
```

Creating, Viewing and Deposit to new account

```
--- Enter 1: View an account
--- Enter 2: Transfer amount
--- Enter 3: Deposit amount
--- Enter 4: Create account
--- Enter 5: Return
--- Enter Number:
```

4

Savings

```
1: Savings 2: Savings 3: Checking --- Enter Account Number:
```

1

Account type: Savings

Balance: 18858.0

```
--- Enter 1: View an account
--- Enter 2: Transfer amount
--- Enter 3: Deposit amount
--- Enter 4: Create account
--- Enter 5: Return
--- Enter Number:
```

1

```
--- Account Types:
```

```
--- 1: Savings
```

```
--- 2: Checking
```

```
--- 3: Return
```

2

```
--- Deposit how much into new account?
```

7000

Checking

```
1: Savings 2: Savings 3: Checking --- Enter Account Number:
```

3

Account type: Checking

Balance: 7000.0

```
--- Enter 1: View an account
--- Enter 2: Transfer amount
--- Enter 3: Deposit amount
--- Enter 4: Create account
--- Enter 5: Return
--- Enter Number:
```

View and Edit Option

Profile

```
Welcome
--- What would you like to do? ---
--- Press 1: View account and balance
--- Press 2: View and edit profile
--- Press 3: View and edit security
--- Press 4: Log out
2
User Identification : 12345678
      Fullname : Adam Smith
      E-mail Address : aSmith@hotmail.com
      Phone Number : 1-512-635-9236
      Home Address : 8252 Rockwood Drive
--- Press 1: Edit name
--- Press 2: Edit E-mail address
--- Press 3: Edit phone number
--- Press 4: Edit home address
--- Press 5: Return
```

Security

```
--- What would you like to do? ---
--- Press 1: View account and balance
--- Press 2: View and edit profile
--- Press 3: View and edit security
--- Press 4: Log out
3
Username: adamSmith
Password: *****
--- Press 1: Change password
--- Press 2: Return
```


Main Class

- Contains Scanner classes that can parse input to perform different actions.

Login Outputs

```
--- Welcome to New Bank! ---  
  
--- Press 1: Sign up  
--- Press 2: Log in  
--- Press 3: Exit Program  
--- Enter Number:  
2  
--- Please enter your username and password ---  
--- Enter 1: Continue Attempt  
--- Enter 2: Return  
--- Enter Number:  
1  
--- Username:  
adamSmith  
--- Password:  
Smithsonian1963  
Welcome  
--- What would you like to do? ---  
--- Press 1: View account and balance  
--- Press 2: View and edit profile  
--- Press 3: View and edit security  
--- Press 4: Log out
```

SQL Database

- Three tables are created: Login, Users (customers), and Accounts.

```
create table project.users (  
    userID int primary key,  
    userFullname varchar(255) unique not null,  
    userEmail varchar(255) unique not null,  
    phoneNumber varchar(255),  
    homeAddress varchar(255)  
);  
  
create table project.accounts (  
    userFullname varchar(255) references project.users(userFullname),  
    accountType varchar(255),  
    accountValue decimal(65, 2)  
);  
  
create table project.login (  
    userID int references project.users(userID),  
    username varchar(255),  
    userEmail varchar(255) references project.users(userEmail),  
    userPass varchar(255)  
);
```

```
insert into project.users (userID, userFullname, userEmail, phoneNumber, homeAddress)  
values (12345678, 'Adam Smith', 'aSmith@hotmail.com', '1-512-635-9236', '8252 Rockwood Drive'),  
       (87654321, 'Jane Smith', 'janeS@hotmail.com', '1-512-825-5825', '8252 Rockwood Drive');  
  
insert into project.accounts (userFullname, accountType, accountValue)  
values ('Adam Smith', 'Savings', 23858.08),  
       ('Jane Smith', 'Savings', 19276.98);  
  
insert into project.login (userID, username, userEmail, userPass)  
values (12345678, 'adamSmith', 'aSmith@hotmail.com', 'Smithsonian1963'),  
       (87654321, 'janeSmith', 'janeS@hotmail.com', 'amberjane00300');
```

Database Class

- Contains all data from the database separated into a list.

```
private List<Account> accountList = new ArrayList<Account>();  
private List<Login> loginList = new ArrayList<Login>();  
private List<User> userList = new ArrayList<User>();
```

- When user logs in, grabs data of current user.

```
private List<Account> currentAccountList = new ArrayList<Account>();  
private Login currentLogin = new Login();  
private User currentUser = new User();
```

- First method of connection.

```
public Connection getConnection() throws SQLException {  
    final String DB_URL = "jdbc:postgresql://localhost:5432/postgres";  
    final String USER = "postgres";  
    final String PASS = "guest123";    // temporary password for privacy  
  
    return DriverManager.getConnection(DB_URL, USER, PASS);  
}
```

Encapsulation

- Gets the data (getters)

```
public List<Account> getAccountList() {  
    return accountList;  
}  
  
public List<Login> getLoginList() {  
    return loginList;  
}  
  
public List<User> getUserList() {  
    return userList;  
}
```

- Sets and gets data for the current account

```
public List<Account> getAccounts() {  
    return currentAccountList;  
}  
  
public Login getLogin() {  
    return currentLogin;  
}  
  
public User getUser() {  
    return currentUser;  
}
```

- Sets data from the database (setters)

```
public void setDatabase() {  
    AccountDAOImpl accountDAO = new AccountDAOImpl();  
    LoginDAOImpl loginDAO = new LoginDAOImpl();  
    UserDAOImpl userDAO = new UserDAOImpl();  
  
    try {  
        accountList = accountDAO.getAccounts();  
        loginList = loginDAO.getLogins();  
        userList = userDAO.getUsers();  
    } catch (Exception e) {  
        System.out.println("An error was thrown during runtime");  
    }  
}  
  
public void addAccount(Account account) {  
    this.currentAccountList.add(account);  
}  
  
public void setLogin(Login login) {  
    this.currentLogin = login;  
}  
  
public void setUser(User user) {  
    this.currentUser = user;  
}
```

Application Overview

Main functions:

- User can login, sign-up, view, add, edit, and delete an account.
- User can view and edit profile and security information.
- User can transfer and deposit to new account type.
- Have 8 Junit Test cases.

Missing functions:

- No employee user and withdrawal functions.
- User cannot transfer money to another user's account, only account type within the same user.
- The delete function seems to be missing.