1   Instructions to Run the Code and Notes

```
1  # Populate Accounts, Users and Admins
2  # Follow the menu-driven interface
3  # We will run these codes only once
4  gcc admin_data.c -o admin
5  ./admin
6
7  gcc account_data.c -o account
8  ./account
9
10 gcc user_data.c -o user
11 ./user
12
13
14 # To run the actual code
15 # Run these files parallely to estabish handshake
16 gcc server.c -o server
17 ./server
18
19 gcc client.c -o client
20 ./client
21
22
23 # Open some more terminals for on time check of the .dat files
24 gcc checkAdmin.c -o admin
25 ./admin
26
27 gcc checkAccount.c -o account
28 ./account
29
30 gcc checkUser.c -o user
31 ./user
```

Listing 1: **Command line Instructions**

NOTE: You can use any of the checkUser.c or checkAccount.c or checkAdmin.c at any point of time to get the status of all the users, accounts and admins.

2 Output Screenshots

Account Data Set up

```
+==================================================================+
|                      MENU TO ADD ACCOUNTS                        |
+==================================================================+
|How many ACCOUNTS do you want to add: 3
|==================================================================|
|Sequentially Assigning Account ID....                             |
|Starting balance is 0                                             |
|Do you want to add a starting balance: 1 for YES, 0 for NO: 1
|Starting balance is : 2200
|==================================================================|
|Tell us your account type                                         |
|==================================================================|
|If you want to open a Normal Account - Enter 1                    |
|If you want to open a Joint Account - Enter 2                     |
|If you want to open a Administrator Account - Enter 3             |
|Press the Appropriate Button: 1
|==================================================================|
|==================================================================|
|Sequentially Assigning Account ID....                             |
|Starting balance is 0                                             |
|Do you want to add a starting balance: 1 for YES, 0 for NO: 0
|==================================================================|
|Tell us your account type                                         |
|==================================================================|
|If you want to open a Normal Account - Enter 1                    |
|If you want to open a Joint Account - Enter 2                     |
|If you want to open a Administrator Account - Enter 3             |
|Press the Appropriate Button: 2
|==================================================================|
|==================================================================|
|Sequentially Assigning Account ID....                             |
|Starting balance is 0                                             |
|Do you want to add a starting balance: 1 for YES, 0 for NO: 0
|==================================================================|
|Tell us your account type                                         |
|==================================================================|
|If you want to open a Normal Account - Enter 1                    |
|If you want to open a Joint Account - Enter 2                     |
|If you want to open a Administrator Account - Enter 3             |
|Press the Appropriate Button: 3
|==================================================================|
```

User Data Set Up

```
+==============================================================+
|                    MENU TO ADD USERS                         |
+==============================================================+
|How many USERS do you want to add: 3
|==============================================================|
|User_ID = 1 and Account_ID = 1
|Enter the Password for USER 1: mayank
|==============================================================|
|==============================================================|
|User_ID = 2 and Account_ID = 2
|Enter the Password for USER 2: anshul
|==============================================================|
|==============================================================|
|User_ID = 3 and Account_ID = 3
|Enter the Password for USER 3: shridhar
|==============================================================|
```

Admin Data Set Up

```
+==============================================================+
|                 MENU TO ADD ADMINISTRATORS                   |
+==============================================================+
|How many ADMINS do you want to add: 1
|==============================================================|
|Enter the Password for ADMIN 1: mayank
|==============================================================|
```

Client enters as User

```
+==============================================================+
|                   MENU FOR LOGGING IN                        |
+==============================================================+
|1|-> Login as Normal Account Holder                          |
|2|-> Login as Joint Account Holder                           |
|3|-> Login as Administrator                                  |
+==============================================================+
|0|-> Exit                                                    |
+==============================================================+
|Select an Operation to Perform : 1
|Starting the Login Process Now...                            |
|Enter your User_ID: 1
|Enter your Password: mayank
|Logged in successfully!                                      |
+==============================================================+
|             MENU FOR ACCESSING USER OPERATIONS               |
+==============================================================+
|1|-> Deposit                                                 |
|2|-> Withdraw                                                |
|3|-> Account Details                                         |
|4|-> Balance Enquiry                                         |
|5|-> Password Change                                         |
+==============================================================+
|0|-> Exit                                                    |
+==============================================================+
|Select an Operation to Perform :
```

```
|Select an Operation to Perform : 1
|Enter the Amount to be Deposited: 100
|Executing query.... Amount Deposited Successfully                      |
+================================================================+
|                 MENU FOR ACCESSING USER OPERATIONS             |
+================================================================+
|1|-> Deposit                                                    |
|2|-> Withdraw                                                   |
|3|-> Account Details                                            |
|4|-> Balance Enquiry                                            |
|5|-> Password Change                                            |
+================================================================+
|0|-> Exit                                                       |
+================================================================+
|Select an Operation to Perform : 2
|Enter the Amount to be Withdrawn: 200
|Balance Amount Updated!                                         |
+================================================================+
|                 MENU FOR ACCESSING USER OPERATIONS             |
+================================================================+
|1|-> Deposit                                                    |
|2|-> Withdraw                                                   |
|3|-> Account Details                                            |
|4|-> Balance Enquiry                                            |
|5|-> Password Change                                            |
+================================================================+
|0|-> Exit                                                       |
+================================================================+
|Select an Operation to Perform : ▮
```

Details of account

```
+================================================================+
|Select an Operation to Perform : 3
|Displaying the Account Info                                     |
|Account_ID --> 1      Balance --> 2400      Account_Type --> 1   |
+================================================================+
|                 MENU FOR ACCESSING USER OPERATIONS             |
+================================================================+
|1|-> Deposit                                                    |
|2|-> Withdraw                                                   |
|3|-> Account Details                                            |
|4|-> Balance Enquiry                                            |
|5|-> Password Change                                            |
+================================================================+
|0|-> Exit                                                       |
+================================================================+
|Select an Operation to Perform : ▮
```

Server Right now

```
|Waiting for user to log in....                                  |
|User Logged In Successfully                                     |
▮
```

Client Enters as Admin

```
+=============================================================+
|                    MENU FOR LOGGING IN                      |
+=============================================================+
|1|-> Login as Normal Account Holder                          |
|2|-> Login as Joint Account Holder                           |
|3|-> Login as Administrator                                  |
+=============================================================+
|0|-> Exit                                                    |
+=============================================================+
|Select an Operation to Perform : 3
|Starting the Login Process Now...                            |
|Enter your User_ID: 1
|Enter your Password: mayank
|Logged in successfully!                                      |
+=============================================================+
|                    MENU FOR LOGGING IN                      |
+=============================================================+
|1|-> Add Account to the Database                             |
|2|-> Delete Account to the Database                          |
|3|-> Modify Account Type                                     |
|4|-> Search Account Details                                  |
+=============================================================+
|0|-> Exit                                                    |
+=============================================================+
|Select an Operation to Perform : 1
|Enter Account Balance: 900
|Enter Account Type: 1
|Executing query.... Account Added Successfully               |
```

Server Right now

```
|Waiting for user to log in....                               |
|User Logged In Successfully                                  |
|Waiting for Admin to log in....                              |
|Admin Logged In Successfully                                 |
```

Admin Operations

```
+====================================================================+
|                        MENU FOR LOGGING IN                         |
+====================================================================+
|1|-> Add Account to the Database                                    |
|2|-> Delete Account to the Database                                 |
|3|-> Modify Account Type                                            |
|4|-> Search Account Details                                         |
+====================================================================+
|0|-> Exit                                                           |
+====================================================================+
|Select an Operation to Perform : 2
|Enter Account_ID to delete: 4
|Executing query.... Account Deleted Successfully                    |
+====================================================================+
|                        MENU FOR LOGGING IN                         |
+====================================================================+
|1|-> Add Account to the Database                                    |
|2|-> Delete Account to the Database                                 |
|3|-> Modify Account Type                                            |
|4|-> Search Account Details                                         |
+====================================================================+
|0|-> Exit                                                           |
+====================================================================+
|Select an Operation to Perform : 3
|Enter Account_ID which needs to be modified: 2
|Executing query.... Account Modified Successfully                   |
+====================================================================+
|                        MENU FOR LOGGING IN                         |
+====================================================================+
|1|-> Add Account to the Database                                    |
|2|-> Delete Account to the Database                                 |
|3|-> Modify Account Type                                            |
|4|-> Search Account Details                                         |
+====================================================================+
|0|-> Exit                                                           |
+====================================================================+
```