Banking Management System

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1. INTRODUCTION

Abstract

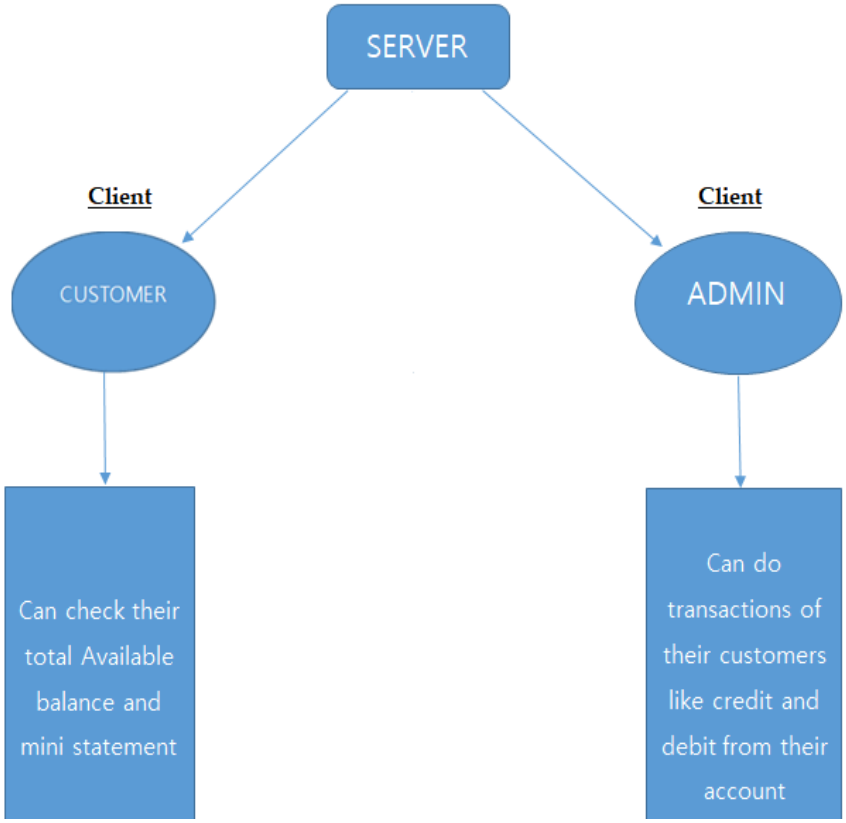
Requirements definition and management is recognized as a necessary step in the delivery of successful systems and software projects, discipline is also required by standards, regulations, and quality improvement initiatives. Creating and managing requirements is a challenge of IT, Systems and product development projects or indeed for any activity where you have to manage a contractual relationship. Organization need to effectively define and manage requirements to ensure they are meeting needs of the customer, while providing compliance and staying on the schedule and within budget. The impact of poorly expressed requirements can bring a business out of compliance or even cause injury or death. Requirements definition and management is an activity that can deliver a high, fast return on investment.

The **"BANKING MANAGEMENT SYSTEM"** undertaken as a project is based on relevant technologies. The main aim of the project is to develop an application for bank management system. This project has been developed to carry out the processes easily and quickly, which is not possible with the manual systems, which are overcome by this application.

Expected Results

To reduce the difficulties faced by bankers in managing their customers account. It will also help the customers to track their banking details like getting their account balance or transaction history online.

Overview Of The Solution



Functionality Of The Project

In this project, first you have to run the server program then run the client program, after running the client program it will ask to select **"Admin or Customer".** Then it will ask user_id and password. After entering correct user_id and password it will check whether the entered user_id and password are valid or not. If you enter wrong user_id and password then, it will show **"Wrong User_id and Password Combination".** Basically, there are two main functions which we have implemented in this project are:

- Customer
- Admin

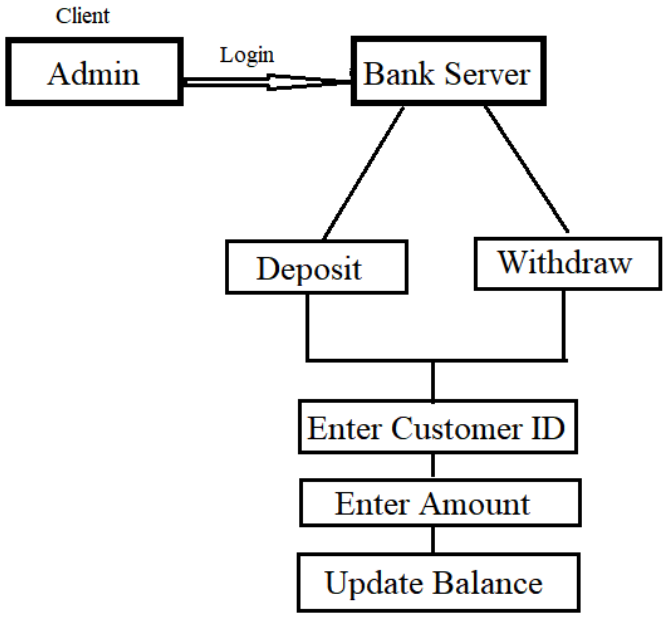
If you are a **Customer** then it will show what you want to do with your account like whether you want to know the available balance or you want to get the mini statement or transaction history of your account and based on your choice it will show the information.

If you are **Admin** then it will first ask for the account holder's user_id in which you want to do credit or debit and after entering the correct customer user_id (only the customer's user_id, not password), it will ask whether you want to do credit or debit and based on your choice it will ask for the amount that how much you want to credit/debit from that account. After entering the amount it will update the balance in the account holder's account.

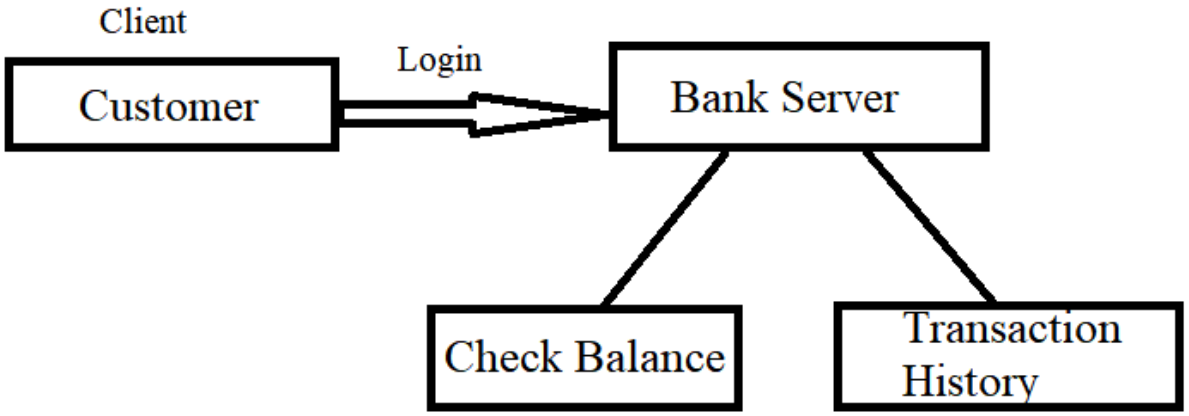
Note: We have considered the "Admin" as a bank staff or manager whom the customer needs to ask whenever they want to deposit or withdraw money from their account.

Program Components

Admin Services –



Customer Services –



2. RESULTS & EXPLANATIONS

Admin_login

admin_login.txt

```
kim_pass1

jim_pass2
```

There are two Admins. Admin can login using either of the two user id and password combination.

Customer_login

customer_login.txt

```
ping_pass1

dim_pass2
```

We have considered two customers. Customers can login using either of the two user id and password combination.

Customer ID

customer_id.txt

```
ping

dim
```

This is the User ID's of the customers which are used by an admin to deposit or withdraw money from the customer's account.

Note : dim.txt and ping.txt are the two files which stores the account balance of the respective customer.

dim.txt | ping.txt

Compilation

```
satyawant@satyawant-VirtualBox:~/Desktop$ gcc server_banking.c -o server
satyawant@satyawant-VirtualBox:~/Desktop$ gcc client_banking.c -o client
satyawant@satyawant-VirtualBox:~/Desktop$
```

Entering incorrect user_id and password for Customer Login -

Server :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9121
CLIENT AUTHORIZED
Client : 1
Client: bhj_rtyu
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9121
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
1
Server : Enter Your User ID And Password
Customer: bhj_rtyu
Server: Wrong User ID And Password Combination
```

Above execution shows that when a customer enters a wrong user_id and password combination while login, then the server will display **"Wrong user ID and password combination"**.

Entering incorrect user_id and password for Admin Login -

Server :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 2
Client: ghbh_hjn
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
2
Server : Enter Your User ID And Password
Admin: ghbh_hjn
Server: Wrong User ID And Password Combination
```

Above execution shows that when an admin enters a wrong user_id and password combination while login, then the server will display **"Wrong user ID and password combination"**.

Entering incorrect Customer_id by the Admin -

Server :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 2
Client: kim_pass1
Client: 1
Client: klj
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
2
Server : Enter Your User ID And Password
Admin: kim_pass1
1. Deposit
2. Withdraw
Enter your choice
1
Server: Enter Customer User ID
Customer_ID: klj
Server: Wrong Customer User ID
```

Above execution shows that when an admin enters a wrong user_id of the customer while **depositing or withdrawing the money from the customer's account**, then the server will display **"Wrong Customer User ID"**.

Money deposit by an admin to the customer's account -

dim's Account balance file before deposit:

dim.txt ×

32610

Server :

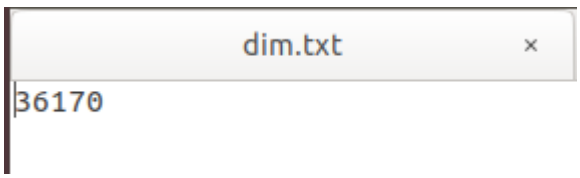
```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 2
Client: kim_pass1
Client: 1
Client: dim
Client: 3560
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
2
Server : Enter Your User ID And Password
Admin: kim_pass1
1. Deposit
2. Withdraw
Enter your choice
1
Server: Enter Customer User ID
Customer_ID: dim
Server: Enter Amount To Deposit
Amount: 3560
Server: Money Deposited Successfully In USER ID -  dim
```

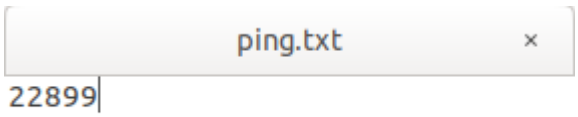
In the above execution the admin has deposited an amount of 3560 in **dim's** account.

dim's Account balance file after deposit:



Money withdrawn by an admin from the customer's account -

ping's Account balance file before withdraw:



Server :

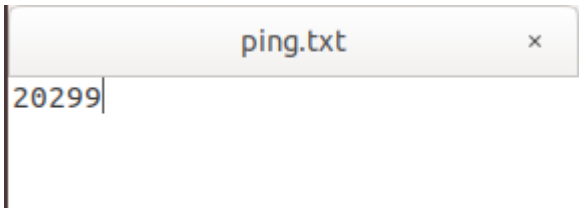
```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 2
Client: jim_pass2
Client: 2
Client: ping
Client: 2600
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
2
Server : Enter Your User ID And Password
Admin: jim_pass2
1. Deposit
2. Withdraw
Enter your choice
2
Server: Enter Customer User ID
Customer_ID: ping
Server: Enter Amount To Withdraw
Amount: 2600
Server: Money Debited From USER ID -  ping
```

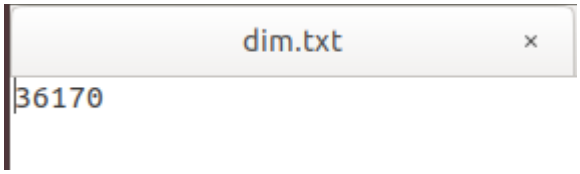
In the above execution the admin has withdrawn an amount of 2600 from **ping's** account.

ping's Account balance file after withdraw:



When an entered withdrawal amount is more than the available balance -

dim's current account balance :



Server :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 2
Client: kim_pass1
Client: 2
Client: dim
Client: 40000
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
2
Server : Enter Your User ID And Password
Admin: kim_pass1
1. Deposit
2. Withdraw
Enter your choice
2
Server: Enter Customer User ID
Customer_ID: dim
Server: Enter Amount To Withdraw
Amount: 40000
Server: Not Enough Money In USER ID -  dim
```

When an admin tries to withdraw more money from the customer's account than available balance, then server displays **"Not Enough Money In User ID – (entered User Id of the customer)"**. We can see from dim.txt file that available balance in **dim's** account is 36170, but dim asked the admin to withdraw more money i.e 40000.

Customer Checking his/her account balance -

Server :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 1
Client: ping_pass1
Client: 1
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
1
Server : Enter Your User ID And Password
Customer: ping_pass1
1. Balance Enquiry
2. Transaction History
Enter your choice
1
Available Balance: 20299
```

Above execution shows that the customer **"ping"** has login to the bank server and selected the first option i.e **"Balance Enquiry"** to see available balance in his account balance.

Server :

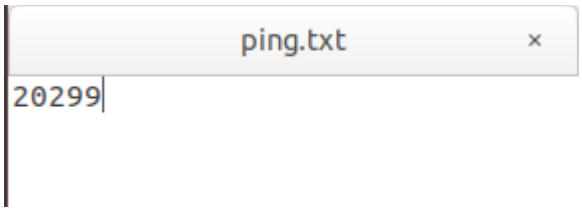
```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 1
Client: dim_pass2
Client: 1
```

Client :

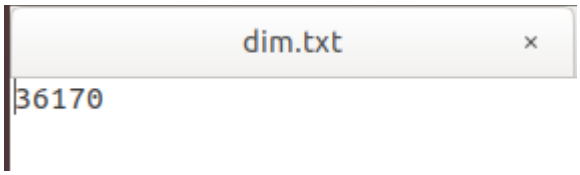
```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
1
Server : Enter Your User ID And Password
Customer: dim_pass2
1. Balance Enquiry
2. Transaction History
Enter your choice
1
Available Balance: 36170
```

Above execution shows that the customer **"dim"** has login to the bank server and selected the first option i.e **"Balance Enquiry"** to see available balance in his account balance.

ping's Account balance file :



dim's Account balance file :



Customer Checking his/her account Transaction history -

Server :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 1
Client: ping_pass1
Client: 2
```

Client

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
1
Server : Enter Your User ID And Password
Customer: ping_pass1
1. Balance Enquiry
2. Transaction History
Enter your choice
2

Thu Jun 25 01:47:58 2020
DEPOSIT 2150

Thu Jun 25 01:49:07 2020
DEPOSIT 4000

Thu Jun 25 01:51:13 2020
DEPOSIT 10000

Thu Jun 25 01:53:22 2020
WITHDRAW 2351

Thu Jun 25 01:58:26 2020
WITHDRAW 200
```

```
Thu Jun 25 02:00:05 2020
WITHDRAW 500

Thu Jun 25 02:01:13 2020
DEPOSIT 5460

Thu Jun 25 15:30:01 2020
DEPOSIT 5000

Thu Jun 25 15:33:39 2020
WITHDRAW 560

Thu Jun 25 15:41:39 2020
WITHDRAW 100

Thu Jun 25 17:20:40 2020
WITHDRAW 2600
```

Above execution shows that the customer **"ping"** has login to the bank server and selected the second option i.e **"Transaction History"** to see the transaction details of his account.

ping's Account Transaction history file :

ping_transaction.txt

```
Thu Jun 25 01:49:07 2020
DEPOSIT 4000

Thu Jun 25 01:51:13 2020
DEPOSIT 10000

Thu Jun 25 01:53:22 2020
WITHDRAW 2351

Thu Jun 25 01:58:26 2020
WITHDRAW 200

Thu Jun 25 02:00:05 2020
WITHDRAW 500

Thu Jun 25 02:01:13 2020
DEPOSIT 5460

Thu Jun 25 15:30:01 2020
DEPOSIT 5000

Thu Jun 25 15:33:39 2020
WITHDRAW 560

Thu Jun 25 15:41:39 2020
WITHDRAW 100

Thu Jun 25 17:20:40 2020
WITHDRAW 2600
```

Server :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./server 9120
CLIENT AUTHORIZED
Client : 1
Client: dim_pass2
Client: 2
```

Client :

```
satyawant@satyawant-VirtualBox:~/Desktop$ ./client 127.0.0.1 9120
Welcome To Our Banking Services

1. Customer
2. Admin
Enter your choice
1
Server : Enter Your User ID And Password
Customer: dim_pass2
1. Balance Enquiry
2. Transaction History
Enter your choice
2

Thu Jun 25 01:50:04 2020
DEPOSIT 20000

Thu Jun 25 01:51:50 2020
WITHDRAW 3000

Thu Jun 25 02:02:58 2020
DEPOSIT 9520

Thu Jun 25 02:07:46 2020
WITHDRAW 500

Thu Jun 25 02:15:54 2020
WITHDRAW 1300
```

```
Thu Jun 25 15:23:38 2020
DEPOSIT 2000

Thu Jun 25 15:25:03 2020
WITHDRAW 110

Thu Jun 25 15:38:43 2020
DEPOSIT 3000

Thu Jun 25 17:15:14 2020
DEPOSIT 3000

Thu Jun 25 17:18:19 2020
DEPOSIT 3560
```

Above execution shows that the customer **"dim"** has login to the bank server and selected the second option i.e **"Transaction History"** to see the transaction details of his account.

dim's Account Transaction history file :

dim_transaction.txt

```
Thu Jun 25 01:50:04 2020
DEPOSIT 20000

Thu Jun 25 01:51:50 2020
WITHDRAW 3000

Thu Jun 25 02:02:58 2020
DEPOSIT 9520

Thu Jun 25 02:07:46 2020
WITHDRAW 500

Thu Jun 25 02:15:54 2020
WITHDRAW 1300

Thu Jun 25 15:23:38 2020
DEPOSIT 2000

Thu Jun 25 15:25:03 2020
WITHDRAW 110

Thu Jun 25 15:38:43 2020
DEPOSIT 3000

Thu Jun 25 17:15:14 2020
DEPOSIT 3000

Thu Jun 25 17:18:19 2020
DEPOSIT 3560
```