



AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

Course No: CSE 4126

Course Title: Distributed Database System

Project Name: Mobile Banking System

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Section: B

Group: B2

Introduction:

Mobile banking is a service provided by a **bank** or other **financial** institution that allows its customers to conduct **financial** transactions remotely using a **mobile** device such as a smartphone or tablet. **Mobile banking** is dependent on the availability of an internet or data connection to the **mobile** device. In this project I used **Oracle 10g** as a **distributed database management System** and the language is **PL/SQL**. There are three types of **Actors** in this system. They are:

1. Main
2. Agent
3. Client

Main:

They are **Shareholders** of this **Mobile Bank**. They can **Cash In** to their own account using their **Phone number** and **Password**. And they can also **send money** to one of an **Agent**. If phone number and password **is incorrect**, money **won't be transferred**. They can also see **their profile** and their **transaction history**. And they can also see the **Profit** of their Company.

Agent:

Agents are **middleman** between **Shareholders** and **Clients**. Agent can **Cash In** to a Client's Account and no charge will be needed for this. And also Agent could **Send Money** to another **Agent** or **Client**. To do this transaction, **5 taka** will be charged from **Agent's Account**. And this money will be added to the **profit** table. Agent can also **Send Money** to **Main** and no charge needed for this transaction. Agent can also see their **Profile** and **Transaction History** of their Account.

Client:

Clients can **Cash Out** from their account to an **Agent's Account**. It takes **20 taka charge** per **one thousand** taka Cash OUT. And charged money will be added to the **profit table**. Client can also **Send Money** to another **Client** or an **Agent**, **5 taka** will be charged from **Clients Account** for this transaction. They can also see their **Profile** and **transaction History**.

Database Tables(site_1)

Table 01: Client (Fragment 1)

Field	Type	Constraint
cid	Varchar2(15)	P.K (Not Null)
cName	Varchar2(30)	Not Null
cPass	Varchar2(30)	Not Null
cAmount	integer	Not Null
cAddress	Varchar(30)	Not Null

Table 02: cHistory

Field	Type	Constraint
ch_id	number	P.K (Not Null) A.I
cid	Varchar2(15)	Not Null
ch_date	Varchar2(20)	Not Null
To_whom	Varchar2(15)	Not Null
ch_amount	integer	Not Null
ch_type	Varchar2(15)	Not Null

Table 03: Profit

Field	Type	Constraint
pid	number	P.K (Not Null) A.I
pFrom	Varchar2(15)	Not Null
pAmount	Integer	Not Null
pDate	Varchar2(20)	Not Null

Database Tables(site_2)

Table 01: Client (Fragment 2)

Field	Type	Constraint
cid	Varchar2(15)	P.K (Not Null)
cName	Varchar2(30)	Not Null
cPass	Varchar2(30)	Not Null
cAmount	integer	Not Null
cAddress	Varchar(30)	Not Null

Table 02: Agent

Field	Type	Constraint
aid	Varchar2(15)	P.K (Not Null)
aName	Varchar2(30)	Not Null
aPass	Varchar2(30)	Not Null
aAmount	integer	Not Null
aAddress	Varchar(30)	Not Null

Table 03: aHistory

Field	Type	Constraint
ah_id	number	P.K (Not Null) A.I
aid	Varchar2(15)	F.K(agent.aid) Not Null
ah_date	Varchar2(20)	Not Null
To_whom	Varchar2(15)	Not Null
ah_amount	integer	Not Null
ah_type	Varchar2(15)	Not Null

Table 04: Main

Field	Type	Constraint
m_id	Varchar2(15)	P.K (Not Null)
mName	Varchar2(30)	Not Null
mPass	Varchar2(30)	Not Null
mAmount	integer	Not Null
mAddress	Varchar(30)	Not Null

Table 05: mHistory

Field	Type	Constraint
mh_id	number	P.K (Not Null) A.I
m_id	Varchar2(15)	F.K(main.m_id) Not Null
mh_date	Varchar2(20)	Not Null
To_whom	Varchar2(15)	Not Null
mh_amount	integer	Not Null
mh_type	Varchar2(15)	Not Null

Functions of this Project:

Client

SendMoney ('User_id', 'Password', Amount, 'SendTo')

CashOut ('User_id', 'Password', Amount, 'AgentID')

cHistory ('User_id', 'Password')

profileC ('User_id', 'Password')

registerNewClient ('User_id', 'Name', 'Password', 'ConPass','Address')

Agent

SendMoney ('User_id', 'Password', Amount, 'SendTo')

CashIn ('User_id', 'Password', Amount, 'ClientID')

aHistory ('User_id', 'Password')

profileA ('User_id', 'Password')

Main

SendMoneyM ('User_id', 'Password', Amount, 'SendTo')

CashInM ('User_id', 'Password', Amount)

mHistory ('User_id', 'Password')

profileM ('User_id', 'Password')

Screenshots:

Profile of a Main Account:

```
Enter value for user_id: 01758069883
Enter value for password: 1002001
AccountNo      Password      Name          Balance      Address
-----
01758069883    1002001      Yeasir Arafat 165600      Malotinagar, Bogra
PL/SQL procedure successfully completed.
```

Cash In to a Main Account:

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Main\cashInM.sql";
Procedure created.

Enter value for user_id: 01758069883
Enter value for password: 1002001
Enter value for amount: 34400
Cash In Successful.
PL/SQL procedure successfully completed.
```

After Cash In New Balance of a Main Account:

```
Enter value for user_id: 01758069883
Enter value for password: 1002001
AccountNo      Password      Name          Balance      Address
-----
01758069883    1002001      Yeasir Arafat 200000      Malotinagar, Bogra
PL/SQL procedure successfully completed.
```

Profile of an Agent's Account:

```
Enter value for user_id: 01758000001
Enter value for password: 4561
AccountNo    Password    Name        Balance    Address
-----
01758000001  4561      Kabir Sigh  18490      Vat kandi, Rajshahi
PL/SQL procedure successfully completed.
```

Send Money from Main to Agent's Account:

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Main\sendMoneyM.sql";

Function created.

Enter value for user_id: 01758069883
Enter value for password: 1002001
Enter value for amount: 1510
Enter value for sendto: 01758000001
Send Money successful.

PL/SQL procedure successfully completed.
```

After Send Money Main's new balance:

```
Enter value for user_id: 01758069883
Enter value for password: 1002001
AccountNo    Password    Name        Balance    Address
-----
01758069883  1002001    Yeasir Arafat  198490      Malotinagar, Bogra
PL/SQL procedure successfully completed.
```

After Send Money Agent's new balance:

```
Enter value for user_id: 01758000001
Enter value for password: 4561
AccountNo    Password    Name        Balance    Address
-----
01758000001  4561      Kabir Sigh  20000      Vat kandi, Rajshahi
PL/SQL procedure successfully completed.
```

Profile of a Client's Account:

```
Enter value for user_id: 01751000001
Enter value for password: 1231
AccountNo      Password      Name      Balance      Address
-----
01751000001    1231      Karim Haider    1193      Dhaka
PL/SQL procedure successfully completed.
```

Send Money from Agent to Client's Account:

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Agent\sendMoney.sql";
Function created.

Enter value for user_id: 01758000001
Enter value for password: 4561
Enter value for amount: 500
Enter value for sendto: 01751000001
Send Money successful.

PL/SQL procedure successfully completed.
```

Client's New Balance:

```
Procedure created.

Enter value for user_id: 01751000001
Enter value for password: 1231
AccountNo      Password      Name      Balance      Address
-----
01751000001    1231      Karim Haider    1693      Dhaka
PL/SQL procedure successfully completed.
```

Agent's New Balance (Charged 5 tk for Send Money) :

```
Enter value for user_id: 01758000001
Enter value for password: 4561
AccountNo      Password      Name      Balance      Address
-----
01758000001    4561      Kabir Sigh    19495      Vat kandi, Rajshahi
PL/SQL procedure successfully completed.
```


Cash In to Client's Account from an Agent:

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Agent\CashIn.sql";  
  
Function created.  
  
Enter value for user_id: 01758000001  
Enter value for password: 4561  
Enter value for amount: 500  
Enter value for sendto: 01751000001  
Cash IN successfully.
```

Agent's New Balance:

```
Enter value for user_id: 01758000001  
Enter value for password: 4561  
AccountNo    Password    Name        Balance    Address  
-----  
01758000001  4561      Kabir Sigh  18995     Vat kandi, Rajshahi
```

Client's New Balance:

```
Enter value for user_id: 01751000001  
Enter value for password: 1231  
AccountNo    Password    Name        Balance    Address  
-----  
01751000001  1231      Karim Haider  2193     Dhaka
```

Cash Out from Clients Account:

```
SQL> @"C:\Users\yeasi\Desktop\DDBS Project\Site 1\Client\cashOut.sql";  
  
Function created.  
  
Enter value for user_id: 01751000001  
Enter value for password: 1231  
Enter value for amount: 1000  
Enter value for sendto: 01758000001  
Cash Out successful.
```

New Balance of Client's Account (20tk charge apply per thousand tk transaction):

```
Enter value for user_id: 01751000001
Enter value for password: 1231
AccountNo      Password      Name      Balance      Address
-----
01751000001    1231      Karim Haider    1173      Dhaka

PL/SQL procedure successfully completed.
```

New Balance of Agent's Account:

```
Enter value for user_id: 01758000001
Enter value for password: 4561
AccountNo      Password      Name      Balance      Address
-----
01758000001    4561      Kabir Sigh    19995      Vat kandi, Rajshahi
```

Send Money from Client to Agent's Account:

```
SQL> @"C:\Users\yeasi\Desktop\DDBS Project\Site 1\Client\sendMoney.sql";

Function created.

Enter value for user_id: 01751000001
Enter value for password: 1231
Enter value for amount: 100
Enter value for sendto: 01758000001
Send Money successful.
```

Client's New Balance (Charged 5 tk for Send Money):

```
Enter value for user_id: 01751000001
Enter value for password: 1231
AccountNo      Password      Name      Balance      Address
-----
01751000001    1231      Karim Haider    1068      Dhaka
```

Agent's New Balance:

```
Enter value for user_id: 01758000001
Enter value for password: 4561
AccountNo      Password      Name      Balance      Address
-----
01758000001    4561      Kabir Sigh    20095      Vat kandi, Rajshahi
```

Register new Client:

```
SQL> @"C:\Users\yeasi\Desktop\DDBS Project\Site 1\Client\registerNewClient.sql";  
Procedure created.  
  
Enter value for phonenumber: 01751000009  
Enter value for name: Shakil Ahmed  
Enter value for password: 1239  
Enter value for confirm_password: 1239  
Enter value for address: Bogra  
Registration SUCCESSFUL.
```

New Client Profile:

```
Enter value for user_id: 01751000009  
Enter value for password: 1239  
AccountNo      Password      Name      Balance      Address  
-----  
01751000009    1239          Shakil Ahmed      0          Bogra
```

Send Money From Agent to Main's Account:

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Agent\sendMoney.sql";  
Function created.  
  
Enter value for user_id: 01758000001  
Enter value for password: 4561  
Enter value for amount: 500  
Enter value for sendto: 01758069883  
Send Money successful.
```

New Balance of Agent's Account (No charge needed for Send Money to Main):

```
Enter value for user_id: 01758000001  
Enter value for password: 4561  
AccountNo      Password      Name      Balance      Address  
-----  
01758000001    4561          Kabir Sigh      19595          Vat kandi, Rajshahi
```

New Balance of Main's Account:

```
Enter value for user_id: 01758069883  
Enter value for password: 1002001  
AccountNo      Password      Name      Balance      Address  
-----  
01758069883    1002001      Yeasir Arafat      198990          Malotinagar, Bogra
```

Client History (Descending Order) :

```
SQL> @"C:\Users\yeasi\Desktop\DDBS Project\Site 1\Client\cHistory.sql";

Procedure created.

Enter value for user_id: 01751000001
Enter value for password: 1231
Type          AccountNo      Date       Time       Amount
-----
Send To       01758000001    19-SEP-2020 12:39:44    100
Cash Out To   01758000001    19-SEP-2020 11:50:04   1000
Cash In From  01758000001    19-SEP-2020 11:36:13    500
Received From 01758000001    19-SEP-2020 11:08:18    500
Send To       01751000004    17-SEP-2020 22:54:30    200
Cash Out To   01758000001    17-SEP-2020 22:52:15    100
Cash In From  01758000001    17-SEP-2020 22:49:06   1000
Received From 01758000001    17-SEP-2020 22:43:58    500

PL/SQL procedure successfully completed.
```

Agent History (Descending Order):

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Agent\aHistory.sql";

Procedure created.

Enter value for user_id: 01758000001
Enter value for password: 4561
Type          AccountNo      Date       Time       Amount
-----
Send To       01758069883    19-SEP-2020 12:56:26    500
Received From 01751000001    19-SEP-2020 12:39:44    100
Cash In From  01751000001    19-SEP-2020 11:50:04   1000
Cash Out To   01751000001    19-SEP-2020 11:36:13    500
Send To       01751000001    19-SEP-2020 11:08:18    500
Received From 01758069883    19-SEP-2020 10:17:05   1510
Cash In From  01751000001    17-SEP-2020 22:52:15    100
Cash Out To   01751000001    17-SEP-2020 22:49:06   1000
Send To       01758069883    17-SEP-2020 22:45:47    400
Send To       01751000001    17-SEP-2020 22:43:58    500
Received From 01758069883    17-SEP-2020 22:31:49  20000
Received From 01758069883    17-SEP-2020 22:30:35    300

PL/SQL procedure successfully completed.
```


Main Admin's History (Descending Order):

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Main\mHistory.sql";

Procedure created.

Enter value for user_id: 01758069883
Enter value for password: 1002001
Type          AccountNo      Date          Time          Amount
-----
Received From 01758000001      19-SEP-2020   12:56:26       500
Send To       01758000001      19-SEP-2020   10:17:05      1510
Cash IN       01758069883      19-SEP-2020   10:11:27     34400
Received From 01758000004      18-SEP-2020   14:04:56       500
Received From 01758000001      17-SEP-2020   22:45:47       400
Send To       01758000004      17-SEP-2020   22:38:42     20000
Send To       01758000001      17-SEP-2020   22:31:49     20000
Send To       01758000001      17-SEP-2020   22:30:35       300

PL/SQL procedure successfully completed.
```

Profit details (Only accessible by Main users):

```
SQL> @"C:\Users\Zim\Desktop\Site 2\Main\profit.sql";

Procedure created.

Enter value for user_id: 01758069883
Enter value for password: 1002001
ID      Date          Time          From          Amount
--      -
1  17-SEP-2020  22:43:58      01758000001      5
2  17-SEP-2020  22:52:15      01751000001      2
3  17-SEP-2020  22:54:30      01751000001      5
4  18-SEP-2020  14:07:18      01758000004      5
5  19-SEP-2020  11:08:18      01758000001      5
6  19-SEP-2020  11:50:04      01751000001     20
7  19-SEP-2020  12:39:44      01751000001      5

Total Profit : 47
```

Conclusion:

Mobile Banking services makes it convenient to access the banking services at any time as per 24*7 conditions. Mobile banking is a self service empowerment to the customers and thus reduces the dependency of bank's staff to facilitate the services. And it was a very pleasant journey to make such a database and design it to fulfil all the requirements of a Mobile Banking System with the help of Oracle 10g software.