A Project on

BANK MANAGEMENT SYSTEM

Submitted By,

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Introduction

The bank provides with financial services i.e transactions like deposit, withdrawal, transfer of funds and so on.

A bank is a financial institution which deals with deposits and withdrawal and other related services. It receives money from those who want to save in the form of deposits and it lends money to those who need it.

This project develops a banking application for banks which have multiple customers spread across the country.

Object Oriented Design

Classes used in the project are,

1. **Class Customer**-Used to take input from customer and also uses customer details for future transactions.

2. **Class Transaction**-All the customer related transactions are performed here.

The relationship between the above mentioned classes are that- For any transaction in Transaction class to take place it requires, customer details obtained from the Customer class.

Database Design

Database consists of eight tables,

1. **BRANCH** table-Primary key(cust_id).

2. **CUSTOMER** table-Primary key(`Cust_id`), `Foreign key(Branch_name) references BRANCH table.`

3. **ACCOUNT** table-Primary key(`Acc_no), Foreign key (Acc_no) references CUSTOMER table.`

4. **LOGIN** table-Primary key(`Cust_id), Foreign key (Cust_id) references CUSTOMER table.`

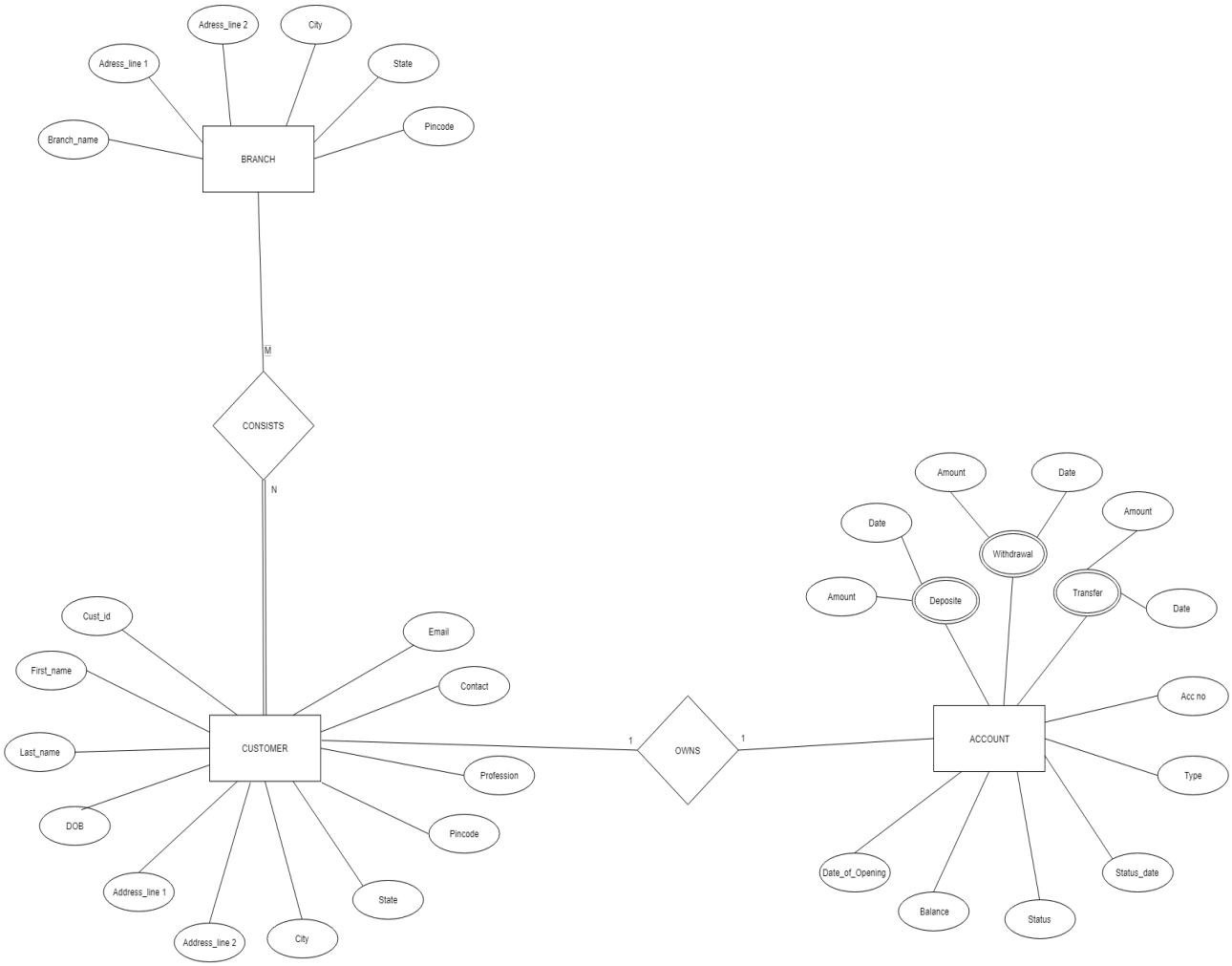
5. **ADMIN** table-Primary key(`ID).`

6. **DEPOSIT** table-Primary key(`Dep_id).`

7. **WITHDRAWAL** table-Primary key(`With_id).`

8. **TRANSFER** table- `Primary key(Trans_id).`

ER Diagram



Implementation of OO design

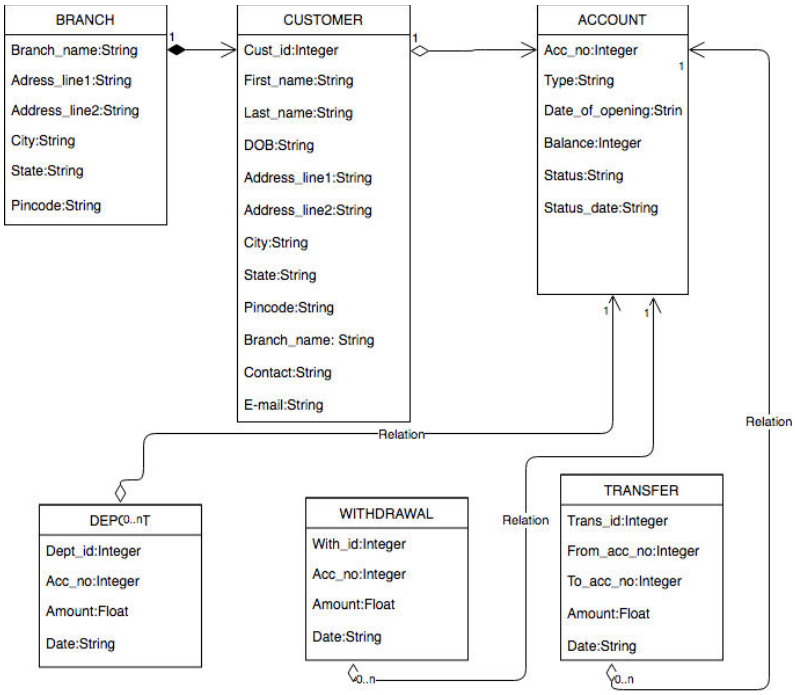
We have used Python which is an object oriented language. There are different OO concepts used like classes, functions, methods.

Implementation of DB design

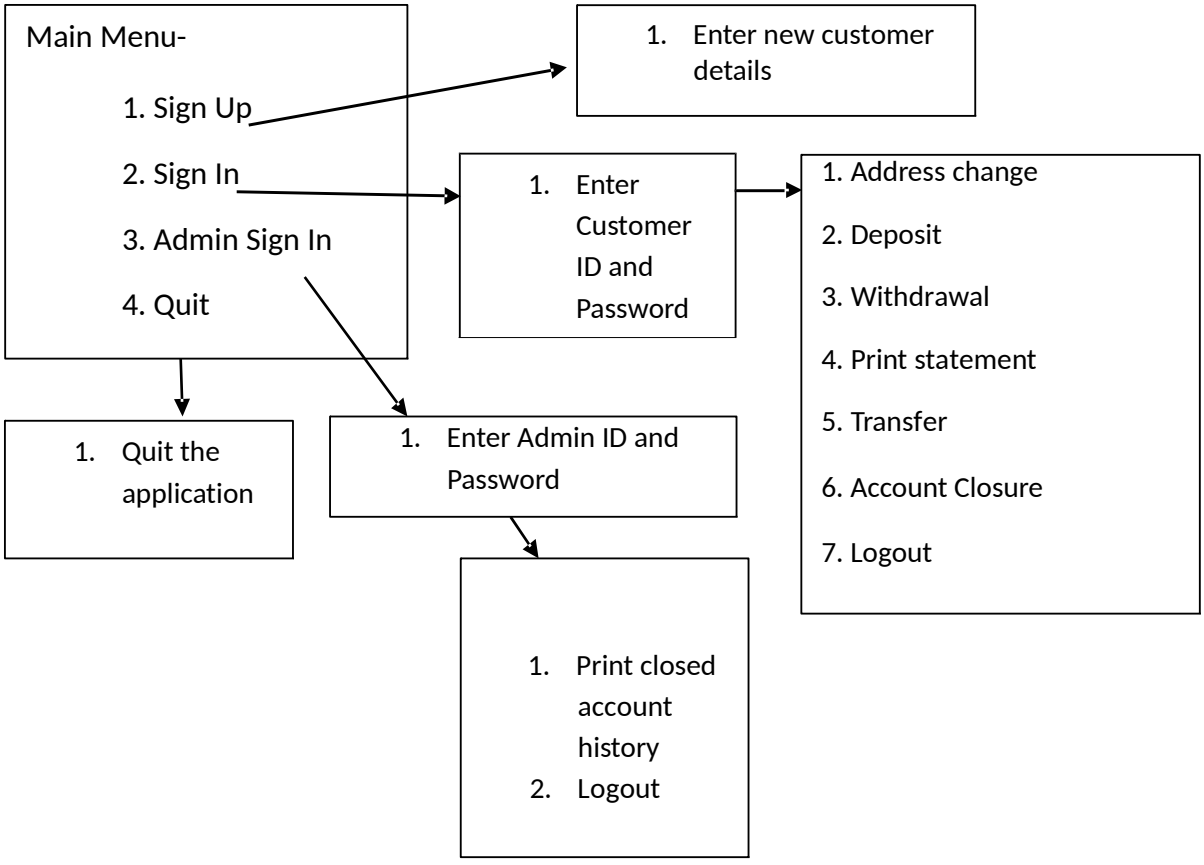
```
CREATE TABLE BRANCH(
Branch_name VARCHAR(40)
NOT NULL,
Address_line1 VARCHAR(70),
Address_line2 VARCHAR(70),
City VARCHAR(40),
State VARCHAR(25),
Pincode INTEGER(6),
CONSTRAINT brname
PRIMARY KEY (Branch_name)
);


CREATE TABLE CUSTOMER(
Cust_id BIGINT(15)
NOT NULL AUTO_INCREMENT,
First_name VARCHAR(30),
Last_name VARCHAR(30),
DOB VARCHAR(10),
Address_line1 VARCHAR(70),
Address_line2 VARCHAR(70),
City VARCHAR(40),
State VARCHAR(25),
Pincode INTEGER(6),
Profession VARCHAR(15),
Branch_name VARCHAR(40),
Contact VARCHAR(10),
Email VARCHAR(40),
CONSTRAINT cid PRIMARY KEY
(Cust_id),
CONSTRAINT br_name
FOREIGN KEY(Branch_name)
REFERENCES BRANCH
(Branch_name)
ON UPDATE CASCADE
);
```

```
CREATE TABLE ACCOUNT(
Acc_no BIGINT(15) NOT NULL,
Type VARCHAR(10),
Date_of_opening VARCHAR(10),
Balance BIGINT(15),
Status VARCHAR(10),
Status_date VARCHAR(10) DEFAULT
NULL,
CONSTRAINT accno PRIMARY KEY
(Acc_no),
CONSTRAINT acc_no FOREIGN
KEY(Acc_no) REFERENCES
CUSTOMER(Cust_id) ON UPDATE
CASCADE
);


CREATE TABLE LOGIN(
Cust_id BIGINT(15) NOT NULL,
Password VARCHAR(30),
Block VARCHAR(5),
CONSTRAINT c_id PRIMARY KEY
(Cust_id),
CONSTRAINT acc_no_ FOREIGN
KEY(Cust_id) REFERENCES
CUSTOMER(Cust_id) ON UPDATE
CASCADE
);


CREATE TABLE ADMIN(
ID BIGINT(15) NOT NULL,
Password VARCHAR(30),
Branch_name VARCHAR(40),
CONSTRAINT id PRIMARY KEY (ID)
);
```

```
CREATE TABLE DEPOSIT(
Dep_id BIGINT(15) NOT NULL,
Acc_no BIGINT(15) NOT NULL,
Amount BIGINT(15),
Date VARCHAR(10),
CONSTRAINT did PRIMARY KEY
(Dep_id)
);

CREATE TABLE WITHDRAWAL(
With_id BIGINT(15) NOT NULL,
Acc_no BIGINT(15) NOT NULL,
Amount BIGINT(15),
Date VARCHAR(10),
CONSTRAINT wid PRIMARY KEY
(With_id)
);


CREATE TABLE TRANSFER(
Trans_id BIGINT(15) NOT NULL,
From_acc_no BIGINT(15) NOT
NULL,
To_acc_no BIGINT(15) NOT
NULL,
Amount BIGINT(15),
Date VARCHAR(10),
CONSTRAINT tid PRIMARY KEY
(Trans_id)
);
```



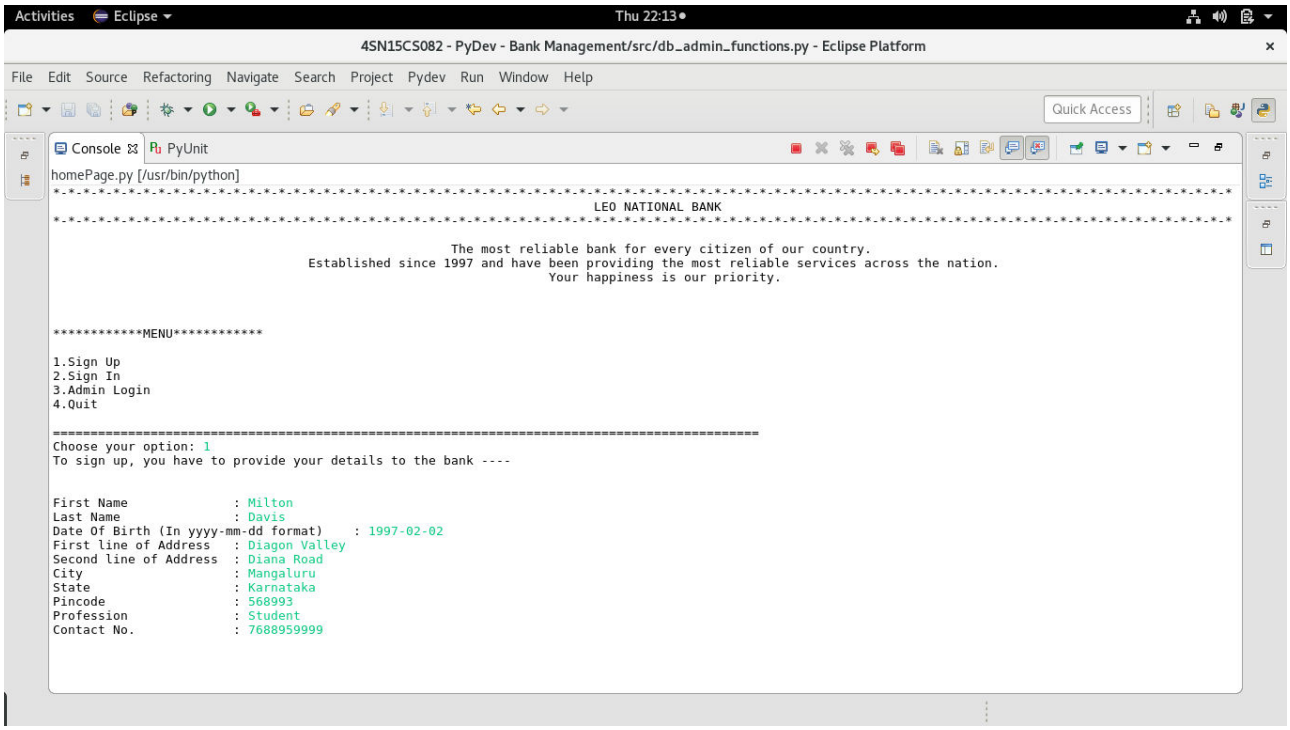
Implementation of User Menu

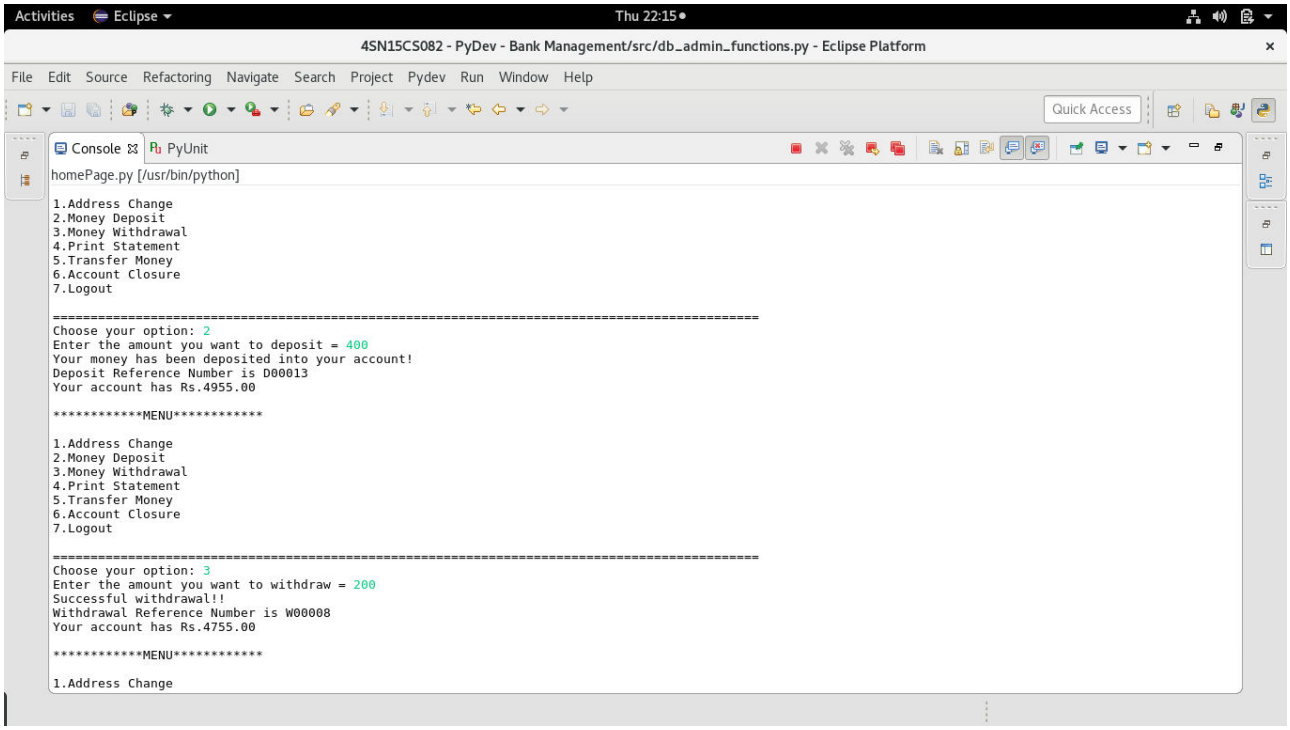


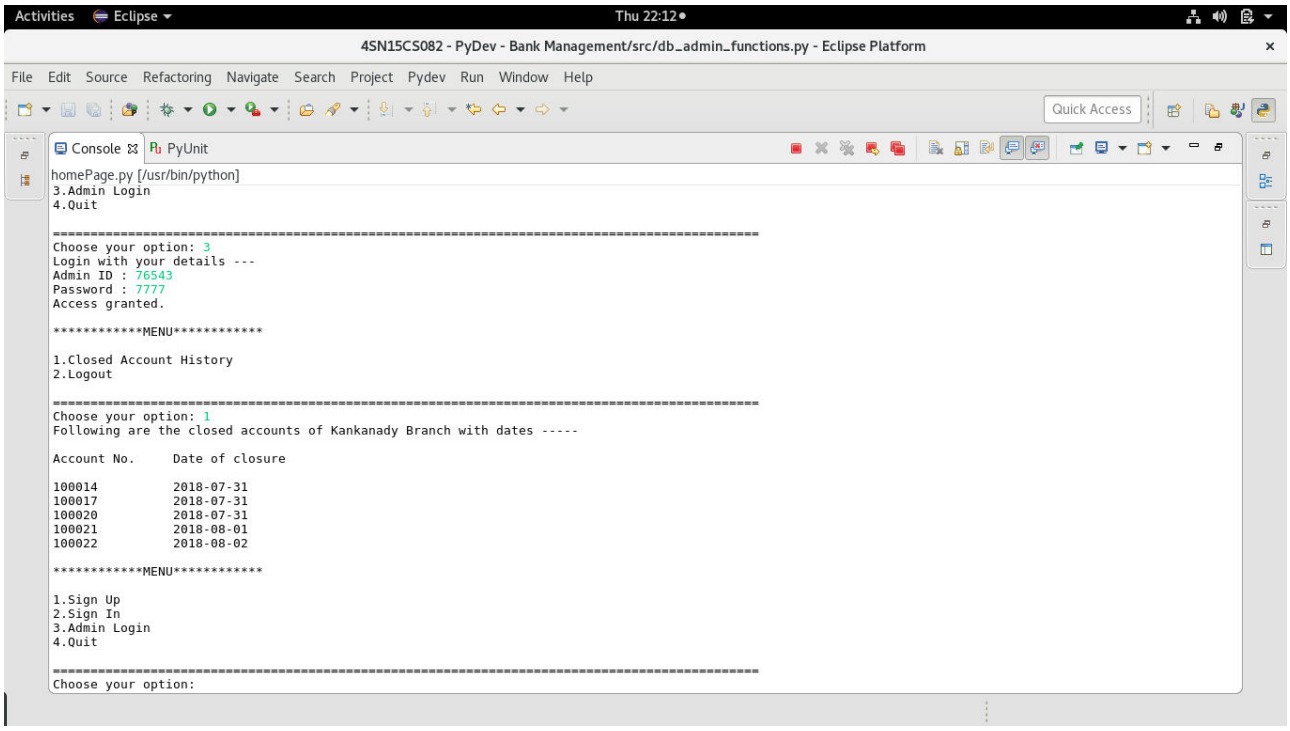
Implementation of Python to DB connection

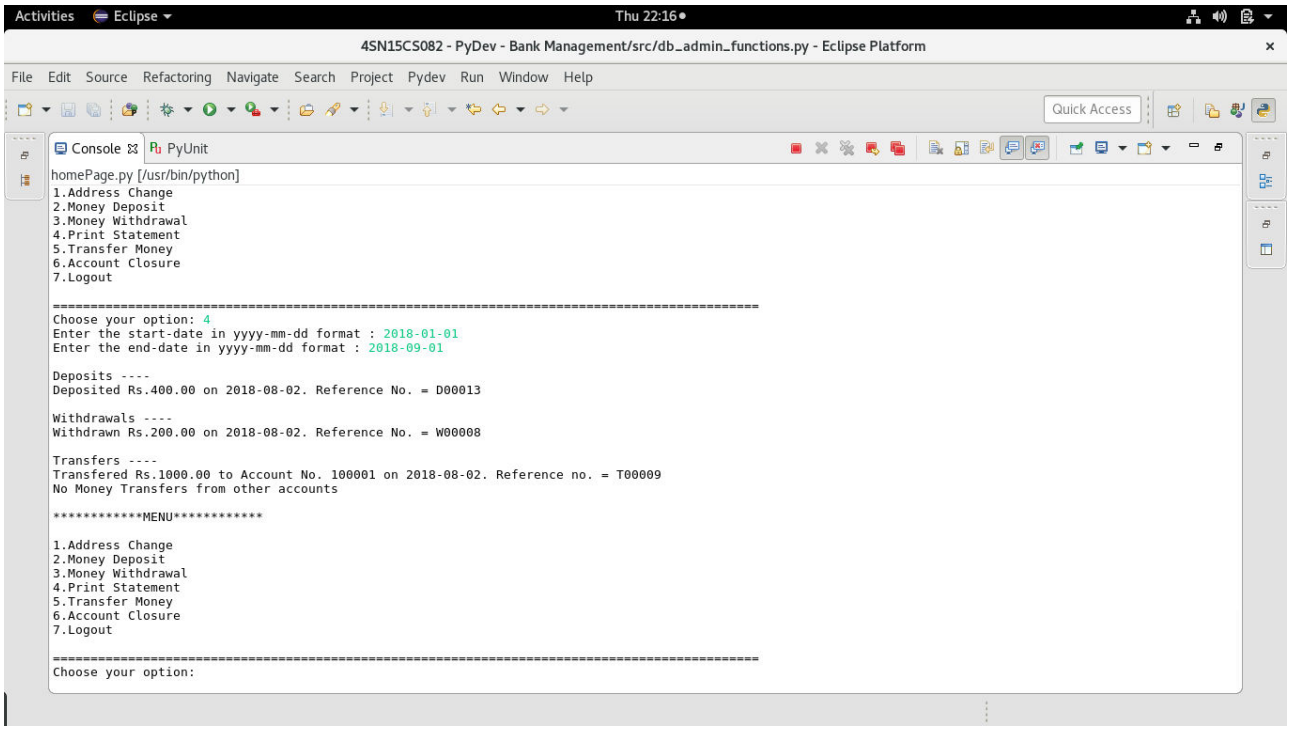
```
import MySQLdb
def connectToMySQL():
                        conn=MySQLdb.connect(host="localhost",
                                             user="root",
                                             password="12345",
                                             db="Bank")
cur = conn.cursor()
```

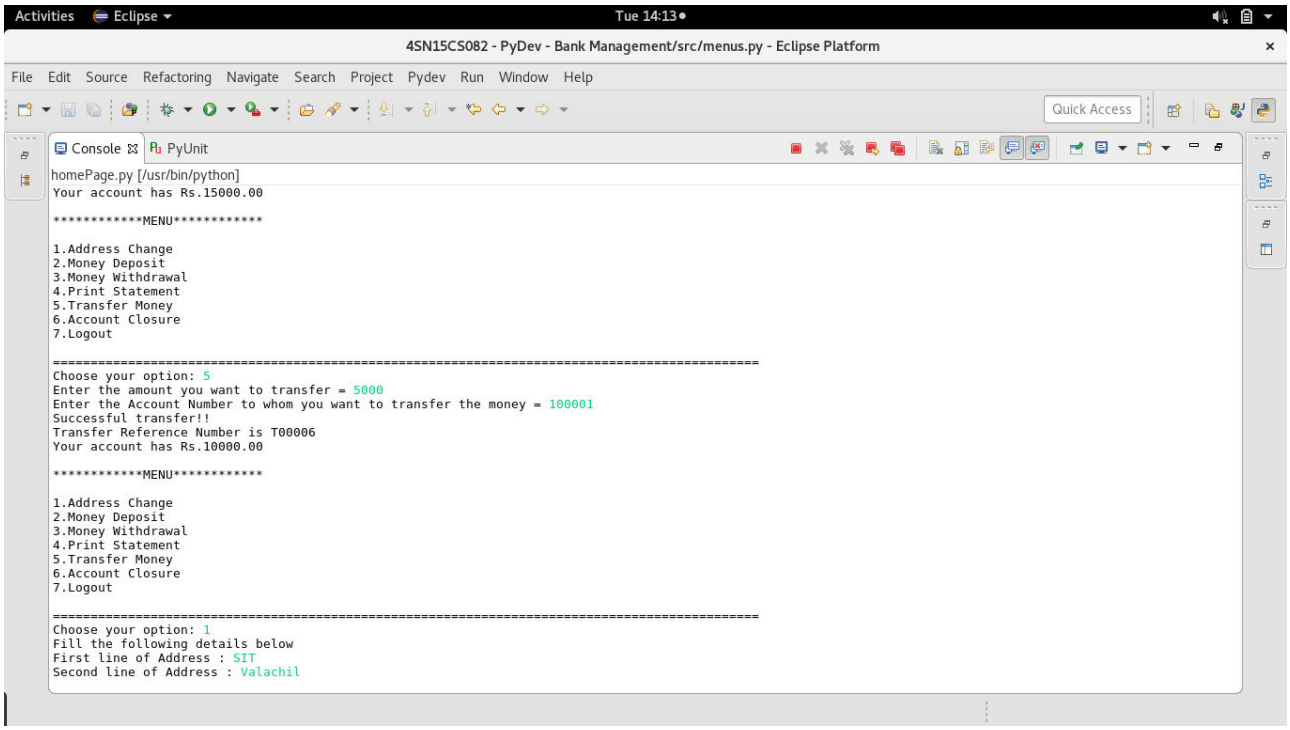
Screenshots




Activities
Eclipse
Thu 22:15
4SN15CS082 - PyDev - Bank Management/src/db_admin_functions.py - Eclipse Platform
File Edit Source Refactoring Navigate Search Project Pydev Run Window Help
Quick Access
Console
PyUnit
homePage.py [/usr/bin/python]
1.Address Change
2.Money Deposit
3.Money Withdrawal
4.Print Statement
5.Transfer Money
6.Account Closure
7.Logout
Choose your option: 2
Enter the amount you want to deposit = 400
Your money has been deposited into your account!
Deposit Reference Number is D00013
Your account has Rs.4955.00
**********MENU**********
1.Address Change
2.Money Deposit
3.Money Withdrawal
4.Print Statement
5.Transfer Money
6.Account Closure
7.Logout
Choose your option: 3
Enter the amount you want to withdraw = 200
Successful withdrawal!!
Withdrawal Reference Number is W00008
Your account has Rs.4755.00
**********MENU**********
1.Address Change


Activities
Eclipse
Thu 22:12
4SN15CS082 - PyDev - Bank Management/src/db_admin_functions.py - Eclipse Platform
File Edit Source Refactoring Navigate Search Project Pydev Run Window Help
Quick Access
Console
PyUnit
homePage.py [/usr/bin/python]
3.Admin Login
4.Quit
Choose your option: 3
Login with your details ---
Admin ID : 76543
Password : 7777
Access granted.
**********MENU**********
1.Closed Account History
2.Logout
Choose your option: 1
Following are the closed accounts of Kankanady Branch with dates -----
Account No. Date of closure
100014 2018-07-31
100017 2018-07-31
100020 2018-07-31
100021 2018-08-01
100022 2018-08-02
**********MENU**********
1.Sign Up
2.Sign In
3.Admin Login
4.Quit
Choose your option:


Activities
Eclipse
Thu 22:16
4SN15CS082 - PyDev - Bank Management/src/db_admin_functions.py - Eclipse Platform
File Edit Source Refactoring Navigate Search Project Pydev Run Window Help
Quick Access
Console
PyUnit
homePage.py [/usr/bin/python]
1.Address Change
2.Money Deposit
3.Money Withdrawal
4.Print Statement
5.Transfer Money
6.Account Closure
7.Logout
Choose your option: 4
Enter the start-date in yyyy-mm-dd format : 2018-01-01
Enter the end-date in yyyy-mm-dd format : 2018-09-01
Deposits ----
Deposited Rs.400.00 on 2018-08-02. Reference No. = D00013
Withdrawals ----
Withdrawn Rs.200.00 on 2018-08-02. Reference No. = W00008
Transfers ----
Transfered Rs.1000.00 to Account No. 100001 on 2018-08-02. Reference no. = T00009
No Money Transfers from other accounts
**********MENU**********
1.Address Change
2.Money Deposit
3.Money Withdrawal
4.Print Statement
5.Transfer Money
6.Account Closure
7.Logout
Choose your option:


Activities
Eclipse
Tue 14:13
4SN15CS082 - PyDev - Bank Management/src/menus.py - Eclipse Platform
File Edit Source Refactoring Navigate Search Project Pydev Run Window Help
Quick Access
Console
PyUnit
homePage.py [/usr/bin/python]
Your account has Rs.15000.00
**********MENU**********
1.Address Change
2.Money Deposit
3.Money Withdrawal
4.Print Statement
5.Transfer Money
6.Account Closure
7.Logout
Choose your option: 5
Enter the amount you want to transfer = 5000
Enter the Account Number to whom you want to transfer the money = 100001
Successful transfer!!
Transfer Reference Number is T00006
Your account has Rs.10000.00
**********MENU**********
1.Address Change
2.Money Deposit
3.Money Withdrawal
4.Print Statement
5.Transfer Money
6.Account Closure
7.Logout
Choose your option: 1
Fill the following details below
First line of Address : SIT
Second line of Address : Valachil

Contribution Of Each Member:

Nishant John: Implemented the database for the application.

P V Priya Prashanth: Developed the class modules for customer and transaction,

Shetty Prajnesh Shivanath: Integrated the codes and database together.

Vikyath K Naiga: Implemented the database and populated them.

Conclusion

The application of this project is huge. The very purpose of developing this project is to exhibit the strength of Python and simplicity of OO programming.

The project can be developed further to support future banking technologies and a GUI can also be added for better User experience and ease of use.