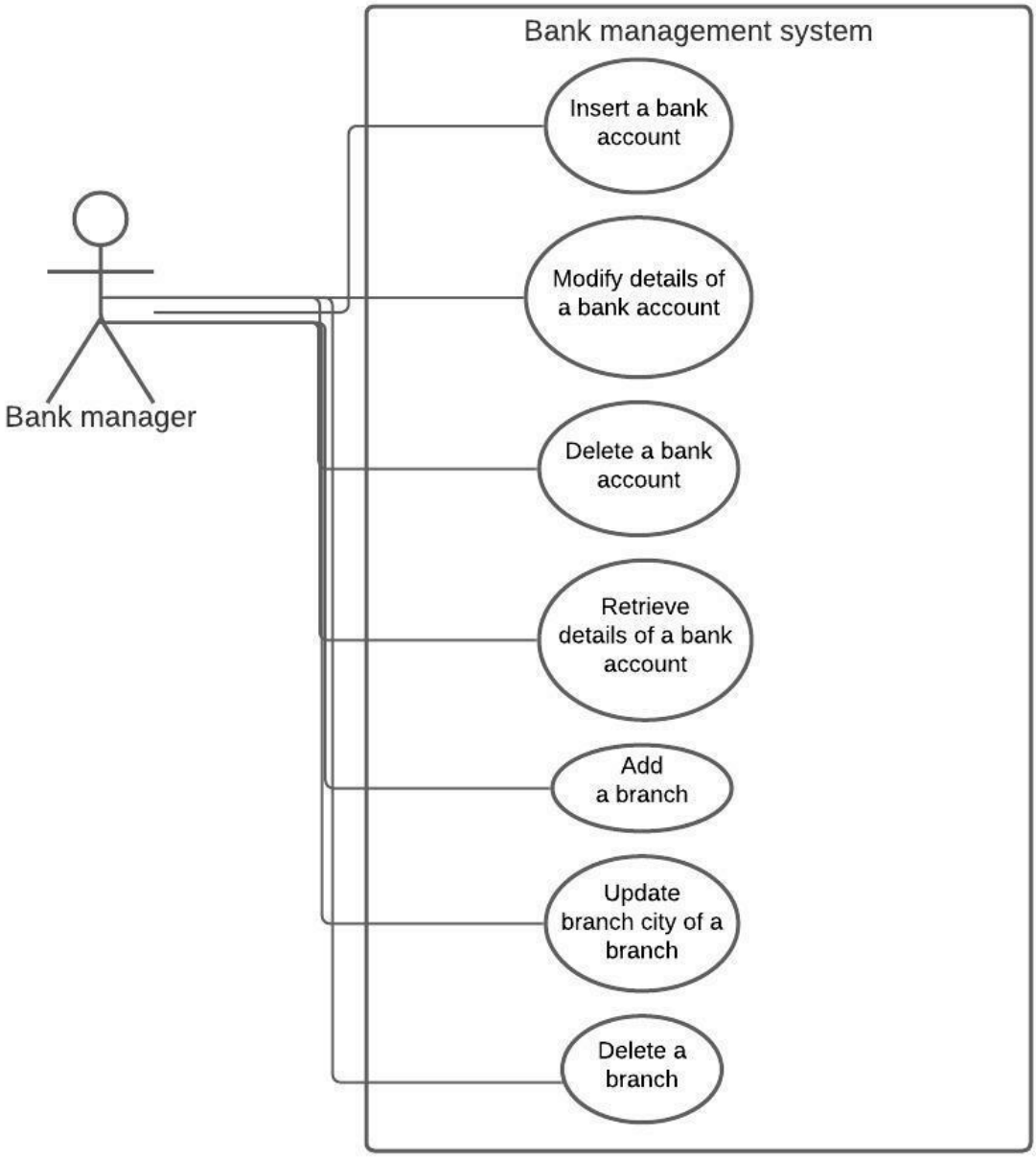
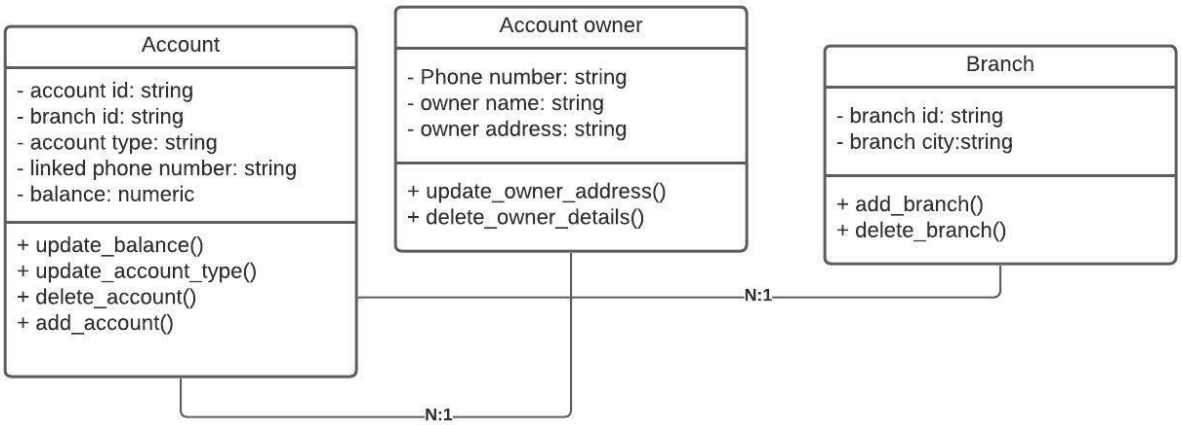
JDBC Project report

- **Aditya Vardhan (IMT2019003)**

Use case diagram



UML diagram



OR Mapping

1. **accounts**

account_id	**char(5)**	**Primary key**
branch_id	**char(5)**	**Foreign key (references bank_branch.branch_id)**
account_type	**varchar(10)**	
phone_number	**varchar(13)**	**Foreign key (references account_owner.phone_number)**
balance	**numeric**	

2. **bank_branch**

branch_id	**char(5)**	**Primary key**
branch_city	**varchar(20)**	

3. **account_owner**

phone_number	**varchar(13)**	**Primary key**
owner_name	**varchar(20)**	

owner_address	varchar(20)	

Screenshots

Initially, the database looks like

.

```
mysql> select * from account_owner;
+--------------+------------+---------------+
| phone_number | owner_name | owner_address |
+--------------+------------+---------------+
| 0123456789   | Abhinav    | Delhi         |
+--------------+------------+---------------+
1 row in set (0.00 sec)

mysql> select * from bank_branch;
+-----------+-------------+
| branch_id | branch_city |
+-----------+-------------+
| br001     | Delhi       |
| br002     | Bengaluru   |
| br003     | Mumbai      |
+-----------+-------------+
3 rows in set (0.09 sec)

mysql> select * from accounts;
+------------+-----------+--------------+--------------+---------+
| account_id | branch_id | account_type | phone_number | balance |
+------------+-----------+--------------+--------------+---------+
| ac001      | br001     | current      | 0123456789   |    1000 |
+------------+-----------+--------------+--------------+---------+
1 row in set (0.00 sec)
```

Add an account

```
aditya@aditya-Lenovo-ideapad-330-15IKB:~/Desktop/college_sems/5/Datab
se lab/JDBC$ java -classpath "mysql-connector-java-8.0.18.jar:." Jdbc
emo
Loading class `com.mysql.jdbc.Driver'. This is deprecated. The new dr
ver class is `com.mysql.cj.jdbc.Driver'. The driver is automatically
egistered via the SPI and manual loading of the driver class is gener
lly unnecessary.
Connecting to database...
Creating statement...

Choose an option number(1,2,3...) from the following to perform the c
rreponding task:
1: To insert an account.
2: To modify an account detail.
3: To retrieve account details.
4: To delete an account.
5: To exit and restart application.

Enter option number: 1
Inserting an account...

Enter branch id: br002
Enter account type: current
Enter phone number: 1123456789
Enter balance: 1500
Enter account owner's name: aditya
Enter account owner's address: delhi
```

```
mysql> select * from account_owner;
+--------------+------------+---------------+
| phone_number | owner_name | owner_address |
+--------------+------------+---------------+
| 0123456789   | Abhinav    | Delhi         |
| 1123456789   | aditya     | delhi         |
+--------------+------------+---------------+
2 rows in set (0.00 sec)

mysql> select * from accounts;
+------------+-----------+--------------+--------------+---------+
| account_id | branch_id | account_type | phone_number | balance |
+------------+-----------+--------------+--------------+---------+
| ac001      | br001     | current      | 0123456789   |    1000 |
| ac002      | br002     | current      | 1123456789   |    1500 |
+------------+-----------+--------------+--------------+---------+
2 rows in set (0.00 sec)
```

Modify details of an account

```
Choose an option number(1,2,3...) from the following to perform the co
rreponding task:
1: To insert an account.
2: To modify an account detail.
3: To retrieve account details.
4: To delete an account.
5: To exit and restart application.

Enter option number: 2
Enter account-id: ac002
Enter new balance: 2500
Enter new account type: savings
Enter account owner's new address: mumbai
```

```
mysql> select * from account_owner;
+--------------+------------+---------------+
| phone_number | owner_name | owner_address |
+--------------+------------+---------------+
| 0123456789   | Abhinav    | Delhi         |
| 1123456789   | aditya     | mumbai        |
+--------------+------------+---------------+
2 rows in set (0.01 sec)

mysql> select * from accounts;
+------------+-----------+--------------+--------------+---------+
| account_id | branch_id | account_type | phone_number | balance |
+------------+-----------+--------------+--------------+---------+
| ac001      | br001     | current      | 0123456789   |    1000 |
| ac002      | br002     | savings      | 1123456789   |    2500 |
+------------+-----------+--------------+--------------+---------+
2 rows in set (0.00 sec)

mysql>
```

Retrieve details of an account

```
Choose an option number(1,2,3...) from the following to perform the co
rreponding task:
1: To insert an account.
2: To modify an account detail.
3: To retrieve account details.
4: To delete an account.
5: To exit and restart application.

Enter option number: 3
Enter account-id: ac002

Account owner: aditya
Owner's address: mumbai
Phone number linked to account: 1123456789
Account type: savings
Balance amount: 2500.0
Branch-id: br002
Branch city: Bengaluru
```

Delete an account

```
Choose an option number(1,2,3...) from the following to perform the co
rreponding task:
1: To insert an account.
2: To modify an account detail.
3: To retrieve account details.
4: To delete an account.
5: To exit and restart application.

Enter option number: 4
Enter account-id: ac002
```

```
mysql> select * from account_owner;
+--------------+------------+---------------+
| phone_number | owner_name | owner_address |
+--------------+------------+---------------+
| 0123456789   | Abhinav    | Delhi         |
+--------------+------------+---------------+
1 row in set (0.00 sec)

mysql> select * from accounts;
+------------+-----------+--------------+--------------+---------+
| account_id | branch_id | account_type | phone_number | balance |
+------------+-----------+--------------+--------------+---------+
| ac001      | br001     | current      | 0123456789   |    1000 |
+------------+-----------+--------------+--------------+---------+
1 row in set (0.01 sec)
```

MANIPULATING BRANCHES

Initially, our database looks like

```
mysql> select * from bank_branch;
+-----------+-------------+
| branch_id | branch_city |
+-----------+-------------+
| br001     | Delhi       |
| br002     | Bengaluru   |
| br003     | Mumbai      |
+-----------+-------------+
3 rows in set (0.00 sec)

mysql> select * from accounts;
+------------+-----------+--------------+--------------+---------+
| account_id | branch_id | account_type | phone_number | balance |
+------------+-----------+--------------+--------------+---------+
| ac001      | br001     | current      | 0123456789   |    1000 |
| ac002      | br003     | savings      | 2123456789   |    1500 |
+------------+-----------+--------------+--------------+---------+
2 rows in set (0.00 sec)
```

Adding a branch

```
Choose an option number(1,2,3...) from the following to perform the co
rreponding task:
1: To insert an account.
2: To modify an account detail.
3: To retrieve account details.
4: To delete an account.
5: To add a branch.
6: To update branch city.
7: To delete a branch.
8: To exit and restart application.

Enter option number: 5
Enter city for the new branch: Chennai
```

```
mysql> select * from bank_branch;
+-----------+-------------+
| branch_id | branch_city |
+-----------+-------------+
| br001     | Delhi       |
| br002     | Bengaluru   |
| br003     | Mumbai      |
| br004     | Chennai     |
+-----------+-------------+
4 rows in set (0.00 sec)
```

Updating branch city

```
Choose an option number(1,2,3...) from the following to perform the co
rreponding task:
1: To insert an account.
2: To modify an account detail.
3: To retrieve account details.
4: To delete an account.
5: To add a branch.
6: To update branch city.
7: To delete a branch.
8: To exit and restart application.

Enter option number: 6
Enter branch id: br003
Enter new city for the branch: Kolkata
```

```
mysql> select * from bank_branch;
+-----------+-------------+
| branch_id | branch_city |
+-----------+-------------+
| br001     | Delhi       |
| br002     | Bengaluru   |
| br003     | Kolkata     |
| br004     | Chennai     |
+-----------+-------------+
4 rows in set (0.00 sec)
```

Deleting a branch

```
Choose an option number(1,2,3...) from the following to perform the co
rreponding task:
1: To insert an account.
2: To modify an account detail.
3: To retrieve account details.
4: To delete an account.
5: To add a branch.
6: To update branch city.
7: To delete a branch.
8: To exit and restart application.

Enter option number: 7
Enter branch id: br003
Enter branch id of the branch, to which you want to shift the accounts
 to: br002
```

```
mysql> select * from accounts;
+------------+-----------+--------------+--------------+---------+
| account_id | branch_id | account_type | phone_number | balance |
+------------+-----------+--------------+--------------+---------+
| ac001      | br001     | current      | 0123456789   |    1000 |
| ac002      | br002     | savings      | 2123456789   |    1500 |
+------------+-----------+--------------+--------------+---------+
2 rows in set (0.00 sec)

mysql> select * from bank_branch;
+-----------+-------------+
| branch_id | branch_city |
+-----------+-------------+
| br001     | Delhi       |
| br002     | Bengaluru   |
| br004     | Chennai     |
+-----------+-------------+
3 rows in set (0.00 sec)
```

Instructions to run the code

In MySQL command prompt -
CREATE USER 'user1'@'localhost' IDENTIFIED BY 'password';
source bank.sql

Now run these on the terminal -

1. **javac JdbcDemo.java**
2. **java -classpath "mysql-connector-java-8.0.18.jar:." JdbcDemo**

Notes

All the above UML diagrams, OR Mapping and Screenshots are enough to understand all the features of this project.
credentials
id: user1
password: password