Objective: To implement queries using *Union, Intersect, Minus, subqueries (nested queries)*

```
mysql> SELECT * FROM Depositor;
+-------------+----------------+
| customer_id | account_number |
+-------------+----------------+
| C001        | A001           |
| C002        | A002           |
| C003        | A010           |
| C004        | A033           |
| C005        | A012           |
+-------------+----------------+
5 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM Borrower;
+-------------+-------------+
| customer_id | loan_number |
+-------------+-------------+
| C001        | L001        |
| C003        | L002        |
| C005        | L010        |
| C006        | L033        |
+-------------+-------------+
4 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM Customer;
+-------------+---------------+---------------+
| customer_id | customer_name | customer_city |
+-------------+---------------+---------------+
| C001        | Korth         | NOIDA         |
| C002        | Sudarshan     | GHAZIABAD     |
| C003        | Navathe       | NOIDA         |
| C004        | Leon          | LAKHNOW       |
| C005        | Sudarshan     | Ghaziabad     |
| C006        | C.J.Date      | Greater NOIDA |
+-------------+---------------+---------------+
```

```
mysql> SELECT * FROM Account;
+----------------+---------------+---------+
| account_number | branch_name   | BALANCE |
+----------------+---------------+---------+
| A001           | NOIDA MAIN    |   20000 |
| A002           | NOIDA MAIN    |   30000 |
| A010           | MOHAN NAGAR   |   15000 |
| A012           | GREATER NOIDA |   40000 |
| A033           | TILAK NAGAR   |   50000 |
+----------------+---------------+---------+
```

```
mysql> SELECT * FROM Branch;
+---------------+-------------+--------+
| branch_name   | branch_city | ASSETS |
+---------------+-------------+--------+
| NOIDA MAIN    | NOIDA       | 200000 |
| MOHAN NAGAR   | GHAZIABAD   | 500000 |
| GREATER NOIDA | NOIDA       | 700000 |
| TILAK NAGAR   | LUKHNOW     | 400000 |
+---------------+-------------+--------+
```

SQL Queries

Use Union, Intersect, Minus

1. Find the Customer Ids of those customers who are having a loan or an account or both. (Union)

```
mysql> SELECT CUSTOMER_ID FROM BORROWER UNION SELECT CUSTOMER_ID FROM DEPOSITOR;
+-------------+
| CUSTOMER_ID |
+-------------+
| C001        |
| C003        |
| C005        |
| C006        |
| C002        |
| C004        |
+-------------+
```

2. Find the Customer Ids of those customers who are having a loan and account both. (Intersect)

```
mysql> SELECT CUSTOMER_ID FROM BORROWER  INNER JOIN  DEPOSITOR USING(CUSTOMER_ID);
+-------------+
| CUSTOMER_ID |
+-------------+
| C001        |
| C003        |
| C005        |
+-------------+
```

3. Find the Customer Ids of those customers who are having loan but not an account. (Minus)

```
mysql> SELECT DISTINCT DEPOSITOR.CUSTOMER_ID FROM DEPOSITOR LEFT JOIN BORROWER ON
       DEPOSITOR.CUSTOMER_ID=BORROWER.CUSTOMER_ID WHERE BORROWER.CUSTOMER_ID IS NULL;
+-------------+
| CUSTOMER_ID |
+-------------+
| C002        |
| C004        |
+-------------+
2 rows in set (0.00 sec)
```

4. Find the Customer Ids of those customers who are having account but not loan. (Minus)

```
mysql> SELECT DISTINCT BORROWER.CUSTOMER_ID FROM BORROWER LEFT JOIN DEPOSITOR ON
      DEPOSITOR.CUSTOMER_ID=BORROWER.CUSTOMER_ID WHERE DEPOSITOR.CUSTOMER_ID IS NULL;
+-------------+
| CUSTOMER_ID |
+-------------+
| C006        |
+-------------+
```

Use Sub-queries

5. Find customer ids of those customers who are borrower from the banks and who appear in the list of account holders.

```
mysql> SELECT CUSTOMER_ID FROM BORROWER WHERE CUSTOMER_ID IN(SELECT CUSTOMER_ID FROM DEPOSITOR);
+-------------+
| CUSTOMER_ID |
+-------------+
| C001        |
| C003        |
| C005        |
+-------------+
```

6. Find those customer names who are borrower.

```
mysql> SELECT CUSTOMER_NAME FROM CUSTOMER WHERE CUSTOMER_ID IN(SELECT DISTINCT CUSTOMER_ID FROM BORROWER);
+---------------+
| CUSTOMER_NAME |
+---------------+
| Korth         |
| Navathe       |
| Sudarshan     |
| C.J.Date      |
+---------------+
```

7. Find the name of the customers who have a loan from the bank, but do not have an account at the bank. (Hint: use NOT IN)

```
mysql> SELECT CUSTOMER_NAME FROM CUSTOMER WHERE CUSTOMER_ID IN (SELECT DISTINCT CUSTOMER_ID FROM BORROWER)
       AND CUSTOMER_ID NOT IN(SELECT DISTINCT CUSTOMER_ID FROM DEPOSITOR);
+---------------+
| CUSTOMER_NAME |
+---------------+
| C.J.Date      |
+---------------+
1 row in set (0.00 sec)
```

8. Get the Customer Id and name of those customers who have both account and loan from the bank.

```
mysql> SELECT CUSTOMER_ID,CUSTOMER_NAME FROM CUSTOMER WHERE CUSTOMER_ID IN(SELECT CUSTOMER_ID
       FROM BORROWER WHERE CUSTOMER_ID IN(SELECT CUSTOMER_ID FROM DEPOSITOR));
+-------------+---------------+
| CUSTOMER_ID | CUSTOMER_NAME |
+-------------+---------------+
| C001        | Korth         |
| C003        | Navathe       |
| C005        | Sudarshan     |
+-------------+---------------+
```

9. Get Branch Name of the branch having highest average balance amongst all branches.

```
mysql> SELECT BRANCH_NAME FROM ACCOUNT GROUP BY BRANCH_NAME HAVING
       AVG(BALANCE)>=ALL(SELECT (AVG(BALANCE)) FROM ACCOUNT GROUP BY BRANCH_NAME);
+-------------+
| BRANCH_NAME |
+-------------+
| TILAK NAGAR |
+-------------+
```

10. Find the names of all branches that have assets greater than those of at least one branch located in NOIDA.

```
mysql> SELECT BRANCH_NAME FROM BRANCH WHERE ASSETS >SOME ( SELECT ASSETS FROM BRANCH WHERE BRANCH_CITY='NOIDA');
+---------------+
| BRANCH_NAME   |
+---------------+
| MOHAN NAGAR   |
| GREATER NOIDA |
| TILAK NAGAR   |
+---------------+
3 rows in set (0.00 sec)
```

11. Find the names of all branches that have assets greater than that of each branch located in NOIDA

```
mysql> SELECT BRANCH_NAME FROM BRANCH WHERE ASSETS >ALL ( SELECT ASSETS FROM BRANCH WHERE BRANCH_CITY='NOIDA');
Empty set (0.00 sec)
```

12. Get the names of the customers who have account in each branch located in Noida.

```
mysql> SELECT CUSTOMER_NAME FROM CUSTOMER,DEPOSITOR WHERE CUSTOMER.CUSTOMER_ID =DEPOSITOR.CUSTOMER_ID
       AND ACCOUNT_NUMBER IN(SELECT ACCOUNT_NUMBER FROM ACCOUNT,BRANCH WHERE ACCOUNT.BRANCH_NAME =
       BRANCH.BRANCH_NAME AND BRANCH_CITY='NOIDA');
+---------------+
| CUSTOMER_NAME |
+---------------+
| Korth         |
| Sudarshan     |
| Sudarshan     |
+---------------+
```

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CSE-A

DBMS Assignment 3