CSE370 : Database Systems

Assignment 03 | Spring 2025

ID : <~~~~~~~> | Name : ~~~~~~~~

No 1 Query (as Plain Text)	mysql -u root -p CREATE DATABASE Bank_~~~~~~~; USE Bank_~~~~~~~; SHOW TABLES; <mark>Insert values into all tables</mark> <mark>Showed all tables by SELECT*From all tables</mark> SELECT customer.customer_name, loan.loan_number FROM borrower JOIN customer ON borrower.customer_id = customer.customer_id JOIN loan ON borrower.loan_number = loan.loan_number WHERE loan.branch_name = 'Downtown';

| No 1 SS (of Query & Output in Shell) | ```
MariaDB [Bank_21301163]> show tables;
+----------------------+
| Tables_in_bank_21301163 |
+----------------------+
| account              |
| borrower             |
| branch               |
| customer             |
| depositor            |
| loan                 |
+----------------------+
6 rows in set (0.001 sec)
``` |
| --- | --- |

```
MariaDB [Bank_21301163]> SELECT*From account;
+-------------+----------------+---------+
| branch_name | account_number | balance |
+-------------+----------------+---------+
| Downtown    | A-101          |     500 |
| Perryridge  | A-102          |     400 |
| Brighton    | A-201          |     900 |
| Mianus      | A-215          |     700 |
| Brighton    | A-217          |     750 |
| Redwood     | A-222          |     700 |
| Round Hill  | A-305          |     350 |
+-------------+----------------+---------+
7 rows in set (0.000 sec)

MariaDB [Bank_21301163]> SELECT*From borrower;
+-------------+-------------+
| customer_id | loan_number |
+-------------+-------------+
| C-101       | L-17        |
| C-201       | L-11        |
| C-201       | L-23        |
| C-211       | L-15        |
| C-212       | L-93        |
| C-222       | L-17        |
| C-225       | L-16        |
| C-226       | L-14        |
+-------------+-------------+
8 rows in set (0.001 sec)
```

```
MariaDB [Bank_21301163]> SELECT*From branch;
+-------------+-------------+---------+
| branch_name | branch_city | assets  |
+-------------+-------------+---------+
| Brighton    | Brooklyn    | 7100000 |
| Downtown    | Brooklyn    | 9000000 |
| Mianus      | Horseneck   |  400000 |
| North Town  | Rye         | 3700000 |
| Perryridge  | Horseneck   | 1700000 |
| Pownal      | Bennington  |  300000 |
| Redwood     | Palo Alto   | 2100000 |
| Round Hill  | Horseneck   | 8000000 |
+-------------+-------------+---------+
8 rows in set (0.000 sec)

MariaDB [Bank_21301163]> SELECT*From customer;
+-------------+---------------+-----------------+---------------+
| customer_id | customer_name | customer_street | customer_city |
+-------------+---------------+-----------------+---------------+
| C-101       | Jones         | Main            | Harrison      |
| C-201       | Smith         | North           | Rye           |
| C-211       | Hayes         | Main            | Harrison      |
| C-212       | Curry         | North           | Rye           |
| C-215       | Lindsay       | Park            | Pittsfield    |
| C-220       | Turner        | Putnam          | Stanford      |
| C-222       | Williams      | Nassau          | Princeton     |
| C-225       | Adams         | Spring          | Pittsfield    |
| C-226       | Johnson       | Alma            | Palo Alto     |
| C-233       | Glenn         | Sand Hill       | Woodside      |
| C-234       | Brooks        | Senator         | Brooklyn      |
| C-255       | Green         | Walnut          | Stanford      |
+-------------+---------------+-----------------+---------------+
12 rows in set (0.001 sec)

MariaDB [Bank_21301163]> SELECT*From depositor;
+-------------+----------------+
| customer_id | account_number |
+-------------+----------------+
| C-101       | A-217          |
| C-201       | A-215          |
| C-211       | A-102          |
| C-215       | A-222          |
| C-220       | A-305          |
| C-226       | A-101          |
| C-226       | A-201          |
+-------------+----------------+
7 rows in set (0.000 sec)
```

```
MariaDB [Bank_21301163]> SELECT*From loan;
+-------------+-------------+--------+
| loan_number | branch_name | amount |
+-------------+-------------+--------+
| L-11        | Round Hill  |    900 |
| L-14        | Downtown    |   1500 |
| L-15        | Perryridge  |   1500 |
| L-16        | Perryridge  |   1300 |
| L-17        | Downtown    |   1000 |
| L-23        | Redwood     |   2000 |
| L-93        | Mianus      |    500 |
+-------------+-------------+--------+
7 rows in set (0.000 sec)

MariaDB [Bank_21301163]> SELECT customer.customer_name, loan.
+---------------+-------------+
| customer_name | loan_number |
+---------------+-------------+
| Johnson       | L-14        |
| Jones         | L-17        |
| Williams      | L-17        |
+---------------+-------------+
3 rows in set (0.003 sec)
```

No 2 Query (as Plain Text)	SELECT c1.customer_name AS Customer1, c2.customer_name AS Customer2, c1.customer_city AS City FROM customer c1 JOIN customer c2 ON c1.customer_id < c2.customer_id AND c1.customer_city = c2.customer_city;
| **No 2 SS (of Query & Output in Shell)** | ```
MariaDB [Bank_21301163]> SELECT c1.custome
 = c2.customer_city;
+-----------+-----------+------------+
| Customer1 | Customer2 | City       |
+-----------+-----------+------------+
| Jones     | Hayes     | Harrison   |
| Smith     | Curry     | Rye        |
| Lindsay   | Adams     | Pittsfield |
| Turner    | Green     | Stamford   |
+-----------+-----------+------------+
4 rows in set (0.002 sec)
``` |
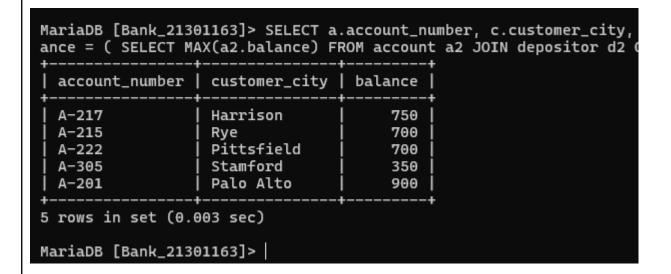| | |
| **No 3 Query (as Plain Text)** | SELECT branch_name, SUM(balance * 0.04) AS Total_Interest FROM account GROUP BY branch_name; |

| **No 3 SS**<br>**(of Query & Output**<br>**in Shell)** | ```
MariaDB [Bank_21301163]> SELECT branch_name, SUM(balance * 0.04)
+-------------+----------------+
| branch_name | Total_Interest |
+-------------+----------------+
| Brighton    |          66.00 |
| Downtown    |          20.00 |
| Mianus      |          28.00 |
| Perryridge  |          16.00 |
| Redwood     |          28.00 |
| Round Hill  |          14.00 |
+-------------+----------------+
6 rows in set (0.001 sec)

MariaDB [Bank_21301163]>
``` |
| | |
| **No 4 Query**
(as Plain Text) | SELECT a.account_number, c.customer_city, a.balance FROM account a JOIN depositor d ON a.account_number = d.account_number JOIN customer c ON d.customer_id = c.customer_id WHERE a.balance = (SELECT MAX(a2.balance) FROM account a2 JOIN depositor d2 ON a2.account_number = d2.account_number JOIN customer c2 ON d2.customer_id = c2.customer_id WHERE c2.customer_city = c.customer_city); |

| No 4 SS<br>(of Query & Output<br>in Shell) | ```
MariaDB [Bank_21301163]> SELECT a.account_number, c.customer_city,
ance = ( SELECT MAX(a2.balance) FROM account a2 JOIN depositor d2 (
+----------------+----------------+---------+
| account_number | customer_city  | balance |
+----------------+----------------+---------+
| A-217          | Harrison       |     750 |
| A-215          | Rye            |     700 |
| A-222          | Pittsfield     |     700 |
| A-305          | Stamford       |     350 |
| A-201          | Palo Alto      |     900 |
+----------------+----------------+---------+
5 rows in set (0.003 sec)

MariaDB [Bank_21301163]> |
``` |
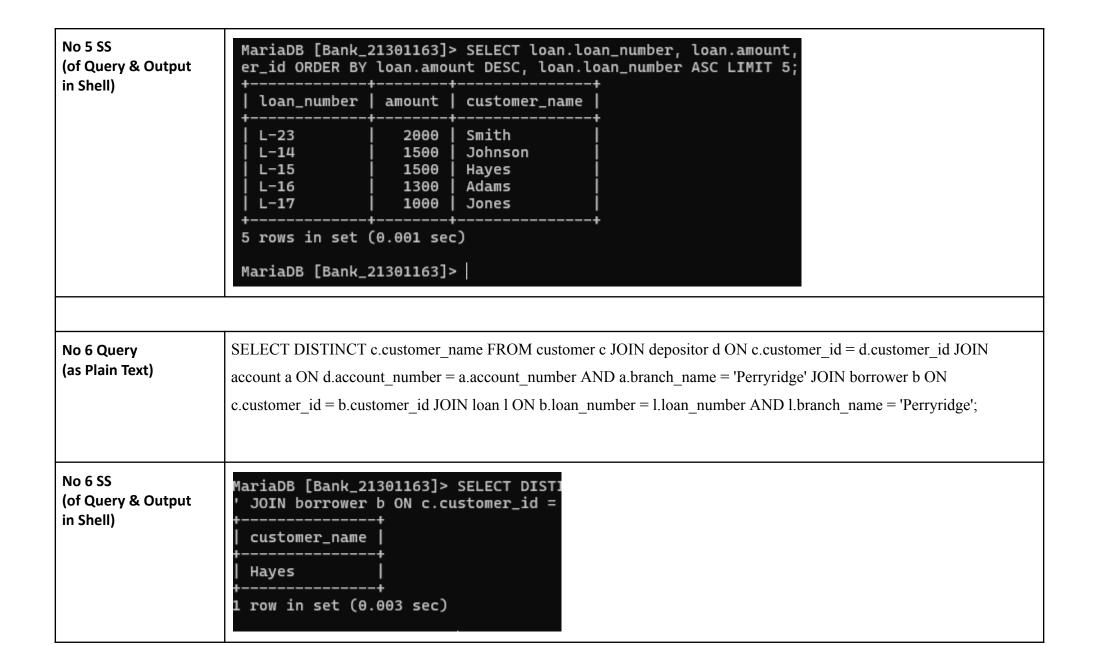| | |
| No 5 Query
(as Plain Text) | SELECT loan.loan_number, loan.amount, customer.customer_name FROM loan JOIN borrower ON loan.loan_number = borrower.loan_number JOIN customer ON borrower.customer_id = customer.customer_id ORDER BY loan.amount DESC, loan.loan_number ASC LIMIT 5; |

| **No 5 SS**<br>**(of Query & Output**<br>**in Shell)** | ```
MariaDB [Bank_21301163]> SELECT loan.loan_number, loan.amount,
er_id ORDER BY loan.amount DESC, loan.loan_number ASC LIMIT 5;
+---------------+--------+---------------+
| loan_number   | amount | customer_name |
+---------------+--------+---------------+
| L-23          |   2000 | Smith         |
| L-14          |   1500 | Johnson       |
| L-15          |   1500 | Hayes         |
| L-16          |   1300 | Adams         |
| L-17          |   1000 | Jones         |
+---------------+--------+---------------+
5 rows in set (0.001 sec)

MariaDB [Bank_21301163]>
``` |
| | |
| **No 6 Query**
(as Plain Text) | SELECT DISTINCT c.customer_name FROM customer c JOIN depositor d ON c.customer_id = d.customer_id JOIN account a ON d.account_number = a.account_number AND a.branch_name = 'Perryridge' JOIN borrower b ON c.customer_id = b.customer_id JOIN loan l ON b.loan_number = l.loan_number AND l.branch_name = 'Perryridge'; |
| **No 6 SS**<br>**(of Query & Output**<br>**in Shell)** | ```
MariaDB [Bank_21301163]> SELECT DISTI
' JOIN borrower b ON c.customer_id =
+---------------+
| customer_name |
+---------------+
| Hayes         |
+---------------+
1 row in set (0.003 sec)
``` |

No 7 Query (as Plain Text)	SELECT customer.customer_name, SUM(loan.amount) AS total_loan FROM borrower JOIN customer ON borrower.customer_id = customer.customer_id JOIN loan ON borrower.loan_number = loan.loan_number GROUP BY customer.customer_id HAVING COUNT(loan.loan_number) >= 2;
| **No 7 SS (of Query & Output in Shell)** | ```
MariaDB [Bank_21301163]> SELECT customer.customer_name, SUM(loan.amoun
number GROUP BY customer.customer_id HAVING COUNT(loan.loan_number) >=
+---------------+------------+
| customer_name | total_loan |
+---------------+------------+
| Smith         |       2900 |
+---------------+------------+
1 row in set (0.003 sec)

MariaDB [Bank_21301163]>
``` |