CSE370
LAB ASSIGNMENT 04

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SECTION : 06
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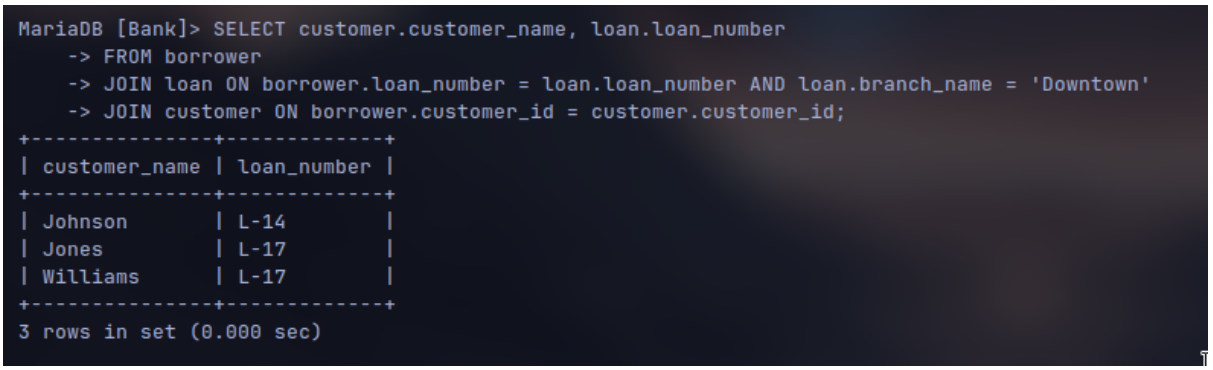
Question - 01 : **Find the name and loan number of all customers having a loan at the Downtown branch. [2]**

Query :

```
SELECT customer.customer_name, loan.loan_number
FROM borrower
JOIN loan ON borrower.loan_number = loan.loan_number AND loan.branch_name =
'Downtown'
JOIN customer ON borrower.customer_id = customer.customer_id;
```



```
MariaDB [Bank]> SELECT customer.customer_name, loan.loan_number
    -> FROM borrower
    -> JOIN loan ON borrower.loan_number = loan.loan_number AND loan.branch_name = 'Downtown'
    -> JOIN customer ON borrower.customer_id = customer.customer_id;
+---------------+-------------+
| customer_name | loan_number |
+---------------+-------------+
| Johnson       | L-14        |
| Jones         | L-17        |
| Williams      | L-17        |
+---------------+-------------+
3 rows in set (0.000 sec)
```

Question - 02 : **Find all the possible pairs of customers who are from the same city. show in the format Customer1, Customer2, City. [2]**

Query :

```
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_city = c2.customer_city AND c1.customer_id <
c2.customer_id;
```

```
MariaDB [Bank]> 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_city = c2.customer_city AND c1.customer_id < c2.customer_id;
+-----------+-----------+------------+
| Customer1 | Customer2 | City       |
+-----------+-----------+------------+
| Jones     | Hayes     | Harrison   |
| Smith     | Curry     | Rye        |
| Lindsay   | Adams     | Pittsfield |
| Turner    | Green     | Stamford   |
+-----------+-----------+------------+
4 rows in set (0.001 sec)
```

Question - 03 : **If the bank gives out 4% interest to all accounts, show the total interest across each branch. Print Branch_name, Total_Interest [1]**

Query:

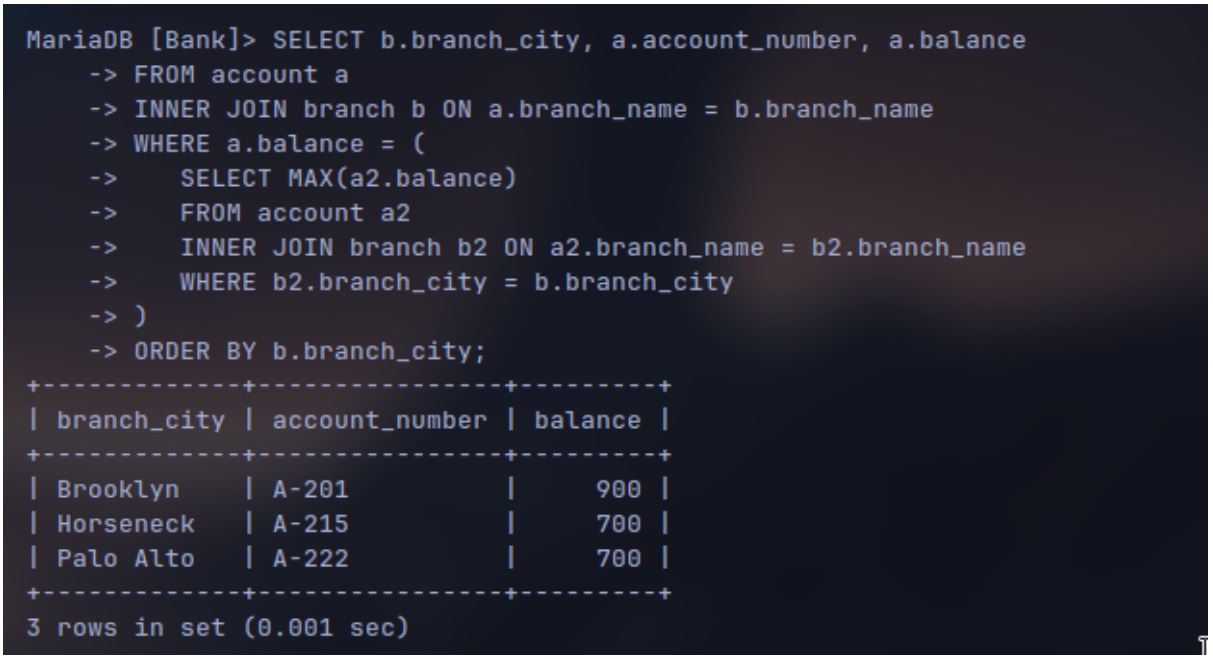
SELECT account.branch_name AS Branch_name, SUM(account.balance * 0.04) AS Total_Interest
FROM account
GROUP BY account.branch_name;

```
MariaDB [Bank]> SELECT account.branch_name AS Branch_name, SUM(account.balance * 0.04) AS Total_Interest
    -> FROM account
    -> GROUP BY account.branch_name;
+-------------+----------------+
| 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)
```

Question - 04 : **Find account numbers with the highest balances for each city in the database [1]**

Query :

```
SELECT b.branch_city, a.account_number, a.balance
FROM account a
INNER JOIN branch b ON a.branch_name = b.branch_name
WHERE a.balance = (
  SELECT MAX(a2.balance)
  FROM account a2
  INNER JOIN branch b2 ON a2.branch_name = b2.branch_name
  WHERE b2.branch_city = b.branch_city
)
ORDER BY b.branch_city;
```

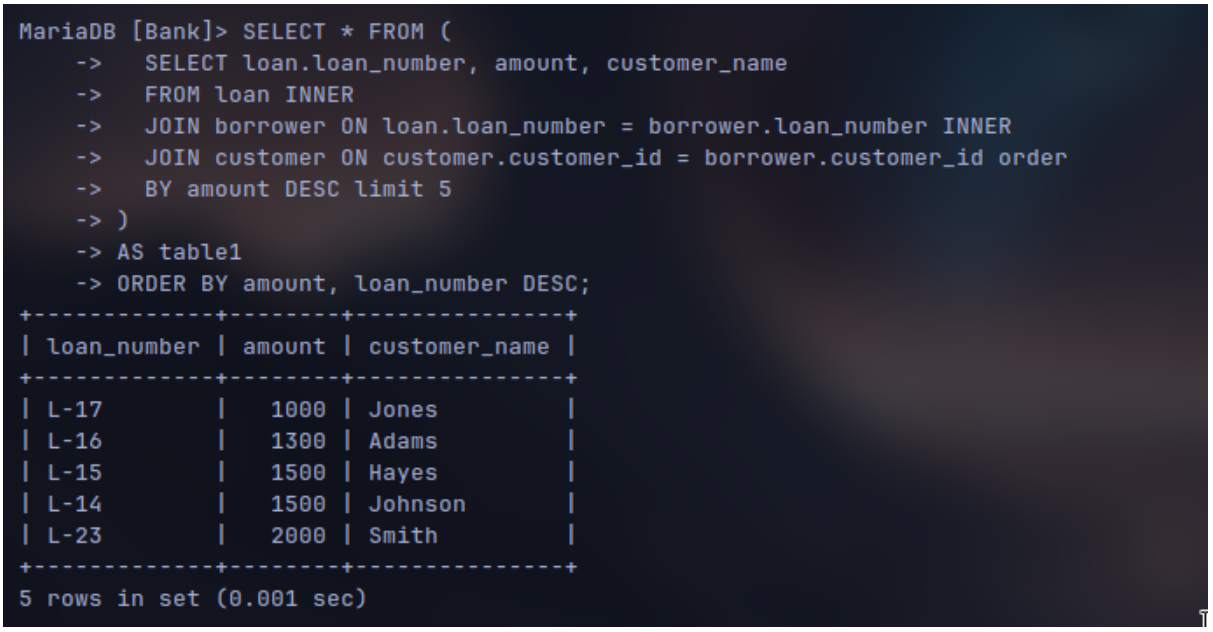


```
MariaDB [Bank]> SELECT b.branch_city, a.account_number, a.balance
    -> FROM account a
    -> INNER JOIN branch b ON a.branch_name = b.branch_name
    -> WHERE a.balance = (
    ->    SELECT MAX(a2.balance)
    ->    FROM account a2
    ->    INNER JOIN branch b2 ON a2.branch_name = b2.branch_name
    ->    WHERE b2.branch_city = b.branch_city
    -> )
    -> ORDER BY b.branch_city;
+-------------+----------------+---------+
| branch_city | account_number | balance |
+-------------+----------------+---------+
| Brooklyn    | A-201          |     900 |
| Horseneck   | A-215          |     700 |
| Palo Alto   | A-222          |     700 |
+-------------+----------------+---------+
3 rows in set (0.001 sec)
```

Question - 05 : **Show the loan number, loan amount, and name of customers who have the top 5 highest loan amounts. The data should be sorted by increasing amounts, then decreasing loan numbers in case of the same loan amount. [Hint for top 5 check the "limit" keyword in mysql] [2]**

Query :

```
SELECT * FROM (
  SELECT loan.loan_number, amount, customer_name
  FROM loan INNER
  JOIN borrower ON loan.loan_number = borrower.loan_number INNER
  JOIN customer ON customer.customer_id = borrower.customer_id order
  BY amount DESC limit 5
)
AS table1
ORDER BY amount, loan_number DESC;
```



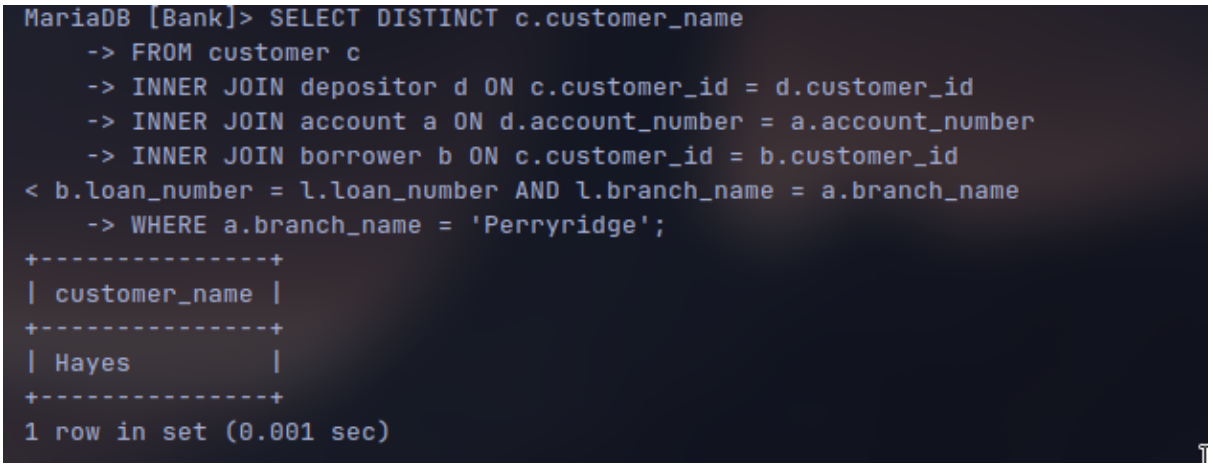
```
MariaDB [Bank]> SELECT * FROM (
    ->   SELECT loan.loan_number, amount, customer_name
    ->   FROM loan INNER
    ->   JOIN borrower ON loan.loan_number = borrower.loan_number INNER
    ->   JOIN customer ON customer.customer_id = borrower.customer_id order
    ->   BY amount DESC limit 5
    -> )
    -> AS table1
    -> ORDER BY amount, loan_number DESC;
+-------------+--------+---------------+
| loan_number | amount | customer_name |
+-------------+--------+---------------+
| L-17        |   1000 | Jones         |
| L-16        |   1300 | Adams         |
| L-15        |   1500 | Hayes         |
| L-14        |   1500 | Johnson       |
| L-23        |   2000 | Smith         |
+-------------+--------+---------------+
5 rows in set (0.001 sec)
```

Question - 06 : **Find the names of customers with an account and also a loan at the Perryridge branch. [2]**

Query :

```
SELECT DISTINCT c.customer_name
```

```
FROM customer c
INNER JOIN depositor d ON c.customer_id = d.customer_id
INNER JOIN account a ON d.account_number = a.account_number
INNER JOIN borrower b ON c.customer_id = b.customer_id
INNER JOIN loan l ON b.loan_number = l.loan_number AND l.branch_name =
a.branch_name
WHERE a.branch_name = 'Perryridge';
```



Question - 07 : **Find the total loan amount of all customers having at least 2 loans from the bank. Show in format customer name, total_loan. [2]**

Query :

```
SELECT c.customer_name, COUNT(*) AS number_of_loans, SUM(l.amount) AS
total_loan
FROM customer c
JOIN borrower b ON c.customer_id = b.customer_id
JOIN loan l ON b.loan_number = l.loan_number
WHERE c.customer_id IN (
   SELECT b2.customer_id
   FROM borrower b2
   GROUP BY b2.customer_id
   HAVING COUNT(*) >= 2
)
GROUP BY c.customer_id
```

ORDER BY total_loan DESC;

```
MariaDB [Bank]> SELECT c.customer_name, COUNT(*) AS number_of_loans, SUM(l.amount) AS total_loan
    -> FROM customer c
    -> JOIN borrower b ON c.customer_id = b.customer_id
    -> JOIN loan l ON b.loan_number = l.loan_number
    -> WHERE c.customer_id IN (
    ->     SELECT b2.customer_id
    ->     FROM borrower b2
    ->     GROUP BY b2.customer_id
    ->     HAVING COUNT(*) >= 2
    -> )
    -> GROUP BY c.customer_id
    -> ORDER BY total_loan DESC;
+---------------+-----------------+------------+
| customer_name | number_of_loans | total_loan |
+---------------+-----------------+------------+
| Smith         |               2 |       2900 |
+---------------+-----------------+------------+
1 row in set (0.001 sec)
```