1. Find the name and loan number of all customers having a loan at the Downtown branch.

- SELECT c.customer_name, b.loan_number FROM customer c INNER JOIN borrower b ON b.customer_id=c.customer_id INNER JOIN loan l ON l.loan_number = b.loan_number WHERE l.branch_name= "Downtown";

```
MariaDB [Bank]> SELECT c.customer_name, b.loan_number FROM customer c  INNER JOIN borrower b ON b.
customer_id=c.customer_id INNER JOIN loan l ON l.loan_number = b.loan_number WHERE l.branch_name=
"Downtown";
+---------------+-------------+
| customer_name | loan_number |
+---------------+-------------+
| Johnson       | L-14        |
| Jones         | L-17        |
| Williams      | L-17        |
+---------------+-------------+
3 rows in set (0.044 sec)
```

2. Find all the possible pairs of customers who are from the same city. show in the format Customer1, Customer2, City.

- SELECT DISTINCT c.customer_name AS Customer1 ,c1.customer_name as Customer2 ,c.customer_city AS City FROM customer c , customer c1 WHERE c.customer_city = c1.customer_city AND c.customer_id < c1.customer_id ;

```
MariaDB [Bank]> SELECT DISTINCT c.customer_name AS Customer1 ,c1.customer_name as Customer2 ,c.cus
tomer_city AS City FROM customer c , customer c1 WHERE  c.customer_city = c1.customer_city AND c.c
ustomer_id < c1.customer_id ;
+-----------+-----------+------------+
| Customer1 | Customer2 | City       |
+-----------+-----------+------------+
| Jones     | Hayes     | Harrison   |
| Smith     | Curry     | Rye        |
| Lindsay   | Adams     | Pittsfield |
| Turner    | Green     | Stamford   |
+-----------+-----------+------------+
4 rows in set (0.000 sec)
```

3. If the bank gives out 4% interest to all accounts, show the total interest across each branch. Print Branch_name, Total_Interest .

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

```
MariaDB [Bank]> SELECT branch_name as Branch_name ,SUM(balance * 0.04) AS Total_Interest FROM acco
unt a GROUP BY 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 (0.357 sec)
```

4. Find account numbers with the highest balances for each city in the database.

- SELECT a.account_number ,a.balance,b.branch_city FROM account a JOIN branch b ON a.branch_name = b.branch_name WHERE balance IN (SELECT max(balance) FROM account a JOIN branch b ON a.branch_name = b.branch_name GROUP BY b.branch_city);

```
MariaDB [Bank]> SELECT a.account_number ,a.balance,b.branch_city FROM account a JOIN branch b ON a
.branch_name = b.branch_name WHERE balance IN (SELECT max(balance) FROM account a JOIN branch b ON
 a.branch_name = b.branch_name GROUP BY b.branch_city);
+----------------+---------+-------------+
| account_number | balance | branch_city |
+----------------+---------+-------------+
| A-201          |     900 | Brooklyn    |
| A-215          |     700 | Horseneck   |
| A-222          |     700 | Palo Alto   |
+----------------+---------+-------------+
3 rows in set (0.109 sec)
```

5. Show the loan number, loan amount, and name of customers with 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.

- SELECT l.loan_number ,l.amount,c.customer_name FROM customer c , loan l ,borrower b WHERE l.loan_number =b.loan_number AND c.customer_id=b.customer_id ORDER BY l.amount ,l.loan_number DESC LIMIT 5;

```
MariaDB [Bank]> SELECT l.loan_number ,l.ammount,c.customer_name FROM customer c , loan l ,borrower
 b WHERE l.loan_number =b.loan_number AND c.customer_id=b.customer_id ORDER BY l.ammount ,l.loan_n
umber DESC LIMIT 5;
ERROR 1054 (42S22): Unknown column 'l.ammount' in 'field list'
MariaDB [Bank]> SELECT l.loan_number ,l.amount,c.customer_name FROM customer c , loan l ,borrower
b WHERE l.loan_number =b.loan_number AND c.customer_id=b.customer_id ORDER BY l.amount ,l.loan_num
ber DESC LIMIT 5;
+-------------+--------+---------------+
| loan_number | amount | customer_name |
+-------------+--------+---------------+
| L-93        |    500 | Curry         |
| L-11        |    900 | Smith         |
| L-17        |   1000 | Jones         |
| L-17        |   1000 | Williams      |
| L-16        |   1300 | Adams         |
+-------------+--------+---------------+
5 rows in set (0.000 sec)
```

6. Find the names of customers with an account and also a loan at the Perryridge branch.

- SELECT DISTINCT c.customer_name FROM customer c, depositor d, loan l WHERE c.customer_id=d.customer_id AND d.account_number IN (SELECT account_number FROM account WHERE branch_name = "Perryridge");

```
MariaDB [Bank]> SELECT DISTINCT c.customer_name FROM customer c, depositor d, loan l  WHERE c.cust
omer_id=d.customer_id AND d.account_number IN ( SELECT account_number FROM account WHERE branch_na
me = "Perryridge");
+---------------+
| customer_name |
+---------------+
| Hayes         |
+---------------+
1 row in set (0.001 sec)
```

7. Find the total loan amount of all customers having at least 2 loans from the bank. Show in format customer name, total_loan.

- SELECT c.customer_name AS Customer_Name,SUM(l.amount) AS total_loan FROM customer c INNER JOIN borrower b ON b.customer_id = c.customer_id INNER JOIN loan l ON l.loan_number = b.loan_number GROUP BY c.customer_id, c.customer_name HAVING COUNT(b.loan_number) >= 2;

```
MariaDB [Bank]> SELECT c.customer_name AS Customer_Name,SUM(l.amount) AS total_loan FROM  customer
 c INNER JOIN borrower b ON  b.customer_id = c.customer_id INNER JOIN loan l ON  l.loan_number = b
.loan_number  GROUP BY c.customer_id, c.customer_name HAVING COUNT(b.loan_number) >= 2;
+---------------+------------+
| Customer_Name | total_loan |
+---------------+------------+
| Smith         |       2900 |
+---------------+------------+
1 row in set (0.012 sec)
```