

The Tables:

```
create database Bank;
use Bank;
create table customer (customer_id varchar(10) not null, customer_name varchar(20) not null,
customer_street varchar(30), customer_city varchar(30), primary key (customer_id));
create table branch (branch_name varchar(15), branch_city varchar(30), assets int, primary key
(branch_name), check (assets >= 0));
create table account (branch_name varchar(15), account_number varchar(10) not null, balance int,
primary key (account_number), check (balance >= 0));
create table loan (loan_number varchar(10) not null, branch_name varchar(15), amount int, primary key
(loan_number));
create table depositor (customer_id varchar(10) not null, account_number varchar(10) not null, primary
key (customer_id,account_number), foreign key (customer_id) references customer(customer_id), foreign
key (account_number) references account(account_number));
create table borrower (customer_id varchar(10) not null, loan_number varchar(10) not null, primary key
(customer_id, loan_number), foreign key (customer_id) references customer(customer_id), foreign key
(loan_number) references loan(loan_number));
insert into customer values ('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', 'Stamford'), ('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', 'Stamford');
insert into branch values ('Downtown', 'Brooklyn',9000000), ('Redwood', 'Palo Alto',2100000),
('Perryridge', 'Horseneck',1700000), ('Mianus', 'Horseneck',400000), ('Round Hill', 'Horseneck',8000000),
('Pownal', 'Bennington',300000), ('North Town', 'Rye',3700000), ('Brighton', 'Brooklyn',7100000);
insert into account values ('Downtown','A-101',500), ('Mianus','A-215',700), ('Perryridge','A-102',400),
('Round Hill','A-305',350), ('Brighton','A-201',900), ('Redwood','A-222',700), ('Brighton','A-217',750);
insert into loan values ('L-17', 'Downtown', 1000), ('L-23', 'Redwood', 2000), ('L-15', 'Perryridge', 1500),
('L-14', 'Downtown', 1500), ('L-93', 'Mianus', 500), ('L-11', 'Round Hill', 900), ('L-16', 'Perryridge', 1300);
insert into depositor values ('C-226', 'A-101'), ('C-201', 'A-215'), ('C-211', 'A-102'), ('C-220', 'A-305'),
('C-226', 'A-201'), ('C-101', 'A-217'), ('C-215', 'A-222');
insert into borrower values ('C-101', 'L-17'), ('C-201', 'L-23'), ('C-211', 'L-15'), ('C-226', 'L-14'), ('C-212',
'L-93'), ('C-201', 'L-11'), ('C-222', 'L-17'), ('C-225', 'L-16');
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MariaDB [(none)]> create database Bank;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use Bank;
Database changed
MariaDB [Bank]> create table customer (customer_id varchar(10) not null, customer_name varchar(20) not null, customer_street varchar(30), customer_city varchar(30), primary key (customer_id));
Query OK, 0 rows affected (2.263 sec)

MariaDB [Bank]> create table branch (branch_name varchar(15), branch_city varchar(30), assets int, primary key (branch_name), check (assets >= 0));
Query OK, 0 rows affected (0.297 sec)

MariaDB [Bank]> create table account (branch_name varchar(15), account_number varchar(10) not null, balance int, primary key (account_number), check (balance >= 0));
Query OK, 0 rows affected (0.291 sec)

MariaDB [Bank]> create table loan (loan_number varchar(10) not null, branch_name varchar(15), amount int, primary key (loan_number));
Query OK, 0 rows affected (0.303 sec)

MariaDB [Bank]> create table depositor (customer_id varchar(10) not null, account_number varchar(10) not null, primary key (customer_id,account_number), foreign key (customer_id) references customer(customer_id), foreign key (account_number) references account(account_number));
Query OK, 0 rows affected (0.347 sec)

MariaDB [Bank]> create table borrower (customer_id varchar(10) not null, loan_number varchar(10) not null, primary key (customer_id, loan_number), foreign key (customer_id) references customer(customer_id), foreign key (loan_number) references loan(loan_number));
Query OK, 0 rows affected (0.309 sec)

MariaDB [Bank]> insert into customer values ('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', 'Stamford'), ('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', 'Stamford');
Query OK, 12 rows affected (2.307 sec)
Records: 12 Duplicates: 0 Warnings: 0

MariaDB [Bank]> insert into branch values ('Downtown', 'Brooklyn',9000000), ('Redwood', 'Palo Alto',2100000), ('Perryridge', 'Horseneck',1700000), ('Mianus', 'Horseneck',400000), ('Round Hill', 'Horseneck',800000), ('Pownal', 'Bennington',300000), ('North Town', 'Rye',3700000), ('Brighton', 'Brooklyn',7100000);
Query OK, 8 rows affected (0.161 sec)
Records: 8 Duplicates: 0 Warnings: 0

MariaDB [Bank]> insert into account values ('Downtown','A-101',500), ('Mianus','A-215',700), ('Perryridge','A-102',400), ('Round Hill','A-305',350), ('Brighton','A-201',900), ('Redwood','A-222',700), ('Brighton','A-217',750);
Query OK, 7 rows affected (0.122 sec)
Records: 7 Duplicates: 0 Warnings: 0

MariaDB [Bank]> insert into loan values ('L-17', 'Downtown', 1000), ('L-23', 'Redwood', 2000), ('L-15', 'Perryridge', 1500), ('L-14', 'Downtown', 1500), ('L-93', 'Mianus', 500), ('L-11', 'Round Hill', 900), ('L-16', 'Perryridge', 1300);
Query OK, 7 rows affected (0.462 sec)
Records: 7 Duplicates: 0 Warnings: 0

MariaDB [Bank]> insert into depositor values ('C-226', 'A-101'), ('C-201', 'A-215'), ('C-211', 'A-102'), ('C-220', 'A-305'), ('C-226', 'A-201'), ('C-101', 'A-217'), ('C-215', 'A-222');
Query OK, 7 rows affected (0.122 sec)
Records: 7 Duplicates: 0 Warnings: 0

MariaDB [Bank]> insert into borrower values ('C-101', 'L-17'), ('C-201', 'L-23'), ('C-211', 'L-15'), ('C-226', 'L-14'), ('C-212', 'L-93'), ('C-201', 'L-11'), ('C-222', 'L-17'), ('C-225', 'L-16');
Query OK, 8 rows affected (0.165 sec)
Records: 8 Duplicates: 0 Warnings: 0

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Answer No. 1:

Select c.customer_name, l.loan_number from borrower b Join customer c on b.customer_id = c.customer_id join loan l on b.loan_number = l.loan_number where l.branch_name = 'Downtown';

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MariaDB [Bank]> Select c.customer_name, l.loan_number from borrower b Join customer c on b.customer_id = c.customer_id join loan l on b.loan_number = l.loan_number where l.branch_name = 'Downtown';
+-----+-----+
| customer_name | loan_number |
+-----+-----+
| Johnson       | L-14        |
| Jones         | L-17        |
| Williams      | L-17        |
+-----+-----+
3 rows in set (2.007 sec)

```

Answer No. 2:

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)

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Answer No. 3:

Select a.branch_name, Sum(a.balance * 0.04) as Total_Interest from account a group by a.branch_name;

```
MariaDB [Bank]> Select a.branch_name, Sum(a.balance * 0.04) as Total_Interest from account a group by a.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)
```

Answer No. 4:

Select b.branch_city, a.account_number, a.balance from account a join branch b on a.branch_name = b.branch_name where (b.branch_city, a.balance) in (Select b.branch_city, Max(a.balance) from account a join branch b on a.branch_name = b.branch_name group by b.branch_city);

```
MariaDB [Bank]> Select b.branch_city, a.account_number, a.balance from account a join branch b on a.branch_name = b.branch_name where (b.branch_city, a.balance) in (Select b.branch_city, Max(a.balance) from account a join branch b on a.branch_name = b.branch_name group 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)
```

Answer No. 5:

Select l.loan_number, l.amount, c.customer_name from loan l join borrower b on l.loan_number = b.loan_number join customer c on b.customer_id = c.customer_id order by l.amount asc, l.loan_number desc limit 5;

```
MariaDB [Bank]> Select l.loan_number, l.amount, c.customer_name from loan l join borrower b on l.loan_number = b.loan_number join customer c on b.customer_id = c.customer_id order by l.amount asc, l.loan_number 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 (0.001 sec)
```

Answer No. 6:

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 join borrower b on c.customer_id = b.customer_id join loan l on b.loan_number = l.loan_number where a.branch_name = 'Perryridge' and l.branch_name = 'Perryridge';

```
MariaDB [Bank]> 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 join borrower b on c.customer_id = b.customer_id join loan l on b.loan_number = l.loan_number where a.branch_name = 'Perryridge' and l.branch_name = 'Perryridge';
```

customer_name
Hayes

```
1 row in set (0.001 sec)
```

Answer No. 7:

Select c.customer_name, 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 group by c.customer_name having count(l.loan_number) >= 2;

```
MariaDB [Bank]> Select c.customer_name, 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 group by c.customer_name having count(l.loan_number) >= 2;
+-----+
| customer_name | total_loan |
+-----+
| Smith        | 2900      |
+-----+
1 row in set (0.001 sec)
```