

# **CSE-370**

## **Home Work- 04**

**Name: Mutasim Fouad Showmik**

**ID: 21101052**

**Section: 07**

```
#mysql -u root -p
#show databases;
#create database Bank;
#use Bank;
```

```
Setting environment for using XAMPP for Windows.
User@MSI e:\xampp
# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 8
Server version: 10.4.27-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| homework_3 |
| information_schema |
| lab3 |
| mysql |
| performance_schema |
| phpmyadmin |
| project_database |
| test |
+-----+
8 rows in set (0.085 sec)

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 (0.197 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 (0.271 sec)

MariaDB [Bank]> create table account (
  -> branch name varchar(15),
```

```

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 (0.271 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 (0.183 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 (0.196 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 (0.272 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 (0.221 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', 'Massau', 'Princeton'), ('C-225','Adams', 'Spring', 'Pittsfield'), ('C-226','Johnson', 'Alma', 'Palo Alto'), ('C-233','Glenn', 'San d Hill', 'Woodside'), ('C-234','Brooks', 'Senator', 'Brooklyn'), ('C-255','Green', 'Walnut', 'Stamford');
Query OK, 12 rows affected (0.572 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 (0.072 sec)
Records: 8 Duplicates: 0 Warnings: 0

```

```
MariaDB [Bank]> 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	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

```
12 rows in set (0.317 sec)
```

```
MariaDB [Bank]> 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]> 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]> 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]> 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]> 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 (0.000 sec)
```

## Task-1

#select C.customer\_name, L.loan\_number from customer C, borrower B, loan L where C.customer\_id=B.customer\_id and B.loan\_number=L.loan\_number and L.branch\_name='Downtown';

```
MariaDB [Bank]> select C.customer_name, L.loan_number from customer C, borrower B, loan L where C.customer_id=B.customer_id and B.loan_number=L.loan_number and L.branch_name='Downtown';
```

customer_name	loan_number
Johnson	L-14
Jones	L-17
Williams	L-17

```
3 rows in set (0.323 sec)
```

## Task-2

# select C1.customer\_id as Customer1, C2.customer\_id as Customer2, C1.customer\_city as City from customer C1, customer C2 where C1.customer\_id!=C2.customer\_id and C1.customer\_city=C2.customer\_city group by city;

```
MariaDB [Bank]> select C1.customer_id as Customer1, C2.customer_id as Customer2, C1.customer_city as City from customer C1, customer C2 where C1.customer_id!=C2.customer_id and C1.customer_city=C2.customer_city group by city;
```

Customer1	Customer2	City
C-211	C-101	Harrison
C-225	C-215	Pittsfield
C-212	C-201	Rye
C-255	C-220	Stamford

```
4 rows in set (0.320 sec)
```

### Task-3

select Branch\_name, sum(balance\*0.04) as Total\_interest from account group by branch\_name;

```
MariaDB [Bank]> select Branch_name, sum(balance*0.04) as Total_interest from account 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

```
5 rows in set (0.000 sec)
```

### Task-4

# with np as ( select C.Customer\_id, C.Customer\_name, C.Customer\_city, A.account\_number, B.balance from ((Customer C inner join Depositor A on C.Customer\_id = A.Customer\_id) inner join account B on B.account\_number = A.account\_number)) select n1.account\_number, n1.customer\_city from np n1 where n1.balance >= all(select n2.balance from np n2 where n1.customer\_city = n2.customer\_city and n1.account\_number != n2.account\_number);

```
MariaDB [Bank]> with np as ( select C.Customer_id, C.Customer_name, C.Customer_city, A.account_number, B.balance from ((Customer C inner join Depositor A on C.Customer_id = A.Customer_id) inner join account B on B.account_number = A.account_number)) select n1.account_number, n1.customer_city from np n1 where n1.balance >= all(select n2.balance from np n2 where n1.customer_city = n2.customer_city and n1.account_number != n2.account_number);
```

account_number	Customer_city
A-217	Harrison
A-215	Rye
A-222	Pittsfield
A-305	Stamford
A-201	Palo Alto

```
5 rows in set (0.001 sec)
```

## Task-5

# with final as (select L.loan\_number, L.amount, C.customer\_name from loan L, borrower B, customer C where L.loan\_number=B.loan\_number and C.customer\_id=B.customer\_id order by L.amount desc limit 5) select \* from final order by amount;

```
MariaDB [Bank]> with final as (select L.loan_number, L.amount, C.customer_name from loan L, borrower B, customer C where L.loan_number=B.loan_number
and C.customer_id=B.customer_id order by L.amount desc limit 5) select * from final order by amount;
+-----+-----+-----+
| 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)
```

## Task-6

# select C.customer\_name from (((customer C inner join depositor D on C.customer\_id = D.customer\_id) inner join account A on A.account\_number = D.account\_number)inner join borrower B on C.customer\_id = B.customer\_id) inner join loan Ln on B.loan\_number = Ln.loan\_number) where A.branch\_name = 'Perryridge' and Ln.branch\_name = 'Perryridge';

```
MariaDB [Bank]> select C.customer_name from (((customer C inner join depositor D on C.customer_id = D.customer_id) inner join account A on A.account_
number = D.account_number)inner join borrower B on C.customer_id = B.customer_id) inner join loan Ln on B.loan_number = Ln.loan_number) where A.branch
_name = 'Perryridge' and Ln.branch_name = 'Perryridge';
+-----+
| customer_name |
+-----+
| Hayes         |
+-----+
1 row in set (0.001 sec)
```



## Task-7

```
# with final1 as (select C.customer_id, C.customer_name, Ln.loan_number,
A.amount from ( (customer C inner join borrower Ln on C.customer_id =
Ln.customer_id) inner join loan A on Ln.loan_number = A.loan_number))
select customer_name, sum(amount) as total_loan from final1 group by
customer_id having count(*)>=2;
```

```
MariaDB [Bank]> with final1 as (select C.customer_id, C.customer_name, Ln.loan_number, A.amount from ( (customer C inner join borrower Ln on C.customer_id
= Ln.customer_id) inner join loan A on Ln.loan_number = A.loan_number)) select customer_name, sum(amount) as total_loan from final1 group by customer_id
having count(*)>=2;
+-----+-----+
| customer_name | total_loan |
+-----+-----+
| Smith        |         2900 |
+-----+-----+
1 row in set (1.605 sec)
```

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