

## CSE370 : Database Systems

### Assignment 03 | Fall 2024

ID : 22201421 | Name : Masrura Nahian Nodi

**Make a PDF after completing the assignment**

<b>No 1 Query</b> (as Plain Text)	SELECT c.customer_name, l.loan_number FROM customer c INNER JOIN borrower b ON c.customer_id = b.customer_id INNER JOIN loan l ON b.loan_number = l.loan_number WHERE l.branch_name = 'Downtown';
<b>No 1 SS</b> (of Query & Output in Shell)	<pre>MariaDB [Bank_22201421]&gt; SELECT c.customer_name, l.loan_number -&gt; FROM customer c -&gt; INNER JOIN borrower b ON c.customer_id = b.customer_id -&gt; INNER JOIN loan l ON b.loan_number = l.loan_number -&gt; WHERE l.branch_name = 'Downtown';  +-----+-----+   customer_name   loan_number   +-----+-----+   Johnson         L-14           Jones          L-17           Williams       L-17         +-----+-----+ 3 rows in set (0.428 sec)</pre>
<b>No 2 Query</b>	SELECT c1.customer_name AS Customer1, c2.customer_name AS Customer2, c1.customer_city AS City

(as Plain Text)	FROM Customer c1 JOIN customer c2 ON c1.customer_city = c2.customer_city WHERE c1.customer_id < c2.customer_id;
<b>No 2 SS</b> <b>(of Query &amp; Output</b> <b>in Shell)</b>	<pre> MariaDB [Bank_22201421]&gt; SELECT c1.customer_name AS Customer1, c2.customer_name AS Customer2, c1.customer_city AS City -&gt; FROM customer c1 -&gt; JOIN customer c2 ON c1.customer_city = c2.customer_city -&gt; WHERE c1.customer_id &lt; c2.customer_id; +-----+-----+-----+   Customer1   Customer2   City   +-----+-----+-----+   Jones       Hayes       Harrison     Smith       Curry       Rye          Lindsay     Adams       Pittsfield     Turner      Green       Stamford   +-----+-----+-----+ 4 rows in set (0.228 sec) </pre>
<b>No 3 Query</b> <b>(as Plain Text)</b>	SELECT a.branch_name AS Branch_name, sum(a.balance * 0.04) AS Total_Interest FROM account a GROUP BY a.branch_name;

**No 3 SS**  
**(of Query & Output**  
**in Shell)**

```
MariaDB [Bank_22201421]> SELECT a.branch_name AS 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 (0.434 sec)
```

**No 4 Query**  
**(as Plain Text)**

```
SELECT c.customer_city, a.account_number, MAX(a.balance) AS highest_balance
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
GROUP BY c.customer_city;
```

**No 4 SS**  
**(of Query & Output**  
**in Shell)**

```
MariaDB [Bank_22201421]> SELECT c.customer_city, a.account_number, MAX(a.balance) AS highest_balance
-> 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
-> GROUP BY c.customer_city;

+-----+-----+-----+
| customer_city | account_number | highest_balance |
+-----+-----+-----+
| Harrison      | A-217          | 750             |
| Palo Alto     | A-101          | 900             |
| Pittsfield    | A-222          | 700             |
| Rye           | A-215          | 700             |
| Stamford      | A-305          | 350             |
+-----+-----+-----+
5 rows in set (1.398 sec)
```

**No 5 Query**  
**(as Plain Text)**

```
SELECT loan_number, loan_amount, customer_name
FROM (
SELECT l.loan_number, l.amount AS loan_amount, c.customer_name
FROM loan l
INNER JOIN borrower b ON l.loan_number = b.loan_number
INNER JOIN customer c ON c.customer_id = b.customer_id
ORDER BY l.amount DESC, l.loan_number DESC
LIMIT 5) AS tip_loans
ORDER BY loan_amount ASC, loan_number DESC;
```

No 5 SS  
(of Query & Output  
in Shell)

```
MariaDB [Bank_22201421]> SELECT loan_number, loan_amount, customer_name
-> FROM (
-> SELECT l.loan_number, l.amount AS loan_amount, c.customer_name
-> FROM loan l
-> INNER JOIN borrower b ON l.loan_number = b.loan_number
-> INNER JOIN customer c ON c.customer_id = b.customer_id
-> ORDER BY l.amount DESC, l.loan_number DESC
-> LIMIT 5) AS tip_loans
-> ORDER BY loan_amount ASC, loan_number DESC;
+-----+-----+-----+
| loan_number | loan_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 (0.378 sec)
```

No 6 Query  
(as Plain Text)

```
SELECT 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
WHERE a.branch_name = 'Perryridge'
```

```
AND c.customer_id IN (  
SELECT b.customer_id  
FROM borrower b  
INNER JOIN loan l ON b.loan_number = l.loan_number  
WHERE l.branch_name = 'Perryridge'  
);
```

No 6 SS  
(of Query & Output  
in Shell)

```
MariaDB [Bank_22201421]> SELECT 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  
-> WHERE a.branch_name = 'Perryridge'  
-> AND c.customer_id IN (  
-> SELECT b.customer_id  
-> FROM borrower b  
-> INNER JOIN loan l ON b.loan_number = l.loan_number  
-> WHERE l.branch_name = 'Perryridge'  
-> );  
  
+-----+  
| customer_name |  
+-----+  
| Hayes         |  
+-----+  
1 row in set (0.351 sec)
```

<b>No 7 Query (as Plain Text)</b>	<pre>SELECT c.customer_name, SUM(l.amount) AS total_loan FROM customer c INNER JOIN borrower b ON c.customer_id = b.customer_id INNER JOIN loan l ON b.loan_number = l.loan_number GROUP BY c.customer_id, c.customer_name HAVING COUNT(l.loan_number) &gt;= 2;</pre>
<b>No 7 SS (of Query &amp; Output in Shell)</b>	<pre>MariaDB [Bank_22201421]&gt; SELECT c.customer_name, SUM(l.amount) AS total_loan -&gt; FROM customer c -&gt; INNER JOIN borrower b ON c.customer_id = b.customer_id -&gt; INNER JOIN loan l ON b.loan_number = l.loan_number -&gt; GROUP BY c.customer_id, c.customer_name -&gt; HAVING COUNT(l.loan_number) &gt;= 2; +-----+-----+   customer_name   total_loan   +-----+-----+   Smith                  2900   +-----+-----+ 1 row in set (0.498 sec)</pre>