DBMS

LAB – 7

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1. **Find the list of passengers (user_id, user_type First name and last name) who have traveled from Bengaluru to Chennai during the month of Oct 2021 and Aug 2022**

   Query :

```sql
SELECT T1.User_ID,
    T2.User_Type,
    T2.FName,
    T2.LName
FROM ticket_385 T1
    JOIN user_385 T2 ON T1.User_ID = T2.User_ID
WHERE T1.Travel_Date BETWEEN '2021-10-01' AND '2021-10-31'
    AND T1.Departure = 'Bengaluru'
    AND T1.Arrival = 'Chennai'
UNION
(
    SELECT T3.User_ID,
        T4.User_Type,
        T4.FName,
        T4.LName
    FROM ticket_385 T3
        JOIN user_385 T4 ON T3.User_ID = T4.User_ID
    WHERE T3.Travel_Date BETWEEN '2022-08-01' AND '2022-08-31'
        AND T3.Departure = 'Bengaluru'
        AND T3.Arrival = 'Chennai'
);
```

   OUTPUT :

```
MariaDB [railway_reservation]> SELECT T1.User_ID,
    ->     T2.User_Type,
    ->     T2.FName,
    ->     T2.LName
    -> FROM ticket_385 T1
    ->     JOIN user_385 T2 ON T1.User_ID = T2.User_ID
    -> WHERE T1.Travel_Date BETWEEN '2021-10-01' AND '2021-10-31'
    ->     AND T1.Departure = 'Bengaluru'
    ->     AND T1.Arrival = 'Chennai'
    -> UNION
    -> (
    ->     SELECT T3.User_ID,
    ->         T4.User_Type,
    ->         T4.FName,
    ->         T4.LName
    ->     FROM ticket_385 T3
    ->         JOIN user_385 T4 ON T3.User_ID = T4.User_ID
    ->     WHERE T3.Travel_Date BETWEEN '2022-08-01' AND '2022-08-31'
    ->         AND T3.Departure = 'Bengaluru'
    ->         AND T3.Arrival = 'Chennai'
    -> );
+---------+-----------+----------+-------+
| User_ID | User_Type | FName    | LName |
+---------+-----------+----------+-------+
| USR_008 | PSGR      | Ajit     | Sethi |
| ADM_001 | ADMIN     | Narendra | Modi  |
+---------+-----------+----------+-------+
2 rows in set (0.012 sec)
```

2. **Find the list of passengers (user_id, user_type First name and last name) who have traveled from Bengaluru to Chennai during the month of Oct 2021 and also during Aug 2022**

   Query :

```sql
SELECT T1.User_ID,
    T2.User_Type,
    T2.FName,
    T2.LName
FROM ticket_385 T1
    JOIN user_385 T2 ON T1.User_ID = T2.User_ID
WHERE T1.Travel_Date BETWEEN '2021-10-01' AND '2021-10-31'
    AND T1.Departure = 'Bengaluru'
    AND T1.Arrival = 'Chennai'
INTERSECT
(
    SELECT T3.User_ID,
        T4.User_Type,
        T4.FName,
        T4.LName
    FROM ticket_385 T3
        JOIN user_385 T4 ON T3.User_ID = T4.User_ID
    WHERE T3.Travel_Date BETWEEN '2022-08-01' AND '2022-08-31'
        AND T3.Departure = 'Bengaluru'
        AND T3.Arrival = 'Chennai'
);
```

OUTPUT :

```
MariaDB [railway_reservation]> SELECT T1.User_ID,
    ->     T2.User_Type,
    ->     T2.FName,
    ->     T2.LName
    -> FROM ticket_385 T1
    ->     JOIN user_385 T2 ON T1.User_ID = T2.User_ID
    -> WHERE T1.Travel_Date BETWEEN '2021-10-01' AND '2021-10-31'
    ->     AND T1.Departure = 'Bengaluru'
    ->     AND T1.Arrival = 'Chennai'
    -> INTERSECT
    -> (
    ->     SELECT T3.User_ID,
    ->         T4.User_Type,
    ->         T4.FName,
    ->         T4.LName
    ->     FROM ticket_385 T3
    ->         JOIN user_385 T4 ON T3.User_ID = T4.User_ID
    ->     WHERE T3.Travel_Date BETWEEN '2022-08-01' AND '2022-08-31'
    ->         AND T3.Departure = 'Bengaluru'
    ->         AND T3.Arrival = 'Chennai'
    -> );
Empty set (0.001 sec)
```

3. **Find the list of passengers (user_id, user_type First name and last name) who have traveled from Bengaluru to Chennai during the month of Aug 2022 and not in Oct 2021**

Query :

```sql
SELECT T1.User_ID,
    T2.User_Type,
    T2.FName,
    T2.LName
FROM ticket_385 T1
    JOIN user_385 T2 ON T1.User_ID = T2.User_ID
WHERE T1.Travel_Date BETWEEN '2022-08-01' AND '2022-08-31'
    AND T1.Departure = 'Bengaluru'
    AND T1.Arrival = 'Chennai'
EXCEPT(
        SELECT T3.User_ID,
            T4.User_Type,
            T4.FName,
            T4.LName
        FROM ticket_385 T3
            JOIN user_385 T4 ON T3.User_ID = T4.User_ID
        WHERE T3.Travel_Date BETWEEN '2021-10-01' AND '2021-10-31'
            AND T3.Departure = 'Bengaluru'
            AND T3.Arrival = 'Chennai'
    );
```

OUTPUT :

```
MariaDB [railway_reservation]> SELECT T1.User_ID,
    ->      T2.User_Type,
    ->      T2.FName,
    ->      T2.LName
    -> FROM ticket_385 T1
    ->      JOIN user_385 T2 ON T1.User_ID = T2.User_ID
    -> WHERE T1.Travel_Date BETWEEN '2022-08-01' AND '2022-08-31'
    ->      AND T1.Departure = 'Bengaluru'
    ->      AND T1.Arrival = 'Chennai'
    -> EXCEPT(
    ->          SELECT T3.User_ID,
    ->              T4.User_Type,
    ->              T4.FName,
    ->              T4.LName
    ->          FROM ticket_385 T3
    ->              JOIN user_385 T4 ON T3.User_ID = T4.User_ID
    ->          WHERE T3.Travel_Date BETWEEN '2021-10-01' AND '2021-10-31'
    ->              AND T3.Departure = 'Bengaluru'
    ->              AND T3.Arrival = 'Chennai'
    ->      );
+---------+-----------+----------+-------+
| User_ID | User_Type | FName    | LName |
+---------+-----------+----------+-------+
| ADM_001 | ADMIN     | Narendra | Modi  |
+---------+-----------+----------+-------+
1 row in set (0.001 sec)
```

4. **Find the list of passengers (user_id, user_type, First name and last name) who have traveled from Bengaluru to Chennai and returned to Bengaluru within a week.**

   Query :

```sql
SELECT T1.User_ID,
    T2.User_Type,
    T2.FName,
    T2.LName
FROM ticket_385 T1
    JOIN user_385 T2 ON T1.User_ID = T2.User_ID
WHERE T1.Departure = 'Bengaluru'
    AND T1.Arrival = 'Chennai'
    AND EXISTS(
        SELECT T3.User_ID,
            T4.User_Type,
            T4.FName,
            T4.LName
        FROM ticket_385 T3
            JOIN user_385 T4 ON T3.User_ID = T4.User_ID
        WHERE T3.User_ID = T1.User_ID
            AND T3.Arrival = 'Bengaluru'
            AND DATEDIFF(T3.Travel_Date, T1.Travel_Date) < 8
    );
```

   OUTPUT :

```
MariaDB [railway_reservation]> SELECT T1.User_ID,
    ->      T2.User_Type,
    ->      T2.FName,
    ->      T2.LName
    -> FROM ticket_385 T1
    ->      JOIN user_385 T2 ON T1.User_ID = T2.User_ID
    -> WHERE T1.Departure = 'Bengaluru'
    ->      AND T1.Arrival = 'Chennai'
    ->      AND EXISTS(
    ->          SELECT T3.User_ID,
    ->              T4.User_Type,
    ->              T4.FName,
    ->              T4.LName
    ->          FROM ticket_385 T3
    ->              JOIN user_385 T4 ON T3.User_ID = T4.User_ID
    ->          WHERE T3.User_ID = T1.User_ID
    ->              AND T3.Arrival = 'Bengaluru'
    ->              AND DATEDIFF(T3.Travel_Date, T1.Travel_Date) < 8
    ->      );
+---------+-----------+----------+-------+
| User_ID | User_Type | FName    | LName |
+---------+-----------+----------+-------+
| ADM_001 | ADMIN     | Narendra | Modi  |
+---------+-----------+----------+-------+
1 row in set (0.005 sec)
```

5. **Find the list of passengers (user_id, user_type, First name and last name) who have traveled from Bengaluru to Chennai and did not return to Bengaluru (in other words, only one way travel from Bengaluru to Chennai)**

Query :

```sql
SELECT T1.User_ID,
    T2.User_Type,
    T2.FName,
    T2.LName
FROM ticket_385 T1
    JOIN user_385 T2 ON T1.User_ID = T2.User_ID
WHERE T1.Departure = 'Bengaluru'
    AND T1.Arrival = 'Chennai'
    AND NOT EXISTS(
        SELECT T3.User_ID,
            T4.User_Type,
            T4.FName,
            T4.LName
        FROM ticket_385 T3
            JOIN user_385 T4 ON T3.User_ID = T4.User_ID
        WHERE T3.User_ID = T1.User_ID
            AND T3.Arrival = 'Bengaluru'
            AND T3.Travel_Date >= T1.Travel_Date
    );
```

OUTPUT :

```
MariaDB [railway_reservation]> SELECT T1.User_ID,
    ->      T2.User_Type,
    ->      T2.FName,
    ->      T2.LName
    -> FROM ticket_385 T1
    ->      JOIN user_385 T2 ON T1.User_ID = T2.User_ID
    -> WHERE T1.Departure = 'Bengaluru'
    ->      AND T1.Arrival = 'Chennai'
    ->      AND NOT EXISTS(
    ->          SELECT T3.User_ID,
    ->              T4.User_Type,
    ->              T4.FName,
    ->              T4.LName
    ->          FROM ticket_385 T3
    ->              JOIN user_385 T4 ON T3.User_ID = T4.User_ID
    ->          WHERE T3.User_ID = T1.User_ID
    ->              AND T3.Arrival = 'Bengaluru'
    ->              AND T3.Travel_Date >= T1.Travel_Date
    ->      );
+---------+-----------+-------+-------+
| User_ID | User_Type | FName | LName |
+---------+-----------+-------+-------+
| USR_008 | PSGR      | Ajit  | Sethi |
+---------+-----------+-------+-------+
1 row in set (0.002 sec)
```