

DATABASE MANAGEMENT SYSTEMS LAB

Week 7

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Assignment:

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

```
mysql> SELECT T.User_id, U.User_type, U.Fname, U.Lname
-> FROM TICKET_484 AS T NATURAL JOIN USER_484 AS U
-> WHERE T.Departure='Bengaluru' AND T.Arrival='Chennai'
-> AND MONTH(T.Travel_date)=10 AND YEAR(T.Travel_date)=2021
-> UNION
-> SELECT T.User_id, U.User_type, U.Fname, U.Lname
-> FROM TICKET_484 AS T NATURAL JOIN USER_484 AS U
-> WHERE T.Departure='Bengaluru' AND T.Arrival='Chennai'
-> AND MONTH(T.Travel_date)=8 AND YEAR(T.Travel_date)=2022
-> ;
```

User_id	User_type	Fname	Lname
USR_008	PSGR	Ajit	Sethi
ADM_001	ADMIN	Narendra	Modi

2 rows in set (0.01 sec)

mysql> █

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

In the database we made, USR_008 is the only passenger to have travelled in both Aug 2022 and Oct 2021. However, his journeys were from Katapadi to Chennai in Aug 2022 and from Bengaluru to Chennai in Oct 2022. Hence, the output for this question is an Empty Set.

```
mysql> select * from TICKET_484;
```

Pnr	Train_no	Travel_date	Departure	Arrival	Departure_time	Arrival_time	User_id	Train_type	Compartment_type	Compartment_number
PNR001	62621	2022-08-07	Bengaluru	Chennai	16:00:00	20:30:00	ADM_001	Superfast	I Class	F01
PNR002	62620	2022-08-14	Chennai	Bengaluru	08:00:00	12:25:00	ADM_001	Superfast	I Class	F02
PNR003	25261	2022-08-01	Chennai	Mangaluru	18:00:00	07:30:00	ADM_003	Mail	III Class	G02
PNR004	25260	2022-08-15	Mangaluru	Chennai	19:15:00	08:00:00	ADM_003	Mail	II Class	S02
PNR005	58451	2022-08-03	Bengaluru	Mangaluru	06:00:00	14:00:00	USR_002	Fast	III Class	G01
PNR006	58450	2022-08-04	Mangaluru	Bengaluru	08:00:00	10:15:00	USR_002	Fast	II Class	S01
PNR007	62621	2022-08-07	Bangarpet	Chennai	18:00:00	20:30:00	ADM_002	Superfast	II Class	S01
PNR008	62620	2022-08-02	Chennai	Bangarpet	08:00:00	09:00:00	ADM_002	Superfast	I Class	F01
PNR010	25260	2022-08-19	Mangaluru	Kannur	19:15:00	23:15:00	USR_007	Mail	II Class	S01
PNR011	62621	2022-08-22	Katapadi	Chennai	19:00:00	20:30:00	USR_008	Superfast	I Class	F01
PNR012	58451	2022-08-11	Subramanya	Mangaluru	11:00:00	14:00:00	USR_009	Fast	I Class	F01
PNR014	25260	2022-08-17	Kannur	Palakkad	23:15:00	04:30:00	USR_010	Mail	II Class	S01
PNR015	25260	2022-08-05	Palakkad	Chennai	04:30:00	08:00:00	USR_012	Mail	II Class	S01
PNR021	62621	2021-10-22	Bengaluru	Chennai	16:00:00	20:30:00	USR_008	Superfast	I Class	F01

14 rows in set (0.00 sec)

```
mysql> SELECT T1.User_id, U.User_type, U.Fname, U.Lname
-> FROM TICKET_484 AS T1 NATURAL JOIN USER_484 AS U
-> WHERE T1.Arrival='Bengaluru' AND T1.Departure='Chennai'
-> AND MONTH(T1.Travel_date)=10 AND YEAR(T1.Travel_date)=2021
-> AND EXISTS
-> (SELECT T2.User_id, U.User_type, U.Fname, U.Lname
-> FROM TICKET_484 AS T2 NATURAL JOIN USER_484 AS U
-> WHERE T2.Arrival='Bengaluru' AND T2.Departure='Chennai'
-> AND MONTH(T2.Travel_date)=8 AND YEAR(T2.Travel_date)=2022
-> AND T1.User_id=T2.User_id);
```

Empty set (0.01 sec)

mysql> █

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

```
[mysql> SELECT T1.User_id, U.User_type, U.Fname, U.Lname
[      -> FROM TICKET_484 AS T1 NATURAL JOIN USER_484 AS U
[      -> WHERE T1.Arrival='Bengaluru' AND T1.Departure='Chennai'
[      -> AND MONTH(T1.Travel_date)=8 AND YEAR(T1.Travel_date)=2022
[      -> AND NOT EXISTS
[      -> (SELECT T2.User_id, U.User_type, U.Fname, U.Lname
[      -> FROM TICKET_484 AS T2 NATURAL JOIN USER_484 AS U
[      -> WHERE T2.Arrival='Bengaluru' AND T2.Departure='Chennai'
[      -> AND MONTH(T2.Travel_date)=10 AND YEAR(T2.Travel_date)=2021
[      -> AND T1.User_id=T2.User_id);
+-----+-----+-----+-----+
| User_id | User_type | Fname   | Lname   |
+-----+-----+-----+-----+
| ADM_001 | ADMIN     | Narendra | Modi    |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> █
```

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.

```
[mysql> SELECT T1.User_id, U.User_type, U.Fname, U.Lname
[      -> FROM TICKET_484 AS T1 NATURAL JOIN USER_484 AS U
[      -> WHERE T1.Arrival='Bengaluru' AND T1.Departure='Chennai'
[      -> AND EXISTS
[      -> (SELECT T2.User_id, U.User_type, U.Fname, U.Lname
[      -> FROM TICKET_484 AS T2 NATURAL JOIN USER_484 AS U
[      -> WHERE T2.Departure='Bengaluru' AND T2.Arrival='Chennai'
[      -> AND DAY(T1.Travel_date)+7>=DAY(T2.Travel_date)
[      -> AND T1.User_id=T2.User_id);
+-----+-----+-----+-----+
| User_id | User_type | Fname   | Lname   |
+-----+-----+-----+-----+
| ADM_001 | ADMIN     | Narendra | Modi    |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> █
```

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)

```
[mysql> SELECT T.User_id, U.User_type, U.Fname, U.Lname
[      -> FROM TICKET_484 AS T NATURAL JOIN USER_484 AS U
[      -> WHERE T.Departure='Bengaluru' AND T.Arrival='Chennai'
[      -> EXCEPT
[      -> SELECT T.User_id, U.User_type, U.Fname, U.Lname
[      -> FROM TICKET_484 AS T NATURAL JOIN USER_484 AS U
[      -> WHERE T.Arrival='Bengaluru' AND T.Departure='Chennai';
+-----+-----+-----+-----+
| User_id | User_type | Fname   | Lname   |
+-----+-----+-----+-----+
| USR_008 | PSGR      | Ajit    | Sethi   |
+-----+-----+-----+-----+
1 row in set (0.01 sec)

mysql> █
```