

DATABASE MANAGEMENT SYSTEMS LAB

Week 5

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PES1UG20CS484

Section H

Roll No 40

RAILWAY RESERVATION

1. Update price of the ticket.

```
mysql> CREATE VIEW COMPUTE_PRICE AS
--> SELECT TICKET_484.Pnr, TICKET_484.Train_no, TICKET_484.Departure, TICKET_484.Arrival, ROUTE_INFO_484.Distance, FARE_TABLE_484.Far_per_km
--> FROM TICKET_484, ROUTE_INFO_484, FARE_TABLE_484
--> WHERE (TICKET_484.Train_no=ROUTE_INFO_484.Train_no AND
--> TICKET_484.Departure=ROUTE_INFO_484.From_station_name AND
--> TICKET_484.Arrival=ROUTE_INFO_484.To_station_name AND
--> FARE_TABLE_484.Train_type=TICKET_484.Train_type AND
--> FARE_TABLE_484.Compartment_type=TICKET_484.Compartment_type);
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE VIEW PASSENGER_NUMBER AS
--> SELECT Pnr, COUNT(Pnr) as Numbers
--> FROM TICKET_PASSENGER_484
--> GROUP BY Pnr;
Query OK, 0 rows affected (0.01 sec)

mysql> UPDATE PAYMENT_INFO_484 AS P
--> INNER JOIN COMPUTE_PRICE AS CS
--> ON P.Pnr=CS.Pnr
--> INNER JOIN PASSENGER_NUMBER AS PN
--> ON CS.Pnr=PN.Pnr
--> SET P.Price=CS.Distance*CS.Far_per_km*PN.Numbers;
Query OK, 11 rows affected (0.01 sec)
Rows matched: 11 Changed: 11 Warnings: 0

mysql> SELECT * FROM PAYMENT_INFO;
ERROR 1146 (42S02): Table 'pes1ug20cs484_railway_reservation.payment_info' doesn't exist
mysql> SELECT * FROM PAYMENT_INFO_484;
```

Transaction_id	Bank	Card_number	Price	Pnr
146445	HDFC	1.23433E+15	1008.00	PNR006
243535	UNION BANK	2.43647E+15	582.00	PNR012
342344	IOB	5.62357E+15	2172.00	PNR001
354364	CANARA BANK	5.76879E+15	NULL	PNR014
531343	SBI	8.95327E+15	962.00	PNR004
576768	ICICI	7.56356E+15	582.00	PNR007
676756	CANARA BANK	7.36756E+15	2166.00	PNR002
746745	KOTAK	2.54564E+15	878.00	PNR008
758900	UNION BANK	2.43266E+15	138.00	PNR015
867546	UNION BANK	4.65769E+15	262.00	PNR010
867547	SBI	7.46635E+15	NULL	PNR011
978098	INDIAN BANK	9.88733E+15	2812.00	PNR005
978776	UNION BANK	1154978597435874	962.00	PNR003

```
13 rows in set (0.01 sec)

mysql>
```

NATURAL JOIN

2. Retrieve the all stations along route of the Trains along with the distance between the stations

```
mysql> SELECT T.Train_no, T.Train_name, R.From_station_no, R.To_station_no, R.From_station_name, R.To_station_name
--> FROM TRAIN_484 AS T NATURAL JOIN ROUTE_INFO_484 AS R
--> WHERE R.To_station_no-R.From_station_no=1;
```

Train_no	Train_name	From_station_no	To_station_no	From_station_name	To_station_name
25260	Chennai Mail	1	2	Mangaluru	Kannur
25260	Chennai Mail	2	3	Kannur	Palakkad
25261	Managaluru Mail	1	2	Chennai	Palakkad
25261	Managaluru Mail	2	3	Palakkad	Kannur
25261	Managaluru Mail	3	4	Kannur	Mangaluru
58450	MAN-BEN Express	1	2	Mangaluru	Subramanya
58450	MAN-BEN Express	2	3	Subramanya	Mysore
58450	MAN-BEN Express	3	4	Mysore	Bengaluru
58451	BEN-MAN Express	1	2	Bengaluru	Mysore
58451	BEN-MAN Express	2	3	Mysore	Subramanya
58451	BEN-MAN Express	3	4	Subramanya	Mangaluru
62620	CHE-BEN Shatabdi	1	2	Chennai	Sholingur
62620	CHE-BEN Shatabdi	2	3	Sholingur	Katpadi
62620	CHE-BEN Shatabdi	3	4	Katpadi	Bangarpet
62620	CHE-BEN Shatabdi	4	5	Bangarpet	Bengaluru
62621	BEN-CHE Shatabdi	1	2	Bengaluru	Bangarpet
62621	BEN-CHE Shatabdi	2	3	Bangarpet	Katpadi
62621	BEN-CHE Shatabdi	3	4	Katpadi	Sholingur
62621	BEN-CHE Shatabdi	4	5	Sholingur	Chennai

```
19 rows in set (0.00 sec)

mysql>
```

INNER JOIN (equijoin)

3. Retrieve the Train no of train which is leaving Bengaluru and arriving at Chennai with compartments availability greater than 10

```
mysql> SELECT DISTINCT R.Train_no
--> FROM COMPARTMENT_484 AS C INNER JOIN ROUTE_INFO_484 AS R ON C.Train_no=R.Train_no
--> WHERE R.To_station_name='Chennai' AND R.From_station_name='Bengaluru' AND C.Compartment_availability>10
--> ;
+-----+
| Train_no |
+-----+
| 62621 |
+-----+
1 row in set (0.03 sec)

mysql>
```

4. Retrieve first and last name of users who have booked a ticket with price greater than 500

```
mysql> SELECT Fname,Lname
--> FROM USER_484 AS U INNER JOIN TICKET_484 AS T INNER JOIN PAYMENT_INFO_484 AS P
--> WHERE U.User_id=T.User_id AND P.Pnr=T.Pnr and P.Price>500
--> ;
+-----+-----+
| Fname | Lname |
+-----+-----+
| Muhammed | Ali |
| Arjun | Allu |
| Narendra | Modi |
| Manmohan | Singh |
| Droupadi | Murmu |
| Narendra | Modi |
| Droupadi | Murmu |
| Muhammed | Ali |
| Manmohan | Singh |
+-----+-----+
9 rows in set (0.00 sec)

mysql>
```

LEFT OUTER JOIN

5. Retrieve the first name, last name, DOB and ticket PNR if they've bought it for all users.

```
mysql> SELECT U.Fname,U.Lname, U.Date_of_birth
--> FROM USER_484 AS U LEFT OUTER JOIN TICKET_484 AS T ON T.Pnr
--> ;
+-----+-----+-----+
| Fname | Lname | Date_of_birth |
+-----+-----+-----+
| Narendra | Modi | 1989-04-14 |
| Droupadi | Murmu | 1990-04-14 |
| Manmohan | Singh | 1991-04-08 |
| Ajit | Ullal | 1971-01-01 |
| Muhammed | Ali | 2000-10-09 |
| Sai Deepak | Reddy | 1996-12-12 |
| Rudra | Agarwal | 1996-12-13 |
| Rahul | Khanna | 1997-12-14 |
| Nirmala | Seturaman | 1998-12-15 |
| Smriti | Irani | 1999-12-16 |
| Ajit | Sethi | 1966-04-14 |
| Arjun | Allu | 1967-04-08 |
| Samanta | Prabhu | 1968-04-14 |
| Kiran | Bedi | 1969-04-14 |
| Rahul | Gandhi | 1970-04-08 |
| Rashkit | Shetty | 1971-04-14 |
| Rishi | Sunak | 1972-04-14 |
| Vedavalli | Srinath | 1973-04-14 |
| Subbu | Saravana | 1974-04-14 |
| Sheela | Dixit | 1975-04-08 |
| Margaret | Alva | 1976-04-14 |
| Arun | Kumar | 1977-04-14 |
| Anshu | Bhardwaj | 1978-04-14 |
| Suma | Sampat | 1979-04-08 |
| Srihari | Udupa | 1980-04-14 |
| Satish | Kotian | 1981-04-14 |
| Shradha | Nayar | 1982-04-08 |
| Manisha | Solanki | 1983-04-08 |
| Bharti | Devgan | 1984-04-14 |
| Roopa | Ram | 1985-04-14 |
| Pallavi | Ram | 1986-04-08 |
| Ravi | Naik | 1987-04-14 |
| Virat | Murthy | 1988-04-14 |
+-----+-----+-----+
33 rows in set, 13 warnings (0.00 sec)

mysql>
```

6. Retrieve the first name, last name of the Users who have not bought a ticket.

```
mysql> SELECT DISTINCT U.Fname, U.Lname
-> FROM USER_484 AS U LEFT OUTER JOIN TICKET_484 AS T ON T.User_id=U.User_id
-> ;
```

Fname	Lname
Narendra	Modi
Droupadi	Murmu
Manmohan	Singh
Ajit	Ullal
Muhammed	Ali
Sai Deepak	Reddy
Rudra	Agarwal
Rahul	Khanna
Nirmala	Seturaman
Smriti	Irani
Ajit	Sethi
Arjun	Allu
Samanta	Prabhu
Kiran	Bedi
Rahul	Gandhi
Rashkit	Shetty
Rishi	Sunak
Vedavalli	Srinath
Subbu	Saravana
Sheela	Dixit
Margaret	Alva
Arun	Kumar
Anshu	Bhardwaj
Suma	Sampat
Srihari	Udupa
Satish	Kotian
Shradha	Nayar
Manisha	Solanki
Bharti	Devgan
Roopa	Ram
Pallavi	Ram
Ravi	Naik
Virat	Murthy

```
33 rows in set (0.00 sec)

mysql>
```

RIGHT OUTER JOIN

7. Retrieve the ticket PNR, Train number, travel date and along with all users first name and last name.

```
mysql> SELECT T.Pnr, T.Train_no, T.Travel_date, U.Fname, U.Lname
-> FROM TICKET_484 AS T RIGHT OUTER JOIN USER_484 AS U
-> ON T.User_id=U.User_id
-> ;
```

Pnr	Train_no	Travel_date	Fname	Lname
PNR001	62621	2022-08-07	Narendra	Modi
PNR002	62620	2022-08-14	Narendra	Modi
PNR007	62621	2022-08-07	Droupadi	Murmu
PNR008	62620	2022-08-02	Droupadi	Murmu
PNR003	25261	2022-08-01	Manmohan	Singh
PNR004	25260	2022-08-15	Manmohan	Singh
NULL	NULL	NULL	Ajit	Ullal
PNR005	58451	2022-08-03	Muhammed	Ali
PNR006	58450	2023-08-04	Muhammed	Ali
NULL	NULL	NULL	Sai Deepak	Reddy
NULL	NULL	NULL	Rudra	Agarwal
NULL	NULL	NULL	Rahul	Khanna
NULL	NULL	NULL	Nirmala	Seturaman
PNR010	25260	2022-08-19	Smriti	Irani
PNR011	62621	2022-08-22	Ajit	Sethi
PNR012	58451	2022-08-11	Arjun	Allu
PNR014	25260	2022-08-17	Samanta	Prabhu
NULL	NULL	NULL	Kiran	Bedi
PNR015	25260	2022-08-05	Rahul	Gandhi
NULL	NULL	NULL	Rashkit	Shetty
NULL	NULL	NULL	Rishi	Sunak
NULL	NULL	NULL	Vedavalli	Srinath
NULL	NULL	NULL	Subbu	Saravana
NULL	NULL	NULL	Sheela	Dixit
NULL	NULL	NULL	Margaret	Alva
NULL	NULL	NULL	Arun	Kumar
NULL	NULL	NULL	Anshu	Bhardwaj
NULL	NULL	NULL	Suma	Sampat
NULL	NULL	NULL	Srihari	Udupa
NULL	NULL	NULL	Satish	Kotian
NULL	NULL	NULL	Shradha	Nayar
NULL	NULL	NULL	Manisha	Solanki
NULL	NULL	NULL	Bharti	Devgan
NULL	NULL	NULL	Roopa	Ram
NULL	NULL	NULL	Pallavi	Ram
NULL	NULL	NULL	Ravi	Naik
NULL	NULL	NULL	Virat	Murthy

```
37 rows in set (0.01 sec)

mysql>
```

8. Retrieve the user id if they've travelled in a train along with train id and name of all trains.

```
mysql> SELECT T.User_id, N.Train_no, N.Source
-> FROM TICKET_484 AS T RIGHT OUTER JOIN TRAIN_484 AS N ON T.Train_no=N.Train_no
-> ;
```

User_id	Train_no	Source
ADM_003	25260	Mangaluru
USR_007	25260	Mangaluru
USR_010	25260	Mangaluru
USR_012	25260	Mangaluru
ADM_003	25261	Chennai
USR_002	58450	Mangaluru
USR_002	58451	Bengaluru
USR_009	58451	Bengaluru
ADM_001	62620	Chennai
ADM_002	62620	Chennai
ADM_001	62621	Bengaluru
ADM_002	62621	Bengaluru
USR_008	62621	Bengaluru

```
13 rows in set (0.01 sec)

mysql>
```

NESTED QUERIES

9. Retrieve the train no and name of trains whose destination is not Mangalore and distance is not less than 100km and departure time is not 8:30:00 PM.

```
mysql> SELECT T.Train_no
-> FROM TICKET_484 AS T
-> WHERE T.Train_no
-> IN (SELECT T.Train_no FROM TICKET_484 AS T
-> JOIN TRAIN_484 AS N ON T.Train_no=N.Train_no
-> WHERE N.Destination!='Mangaluru')
-> ;
```

Train_no
25260
25260
25260
25260
58450
62620
62620
62621
62621
62621

```
10 rows in set (0.01 sec)

mysql>
```

10. Retrieve the User ID who has spent more ticket price than the average ticket price.

```
mysql> SELECT T.User_id
-> FROM TICKET_484 AS T
-> WHERE T.Pnr
-> IN (SELECT P.Pnr FROM PAYMENT_INFO_484 AS P
-> WHERE P.Price>(SELECT AVG(Price) FROM PAYMENT_INFO_484))
-> ;
```

User_id
ADM_001
ADM_001
USR_002

```
3 rows in set (0.01 sec)

mysql>
```