SRN : PES1UG20CS134   **SEC : C**

RAILWAY RESERVATION

1.Update price of the ticket.

Hint:

This requires creation of two views.

One for calculating the price of one ticket for a given PNR. This involves computation of distance traveled and fare per kilometer.

```
MariaDB [(none)]> create database PES1UG20CS134_updated;
Query OK, 1 row affected (0.002 sec)

MariaDB [(none)]> use PES1UG20CS134_updated;
Database changed
MariaDB [PES1UG20CS134_updated]> source C:/Users/Gaurav/Downloads/railway__1_.sql
Query OK, 0 rows affected (0.003 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.002 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.026 sec)
```

```
MariaDB [PES1UG20CS134_updated]> -- USING CLASSMATE SYSTEM BECAUSE IM FACING TECHNICAL IS ISSUE ON MINE
MariaDB [PES1UG20CS134_updated]> create view view1 as select ticket.pnr,ticket.train_no,ticket.departure
,ticket.arrival,route_info.distance,fare.fare_per_km from ticket,route_info,fare where (ticket.train_no=
route_info.train_no and ticket.departure=route_info.from_station_name and ticket.arrival=route_info.to_s
tation_name and fare.train_type=ticket.train_type and fare.compartment_type=ticket.compartment_type);
Query OK, 0 rows affected (0.024 sec)

MariaDB [PES1UG20CS134_updated]> create view view2 as select pnr ,count(pnr) as numbers from ticket_pass
enger group by pnr;
Query OK, 0 rows affected (0.017 sec)
```

NATURAL JOIN

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

```
MariaDB [PES1UG20CS134_updated]> select t.train_no,t.source,t.destination,t.train_name ,r.from_station_nam
e,to_station_name,r.distance from train as t natural join route_info as r where r.to_station_no-r.from_sta
tion_no=1;
```

train_no	source	destination	train_name	from_station_name	to_station_name	distance
25260	Mangaluru	Chennai	Chennai Mail	Mangaluru	Kannur	131
25260	Mangaluru	Chennai	Chennai Mail	Kannur	Palakkad	220
25261	Chennai	Mangaluru	Managaluru Mail	Chennai	Palakkad	130
25261	Chennai	Mangaluru	Managaluru Mail	Palakkad	Kannur	220
25261	Chennai	Mangaluru	Managaluru Mail	Kannur	Mangaluru	131
58450	Mangaluru	Bengaluru	MAN-BEN Express	Mangaluru	Subramanya	195
58450	Mangaluru	Bengaluru	MAN-BEN Express	Subramanya	Mysore	170
58450	Mangaluru	Bengaluru	MAN-BEN Express	Mysore	Bengaluru	139
58451	Bengaluru	Mangaluru	BEN-MAN Express	Bengaluru	Mysore	139
58451	Bengaluru	Mangaluru	BEN-MAN Express	Mysore	Subramanya	170
58451	Bengaluru	Mangaluru	BEN-MAN Express	Subramanya	Mangaluru	194
62620	Chennai	Bengaluru	CHE-BEN Shatabdi	Chennai	Sholingur	90
62620	Chennai	Bengaluru	CHE-BEN Shatabdi	Sholingur	Katpadi	39
62620	Chennai	Bengaluru	CHE-BEN Shatabdi	Katpadi	Bangarpet	161
62620	Chennai	Bengaluru	CHE-BEN Shatabdi	Bangarpet	Bengaluru	71
62621	Bengaluru	Chennai	BEN-CHE Shatabdi	Bengaluru	Bangarpet	71
62621	Bengaluru	Chennai	BEN-CHE Shatabdi	Bangarpet	Katpadi	161
62621	Bengaluru	Chennai	BEN-CHE Shatabdi	Katpadi	Sholigur	40
62621	Bengaluru	Chennai	BEN-CHE Shatabdi	Sholingur	Chennai	90

INNER JOIN (equijoin)

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

```
MariaDB [PES1UG20CS134_updated]> select distinct r.train_no from compartment as c inner join route_info as
 r where r.to_station_name="Chennai" and r.from_station_name="Bengaluru" and c.availability>10;
+----------+
| train_no |
+----------+
|    62621 |
+----------+
1 row in set (0.005 sec)
```

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

```
MariaDB [PES1UG20CS134_updated]> select distinct train_user.firstname ,train_user.lastname from train_user
 join payment_info on payment_info.price>500;
+-----------+-----------+
| firstname | lastname  |
+-----------+-----------+
| 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 (0.005 sec)
```

LEFT OUTER JOIN

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

```
MariaDB [PES1UG20CS134_updated]> select train_user.firstname,train_user.lastname,train_user.dob from train
_user left outer join ticket on ticket.pnr;
+-----------+-----------+------------+
| firstname | lastname  | dob        |
+-----------+-----------+------------+
| 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 (0.004 sec)
```

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

```
MariaDB [PES1UG20CS134_updated]> select distinct train_user.firstname,train_user.lastname from train_user
left outer join ticket on ticket.passenger_id != train_user.user_id;
+------------+-----------+
| firstname  | lastname  |
+------------+-----------+
| 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    |
| Narendra   | Modi      |
+------------+-----------+
33 rows in set (0.002 sec)
```

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

```
MariaDB [PES1UG20CS134_updated]> select ticket.pnr,ticket.train_no,ticket.travel_date,train_user.firstname
,train_user.lastname from ticket right outer join train_user on ticket.passenger_id=train_user.user_id;
+--------+----------+-------------+-----------+-----------+
| pnr    | train_no | travel_date | firstname | lastname  |
+--------+----------+-------------+-----------+-----------+
| 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 | 2033-08-04  | 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 (0.001 sec)
```

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

```
MariaDB [PES1UG20CS134_updated]> select ticket.passenger_id,train.train_no,train.train_name from ticket r
ght outer join train on train.train_no=ticket.train_no;
+--------------+----------+-----------------+
| passenger_id | train_no | train_name      |
+--------------+----------+-----------------+
| ADM_003      |    25260 | Chennai Mail    |
| USR_007      |    25260 | Chennai Mail    |
| USR_010      |    25260 | Chennai Mail    |
| USR_012      |    25260 | Chennai Mail    |
| ADM_003      |    25261 | Managaluru Mail |
| USR_002      |    58450 | MAN-BEN Express |
| USR_002      |    58451 | BEN-MAN Express |
| USR_009      |    58451 | BEN-MAN Express |
| ADM_001      |    62620 | CHE-BEN Shatabdi|
| ADM_002      |    62620 | CHE-BEN Shatabdi|
| ADM_001      |    62621 | BEN-CHE Shatabdi|
| ADM_002      |    62621 | BEN-CHE Shatabdi|
| USR_008      |    62621 | BEN-CHE Shatabdi|
+--------------+----------+-----------------+
13 rows in set (0.001 sec)
```

NESTED QUERIES

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

```
MariaDB [PES1UG20CS134_updated]> select train.train_no,train.train_name from train where train.train_no in
(select train.train_no from route_info join ticket on route_info.train_no=ticket.train_no where ticket.dep
arture not like "Mangalore" and ticket.departure_time != "20:30:00" and route_info.distance>100);
+----------+------------------+
| train_no | train_name       |
+----------+------------------+
|    25260 | Chennai Mail     |
|    25261 | Managaluru Mail  |
|    58450 | MAN-BEN Express  |
|    58451 | BEN-MAN Express  |
|    62620 | CHE-BEN Shatabdi |
|    62621 | BEN-CHE Shatabdi |
+----------+------------------+
6 rows in set (0.005 sec)
```

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

```
MariaDB [PES1UG20CS134_updated]> select ticket.passenger_id from ticket where ticket.pnr in(select payment
_info .pnr from payment_info where payment_info.price>(select avg(price) from payment_info));
+--------------+
| passenger_id |
+--------------+
| ADM_001      |
| ADM_001      |
| USR_002      |
| USR_002      |
+--------------+
4 rows in set (0.004 sec)

MariaDB [PES1UG20CS134_updated]>
```