1. Update the price of the ticket.
   a. Create a view compute_price as below
      CREATE VIEW compute_price 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_Station_Name AND
      Fare.Train_Type=Ticket.Train_Type AND
      Fare.Compartment_Type =Ticket.Compartment_type);

```
MariaDB [pes1ug20cs517]> create view compute_price 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_station_name and
    -> fare.train_type = ticket.train_type and
    -> fare.compartment_type = ticket.compartment_type);
Query OK, 0 rows affected (0.006 sec)

MariaDB [pes1ug20cs517]>
```

```
MariaDB [pes1ug20cs517]> select * from compute_price limit 5;
+--------+----------+-----------+-----------+----------+-------------+
| pnr    | train_no | departure | arrival   | distance | fare_per_km |
+--------+----------+-----------+-----------+----------+-------------+
| PNR001 |    62621 | Bengaluru | Chennai   |      362 |           3 |
| PNR002 |    62620 | Chennai   | Bengaluru |      361 |           3 |
| PNR003 |    25261 | Chennai   | Mangaluru |      481 |           1 |
| PNR004 |    25260 | Mangaluru | Chennai   |      481 |           1 |
| PNR005 |    58451 | Bengaluru | Mangaluru |      503 |           5 |
+--------+----------+-----------+-----------+----------+-------------+
5 rows in set (0.001 sec)

MariaDB [pes1ug20cs517]>
```

   b. Create a View passenger_num

      CREATE VIEW passenger_num AS select PNR, count(PNR) as numbers from
      Ticket_Passenger group by PNR;

```
MariaDB [pes1ug20cs517]> create view passenger_num as select PNR, count(pnr) as Numbers from ticket_passenger group by p
nr;
Query OK, 0 rows affected (0.017 sec)

MariaDB [pes1ug20cs517]> select * from passenger_num limit 5;
+--------+---------+
| PNR    | Numbers |
+--------+---------+
| PNR001 |       2 |
| PNR002 |       2 |
| PNR003 |       2 |
| PNR004 |       2 |
| PNR005 |       4 |
+--------+---------+
5 rows in set (0.004 sec)

MariaDB [pes1ug20cs517]>
```

c. Update Payment_info.price as below

    UPDATE Payment_Info AS p INNER JOIN compute_price AS cs ON p.PNR =
    cs.PNR INNER JOIN passenger_num AS pn ON cs.PNR = pn.PNR SET p.Price =
    cs.Distance * cs.Fare_Per_KM * pn.numbers;

```
MariaDB [pes1ug20cs517]> UPDATE Payment_Info AS p INNER JOIN compute_price AS cs ON p.PNR =
    -> cs.PNR INNER JOIN passenger_num AS pn ON cs.PNR = pn.PNR SET p.Price =
    -> cs.Distance * cs.Fare_Per_KM * pn.numbers;
Query OK, 12 rows affected (0.026 sec)
Rows matched: 12  Changed: 12  Warnings: 0

MariaDB [pes1ug20cs517]> select * from payment_info limit 5;
+----------------+-------------+-------------+---------+--------+
| transaction_no | bank        | card_no     | price   | pnr    |
+----------------+-------------+-------------+---------+--------+
|         146445 | HDFC        | 1.23433E+15 | 2520.00 | PNR006 |
|         243535 | UNION BANK  | 2.43647E+15 |  970.00 | PNR012 |
|         342344 | IOB         | 5.62357E+15 | 2172.00 | PNR001 |
|         354364 | CANARA BANK | 5.76879E+15 |  220.00 | PNR014 |
|         531343 | SBI         | 8.95327E+15 |  962.00 | PNR004 |
+----------------+-------------+-------------+---------+--------+
5 rows in set (0.001 sec)

MariaDB [pes1ug20cs517]>
```

2. Retrieve the all stations along route of the Trains along with the distance between
    the stations.
    Query:
    select train_no,from_station_name,to_station_name,distance from route_info
    where to_station_no-from_station_no=1 order by train_no;

```
MariaDB [pes1ug20cs517]> select train_no,from_station_name,to_station_name,distance from route_info where to_station_no-
from_station_no=1 order by train_no;
+----------+-------------------+------------------+----------+
| train_no | from_station_name | to_station_name  | distance |
+----------+-------------------+------------------+----------+
|    25260 | Mangaluru         | Kannur           |      131 |
|    25260 | Kannur            | Palakkad         |      220 |
|    25261 | Chennai           | Palakkad         |      130 |
|    25261 | Palakkad          | Kannur           |      220 |
|    25261 | Kannur            | Mangaluru        |      131 |
|    58450 | Mangaluru         | Subramanya       |      195 |
|    58450 | Subramanya        | Mysore           |      170 |
|    58450 | Mysore            | Bengaluru        |      139 |
|    58451 | Bengaluru         | Mysore           |      139 |
|    58451 | Mysore            | Subramanya       |      170 |
|    58451 | Subramanya        | Mangaluru        |      194 |
|    62620 | Chennai           | Sholingur        |       90 |
|    62620 | Sholingur         | Katpadi          |       39 |
|    62620 | Katpadi           | Bangarpet        |      161 |
|    62620 | Bangarpet         | Bengaluru        |       71 |
|    62621 | Bengaluru         | Bangarpet        |       71 |
|    62621 | Bangarpet         | Katpadi          |      161 |
|    62621 | Katpadi           | Sholigur         |       40 |
|    62621 | Sholingur         | Chennai          |       90 |
+----------+-------------------+------------------+----------+
19 rows in set (0.001 sec)

MariaDB [pes1ug20cs517]>
```

3. Retrieve the Train no of train which is leaving Bengaluru and arriving at Chennai with compartments availability greater than 10.
   Query:
   select route_info.train_no from route_info inner join compartment on route_info.train_no = compartment.train_number where compartment.availability > 10 and from_station_name = "bengaluru" and to_station_name = "chennai";

```
MariaDB [pes1ug20cs517]> select route_info.train_no from route_info inner join compartment on route_info.train_no = comp
artment.train_number where compartment.availability > 10 and from_station_name = "bengaluru" and to_station_name = "chen
nai";
+----------+
| train_no |
+----------+
|    62621 |
+----------+
1 row in set (0.001 sec)

MariaDB [pes1ug20cs517]>
```

4. Retrieve first and last name of users who have booked a ticket with price greater than 500.
   Query:
   select name from ticket_passenger inner join payment_info on ticket_passenger.pnr = payment_info.pnr where price > 500;

```
MariaDB [pes1ug20cs517]> select name from ticket_passenger inner join payment_info on ticket_passenger.pnr = payment_inf
o.pnr where price > 500;
+------------------+
| name             |
+------------------+
| Smriti Irani     |
| Ramya R          |
| Saideepak Reddy  |
| Sheela Reddy     |
| Anwar Hussein    |
| Karishma Husein  |
| Christon D Souza |
| SaiDeepak Reddy  |
| Sheela Reddy     |
| Christon D Souza |
| Hema Ullal       |
| Hima Ullal       |
| Asha Ullal       |
| Ajit Ullal       |
| Anwar Hussein    |
| Karishma Husein  |
+------------------+
16 rows in set (0.003 sec)

MariaDB [pes1ug20cs517]>
```

5. Retrieve the first name, last name, DOB and ticket PNR if they've bought it for all
   users.
   Query:
   select firstname, lastname, dob, pnr from train_user left join ticket on user_id =
   passenger_id;

```
MariaDB [pes1ug20cs517]> select firstname, lastname, dob, pnr from train_user left join ticket on user_id = passenger_id;
+------------+----------+------------+--------+
| firstname  | lastname | dob        | pnr    |
+------------+----------+------------+--------+
| Narendra   | Modi     | 1989-04-14 | PNR001 |
| Narendra   | Modi     | 1989-04-14 | PNR002 |
| Droupadi   | Murmu    | 1990-04-14 | PNR007 |
| Droupadi   | Murmu    | 1990-04-14 | PNR008 |
| Manmohan   | Singh    | 1991-04-08 | PNR003 |
| Manmohan   | Singh    | 1991-04-08 | PNR004 |
| Ajit       | Ullal    | 1971-01-01 | NULL   |
| Muhammed   | Ali      | 2000-10-09 | PNR005 |
| Muhammed   | Ali      | 2000-10-09 | PNR006 |
| Sai Deepak | Reddy    | 1996-12-12 | NULL   |
| Rudra      | Agarwal  | 1996-12-13 | NULL   |
| Rahul      | Khanna   | 1997-12-14 | NULL   |
| Nirmala    | Seturaman| 1998-12-15 | NULL   |
| Smriti     | Irani    | 1999-12-16 | PNR010 |
| Ajit       | Sethi    | 1966-04-14 | PNR011 |
| Arjun      | Allu     | 1967-04-08 | PNR012 |
| Samanta    | Prabhu   | 1968-04-14 | PNR014 |
| Kiran      | Bedi     | 1969-04-14 | NULL   |
| Rahul      | Gandhi   | 1970-04-08 | PNR015 |
| Rashkit    | Shetty   | 1971-04-14 | NULL   |
| Rishi      | Sunak    | 1972-04-14 | NULL   |
| Vedavalli  | Srinath  | 1973-04-14 | NULL   |
| Subbu      | Saravana | 1974-04-14 | NULL   |
| Sheela     | Dixit    | 1975-04-08 | NULL   |
| Margaret   | Alva     | 1976-04-14 | NULL   |
| Arun       | Kumar    | 1977-04-14 | NULL   |
| Anshu      | Bhardwaj | 1978-04-14 | NULL   |
| Suma       | Sampat   | 1979-04-08 | NULL   |
| Srihari    | Udupa    | 1980-04-14 | NULL   |
| Satish     | Kotian   | 1981-04-14 | NULL   |
| Shradha    | Nayar    | 1982-04-08 | NULL   |
| Manisha    | Solanki  | 1983-04-08 | NULL   |
| Bharti     | Devgan   | 1984-04-14 | NULL   |
| Roopa      | Ram      | 1985-04-14 | NULL   |
| Pallavi    | Ram      | 1986-04-08 | NULL   |
| Ravi       | Naik     | 1987-04-14 | NULL   |
| Virat      | Murthy   | 1988-04-14 | NULL   |
+------------+----------+------------+--------+
37 rows in set (0.003 sec)

MariaDB [pes1ug20cs517]>
```

6. Retrieve the first name, last name,of the Users who have not bought a ticket.
   Query:
   select firstname, lastname, dob from train_user left join ticket on user_id =
   passenger_id where user_id not in (select passenger_id from ticket);

```
MariaDB [pes1ug20cs517]> select firstname, lastname, dob from train_user left join ticket on user_id = passenger_id where user_id not in (select passenger_id from ticket);
+------------+------------+------------+
| firstname  | lastname   | dob        |
+------------+------------+------------+
| Ajit       | Ullal      | 1971-01-01 |
| Sai Deepak | Reddy      | 1996-12-12 |
| Rudra      | Agarwal    | 1996-12-13 |
| Rahul      | Khanna     | 1997-12-14 |
| Nirmala    | Seturaman  | 1998-12-15 |
| Kiran      | Bedi       | 1969-04-14 |
| 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 |
+------------+------------+------------+
24 rows in set (0.001 sec)

MariaDB [pes1ug20cs517]>
```

7. Retrieve the ticket PNR, Train number, travel date and along with all users first name and last name.
   Query:
   select pnr, train_no, travel_date, firstname, lastname from ticket right join train_user on user_id = passenger_id;

```
MariaDB [pes1ug20cs517]> select pnr, train_no, travel_date, firstname, lastname from ticket right join train_user on user_id = passenger_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)

MariaDB [pes1ug20cs517]>
```
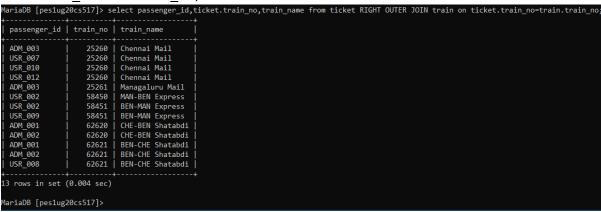
8. Retrieve the user id if they've traveled in a train along with train id and name of all
   trains.
   Query:
   select passenger_id,ticket.train_no,train_name from ticket RIGHT OUTER JOIN train
   on
   ticket.train_no=train.train_no;

```
MariaDB [pes1ug20cs517]> select passenger_id,ticket.train_no,train_name from ticket RIGHT OUTER JOIN train on ticket.train_no=train.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 (0.004 sec)

MariaDB [pes1ug20cs517]>
```

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. (Correlated)
   Query:
   SELECT t1.train_no,t1.train_name from train as t1, (select distinct t2.train_no from
   route_info as
   t2,(select distinct train_no from ticket where departure_time!="20:30:00") as t3
   where
   (t2.train_no=t3.train_no) and (t2.Distance>100)) as t2 where
   (t1.train_no=t2.train_no) and
   (t1.Destination!="Mangaluru");

```
MariaDB [pes1ug20cs517]> SELECT t1.train_no,t1.train_name from train as t1, (select distinct t2.train_no from route_info as
    -> t2,(select distinct train_no from ticket where departure_time!="20:30:00") as t3 where
    -> (t2.train_no=t3.train_no) and (t2.Distance>100)) as t2 where (t1.train_no=t2.train_no) and
    -> (t1.Destination!="Mangaluru");
+----------+------------------+
| train_no | train_name       |
+----------+------------------+
|    25260 | Chennai Mail     |
|    58450 | MAN-BEN Express  |
|    62620 | CHE-BEN Shatabdi |
|    62621 | BEN-CHE Shatabdi |
+----------+------------------+
4 rows in set (0.006 sec)

MariaDB [pes1ug20cs517]>
```

10. Retrieve the User ID who has spent more than the average ticket price.
    (Uncorrelated)
    Query:
    select distinct passenger_id from ticket join payment_info on
    ticket.pnr=payment_info.pnr where payment_info.price>(select avg(price) from
    payment_info);

NAME: Y Srinivas
SRN: PES1UG20CS517
Section: I

```
MariaDB [pes1ug20cs517]> select distinct passenger_id from ticket join payment_info on ticket.pnr=payment_info.pnr where payment_info.price>(select avg(price) from payment_info);
+--------------+
| passenger_id |
+--------------+
| USR_002      |
| ADM_001      |
+--------------+
2 rows in set (0.005 sec)

MariaDB [pes1ug20cs517]>
```