UE20CS301

Database Management System

Lab 5 – Joins

Name   : Renita Kurian

SRN   : PES1UG20CS331

Roll No. : 13

1. Update price of the ticket.

```
MariaDB [railway_system]> create view compute_price as
    -> select ticket_331.pnr, ticket_331.trainno, ticket_331.departure, ticket_331.arrival, route_331.distance, fare_table_331.farePerKm
    -> from ticket_331, route_331, fare_table_331 where(ticket_331.trainno = route_331.train_no and
    -> ticket_331.departure = route_331.fromname and ticket_331.arrival = route_331.toname and
    -> fare_table_331.traintype = ticket_331.traintype and fare_table_331.compartmenttype = ticket_331.compartmenttype);
Query OK, 0 rows affected (0.012 sec)

MariaDB [railway_system]> select * from compute_price;
+--------+---------+------------+-----------+----------+-----------+
| pnr    | trainno | departure  | arrival   | distance | farePerKm |
+--------+---------+------------+-----------+----------+-----------+
| PNR001 |   62621 | Bengaluru  | Chennai   |      362 |       3.3 |
| PNR002 |   62620 | Chennai    | Bengaluru |      361 |       3.3 |
| PNR003 |   25261 | Chennai    | Mangaluru |      481 |      0.95 |
| PNR004 |   25260 | Mangaluru  | Chennai   |      481 |      1.35 |
| PNR005 |   58451 | Bengaluru  | Mangaluru |      503 |       1.1 |
| PNR006 |   58450 | Mangaluru  | Bengaluru |      504 |       1.6 |
| PNR007 |   62621 | Bangarpet  | Chennai   |      291 |      1.92 |
| PNR008 |   62620 | Chennai    | Bangarpet |      290 |       3.3 |
| PNR010 |   25260 | Mangaluru  | Kannur    |      131 |      1.35 |
| PNR012 |   58451 | Subramanya | Mangaluru |      194 |      2.75 |
| PNR014 |   25260 | Kannur     | Palakkad  |      220 |      1.35 |
| PNR015 |   25260 | Palakkad   | Chennai   |      130 |      1.35 |
+--------+---------+------------+-----------+----------+-----------+
12 rows in set (0.010 sec)
```

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

```
MariaDB [railway_system]> select t.train_no, t.t_name, t.t_type, t.destination, t.arrival, r.fromname, r.toname, r.distance from train_331 as t NATURAL JOIN route_331 as r;
+----------+-----------------+--------+-------------+-----------+------------+------------+----------+
| train_no | t_name          | t_type | destination | arrival   | fromname   | toname     | distance |
+----------+-----------------+--------+-------------+-----------+------------+------------+----------+
|    25260 | Chennai Mail    | mail   | Chennai     | Mangaluru | Mangaluru  | Kannur     |      131 |
|    25260 | Chennai Mail    | mail   | Chennai     | Mangaluru | Mangaluru  | Palakkad   |      351 |
|    25260 | Chennai Mail    | mail   | Chennai     | Mangaluru | Mangaluru  | Chennai    |      481 |
|    25260 | Chennai Mail    | mail   | Chennai     | Mangaluru | Kannur     | Palakkad   |      220 |
|    25260 | Chennai Mail    | mail   | Chennai     | Mangaluru | Kannur     | Chennai    |      350 |
|    25260 | Chennai Mail    | mail   | Chennai     | Mangaluru | Palakkad   | Chennai    |      130 |
|    25261 | Managaluru Mail | mail   | Mangaluru   | Chennai   | Chennai    | Palakkad   |      130 |
|    25261 | Managaluru Mail | mail   | Mangaluru   | Chennai   | Chennai    | Kannur     |      350 |
|    25261 | Managaluru Mail | mail   | Mangaluru   | Chennai   | Chennai    | Mangaluru  |      481 |
|    25261 | Managaluru Mail | mail   | Mangaluru   | Chennai   | Palakkad   | Kannur     |      220 |
|    25261 | Managaluru Mail | mail   | Mangaluru   | Chennai   | Palakkad   | Mangaluru  |      351 |
|    25261 | Managaluru Mail | mail   | Mangaluru   | Chennai   | Kannur     | Mangaluru  |      131 |
|    58450 | MAN-BEN Express | Fast   | Bengaluru   | Mangaluru | Mangaluru  | Subramanya |      195 |
|    58450 | MAN-BEN Express | Fast   | Bengaluru   | Mangaluru | Mangaluru  | Mysore     |      365 |
|    58450 | MAN-BEN Express | Fast   | Bengaluru   | Mangaluru | Mangaluru  | Bengaluru  |      504 |
|    58450 | MAN-BEN Express | Fast   | Bengaluru   | Mangaluru | Subramanya | Mysore     |      170 |
|    58450 | MAN-BEN Express | Fast   | Bengaluru   | Mangaluru | Subramanya | Bengaluru  |      309 |
|    58450 | MAN-BEN Express | Fast   | Bengaluru   | Mangaluru | Mysore     | Bengaluru  |      139 |
|    58451 | BEN-MAN Express | Fast   | Mangaluru   | Bengaluru | Bengaluru  | Mysore     |      139 |
|    58451 | BEN-MAN Express | Fast   | Mangaluru   | Bengaluru | Bengaluru  | Subramanya |      309 |
|    58451 | BEN-MAN Express | Fast   | Mangaluru   | Bengaluru | Bengaluru  | Mangaluru  |      503 |
|    58451 | BEN-MAN Express | Fast   | Mangaluru   | Bengaluru | Mysore     | Subramanya |      170 |
|    58451 | BEN-MAN Express | Fast   | Mangaluru   | Bengaluru | Mysore     | Mangaluru  |      364 |
|    58451 | BEN-MAN Express | Fast   | Mangaluru   | Bengaluru | Subramanya | Mangaluru  |      194 |
```

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

```
MariaDB [railway_system]> select t.train_no from train_331 as T JOIN compartment_331 as C
on t.train_no = c.train_no where t.arrival = 'Chennai' and t.destination = 'Bengaluru' and
 c.availability>10;
+----------+
| train_no |
+----------+
|    62620 |
+----------+
1 row in set (0.001 sec)
```

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

```
MariaDB [railway_system]> create view user_price as
    -> select pnr, distance*farePerKm as price from compute_price;
Query OK, 0 rows affected (0.005 sec)

MariaDB [railway_system]> select * from user_price;
+--------+--------------------+
| pnr    | price              |
+--------+--------------------+
| PNR001 | 1194.5999827384949 |
| PNR002 | 1191.2999827861786 |
| PNR003 |  456.9499942660332 |
| PNR004 |  649.3500114679337 |
| PNR005 |  553.3000119924545 |
| PNR006 |  806.4000120162964 |
| PNR007 |  558.7199875116348 |
| PNR008 |  956.9999861717224 |
| PNR010 |  176.8500031232834 |
| PNR012 |              533.5 |
| PNR014 |  297.00000524520874 |
| PNR015 |  175.50000309944153 |
+--------+--------------------+
12 rows in set (0.002 sec)

MariaDB [railway_system]> select p.name from passenger_331 as P JOIN user_price as U on p.pnr = u.pnr where u.price>500;
+------------------+
| name             |
+------------------+
| Saideepak Reddy  |
| Sheela Reddy     |
| SaiDeepak Reddy  |
| Sheela Reddy     |
| Anwar Hussein    |
| Karishma Husein  |
| Hema Ullal       |
| Hima Ullal       |
| Asha Ullal       |
| Ajit Ullal       |
| Smriti Irani     |
| Christon D Souza |
| Christon D Souza |
| Ramya R          |
+------------------+
14 rows in set (0.002 sec)
```

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

```
MariaDB [railway_system]> select u.userid, u.fname, u.lname, t.pnr, u.DOB from user_331 as u left join ticket_331 as t on u.userid=t.userid where t.pnr like '%PNR%';
+---------+----------+--------+--------+------------+
| userid  | fname    | lname  | pnr    | DOB        |
+---------+----------+--------+--------+------------+
| ADM_001 | Narendra | Modi   | PNR001 | 1989-04-14 |
| ADM_001 | Narendra | Modi   | PNR002 | 1989-04-14 |
| ADM_002 | Droupadi | Murmu  | PNR007 | 1990-04-14 |
| ADM_002 | Droupadi | Murmu  | PNR008 | 1990-04-14 |
| ADM_003 | Manmohan | Singh  | PNR003 | 1991-04-08 |
| ADM_003 | Manmohan | Singh  | PNR004 | 1991-04-08 |
| USR_002 | Muhammed | Ali    | PNR005 | 2000-10-09 |
| USR_002 | Muhammed | Ali    | PNR006 | 2000-10-09 |
| USR_007 | Smriti   | Irani  | PNR010 | 1999-12-16 |
| USR_008 | Ajit     | Sethi  | PNR011 | 1966-04-14 |
| USR_009 | Arjun    | Allu   | PNR012 | 1967-04-08 |
| USR_010 | Samanta  | Prabhu | PNR014 | 1968-04-14 |
| USR_012 | Rahul    | Gandhi | PNR015 | 1970-04-08 |
+---------+----------+--------+--------+------------+
13 rows in set (0.001 sec)
```

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

```
MariaDB [railway_system]> select u.userid, u.fname, u.lname from user_331 as u left join ticket_
331 as t on u.userid=t.userid except (select u.userid, u.fname, u.lname from user_331 as u join
ticket_331 as t on u.userid=t.userid);
+---------+------------+------------+
| userid  | fname      | lname      |
+---------+------------+------------+
| USR_001 |    Ajit    | Ullal      |
| USR_003 | Sai Deepak | Reddy      |
| USR_004 | Rudra      | Agarwal    |
| USR_005 | Rahul      | Khanna     |
| USR_006 | Nirmala    | Seturaman  |
| USR_011 | Kiran      | Bedi       |
| USR_013 | Rashkit    | Shetty     |
| USR_014 | Rishi      | Sunak      |
| USR_015 | Vedavalli  | Srinath    |
| USR_016 | Subbu      | Saravana   |
| USR_017 | Sheela     | Dixit      |
| USR_018 | Margaret   | Alva       |
| USR_019 | Arun       | Kumar      |
| USR_020 | Anshu      | Bhardwaj   |
| USR_021 | Suma       | Sampat     |
| USR_022 | Srihari    | Udupa      |
| USR_023 | Satish     | Kotian     |
| USR_024 | Shradha    | Nayar      |
| USR_025 | Manisha    | Solanki    |
| USR_026 | Bharti     | Devgan     |
| USR_027 | Roopa      | Ram        |
| USR_028 | Pallavi    | Ram        |
| USR_029 | Ravi       | Naik       |
| USR_030 | Virat      | Murthy     |
+---------+------------+------------+
24 rows in set (0.001 sec)
```

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

```
MariaDB [railway_system]> select t.pnr, t.trainno, t.travelDate, u.fname, u.lname from ticket_331 as t right join user_331 as u on t.userid=u.userid;
+--------+---------+------------+------------+------------+
| pnr    | trainno | travelDate | 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 | 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 [railway_system]> select  t.trainno, t1.t_Name, t.userid from ticket_331 as t right join
 train_331 as t1 on t.trainno=t1.train_no;
+---------+------------------+---------+
| trainno | t_Name           | userid  |
+---------+------------------+---------+
|   62621 | BEN-CHE Shatabdi | ADM_001 |
|   62620 | CHE-BEN Shatabdi | ADM_001 |
|   25261 | Managaluru Mail  | ADM_003 |
|   25260 | Chennai Mail     | ADM_003 |
|   58451 | BEN-MAN Express  | USR_002 |
|   58450 | MAN-BEN Express  | USR_002 |
|   62621 | BEN-CHE Shatabdi | ADM_002 |
|   62620 | CHE-BEN Shatabdi | ADM_002 |
|   25260 | Chennai Mail     | USR_007 |
|   62621 | BEN-CHE Shatabdi | USR_008 |
|   58451 | BEN-MAN Express  | USR_009 |
|   25260 | Chennai Mail     | USR_010 |
|   25260 | Chennai Mail     | USR_012 |
+---------+------------------+---------+
13 rows in set (0.002 sec)
```

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 [railway_system]> select train_no, t_name from train_331 where train_no in (select t.train_no from
 train_331 as t join compute_price as c on t.train_no=c.trainno where t.destination=c.arrival and t.arriva
l = c.departure and c.distance>100) and destination!='Mangaluru' and train_no not in (select train_no from
 ticket_331 where departuretime='20:30:00');
+----------+------------------+
| train_no | t_name           |
+----------+------------------+
|    62621 | BEN-CHE Shatabdi |
|    62620 | CHE-BEN Shatabdi |
|    25260 | Chennai Mail     |
|    58450 | MAN-BEN Express  |
+----------+------------------+
4 rows in set (0.002 sec)
```

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

```
MariaDB [railway_system]> select distinct userID from user_331 NATURAL JOIN ticket_331 where pnr in (select pnr from user_price where price>(select avg(price) from user_price));
+---------+
| userID  |
+---------+
| ADM_001 |
| ADM_003 |
| USR_002 |
| ADM_002 |
+---------+
4 rows in set (0.002 sec)
```