Name: Vrushank G   SRN: PES1UG20CS516   Section: I

Task-I: Use INSERT/SELECT/UPDATE queries for the following tasks:

1. Insert the shared data into the respective tables using appropriate insert query.

• Show the usage of INSERT and LOAD DATA INFILE commands explicitly

```
MariaDB [pes1ug20cs516]> drop table fare;
Query OK, 0 rows affected (0.011 sec)

MariaDB [pes1ug20cs516]> create table fare(train_type varchar(20), compartment_type varchar(10), fare_per_km int, primar
y key(train_type,compartment_type));
Query OK, 0 rows affected (0.015 sec)

MariaDB [pes1ug20cs516]> LOAD DATA INFILE "D:/RISHI/SEM5/DBMS/PES1UG20CS516_Lab4/fare_table.csv" INTO TABLE fare
    -> COLUMNS TERMINATED BY ','
    -> OPTIONALLY ENCLOSED BY '"'
    -> ESCAPED BY '"'
    -> LINES TERMINATED BY '\n'
    -> IGNORE 1 LINES;
Query OK, 9 rows affected, 9 warnings (0.006 sec)
Records: 9  Deleted: 0  Skipped: 0  Warnings: 9
```

```
MariaDB [pes1ug20cs516]> select * from fare;
+------------+------------------+-------------+
| train_type | compartment_type | fare_per_km |
+------------+------------------+-------------+
| Fast       | I Class          |           3 |
| Fast       | II Class         |           2 |
| Mail       | I Class          |           2 |
| Mail       | II Class         |           1 |
| Mail       | III Class        |           1 |
| Superfast  | I Class          |           3 |
| Superfast  | II Class         |           2 |
| Superfast  | III Class        |           1 |
+------------+------------------+-------------+
8 rows in set (0.000 sec)

MariaDB [pes1ug20cs516]> insert into fare values('Fast','III Class',2);
Query OK, 1 row affected (0.001 sec)

MariaDB [pes1ug20cs516]> select * from fare;
+------------+------------------+-------------+
| train_type | compartment_type | fare_per_km |
+------------+------------------+-------------+
| Fast       | I Class          |           3 |
| Fast       | II Class         |           2 |
| Fast       | III Class        |           2 |
| Mail       | I Class          |           2 |
| Mail       | II Class         |           1 |
| Mail       | III Class        |           1 |
| Superfast  | I Class          |           3 |
| Superfast  | II Class         |           2 |
| Superfast  | III Class        |           1 |
+------------+------------------+-------------+
9 rows in set (0.000 sec)
```

Name: Vrushank G   **SRN: PES1UG20CS516**   **Section: I**

2. Calculate and update age attribute in User Table.

```
MariaDB [pes1ug20cs516]> select * from train_user limit 10;
+---------+-----------+-----------+-----------+------+------------+---------+------------------+
| user_id | user_type | firstname | lastname  | age  | dob        | pincode | street_number    |
+---------+-----------+-----------+-----------+------+------------+---------+------------------+
| ADM_001 | ADMIN     | Narendra  | Modi      |   33 | 1989-04-14 | 600047  | Old Jail Road    |
| ADM_002 | ADMIN     | Droupadi  | Murmu     |   32 | 1990-04-14 | 640012  | High Street      |
| ADM_003 | ADMIN     | Manmohan  | Singh     |   31 | 1991-04-08 | 575003  | Pumpwell Road    |
| USR_001 | PSGR      | Ajit      | Ullal     |   51 | 1971-01-01 | 560001  | 10, Janpath      |
| USR_002 | PSGR      | Muhammed  | Ali       |   21 | 2000-10-09 | 560003  | 10, Downing      |
| USR_003 | PSGR      | Sai Deepak| Reddy     |   25 | 1996-12-12 | 600001  | 14, Kailsh Marg  |
| USR_004 | PSGR      | Rudra     | Agarwal   |   25 | 1996-12-13 | 600042  | 5, Lohia Garden  |
| USR_005 | PSGR      | Rahul     | Khanna    |   24 | 1997-12-14 | 600067  | 1, Pink Street   |
| USR_006 | PSGR      | Nirmala   | Seturaman |   23 | 1998-12-15 | 560105  | 3, Blue Avenue   |
| USR_007 | PSGR      | Smriti    | Irani     |   22 | 1999-12-16 | 575014  | 4, Banyan Avenie |
+---------+-----------+-----------+-----------+------+------------+---------+------------------+
10 rows in set (0.000 sec)
```

3. Display all the route information whose distance falls in a range from 70 to 150 km.

```
MariaDB [pes1ug20cs516]> select *from route_info where distance<150 and distance>70;
+----------------+--------------+-------------------+-----------------+----------+----------+
| from_station_no | to_station_no | from_station_name | to_station_name | distance | train_no |
+----------------+--------------+-------------------+-----------------+----------+----------+
|              1 |            2 | Mangaluru         | Kannur          |      131 |    25260 |
|              4 |            4 | Palakkad          | Chennai         |      130 |    25260 |
|              1 |            2 | Chennai           | Palakkad        |      130 |    25261 |
|              3 |            4 | Kannur            | Mangaluru       |      131 |    25261 |
|              3 |            4 | Mysore            | Bengaluru       |      139 |    58450 |
|              1 |            2 | Bengaluru         | Mysore          |      139 |    58451 |
|              1 |            2 | Chennai           | Sholingur       |       90 |    62620 |
|              1 |            3 | Chennai           | Katpadi         |      129 |    62620 |
|              4 |            5 | Bangarpet         | Bengaluru       |       71 |    62620 |
|              1 |            2 | Bengaluru         | Bangarpet       |       71 |    62621 |
|              3 |            5 | Katpadi           | Chennai         |      130 |    62621 |
|              4 |            5 | Sholingur         | Chennai         |       90 |    62621 |
+----------------+--------------+-------------------+-----------------+----------+----------+
12 rows in set (0.001 sec)
```

4. Display the train route information which are run between Chennai and Sholingur

```
MariaDB [pes1ug20cs516]> select * from route_info where ((from_station_name="chennai" and to_station_name="sholingur") or (from_station_name="sholingur" and to_station_name="chennai"));
+----------------+--------------+-------------------+-----------------+----------+----------+
| from_station_no | to_station_no | from_station_name | to_station_name | distance | train_no |
+----------------+--------------+-------------------+-----------------+----------+----------+
|              1 |            2 | Chennai           | Sholingur       |       90 |    62620 |
|              2 |            5 | Sholingur         | Chennai         |      271 |    62620 |
|              4 |            5 | Sholingur         | Chennai         |       90 |    62621 |
+----------------+--------------+-------------------+-----------------+----------+----------+
3 rows in set (0.001 sec)
```

5. Display the train details whose type is not mail.

```
MariaDB [pes1ug20cs516]> select * from train where not train_type="mail";
+----------+------------------+------------+-----------+-------------+--------------+
| train_no | train_name       | train_type | source    | destination | availability |
+----------+------------------+------------+-----------+-------------+--------------+
|    58450 | MAN-BEN Express  | Fast       | Mangaluru | Bengaluru   | yes          |
|    58451 | BEN-MAN Express  | Fast       | Bengaluru | Mangaluru   | yes          |
|    62620 | CHE-BEN Shatabdi | Superfast  | Chennai   | Bengaluru   | No           |
|    62621 | BEN-CHE Shatabdi | Superfast  | Bengaluru | Chennai     | yes          |
+----------+------------------+------------+-----------+-------------+--------------+
4 rows in set (0.001 sec)
```

6. Display the train name which goes to Chennai from Bengaluru.

```
MariaDB [pes1ug20cs516]> select train_name from train where source="bengaluru" and destination="Chennai";
+------------------+
| train_name       |
+------------------+
| BEN-CHE Shatabdi |
+------------------+
1 row in set (0.001 sec)
```

7. Display the list of trains starting from Chennai after 8:00.

```
MariaDB [pes1ug20cs516]> select train.train_no , train.train_name from train inner join ticket where ticket.train_no=train.train_no and ticket.departure="Chennai" and ticket.departure_time>"8:00";
+----------+-----------------+
| train_no | train_name      |
+----------+-----------------+
|    25261 | Managaluru Mail |
+----------+-----------------+
1 row in set (0.003 sec)
```

8. Display the list of users who are born between 1980 to 1990.

```
MariaDB [pes1ug20cs516]> select *from train_user where year(dob)>1980 and year(dob)<1990;
+---------+-----------+-----------+----------+------+------------+---------+----------------------+
| user_id | user_type | firstname | lastname | age  | dob        | pincode | street_number        |
+---------+-----------+-----------+----------+------+------------+---------+----------------------+
| ADM_001 | ADMIN     | Narendra  | Modi     |   33 | 1989-04-14 | 600047  | Old Jail Road        |
| USR_023 | PSGR      | Satish    | Kotian   |   41 | 1981-04-14 | 600044  | T Nagar              |
| USR_024 | PSGR      | Shradha   | Nayar    |   40 | 1982-04-08 | 560006  | M G Road, Bangalore  |
| USR_025 | PSGR      | Manisha   | Solanki  |   39 | 1983-04-08 | 575030  | M G Road             |
| USR_026 | PSGR      | Bharti    | Devgan   |   38 | 1984-04-14 | 560059  | NAL Wind Tunnel Road |
| USR_027 | PSGR      | Roopa     | Ram      |   37 | 1985-04-14 | 575023  | Bunder Road          |
| USR_028 | PSGR      | Pallavi   | Ram      |   36 | 1986-04-08 | 560044  | Lavelle Road         |
| USR_029 | PSGR      | Ravi      | Naik     |   35 | 1987-04-14 | 600045  | Thiru V ka Salai     |
| USR_030 | PSGR      | Virat     | Murthy   |   34 | 1988-04-14 | 575011  | Bejai New Road       |
+---------+-----------+-----------+----------+------+------------+---------+----------------------+
9 rows in set (0.003 sec)
```

9. Display the train users whose name starts with the letter 'S'

```
MariaDB [pes1ug20cs516]> select *from train_user where firstname like "S%";
+---------+-----------+------------+----------+------+------------+---------+---------------------------+
| user_id | user_type | firstname  | lastname | age  | dob        | pincode | street_number             |
+---------+-----------+------------+----------+------+------------+---------+---------------------------+
| USR_003 | PSGR      | Sai Deepak | Reddy    |   25 | 1996-12-12 | 600001  | 14, Kailsh Marg           |
| USR_007 | PSGR      | Smriti     | Irani    |   22 | 1999-12-16 | 575014  | 4, Banyan Avenie          |
| USR_010 | PSGR      | Samanta    | Prabhu   |   54 | 1968-04-14 | 600042  | 8, Clone Colony           |
| USR_016 | PSGR      | Subbu      | Saravana |   48 | 1974-04-14 | 600043  | American Street           |
| USR_017 | PSGR      | Sheela     | Dixit    |   47 | 1975-04-08 | 560048  | Kasturba Road             |
| USR_021 | PSGR      | Suma       | Sampat   |   43 | 1979-04-08 | 560012  | Old Airport Road, Bangalore |
| USR_022 | PSGR      | Srihari    | Udupa    |   42 | 1980-04-14 | 560015  | Suranjan Das Road         |
| USR_023 | PSGR      | Satish     | Kotian   |   41 | 1981-04-14 | 600044  | T Nagar                   |
| USR_024 | PSGR      | Shradha    | Nayar    |   40 | 1982-04-08 | 560006  | M G Road, Bangalore       |
+---------+-----------+------------+----------+------+------------+---------+---------------------------+
9 rows in set (0.001 sec)
```

10. Find the availability of I Class compartment of the train number 62621

```
MariaDB [pes1ug20cs516]> select availability from compartment where compartment_type="I Class" and train_number=62621;
+--------------+
| availability |
+--------------+
|            6 |
+--------------+
1 row in set (0.001 sec)
```

11. Find the PNR and Transaction ID of the users who made payment via Union Bank.

```
MariaDB [pes1ug20cs516]> select pnr, transaction_no from payment_info where bank="Union Bank";
+--------+----------------+
| pnr    | transaction_no |
+--------+----------------+
| PNR012 |         243535 |
| PNR015 |         758900 |
| PNR010 |         867546 |
| PNR003 |         978776 |
+--------+----------------+
4 rows in set (0.003 sec)
```

Name: Vrushank G   **SRN: PES1UG20CS516**   **Section: I**

Task-II: Use DCL and TCL statements for the following:

1. Grant privileges on different tables to users and observe the effect.

```
MariaDB [(none)]> CREATE USER vrushank IDENTIFIED BY "123456";
Query OK, 0 rows affected (0.007 sec)
```

```
ASUS@DESKTOP-842748Q c:\xampp
# mysql -u vrushank -p
Enter password: ******
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 9
Server version: 10.4.24-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
```

```
MariaDB [pes1ug20cs516]> grant INSERT on pes1ug20cs516.ticket to vrushank;
Query OK, 0 rows affected (0.004 sec)
```

```
MariaDB [pes1ug20cs516]> insert into ticket values("PNR020", 62620, "2022-09-26","Chennai","Katpadi","8:00:00","13:00:00
","USR_020","Superfast","II Class","F02");
Query OK, 1 row affected (0.042 sec)
```

```
MariaDB [(none)]> grant select,delete,update on pes1ug20cs516.fare to vrushank;
Query OK, 0 rows affected (0.003 sec)
```

Name: Vrushank G   **SRN: PES1UG20CS516**   **Section: I**

```
MariaDB [(none)]> select * from fare;
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> use pes1ug20cs516;
Database changed
MariaDB [pes1ug20cs516]> select * from fare;
+------------+------------------+-------------+
| train_type | compartment_type | fare_per_km |
+------------+------------------+-------------+
| Fast       | I Class          |           3 |
| Fast       | II Class         |           2 |
| Fast       | III Class        |           2 |
| Mail       | I Class          |           2 |
| Mail       | II Class         |           1 |
| Mail       | III Class        |           1 |
| Superfast  | I Class          |           3 |
| Superfast  | II Class         |           2 |
| Superfast  | III Class        |           1 |
+------------+------------------+-------------+
9 rows in set (0.001 sec)

MariaDB [pes1ug20cs516]> delete from fare where train_type="Superfast" and compartment_type="III Class";
Query OK, 1 row affected (0.006 sec)

MariaDB [pes1ug20cs516]> update fare set fare_per_km=4 where train_type="Superfast" and compartment_type="I Class";
Query OK, 1 row affected (0.004 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [pes1ug20cs516]> select * from fare;
+------------+------------------+-------------+
| train_type | compartment_type | fare_per_km |
+------------+------------------+-------------+
| Fast       | I Class          |           3 |
| Fast       | II Class         |           2 |
| Fast       | III Class        |           2 |
| Mail       | I Class          |           2 |
| Mail       | II Class         |           1 |
| Mail       | III Class        |           1 |
| Superfast  | I Class          |           4 |
| Superfast  | II Class         |           2 |
+------------+------------------+-------------+
8 rows in set (0.000 sec)
```

2. Revoke UPDATE & DELETE privileges on any tables and observe the effect if any deletion/ updation is performed.

```
MariaDB [(none)]> revoke delete,update on table pes1ug20cs516.fare from vrushank;
Query OK, 0 rows affected (0.004 sec)
```

```
MariaDB [pes1ug20cs516]> select * from fare;
+------------+------------------+-------------+
| train_type | compartment_type | fare_per_km |
+------------+------------------+-------------+
| Fast       | I Class          |           3 |
| Fast       | II Class         |           2 |
| Fast       | III Class        |           2 |
| Mail       | I Class          |           2 |
| Mail       | II Class         |           1 |
| Mail       | III Class        |           1 |
| Superfast  | I Class          |           4 |
| Superfast  | II Class         |           2 |
+------------+------------------+-------------+
8 rows in set (0.001 sec)

MariaDB [pes1ug20cs516]> delete from fare where train_type="Superfast" and compartment_type="III Class";
ERROR 1142 (42000): DELETE command denied to user 'vrushank'@'localhost' for table 'fare'
MariaDB [pes1ug20cs516]> update fare set fare_per_km=4 where train_type="Superfast" and compartment_type="I Class";
ERROR 1142 (42000): UPDATE command denied to user 'vrushank'@'localhost' for table 'fare'
```

Name: Vrushank G   SRN: PES1UG20CS516   Section: I

3. Create different save points and perform some insert/update/delete operations. Observe the effect of commit & rollback operations and release any created savepoints.

Task-2_3.sql file:

```
START TRANSACTION;
SAVEPOINT S1;
UPDATE ticket_passenger
SET
    seat_no = "S01-29",
    name = "vrushank",
    age = 19

WHERE pnr = "PNR015";
(SELECT * FROM ticket_passenger ORDER BY pnr DESC limit 5) ORDER BY pnr ASC;

SAVEPOINT S2;

INSERT INTO ticket_passenger
VALUES
(
    "S01-30",
    "Y Srinivas",
    20,
    "PNR020"
);
(SELECT * FROM ticket_passenger ORDER BY pnr DESC limit 5) ORDER BY pnr ASC;

ROLLBACK TO S2;
(SELECT * FROM ticket_passenger ORDER BY pnr DESC limit 5) ORDER BY pnr ASC;

ROLLBACK TO S1;
(SELECT * FROM ticket_passenger ORDER BY pnr DESC limit 5) ORDER BY pnr ASC;
```

```
MariaDB [pes1ug20cs516]> source D:/RISHI/SEM5/DBMS/PES1UG20CS516_Lab4/Task-2_3.sql
Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 1 row affected (0.003 sec)
Rows matched: 1  Changed: 1  Warnings: 0


+---------+----------------+------+--------+
| seat_no | name           | age  | pnr    |
+---------+----------------+------+--------+
| S01-26  | Rakshita Prabhu |  21 | PNR010 |
| F01-7   | Sheela Seth    |   33 | PNR011 |
| F01-13  | Ramya R        |   45 | PNR012 |
| S01-2   | Shradha Nayar  |   20 | PNR014 |
| S01-29  | vrushank       |   19 | PNR015 |
+---------+----------------+------+--------+
5 rows in set (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 1 row affected (0.000 sec)


+---------+----------------+------+--------+
| seat_no | name           | age  | pnr    |
+---------+----------------+------+--------+
| F01-7   | Sheela Seth    |   33 | PNR011 |
| F01-13  | Ramya R        |   45 | PNR012 |
| S01-2   | Shradha Nayar  |   20 | PNR014 |
| S01-29  | vrushank       |   19 | PNR015 |
| S01-30  | Y Srinivas     |   20 | PNR020 |
+---------+----------------+------+--------+
5 rows in set (0.003 sec)

Query OK, 0 rows affected (0.000 sec)


+---------+----------------+------+--------+
| seat_no | name           | age  | pnr    |
+---------+----------------+------+--------+
| S01-26  | Rakshita Prabhu |  21 | PNR010 |
| F01-7   | Sheela Seth    |   33 | PNR011 |
| F01-13  | Ramya R        |   45 | PNR012 |
| S01-2   | Shradha Nayar  |   20 | PNR014 |
| S01-29  | vrushank       |   19 | PNR015 |
+---------+----------------+------+--------+
5 rows in set (0.000 sec)
```

Name: Vrushank G   **SRN: PES1UG20CS516**   **Section: I**

```
Query OK, 0 rows affected (0.001 sec)

+---------+-----------------+------+--------+
| seat_no | name            | age  | pnr    |
+---------+-----------------+------+--------+
| S01-26  | Rakshita Prabhu |   21 | PNR010 |
| F01-7   | Sheela Seth     |   33 | PNR011 |
| F01-13  | Ramya R         |   45 | PNR012 |
| S01-2   | Shradha Nayar   |   20 | PNR014 |
| S01-29  | Khushi Jha      |   18 | PNR015 |
+---------+-----------------+------+--------+
5 rows in set (0.001 sec)

MariaDB [pes1ug20cs516]> _
```