Assignment4: Ex10

Creating Database:

```
MySQL 8.0 Command Line Client

Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 22
Server version: 8.0.28-commercial MySQL Enterprise Server - Commercial

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owners.

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

mysql> CREATE DATABASE PRIYA_8020951;
Query OK, 1 row affected (0.08 sec)

mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| djangodb           |
| information_schema |
| mysampledb         |
| mysql              |
| performance_schema |
| priya_8020951      |
| sys                |
+--------------------+
7 rows in set (0.07 sec)

mysql> USE PRIYA_8020951;
Database changed
```

Creating tables:

```
MySQL 8.0 Command Line Client
    -> id INT NOT NULL AUTO_INCREMENT,
    -> origin VARCHAR(15) NOT NULL,
    -> destination VARCHAR(15) NOT NULL,
    -> duration INT NOT NULL,
    -> PRIMARY KEY(id)
    -> );
Query OK, 0 rows affected (1.42 sec)

mysql> CREATE TABLE flights_noIndex(
    -> id INT NOT NULL,
    -> origin TEXT NOT NULL,
    -> destination TEXT NOT NULL,
    -> duration INTEGER NOT NULL,
    -> );
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to yo
mysql> CREATE TABLE flights_noIndex(
    -> id INT NOT NULL,
    -> origin TEXT NOT NULL,
    -> destination TEXT NOT NULL,
    -> duration INTEGER NOT NULL
    -> );
Query OK, 0 rows affected (0.83 sec)

mysql> INSERT INTO FLIGHTS
    -> (origin,destination,duration)
    -> VALUES("New York","London", 415);
Query OK, 1 row affected (0.38 sec)
```

Inserting values:

```
MySQL 8.0 Command Line Client
mysql> INSERT INTO FLIGHTS
    -> (origin,destination,duration)
    -> VALUES("New York","London",415);
Query OK, 1 row affected (0.10 sec)

mysql> INSERT INTO FLIGHTS
    -> (origin,destination,duration)
    -> VALUES("Shanghai","Paris",760);
Query OK, 1 row affected (0.13 sec)

mysql> INSERT INTO FLIGHTS
    -> (origin,destination,duration)
    -> VALUES("Istanbul","Tokyo",700);
Query OK, 1 row affected (0.11 sec)

mysql> INSERT INTO FLIGHTS
    -> (origin,destination,duration)
    -> VALUES("New York","Paris",435);
Query OK, 1 row affected (0.12 sec)

mysql> INSERT INTO FLIGHTS
    -> (origin,destination,duration)
    -> VALUES("Moscow","Paris",245);
Query OK, 1 row affected (0.11 sec)

mysql> INSERT INTO FLIGHTS
    -> (origin,destination,duration)
    -> VALUES("Lima","New York",455);
Query OK, 1 row affected (0.12 sec)
```

Select statements

```
MySQL 8.0 Command Line Client
    -> VALUES("Lima","New York",455);
Query OK, 1 row affected (0.12 sec)

mysql> select * from flights WHERE id=3;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  3 | Istanbul | Tokyo       |      700 |
+----+----------+-------------+----------+
1 row in set (0.03 sec)

mysql> select * from flights WHERE origin="New York";
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  1 | New York | London      |      415 |
|  4 | New York | Paris       |      435 |
+----+----------+-------------+----------+
2 rows in set (0.04 sec)

mysql> select * from flights WHERE duration>500;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  2 | Shanghai | Paris       |      760 |
|  3 | Istanbul | Tokyo       |      700 |
+----+----------+-------------+----------+
2 rows in set (0.00 sec)

mysql> select * from flights WHERE duration>500 AND destination = "Paris";
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  2 | Shanghai | Paris       |      760 |
+----+----------+-------------+----------+
1 row in set (0.00 sec)

mysql> select * from flights WHERE duration>500 OR destination = "Paris";
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  2 | Shanghai | Paris       |      760 |
|  3 | Istanbul | Tokyo       |      700 |
|  4 | New York | Paris       |      435 |
|  5 | Moscow   | Paris       |      245 |
+----+----------+-------------+----------+
4 rows in set (0.00 sec)

mysql>
```

```
MySQL 8.0 Command Line Client

mysql> select * from flights WHERE origin IN ("New York", "Lima");
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  1 | New York | London      |      415 |
|  4 | New York | Paris       |      435 |
|  6 | Lima     | New York    |      455 |
+----+----------+-------------+----------+
3 rows in set (0.00 sec)

mysql> select * from flights WHERE origin LIKE "%a%";
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  2 | Shanghai | Paris       |      760 |
|  3 | Istanbul | Tokyo       |      700 |
|  6 | Lima     | New York    |      455 |
+----+----------+-------------+----------+
3 rows in set (0.00 sec)

mysql> select DISTINCT origin, destination FROM flights WHERE origin IN("New York","Lima");
+----------+-------------+
| origin   | destination |
+----------+-------------+
| New York | London      |
| New York | Paris       |
| Lima     | New York    |
+----------+-------------+
3 rows in set (0.01 sec)

mysql> select DISTINCT origin FROM flights WHERE origin IN("New York","Lima");
+----------+
| origin   |
+----------+
| New York |
| Lima     |
+----------+
2 rows in set (0.00 sec)

mysql> select * FROM flights LIMIT 5;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  1 | New York | London      |      415 |
|  2 | Shanghai | Paris       |      760 |
|  3 | Istanbul | Tokyo       |      700 |
|  4 | New York | Paris       |      435 |
|  5 | Moscow   | Paris       |      245 |
+----+----------+-------------+----------+
```

```
MySQL 8.0 Command Line Client

mysql> select * from flights order by duration;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  5 | Moscow   | Paris       |      245 |
|  1 | New York | London      |      415 |
|  4 | New York | Paris       |      435 |
|  6 | Lima     | New York    |      455 |
|  3 | Istanbul | Tokyo       |      700 |
|  2 | Shanghai | Paris       |      760 |
+----+----------+-------------+----------+
6 rows in set (0.00 sec)

mysql> SELECT Origin, count(duration) from flights GROUP BY origin;
+----------+-----------------+
| Origin   | count(duration) |
+----------+-----------------+
| New York |               2 |
| Shanghai |               1 |
| Istanbul |               1 |
| Moscow   |               1 |
| Lima     |               1 |
+----------+-----------------+
5 rows in set (0.06 sec)

mysql> SELECT Origin, count(duration) from flights GROUP BY origin having count(duration)>2;
Empty set (0.03 sec)

mysql> SELECT Origin, count(duration) from flights GROUP BY origin having count(duration)=2;
+----------+-----------------+
| Origin   | count(duration) |
+----------+-----------------+
| New York |               2 |
+----------+-----------------+
1 row in set (0.00 sec)

mysql> SELECT Origin, count(duration) from flights GROUP BY origin having count(duration)<2;
+----------+-----------------+
| Origin   | count(duration) |
+----------+-----------------+
| Shanghai |               1 |
| Istanbul |               1 |
| Moscow   |               1 |
| Lima     |               1 |
+----------+-----------------+
4 rows in set (0.00 sec)

mysql>
```

Update and delete:

```
Select MySQL 8.0 Command Line Client
mysql> UPDATE flights
    -> SET duration = 430
    -> WHERE origin = "New York"
    -> AND destination = "London";
Query OK, 1 row affected (0.12 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> Select * from flights
    -> ;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  1 | New York | London      |      430 |
|  2 | Shanghai | Paris       |      760 |
|  3 | Istanbul | Tokyo       |      700 |
|  4 | New York | Paris       |      435 |
|  5 | Moscow   | Paris       |      245 |
|  6 | Lima     | New York    |      455 |
+----+----------+-------------+----------+
6 rows in set (0.03 sec)

mysql> DELETE FROM flights WHERE destination = "Tokyo";
Query OK, 1 row affected (0.13 sec)

mysql> Select * from flights;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  1 | New York | London      |      430 |
|  2 | Shanghai | Paris       |      760 |
|  4 | New York | Paris       |      435 |
|  5 | Moscow   | Paris       |      245 |
|  6 | Lima     | New York    |      455 |
+----+----------+-------------+----------+
5 rows in set (0.00 sec)

mysql>
```

Aggregate functions:

```
MySQL 8.0 Command Line Client
mysql> select AVG(duration) from flights;
+---------------+
| AVG(duration) |
+---------------+
|      501.6667 |
+---------------+
1 row in set (0.03 sec)

mysql> select COUNT(duration) from flights;
+-----------------+
| COUNT(duration) |
+-----------------+
|               6 |
+-----------------+
1 row in set (0.00 sec)

mysql> select COUNT(duration) from flights where origin="New York";
+-----------------+
| COUNT(duration) |
+-----------------+
|               2 |
+-----------------+
1 row in set (0.00 sec)

mysql> select SUM(duration) from flights;
+---------------+
| SUM(duration) |
+---------------+
|          3010 |
+---------------+
1 row in set (0.00 sec)

mysql> select MIN(duration) from flights;
+---------------+
| MIN(duration) |
+---------------+
|           245 |
+---------------+
1 row in set (0.06 sec)

mysql> select MAX(duration) from flights;
+---------------+
| MAX(duration) |
+---------------+
|           760 |
+---------------+
1 row in set (0.00 sec)

mysql>
```

Commit & Rollback

```
MySQL 8.0 Command Line Client

mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

mysql> INSERT INTO flights
    -> (origin,destination,duration)
    -> VALUES("Chennai","Delhi",2);
Query OK, 1 row affected (0.04 sec)

mysql> COMMIT;
Query OK, 0 rows affected (0.07 sec)

mysql> SET AUTOCOMMIT=0;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from flights;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  1 | New York | London      |      430 |
|  2 | Shanghai | Paris       |      760 |
|  4 | New York | Paris       |      435 |
|  5 | Moscow   | Paris       |      245 |
|  6 | Lima     | New York    |      455 |
|  7 | Chennai  | Mumbai      |        2 |
|  8 | Mumbai   | Chennai     |        2 |
|  9 | Chennai  | Delhi       |        2 |
+----+----------+-------------+----------+
8 rows in set (0.04 sec)

mysql> DELETE from flights WHERE destionation="Delhi";
ERROR 1054 (42S22): Unknown column 'destionation' in 'where clause'
mysql> DELETE from flights WHERE destination="Delhi";
Query OK, 1 row affected (0.05 sec)

mysql> Select * from flights;
+----+----------+-------------+----------+
| id | origin   | destination | duration |
+----+----------+-------------+----------+
|  1 | New York | London      |      430 |
|  2 | Shanghai | Paris       |      760 |
|  4 | New York | Paris       |      435 |
|  5 | Moscow   | Paris       |      245 |
|  6 | Lima     | New York    |      455 |
|  7 | Chennai  | Mumbai      |        2 |
|  8 | Mumbai   | Chennai     |        2 |
+----+----------+-------------+----------+
7 rows in set (0.00 sec)

mysql>
```

```
MySQL 8.0 Command Line Client

|   5 | Moscow   | Paris       |        245 |
|   6 | Lima     | New York    |        455 |
|   7 | Chennai  | Mumbai      |          2 |
|   8 | Mumbai   | Chennai     |          2 |
|   9 | Chennai  | Delhi       |          2 |
+-----+----------+-------------+------------+
8 rows in set (0.04 sec)

mysql> DELETE from flights WHERE destionation="Delhi";
ERROR 1054 (42S22): Unknown column 'destionation' in 'where clause'
mysql> DELETE from flights WHERE destination="Delhi";
Query OK, 1 row affected (0.05 sec)

mysql> Select * from flights;
+-----+----------+-------------+------------+
| id  | origin   | destination | duration   |
+-----+----------+-------------+------------+
|   1 | New York | London      |        430 |
|   2 | Shanghai | Paris       |        760 |
|   4 | New York | Paris       |        435 |
|   5 | Moscow   | Paris       |        245 |
|   6 | Lima     | New York    |        455 |
|   7 | Chennai  | Mumbai      |          2 |
|   8 | Mumbai   | Chennai     |          2 |
+-----+----------+-------------+------------+
7 rows in set (0.00 sec)

mysql> Rollback;
Query OK, 0 rows affected (0.05 sec)

mysql> Select * from flights;
+-----+----------+-------------+------------+
| id  | origin   | destination | duration   |
+-----+----------+-------------+------------+
|   1 | New York | London      |        430 |
|   2 | Shanghai | Paris       |        760 |
|   4 | New York | Paris       |        435 |
|   5 | Moscow   | Paris       |        245 |
|   6 | Lima     | New York    |        455 |
|   7 | Chennai  | Mumbai      |          2 |
|   8 | Mumbai   | Chennai     |          2 |
|   9 | Chennai  | Delhi       |          2 |
+-----+----------+-------------+------------+
8 rows in set (0.00 sec)

mysql>
```

Joins

(Full outer join is not supporting on SQL, used Union instead)

```
MySQL 8.0 Command Line Client
mysql> Select * from PASSANGER
    -> ;
+----+----------+----------+-----------+
| id | Fname    | lname    | flight_id |
+----+----------+----------+-----------+
|  1 | Harry    | Potter   |         1 |
|  2 | ROn      | Weasley  |         1 |
|  3 | Hermione | Granger  |         2 |
|  4 | Draco    | Malfoy   |         4 |
|  5 | Luna     | Lovegood |         6 |
|  6 | Ginny    | Weasley  |         6 |
+----+----------+----------+-----------+
6 rows in set (0.00 sec)

mysql> SELECT flight_id,fname,lname,origin,destination
    -> FROM flights JOIN PASSANGER
    -> ON PASSANGER.flight_id = flights.id;
+-----------+----------+----------+----------+-------------+
| flight_id | fname    | lname    | origin   | destination |
+-----------+----------+----------+----------+-------------+
|         1 | Harry    | Potter   | New York | London      |
|         1 | ROn      | Weasley  | New York | London      |
|         2 | Hermione | Granger  | Shanghai | Paris       |
|         4 | Draco    | Malfoy   | New York | Paris       |
|         6 | Luna     | Lovegood | Lima     | New York    |
|         6 | Ginny    | Weasley  | Lima     | New York    |
+-----------+----------+----------+----------+-------------+
6 rows in set (0.00 sec)

mysql> SELECT flight_id,fname,lname,origin,destination
    -> FROM flights RIGHT OUTER JOIN PASSANGER
    -> ON PASSANGER.flight_id = flights.id;
+-----------+----------+----------+----------+-------------+
| flight_id | fname    | lname    | origin   | destination |
+-----------+----------+----------+----------+-------------+
|         1 | Harry    | Potter   | New York | London      |
|         1 | ROn      | Weasley  | New York | London      |
|         2 | Hermione | Granger  | Shanghai | Paris       |
|         4 | Draco    | Malfoy   | New York | Paris       |
|         6 | Luna     | Lovegood | Lima     | New York    |
|         6 | Ginny    | Weasley  | Lima     | New York    |
+-----------+----------+----------+----------+-------------+
6 rows in set (0.00 sec)

mysql>
```

```
MySQL 8.0 Command Line Client

mysql> SELECT flight_id,fname,lname,origin,destination
    -> FROM flights RIGHT OUTER JOIN PASSANGER
    -> ON PASSANGER.flight_id = flights.id
    -> UNION
    -> SELECT flight_id,fname,lname,origin,destination
    -> FROM flights LEFT OUTER JOIN PASSANGER
    -> ON PASSANGER.flight_id = flights.id;
+-----------+----------+----------+----------+-------------+
| flight_id | fname    | lname    | origin   | destination |
+-----------+----------+----------+----------+-------------+
|         1 | Harry    | Potter   | New York | London      |
|         1 | ROn      | Weasley  | New York | London      |
|         2 | Hermione | Granger  | Shanghai | Paris       |
|         4 | Draco    | Malfoy   | New York | Paris       |
|         6 | Luna     | Lovegood | Lima     | New York    |
|         6 | Ginny    | Weasley  | Lima     | New York    |
|      NULL | NULL     | NULL     | Moscow   | Paris       |
|      NULL | NULL     | NULL     | Chennai  | Mumbai      |
|      NULL | NULL     | NULL     | Mumbai   | Chennai     |
|      NULL | NULL     | NULL     | Chennai  | Delhi       |
+-----------+----------+----------+----------+-------------+
10 rows in set (0.20 sec)

mysql>
```