

DBMS Lab 8

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Section - 'H'

8

Task 1

```
mysql> CREATE DATABASE airlines_db;
Query OK, 1 row affected (0.01 sec)

mysql> USE airlines_db;
Database changed
mysql> CREATE TABLE Flight (
    ->     flight_number VARCHAR(10) PRIMARY KEY,
    ->     departure_time DATETIME NOT NULL,
    ->     arrival_time DATETIME NOT NULL,
    ->     origin VARCHAR(50) NOT NULL,
    ->     destination VARCHAR(50) NOT NULL,
    ->     economy_seats INT NOT NULL,
    ->     business_seats INT NOT NULL,
    ->     first_class_seats INT NOT NULL
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql> CREATE TABLE Passenger (
    ->     passenger_id VARCHAR(10) PRIMARY KEY,
    ->     name VARCHAR(50) NOT NULL,
    ->     gender ENUM('Male', 'Female', 'Other'),
    ->     date_of_birth DATE,
    ->     phone_number VARCHAR(15),
    ->     seat_preference ENUM('Window', 'Aisle', 'Middle'),
    ->     class_preference ENUM('Economy', 'Business', 'First'),
    ->     loyalty_program_points INT DEFAULT 0
    -> );
Query OK, 0 rows affected (0.09 sec)
```

```
mysql> INSERT INTO Flight
-> VALUES
->     ('SKY101', '2025-07-12 06:00:00', '2025-07-12 10:30:00', 'Delhi', 'Singapore', 180, 30, 10),
->     ('SKY202', '2025-07-13 14:00:00', '2025-07-13 18:00:00', 'Mumbai', 'Dubai', 160, 25, 8),
->     ('SKY303', '2025-07-14 22:00:00', '2025-07-15 02:30:00', 'Chennai', 'Bangkok', 150, 20, 5);
Query OK, 3 rows affected (0.03 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Passenger
-> VALUES
->     ('P001', 'Aarav Sharma', 'Male', '1990-08-15', '9876543210', 'Window', 'Economy', 12000),
->     ('P002', 'Meera Patel', 'Female', '1985-02-20', '9123456789', 'Aisle', 'Business', 22000),
->     ('P003', 'Riya Das', 'Female', '1998-11-10', '9988776655', 'Window', 'First', 30000);
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

Task 2

```
mysql> SET SESSION TRANSACTION ISOLATION LEVEL READ UNCOMMITTED;
Query OK, 0 rows affected (0.01 sec)

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

mysql> UPDATE Passenger
-> SET seat_preference = 'Aisle'
-> WHERE passenger_id = 'P001';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> use airlines_db;
Database changed
mysql> SET SESSION TRANSACTION ISOLATION LEVEL READ UNCOMMITTED;
Query OK, 0 rows affected (0.00 sec)

mysql> START TRANSACTION;
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT name, seat_preference
-> FROM Passenger
-> WHERE passenger_id = 'P001';
+-----+-----+
| name      | seat_preference |
+-----+-----+
| Aarav Sharma | Aisle           |
+-----+-----+
1 row in set (0.00 sec)
```

Task 3

```
mysql> SET SESSION TRANSACTION ISOLATION LEVEL READ COMMITTED;
Query OK, 0 rows affected (0.00 sec)

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

mysql> SELECT seat_preference
    -> FROM Passenger
    -> WHERE passenger_id = 'P001';
+-----+
| seat_preference |
+-----+
| Aisle          |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SET SESSION TRANSACTION ISOLATION LEVEL READ COMMITTED;
Query OK, 0 rows affected (0.00 sec)

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

mysql> UPDATE Passenger
    -> SET seat_preference = 'Window'
    -> WHERE passenger_id = 'P001';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> COMMIT;
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> SELECT seat_preference
-> FROM Passenger
-> WHERE passenger_id = 'P001';
+-----+
| seat_preference |
+-----+
| Window          |
+-----+
1 row in set (0.00 sec)
```

Task 4

```
mysql> SET SESSION TRANSACTION ISOLATION LEVEL REPEATABLE READ;
Query OK, 0 rows affected (0.00 sec)

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

mysql> SELECT passenger_id, name, seat_preference
-> FROM Passenger
-> WHERE class_preference = 'Economy';
+-----+-----+-----+
| passenger_id | name      | seat_preference |
+-----+-----+-----+
| P001         | Aarav Sharma | Window          |
+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> SET SESSION TRANSACTION ISOLATION LEVEL REPEATABLE READ;
Query OK, 0 rows affected (0.00 sec)

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

mysql> UPDATE Passenger
      -> SET seat_preference = 'Aisle'
      -> WHERE passenger_id = 'P001';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> COMMIT;
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> SELECT passenger_id, name, seat_preference
      -> FROM Passenger
      -> WHERE class_preference = 'Economy';
+-----+-----+
| passenger_id | name          | seat_preference |
+-----+-----+
| P001         | Aarav Sharma | Window        |
+-----+-----+
1 row in set (0.00 sec)
```

Task 5

```
mysql> SET SESSION TRANSACTION ISOLATION LEVEL SERIALIZABLE;
Query OK, 0 rows affected (0.00 sec)

mysql> START TRANSACTION;
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> SELECT COUNT(*)
      -> FROM Flight
      -> WHERE DATE(departure_time) = '2025-07-14'
      -> FOR UPDATE;
+-----+
| COUNT(*) |
+-----+
|      2   |
+-----+
1 row in set (0.00 sec)
```

```
mysql> USE airlines_db;
Database changed
mysql> SET SESSION TRANSACTION ISOLATION LEVEL SERIALIZABLE;
Query OK, 0 rows affected (0.00 sec)

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

mysql> INSERT INTO Flight
-> VALUES ('SKY505', '2025-07-14 21:00:00', '2025-07-14 23:00:00', 'Delhi', 'Dubai', 180, 10, 5);
ERROR 1205 (HY000): Lock wait timeout exceeded; try restarting transaction
```

```
mysql> COMMIT;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> SET SESSION TRANSACTION ISOLATION LEVEL SERIALIZABLE;
Query OK, 0 rows affected (0.00 sec)

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

mysql> INSERT INTO Flight
-> VALUES ('SKY505', '2025-07-14 21:00:00', '2025-07-14 23:00:00', 'Delhi', 'Dubai', 180, 10, 5);
Query OK, 1 row affected (0.00 sec)
```