1. Start MariaDB

```
PS C:\Program Files\MariaDB 11.7\bin> ./mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 5
Server version: 11.7.2-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)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
4 rows in set (0.027 sec)

MariaDB [(none)]>
```

2. Create Tables and Insert Data

```
MariaDB [(none)]> CREATE DATABASE hw3_database;
Query OK, 1 row affected (0.017 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| hw3_database       |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.001 sec)

MariaDB [(none)]> use hw3_databse
ERROR 1049 (42000): Unknown database 'hw3_databse'
MariaDB [(none)]> use hw3_database;
Database changed
MariaDB [hw3_database]> show tables;
Empty set (0.012 sec)

MariaDB [hw3_database]>
```

a. Schema: Create the necessary tables

| SQL Statements | Output |
|---|---|
| CREATE TABLE Booking (<br>    agent VARCHAR(50),<br>    traveler_ssn INTEGER,<br>    trip_id INTEGER,<br><br>    PRIMARY KEY (agent, traveler_ssn, trip_id)<br>); | `MariaDB [hw3_database]> CREATE TABLE Booking (` <br> `-> agent VARCHAR(50),` <br> `-> traveler_ssn INTEGER,` <br> `-> trip_id INTEGER,` <br> `->` <br> `-> PRIMARY KEY (agent, traveler_ssn, trip_id)` <br> `-> );` <br> `Query OK, 0 rows affected (0.008 sec)` <br><br> `MariaDB [hw3_database]> show tables;` <br> `+----------------------+` <br> `| Tables_in_hw3_database |` <br> `+----------------------+` <br> `| booking              |` <br> `+----------------------+` <br> `1 row in set (0.001 sec)` <br><br> `MariaDB [hw3_database]> DESCRIBE booking;` <br> `+--------------+---------+------+-----+---------+-------+` <br> `| Field        | Type    | Null | Key | Default | Extra |` <br> `+--------------+---------+------+-----+---------+-------+` <br> `| agent        | varchar(50) | NO | PRI | NULL  |       |` <br> `| traveler_ssn | int(11) | NO   | PRI | NULL    |       |` <br> `| trip_id      | int(11) | NO   | PRI | NULL    |       |` <br> `+--------------+---------+------+-----+---------+-------+` <br> `3 rows in set (0.026 sec)` |
| CREATE TABLE TravelAgent (<br>    name VARCHAR(50),<br>    years_experience INTEGER,<br>    phone VARCHAR(50),<br><br>    PRIMARY KEY (name)<br>); | `MariaDB [hw3_database]> CREATE TABLE TravelAgent (` <br> `-> name VARCHAR(50),` <br> `-> years_experience INTEGER,` <br> `-> phone VARCHAR(50),` <br> `->` <br> `-> PRIMARY KEY (name)` <br> `-> );` <br> `Query OK, 0 rows affected (0.007 sec)` <br><br> `MariaDB [hw3_database]> show tables;` <br> `+----------------------+` <br> `| Tables_in_hw3_database |` <br> `+----------------------+` <br> `| booking              |` <br> `| travelagent          |` <br> `+----------------------+` <br> `2 rows in set (0.001 sec)` <br><br> `MariaDB [hw3_database]> DESCRIBE travelagent;` <br> `+------------------+---------+------+-----+---------+-------+` <br> `| Field            | Type    | Null | Key | Default | Extra |` <br> `+------------------+---------+------+-----+---------+-------+` <br> `| name             | varchar(50) | NO | PRI | NULL  |       |` <br> `| years_experience | int(11) | YES  |     | NULL    |       |` <br> `| phone            | varchar(50) | YES |     | NULL    |       |` <br> `+------------------+---------+------+-----+---------+-------+` <br> `3 rows in set (0.023 sec)` <br><br> `MariaDB [hw3_database]>` |

| | |
|---|---|
| CREATE TABLE Traveler ( <br>     name VARCHAR(50), <br>     ssn INT, <br>     dob DATE, <br><br>     PRIMARY KEY(name) <br>); | ```MariaDB [hw3_database]> CREATE TABLE Traveler (
    -> name VARCHAR(50),
    -> ssn INT,
    -> dob DATE,
    ->
    -> PRIMARY KEY(name)
    -> );
Query OK, 0 rows affected (0.009 sec)

MariaDB [hw3_database]> show tables;
+----------------------+
| Tables_in_hw3_database |
+----------------------+
| booking              |
| travelagent          |
| traveler             |
+----------------------+
3 rows in set (0.001 sec)

MariaDB [hw3_database]> DESCRIBE traveler;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| name  | varchar(50) | NO   | PRI | NULL    |       |
| ssn   | int(11)     | YES  |     | NULL    |       |
| dob   | date        | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.016 sec)``` |
| CREATE TABLE Trip( <br>     id INTEGER, <br>     start_location VARCHAR(50), <br>     end_location VARCHAR(50), <br>     start_date DATE, <br>     end_date DATE, <br><br>     PRIMARY KEY (id) <br>); | ```MariaDB [hw3_database]> CREATE TABLE Trip(
    -> id INTEGER,
    -> start_location VARCHAR(50),
    -> end_location VARCHAR(50),
    -> start_date DATE,
    -> end_date DATE,
    ->
    -> PRIMARY KEY (id)
    -> );
Query OK, 0 rows affected (0.008 sec)

MariaDB [hw3_database]> show tables;
+----------------------+
| Tables_in_hw3_database |
+----------------------+
| booking              |
| travelagent          |
| traveler             |
| trip                 |
+----------------------+
4 rows in set (0.001 sec)

MariaDB [hw3_database]> DESCRIBE trip;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| id             | int(11)     | NO   | PRI | NULL    |       |
| start_location | varchar(50) | YES  |     | NULL    |       |
| end_location   | varchar(50) | YES  |     | NULL    |       |
| start_date     | date        | YES  |     | NULL    |       |
| end_date       | date        | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
5 rows in set (0.021 sec)``` |

b.   Insert Sample Data

| SQL Statements | Output |
|---|---|
| INSERT INTO TravelAgent (name, years_experience, phone) <br>VALUES <br>('Alice Brown', 12, '123-456-7890'), <br>('John Smith', 8, '234-567-8901'), <br>('Michael Johnson', 5, '345-678-9012'), <br>('Sarah Williams', 15, '456-789-0123'), <br>('Daniel Lee', 20, '567-890-1234'), <br>('Rachel Green', 3, '678-901-2345'); | ```MariaDB [hw3_database]> INSERT INTO TravelAgent (name, years_experience, phone)
    -> VALUES
    -> ('Alice Brown', 12, '123-456-7890'),
    -> ('John Smith', 8, '234-567-8901'),
    -> ('Michael Johnson', 5, '345-678-9012'),
    -> ('Sarah Williams', 15, '456-789-0123'),
    -> ('Daniel Lee', 20, '567-890-1234'),
    -> ('Rachel Green', 3, '678-901-2345');
Query OK, 6 rows affected (0.020 sec)
Records: 6  Duplicates: 0  Warnings: 0

MariaDB [hw3_database]> SELECT *
    -> FROM TravelAgent;
+-----------------+------------------+--------------+
| name            | years_experience | phone        |
+-----------------+------------------+--------------+
| Alice Brown     |               12 | 123-456-7890 |
| Daniel Lee      |               20 | 567-890-1234 |
| John Smith      |                8 | 234-567-8901 |
| Michael Johnson |                5 | 345-678-9012 |
| Rachel Green    |                3 | 678-901-2345 |
| Sarah Williams  |               15 | 456-789-0123 |
+-----------------+------------------+--------------+
6 rows in set (0.013 sec)``` |

| | |
|---|---|
| INSERT INTO Traveler (name, ssn, dob)<br>VALUES<br>('David Harris', 101, '1985-06-12'),<br>('Sarah Connor', 102, '1992-03-05'),<br>('Mike Johnson', 103, '1998-09-17'),<br>('Laura White', 104, '1995-04-23'),<br>('James Miller', 105, '2000-08-14'),<br>('Emma Watson', 106, '1997-11-30'),<br>('Chris Evans', 107, '1993-06-21'),<br>('Sophia Brown', 108, '1999-02-25'); | ```<br>MariaDB [hw3_database]> INSERT INTO Traveler (name, ssn, dob)<br>    -> VALUES<br>    -> ('David Harris', 101, '1985-06-12'),<br>    -> ('Sarah Connor', 102, '1992-03-05'),<br>    -> ('Mike Johnson', 103, '1998-09-17'),<br>    -> ('Laura White', 104, '1995-04-23'),<br>    -> ('James Miller', 105, '2000-08-14'),<br>    -> ('Emma Watson', 106, '1997-11-30'),<br>    -> ('Chris Evans', 107, '1993-06-21'),<br>    -> ('Sophia Brown', 108, '1999-02-25');<br>Query OK, 8 rows affected (0.003 sec)<br>Records: 8  Duplicates: 0  Warnings: 0<br><br>MariaDB [hw3_database]> SELECT *<br>    -> FROM Traveler;<br>+--------------+-----+------------+<br>| name         | ssn | dob        |<br>+--------------+-----+------------+<br>| Chris Evans  | 107 | 1993-06-21 |<br>| David Harris | 101 | 1985-06-12 |<br>| Emma Watson  | 106 | 1997-11-30 |<br>| James Miller | 105 | 2000-08-14 |<br>| Laura White  | 104 | 1995-04-23 |<br>| Mike Johnson | 103 | 1998-09-17 |<br>| Sarah Connor | 102 | 1992-03-05 |<br>| Sophia Brown | 108 | 1999-02-25 |<br>+--------------+-----+------------+<br>8 rows in set (0.001 sec)<br>``` |
| INSERT INTO Trip (id, start_location,<br>end_location, start_date, end_date)<br>VALUES<br>(201, 'New York', 'Paris', '2025-07-10',<br>'2025-07-20'),<br>(202, 'Tokyo', 'Sydney', '2025-08-01',<br>'2025-08-15'),<br>(203, 'London', 'Rome', '2025-09-05',<br>'2025-09-15'),<br>(204, 'Miami', 'New York', '2025-06-15',<br>'2025-06-20'),<br>(205, 'San Francisco', 'Berlin', '2025-10-<br>01', '2025-10-10'),<br>(206, 'Chicago', 'Los Angeles', '2025-09-<br>10', '2025-09-12'),<br>(207, 'Boston', 'Dubai', '2025-07-05',<br>'2025-07-18'),<br>(208, 'New York', 'Dubai', '2025-09-10',<br>'2025-09-15'); | ```<br>MariaDB [hw3_database]> INSERT INTO Trip (id, start_location, end_location,<br>start_date, end_date)<br>    -> VALUES<br>    -> (201, 'New York', 'Paris', '2025-07-10', '2025-07-20'),<br>    -> (202, 'Tokyo', 'Sydney', '2025-08-01', '2025-08-15'),<br>    -> (203, 'London', 'Rome', '2025-09-05', '2025-09-15'),<br>    -> (204, 'Miami', 'New York', '2025-06-15', '2025-06-20'),<br>    -> (205, 'San Francisco', 'Berlin', '2025-10-01', '2025-10-10'),<br>    -> (206, 'Chicago', 'Los Angeles', '2025-09-10', '2025-09-12'),<br>    -> (207, 'Boston', 'Dubai', '2025-07-05', '2025-07-18'),<br>    -> (208, 'New York', 'Dubai', '2025-09-10', '2025-09-15');<br>Query OK, 8 rows affected (0.001 sec)<br>Records: 8  Duplicates: 0  Warnings: 0<br><br>MariaDB [hw3_database]> SELECT *<br>    -> FROM Trip;<br>+-----+---------------+-------------+------------+------------+<br>| id  | start_location | end_location | start_date | end_date   |<br>+-----+---------------+-------------+------------+------------+<br>| 201 | New York      | Paris       | 2025-07-10 | 2025-07-20 |<br>| 202 | Tokyo         | Sydney      | 2025-08-01 | 2025-08-15 |<br>| 203 | London        | Rome        | 2025-09-05 | 2025-09-15 |<br>| 204 | Miami         | New York    | 2025-06-15 | 2025-06-20 |<br>| 205 | San Francisco | Berlin      | 2025-10-01 | 2025-10-10 |<br>| 206 | Chicago       | Los Angeles | 2025-09-10 | 2025-09-12 |<br>| 207 | Boston        | Dubai       | 2025-07-05 | 2025-07-18 |<br>| 208 | New York      | Dubai       | 2025-09-10 | 2025-09-15 |<br>+-----+---------------+-------------+------------+------------+<br>8 rows in set (0.000 sec)<br>``` |
| INSERT INTO Booking (agent,<br>traveler_ssn, trip_id)<br>VALUES<br>('Alice Brown', 101, 201),<br>('John Smith', 102, 202),<br>('Michael Johnson', 103, 203),<br>('Sarah Williams', 104, 204),<br>('Daniel Lee', 105, 205),<br>('Alice Brown', 106, 206),<br>('Rachel Green', 107, 207),<br>('John Smith', 108, 201),<br>('Alice Brown', 101, 208); | ```<br>MariaDB [hw3_database]> INSERT INTO Booking (agent, traveler_ssn, trip_id)<br>    -> VALUES<br>    -> ('Alice Brown', 101, 201),<br>    -> ('John Smith', 102, 202),<br>    -> ('Michael Johnson', 103, 203),<br>    -> ('Sarah Williams', 104, 204),<br>    -> ('Daniel Lee', 105, 205),<br>    -> ('Alice Brown', 106, 206),<br>    -> ('Rachel Green', 107, 207),<br>    -> ('John Smith', 108, 201),<br>    -> ('Alice Brown', 101, 208);<br>Query OK, 9 rows affected (0.009 sec)<br>Records: 9  Duplicates: 0  Warnings: 0<br><br>MariaDB [hw3_database]> SELECT *<br>    -> FROM booking;<br>+-----------------+--------------+---------+<br>| agent           | traveler_ssn | trip_id |<br>+-----------------+--------------+---------+<br>| Alice Brown     |          101 |     201 |<br>| Alice Brown     |          101 |     208 |<br>| Alice Brown     |          106 |     206 |<br>| Daniel Lee      |          105 |     205 |<br>| John Smith      |          102 |     202 |<br>| John Smith      |          108 |     201 |<br>| Michael Johnson |          103 |     203 |<br>| Rachel Green    |          107 |     207 |<br>| Sarah Williams  |          104 |     204 |<br>+-----------------+--------------+---------+<br>9 rows in set (0.001 sec)<br>``` |

3. SQL Query Exercises

| # | SQL Query | Screenshot of SQL Query and Query Output |
|---|-----------|------------------------------------------|
| 1 | SELECT  name, phone, 'Experienced Agent' AS Experience FROM TravelAgent WHERE years_experience > 10; | ```
MariaDB [hw3_database]> SELECT  name, phone, 'Experienced Agent' AS Experience
    -> FROM TravelAgent
    -> WHERE years_experience > 10;
+----------------+--------------+------------------+
| name           | phone        | Experience       |
+----------------+--------------+------------------+
| Alice Brown    | 123-456-7890 | Experienced Agent |
| Daniel Lee     | 567-890-1234 | Experienced Agent |
| Sarah Williams | 456-789-0123 | Experienced Agent |
+----------------+--------------+------------------+
3 rows in set (0.125 sec)
``` |
| 2 | SELECT start_date, end_date FROM Trip WHERE start_location = 'New York'; | ```
MariaDB [hw3_database]> SELECT start_date, end_date
    -> FROM Trip
    -> WHERE start_location = 'New York';
+------------+------------+
| start_date | end_date   |
+------------+------------+
| 2025-07-10 | 2025-07-20 |
| 2025-09-10 | 2025-09-15 |
+------------+------------+
2 rows in set (0.100 sec)
``` |
| 3 | SELECT * FROM Trip WHERE start_location = 'New York' AND end_location = 'Paris'; | ```
MariaDB [hw3_database]> SELECT *
    -> FROM Trip
    -> WHERE start_location = 'New York' AND end_location = 'Paris';
+-----+----------------+--------------+------------+------------+
| id  | start_location | end_location | start_date | end_date   |
+-----+----------------+--------------+------------+------------+
| 201 | New York       | Paris        | 2025-07-10 | 2025-07-20 |
+-----+----------------+--------------+------------+------------+
1 row in set (0.110 sec)
``` |
| 4 | SELECT * FROM Trip WHERE start_location = 'New York' OR start_location = 'Miami'; | ```
MariaDB [hw3_database]> SELECT *
    -> FROM Trip
    -> WHERE start_location = 'New York' OR start_location = 'Miami';
+-----+----------------+--------------+------------+------------+
| id  | start_location | end_location | start_date | end_date   |
+-----+----------------+--------------+------------+------------+
| 201 | New York       | Paris        | 2025-07-10 | 2025-07-20 |
| 204 | Miami          | New York     | 2025-06-15 | 2025-06-20 |
| 208 | New York       | Dubai        | 2025-09-10 | 2025-09-15 |
+-----+----------------+--------------+------------+------------+
3 rows in set (0.008 sec)
``` |
| 5 | SELECT * FROM Trip WHERE start_date > '2025-08-01'; | ```
MariaDB [hw3_database]> SELECT *
    -> FROM Trip
    -> WHERE start_date > '2025-08-01';
+-----+----------------+--------------+------------+------------+
| id  | start_location | end_location | start_date | end_date   |
+-----+----------------+--------------+------------+------------+
| 203 | London         | Rome         | 2025-09-05 | 2025-09-15 |
| 205 | San Francisco  | Berlin       | 2025-10-01 | 2025-10-10 |
| 206 | Chicago        | Los Angeles  | 2025-09-10 | 2025-09-12 |
| 208 | New York       | Dubai        | 2025-09-10 | 2025-09-15 |
+-----+----------------+--------------+------------+------------+
4 rows in set (0.008 sec)
``` |
| 6 | SELECT traveler_ssn, trip_id FROM Booking WHERE agent = 'Alice Brown'; | ```
MariaDB [hw3_database]> SELECT traveler_ssn, trip_id
    -> FROM Booking
    -> WHERE agent = 'Alice Brown';
+--------------+---------+
| traveler_ssn | trip_id |
+--------------+---------+
|          101 |     201 |
|          101 |     208 |
|          106 |     206 |
+--------------+---------+
3 rows in set (0.029 sec)
``` |
| 7 | SELECT * FROM Traveler WHERE name LIKE '_a%'; | ```
MariaDB [hw3_database]> SELECT *
    -> FROM Traveler
    -> WHERE name LIKE '_a%';
+--------------+------+------------+
| name         | ssn  | dob        |
+--------------+------+------------+
| David Harris |  101 | 1985-06-12 |
| James Miller |  105 | 2000-08-14 |
| Laura White  |  104 | 1995-04-23 |
| Sarah Connor |  102 | 1992-03-05 |
+--------------+------+------------+
4 rows in set (0.020 sec)
``` |

| 8 | SELECT *<br>FROM Traveler<br>WHERE name NOT LIKE 'David Harris'; | | |
|---|---|---|---|

```
MariaDB [hw3_database]> SELECT *
    -> FROM Traveler
    -> WHERE name NOT LIKE 'David Harris';
+--------------+------+------------+
| name         | ssn  | dob        |
+--------------+------+------------+
| Chris Evans  | 107  | 1993-06-21 |
| Emma Watson  | 106  | 1997-11-30 |
| James Miller | 105  | 2000-08-14 |
| Laura White  | 104  | 1995-04-23 |
| Mike Johnson | 103  | 1998-09-17 |
| Sarah Connor | 102  | 1992-03-05 |
| Sophia Brown | 108  | 1999-02-25 |
+--------------+------+------------+
7 rows in set (0.003 sec)
```

| 9 | SELECT *<br>FROM TravelAgent<br>WHERE phone LIKE '456-___-____'; | | |
|---|---|---|---|

```
MariaDB [hw3_database]> SELECT *
    -> FROM TravelAgent
    -> WHERE phone LIKE '456-___-____';
+----------------+------------------+--------------+
| name           | years_experience | phone        |
+----------------+------------------+--------------+
| Sarah Williams |               15 | 456-789-0123 |
+----------------+------------------+--------------+
1 row in set (0.002 sec)
```

| 10 | SELECT *<br>FROM Trip<br>WHERE start_date BETWEEN '2025-07-01' AND '2025-09-30'; | | |
|---|---|---|---|

```
MariaDB [hw3_database]> SELECT *
    -> FROM Trip
    -> WHERE start_date BETWEEN '2025-07-01' AND '2025-09-30';
+-----+----------------+-------------+------------+------------+
| id  | start_location | end_location | start_date | end_date  |
+-----+----------------+-------------+------------+------------+
| 201 | New York       | Paris       | 2025-07-10 | 2025-07-20 |
| 202 | Tokyo          | Sydney      | 2025-08-01 | 2025-08-15 |
| 203 | London         | Rome        | 2025-09-05 | 2025-09-15 |
| 206 | Chicago        | Los Angeles | 2025-09-10 | 2025-09-12 |
| 207 | Boston         | Dubai       | 2025-07-05 | 2025-07-18 |
| 208 | New York       | Dubai       | 2025-09-10 | 2025-09-15 |
+-----+----------------+-------------+------------+------------+
6 rows in set (0.108 sec)
```