Name: Natalie Poche
Assignment: Homework 7
Due: April 23, 2025

Homework 7

Problem Statement: This assignment uses the same database named HW 6 7 that you created in Homework 6. Before beginning this assignment, do the following:

- Use the HW 6 7 database. Do not create a new one.

```
MariaDB [(none)]> use hw_6_7;
Database changed
MariaDB [hw_6_7]>
```

- Delete all existing records from the tables to start with a clean slate.

```
MariaDB [hw_6_7]> show tables;
+--------------------+
| Tables_in_hw_6_7   |
+--------------------+
| booking            |
| deletedtravelerlog |
| goeson             |
| leg                |
| owns               |
| passport           |
| travelagent        |
| traveler           |
| travelerstats      |
| trip               |
+--------------------+
10 rows in set (0.002 sec)

MariaDB [hw_6_7]> select * from booking, deletedtravelerlog, goeson, leg, owns, passport, travelagent, traveler, travelerstats, tr
    -> ;
Empty set (0.009 sec)
```


- Repopulate the database with the new data provided in the INSERT statements below. These updated records will be used to complete all tasks in Homework 7.

SQL Statements	SQL Implementation
INSERT INTO Traveler (name, ssn, dob) VALUES ('John Doe', 101, '1985-06-12'), ('Alice Brown', 102, '1992-03-05'), ('Mike Johnson', 103, '1998-09-17'), ('Lisa Turner', 104, '2000-12-22'), ('Sarah Connor', 105, '2003-11-01'), ('David Harris', 106, '1980-07-15'), ('Emma Watson', 107, '1995-01-08'), ('James Miller', 108, '1999-05-21'); SELECT * FROM Traveler;	MariaDB [hw_6_7]> INSERT INTO Traveler (name, ssn, dob) -> VALUES ('John Doe', 101, '1985-06-12'), -> ('Alice Brown', 102, '1992-03-05'), -> ('Mike Johnson', 103, '1998-09-17'), -> ('Lisa Turner', 104, '2000-12-22'), -> ('Sarah Connor', 105, '2003-11-01'), -> ('David Harris', 106, '1980-07-15'), -> ('Emma Watson', 107, '1995-01-08'), -> ('James Miller', 108, '1999-05-21'); Query OK, 8 rows affected (0.012 sec) Records: 8 Duplicates: 0 Warnings: 0 MariaDB [hw_6_7]> MariaDB [hw_6_7]> SELECT * FROM Traveler; +--------------+-----+------------+ | name | ssn | dob | +--------------+-----+------------+ | John Doe | 101 | 1985-06-12 | | Alice Brown | 102 | 1992-03-05 | | Mike Johnson | 103 | 1998-09-17 | | Lisa Turner | 104 | 2000-12-22 | | Sarah Connor | 105 | 2003-11-01 | | David Harris | 106 | 1980-07-15 | | Emma Watson | 107 | 1995-01-08 | | James Miller | 108 | 1999-05-21 | +--------------+-----+------------+ 8 rows in set (0.001 sec)

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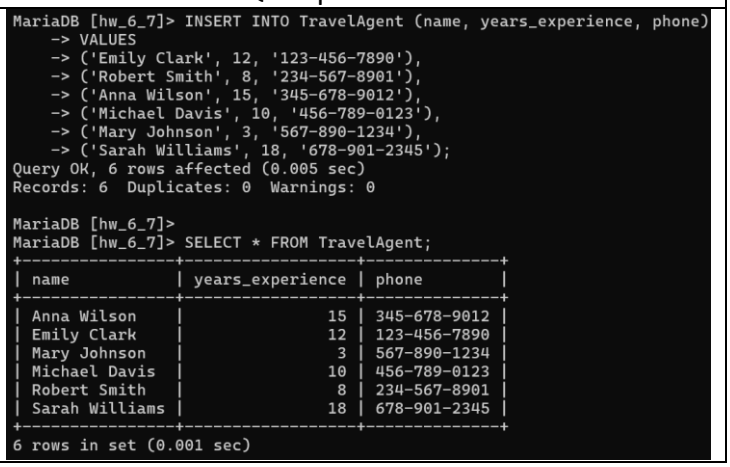
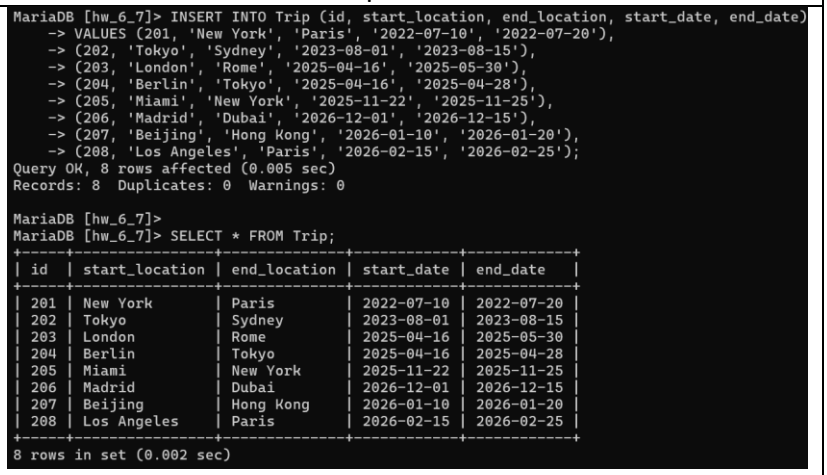
SQL Statements	SQL Implementation
INSERT INTO TravelAgent (name, years_experience, phone) VALUES ('Emily Clark', 12, '123-456-7890'), ('Robert Smith', 8, '234-567-8901'), ('Anna Wilson', 15, '345-678-9012'), ('Michael Davis', 10, '456-789-0123'), ('Mary Johnson', 3, '567-890-1234'), ('Sarah Williams', 18, '678-901-2345'); SELECT * FROM TravelAgent;	

SQL Statements	SQL Implementation
INSERT INTO Trip (id, start_location, end_location, start_date, end_date) VALUES (201, 'New York', 'Paris', '2022-07-10', '2022-07-20'), (202, 'Tokyo', 'Sydney', '2023-08-01', '2023-08-15'), (203, 'London', 'Rome', '2025-04-16', '2025-05-30'), (204, 'Berlin', 'Tokyo', '2025-04-16', '2025-04-28'), (205, 'Miami', 'New York', '2025-11-22', '2025-11-25'), (206, 'Madrid', 'Dubai', '2026-12-01', '2026-12-15'), (207, 'Beijing', 'Hong Kong', '2026-01-10', '2026-01-20'), (208, 'Los Angeles', 'Paris', '2026-02-15', '2026-02-25'); SELECT * FROM Trip;	

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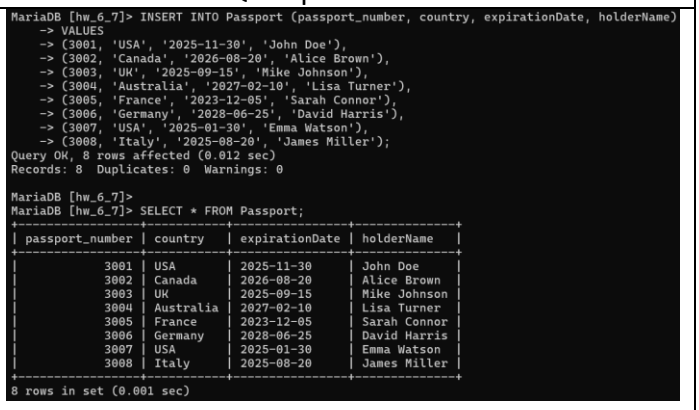
SQL Statements	SQL Implementation
INSERT INTO Passport (passport_number, country, expirationDate, holderName) VALUES (3001, 'USA', '2025-11-30', 'John Doe'), (3002, 'Canada', '2026-08-20', 'Alice Brown'), (3003, 'UK', '2025-09-15', 'Mike Johnson'), (3004, 'Australia', '2027-02-10', 'Lisa Turner'), (3005, 'France', '2023-12-05', 'Sarah Connor'), (3006, 'Germany', '2028-06-25', 'David Harris'), (3007, 'USA', '2025-01-30', 'Emma Watson'), (3008, 'Italy', '2025-08-20', 'James Miller'); SELECT * FROM Passport;	

SQL Statements	SQL Implementation
INSERT INTO Owns (ssn, passport_number, country) VALUES (101, 3001, 'USA'), (102, 3002, 'Canada'), (103, 3003, 'UK'), (104, 3004, 'Australia'), (105, 3005, 'France'), (106, 3006, 'Germany'), (107, 3007, 'USA'), (108, 3008, 'Italy'); SELECT * FROM Owns;	

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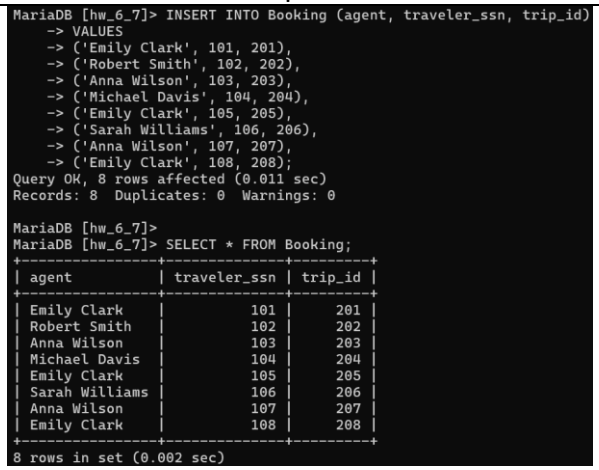
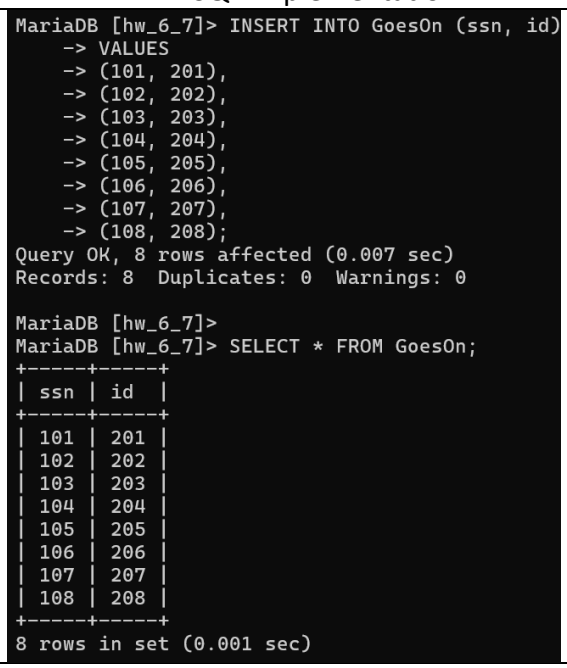
SQL Statements	SQL Implementation
INSERT INTO Booking (agent, traveler_ssn, trip_id) VALUES ('Emily Clark', 101, 201), ('Robert Smith', 102, 202), ('Anna Wilson', 103, 203), ('Michael Davis', 104, 204), ('Emily Clark', 105, 205), ('Sarah Williams', 106, 206), ('Anna Wilson', 107, 207), ('Emily Clark', 108, 208); SELECT * FROM Booking;	

SQL Statements	SQL Implementation
INSERT INTO GoesOn (ssn, id) VALUES (101, 201), (102, 202), (103, 203), (104, 204), (105, 205), (106, 206), (107, 207), (108, 208); SELECT * FROM GoesOn;	

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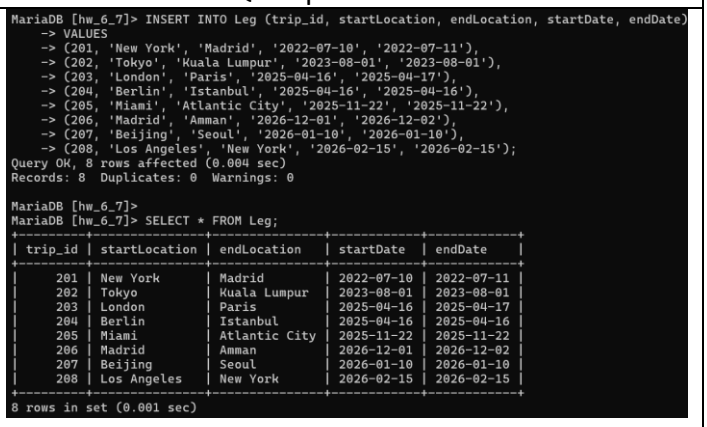
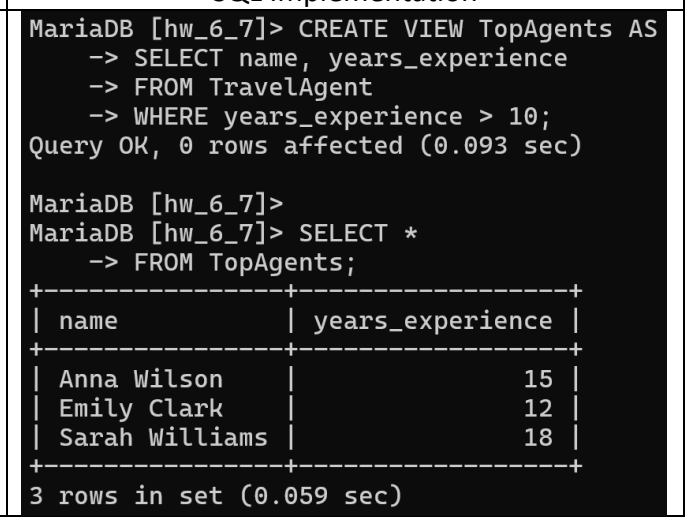
SQL Statements	SQL Implementation
INSERT INTO Leg (trip_id, startLocation, endLocation, startDate, endDate) VALUES (201, 'New York', 'Madrid', '2022-07-10', '2022-07-11'), (202, 'Tokyo', 'Kuala Lumpur', '2023-08-01', '2023-08-01'), (203, 'London', 'Paris', '2025-04-16', '2025-04-17'), (204, 'Berlin', 'Istanbul', '2025-04-16', '2025-04-16'), (205, 'Miami', 'Atlantic City', '2025-11-22', '2025-11-22'), (206, 'Madrid', 'Amman', '2026-12-01', '2026-12-02'), (207, 'Beijing', 'Seoul', '2026-01-10', '2026-01-10'), (208, 'Los Angeles', 'New York', '2026-02-15', '2026-02-15'); SELECT * FROM Leg;	

Part 1: Create Standard Views

1. View: TopAgents (10 points) Create a view named TopAgents that lists all travel agents who have more than 10 years of experience. Include the name and years experience columns.

SQL Statements	SQL Implementation
CREATE VIEW TopAgents AS SELECT name, years_experience FROM TravelAgent WHERE years_experience > 10; SELECT * FROM TopAgents;	

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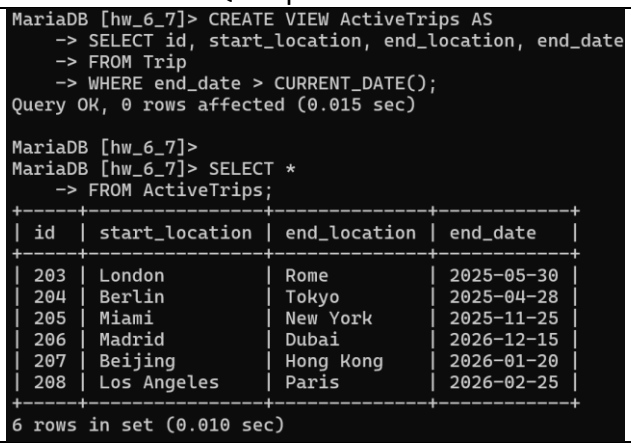
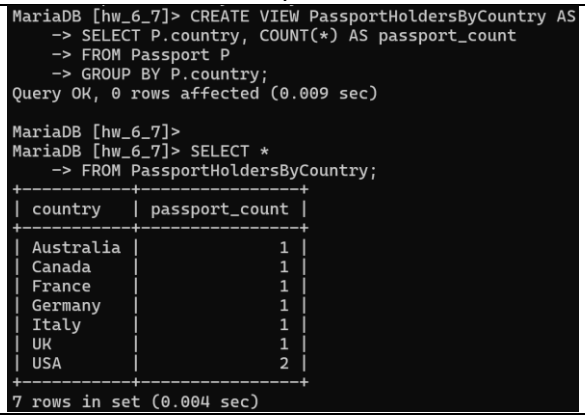
2. View: ActiveTrips (10 points) Create a view named ActiveTrips that includes details of all trips where the end date is later than the current date. Include the id, start location, end location, and end date columns.

SQL Statements	SQL Implementation
CREATE VIEW ActiveTrips AS SELECT id, start_location, end_location, end_date FROM Trip WHERE end_date > CURRENT_DATE(); SELECT * FROM ActiveTrips;	

```
MariaDB [hw_6_7]> CREATE VIEW ActiveTrips AS
    -> SELECT id, start_location, end_location, end_date
    -> FROM Trip
    -> WHERE end_date > CURRENT_DATE();
Query OK, 0 rows affected (0.015 sec)

MariaDB [hw_6_7]>
MariaDB [hw_6_7]> SELECT *
    -> FROM ActiveTrips;
+-----+----------------+--------------+------------+
| id  | start_location | end_location | end_date   |
+-----+----------------+--------------+------------+
| 203 | London         | Rome         | 2025-05-30 |
| 204 | Berlin         | Tokyo        | 2025-04-28 |
| 205 | Miami          | New York     | 2025-11-25 |
| 206 | Madrid         | Dubai        | 2026-12-15 |
| 207 | Beijing        | Hong Kong    | 2026-01-20 |
| 208 | Los Angeles    | Paris        | 2026-02-25 |
+-----+----------------+--------------+------------+
6 rows in set (0.010 sec)
```

3. View: PassportHoldersByCountry (15 points) Create a view named PassportHoldersByCountry that lists the number of passport holders grouped by country. Include country and the count of passport holders as passport count.

SQL Statements	SQL Implementation
CREATE VIEW PassportHoldersByCountry AS SELECT P.country, COUNT(*) AS passport_count FROM Passport P GROUP BY P.country; SELECT * FROM PassportHoldersByCountry;	

```
MariaDB [hw_6_7]> CREATE VIEW PassportHoldersByCountry AS
    -> SELECT P.country, COUNT(*) AS passport_count
    -> FROM Passport P
    -> GROUP BY P.country;
Query OK, 0 rows affected (0.009 sec)

MariaDB [hw_6_7]>
MariaDB [hw_6_7]> SELECT *
    -> FROM PassportHoldersByCountry;
+-----------+----------------+
| country   | passport_count |
+-----------+----------------+
| Australia |              1 |
| Canada    |              1 |
| France    |              1 |
| Germany   |              1 |
| Italy     |              1 |
| UK        |              1 |
| USA       |              2 |
+-----------+----------------+
7 rows in set (0.004 sec)
```

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4. View: AgentBookings (15 points) Create a view named AgentBookings that lists each agent's name along with the total number of trips they have booked. Include the agent and the total number of trips as trip count.

SQL Statements	SQL Implementation
CREATE VIEW AgentBookings AS SELECT B.agent, COUNT(*) AS trip_count FROM Booking B GROUP BY B.agent; SELECT * FROM AgentBookings;	MariaDB [hw_6_7]> CREATE VIEW AgentBookings AS -> SELECT B.agent, COUNT(*) AS trip_count -> FROM Booking B -> GROUP BY B.agent; Query OK, 0 rows affected (0.009 sec) MariaDB [hw_6_7]> MariaDB [hw_6_7]> SELECT * -> FROM AgentBookings; +----------------+------------+ | agent | trip_count | +----------------+------------+ | Anna Wilson | 2 | | Emily Clark | 3 | | Michael Davis | 1 | | Robert Smith | 1 | | Sarah Williams | 1 | +----------------+------------+ 5 rows in set (0.004 sec)

5. View: UpcomingTripsByTraveler (20 points) Create a view named UpcomingTripsByTraveler that lists each traveler's name, their upcoming trips (trips starting after today using CURRENT DATE() function), and the trip start and end dates. Include name, id, start date, and end date.

SQL Statements	SQL Implementation
CREATE VIEW UpcomingTripsByTraveler AS SELECT T.name, B.trip_id, Tr.start_date, Tr.end_date FROM Traveler T JOIN Booking B ON B.traveler_ssn = T.ssn JOIN Trip Tr ON Tr.id = B.trip_id WHERE Tr.start_date > CURRENT_DATE(); SELECT * FROM UpcomingTripsByTraveler;	MariaDB [hw_6_7]> CREATE VIEW UpcomingTripsByTraveler AS -> SELECT T.name, B.trip_id, Tr.start_date, Tr.end_date -> FROM Traveler T -> JOIN Booking B ON B.traveler_ssn = T.ssn -> JOIN Trip Tr ON Tr.id = B.trip_id -> WHERE Tr.start_date > CURRENT_DATE(); ERROR 1050 (42S01): Table 'UpcomingTripsByTraveler' already exists MariaDB [hw_6_7]> MariaDB [hw_6_7]> SELECT * -> FROM UpcomingTripsByTraveler; +--------------+---------+------------+------------+ | name | trip_id | start_date | end_date | +--------------+---------+------------+------------+ | Sarah Connor | 205 | 2025-11-22 | 2025-11-25 | | David Harris | 206 | 2026-12-01 | 2026-12-15 | | Emma Watson | 207 | 2026-01-10 | 2026-01-20 | | James Miller | 208 | 2026-02-15 | 2026-02-25 | +--------------+---------+------------+------------+ 4 rows in set (0.001 sec)

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Part 2: Scenarios and Queries

1. (5 points) List all travel agents who have booked trips for travelers on trips starting after today.

SQL Statements	SQL Implementation
SELECT DISTINCT B.agent FROM UpcomingTripsByTraveler T JOIN Booking B ON B.trip_id = T.trip_id WHERE T.start_date > CURRENT_DATE();	MariaDB [hw_6_7]> SELECT DISTINCT B.agent -> FROM UpcomingTripsByTraveler T -> JOIN Booking B ON B.trip_id = T.trip_id -> WHERE T.start_date > CURRENT_DATE(); +----------------+ | agent | +----------------+ | Emily Clark | | Sarah Williams | | Anna Wilson | +----------------+ 3 rows in set (0.007 sec)

2. (5 points) Identify the country with the highest number of passport holders.

SQL Statements	SQL Implementation
SELECT A.country FROM PassportHoldersByCountry A WHERE A.passport_count >= (SELECT MAX(*));	MariaDB [hw_6_7]> SELECT A.country -> FROM PassportHoldersByCountry A -> WHERE A.passport_count >= (-> SELECT MAX(B.passport_count) -> FROM PassportHoldersByCountry B); +---------+ | country | +---------+ | USA | +---------+ 1 row in set (0.336 sec)

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3. (10 points) Find the traveler(s) who have the most upcoming trips.

SQL Statements	SQL Implementation
SELECT A.name FROM UpcomingTripsByTraveler A GROUP BY A.name HAVING COUNT(*) = (SELECT MAX(C.trip_count) FROM(SELECT COUNT(*) AS trip_count FROM UpcomingTripsByTraveler B GROUP BY B.name) AS C);	MariaDB [hw_6_7]> SELECT A.name -> FROM UpcomingTripsByTraveler A -> GROUP BY A.name -> HAVING COUNT(*) = (-> SELECT MAX(C.trip_count) -> FROM(-> SELECT COUNT(*) AS trip_count -> FROM UpcomingTripsByTraveler B -> GROUP BY B.name ->) AS C ->); +--------------+ | name | +--------------+ | David Harris | | Emma Watson | | James Miller | | Sarah Connor | +--------------+ 4 rows in set (0.013 sec)
SELECT A.name, COUNT(*) FROM UpcomingTripsByTraveler A GROUP BY A.name HAVING COUNT(*) >= ANY(SELECT COUNT(*) FROM UpcomingTripsByTraveler B GROUP BY B.name HAVING COUNT(*) > 0);	MariaDB [hw_6_7]> SELECT A.name -> FROM UpcomingTripsByTraveler A -> GROUP BY A.name -> HAVING COUNT(*) >= ANY(-> SELECT COUNT(*) -> FROM UpcomingTripsByTraveler B -> GROUP BY B.name -> HAVING COUNT(*) > 0); +--------------+ | name | +--------------+ | David Harris | | Emma Watson | | James Miller | | Sarah Connor | +--------------+ 4 rows in set (0.170 sec)

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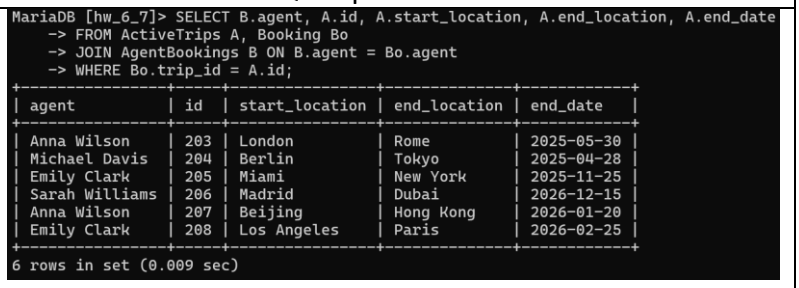
4. (10 points) List all active trips (as per ActiveTrips) with their corresponding travel agents.

SQL Statements	SQL Implementation
SELECT B.agent, A.id, A.start_location, A.end_location, A.end_date FROM ActiveTrips A, Booking Bo JOIN AgentBookings B ON B.agent = Bo.agent WHERE Bo.trip_id = A.id;	

```
MariaDB [hw_6_7]> SELECT B.agent, A.id, A.start_location, A.end_location, A.end_date
    -> FROM ActiveTrips A, Booking Bo
    -> JOIN AgentBookings B ON B.agent = Bo.agent
    -> WHERE Bo.trip_id = A.id;
+----------------+-----+----------------+--------------+------------+
| agent          | id  | start_location | end_location | end_date   |
+----------------+-----+----------------+--------------+------------+
| Anna Wilson    | 203 | London         | Rome         | 2025-05-30 |
| Michael Davis  | 204 | Berlin         | Tokyo        | 2025-04-28 |
| Emily Clark    | 205 | Miami          | New York     | 2025-11-25 |
| Sarah Williams | 206 | Madrid         | Dubai        | 2026-12-15 |
| Anna Wilson    | 207 | Beijing        | Hong Kong    | 2026-01-20 |
| Emily Clark    | 208 | Los Angeles    | Paris        | 2026-02-25 |
+----------------+-----+----------------+--------------+------------+
6 rows in set (0.009 sec)
```