Group: Alek Coupet and William Lee

1) Find the addresses of all houses currently listed.

```
MariaDB [(none)]> use realestatedb;
Database changed
MariaDB [realestatedb]> SELECT P.address
    -> FROM Property P
    -> JOIN House H ON P.address = H.address
    -> JOIN Listings L ON P.address = L.address;
+----------------+
| address        |
+----------------+
| 123 Elm St     |
| 202 Birch Blvd |
| 321 Pine Ct    |
| 456 Oak St     |
| 789 Maple Ave  |
+----------------+
5 rows in set (0.001 sec)

MariaDB [realestatedb]>
```

2) Find the addresses and MLS numbers of all houses currently listed.

```
MariaDB [realestatedb]> SELECT P.address, L.mlsNumber
    -> FROM Property P
    -> JOIN House H ON P.address = H.address
    -> JOIN Listings L ON P.address = L.address;
+----------------+-----------+
| address        | mlsNumber |
+----------------+-----------+
| 123 Elm St     |         1 |
| 202 Birch Blvd |         3 |
| 321 Pine Ct    |         5 |
| 456 Oak St     |         2 |
| 789 Maple Ave  |         4 |
+----------------+-----------+
5 rows in set (0.001 sec)

MariaDB [realestatedb]>
```

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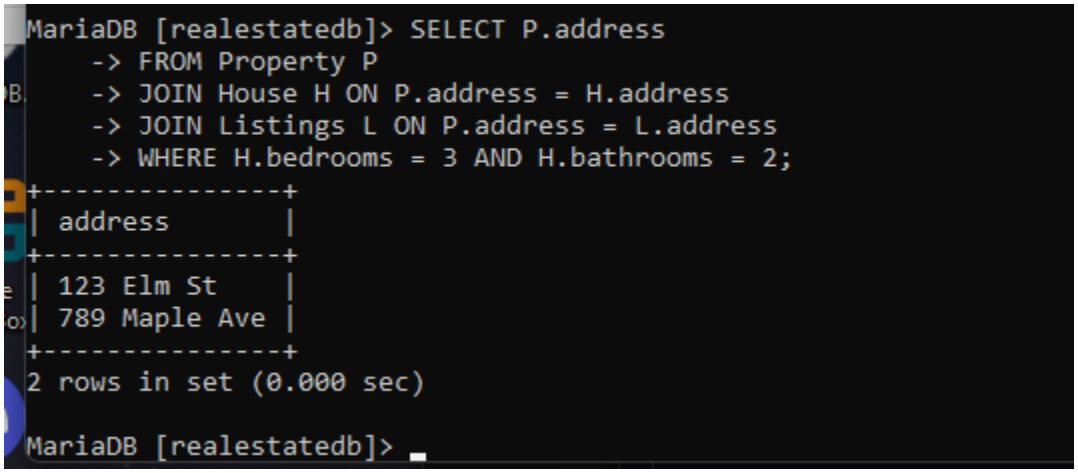
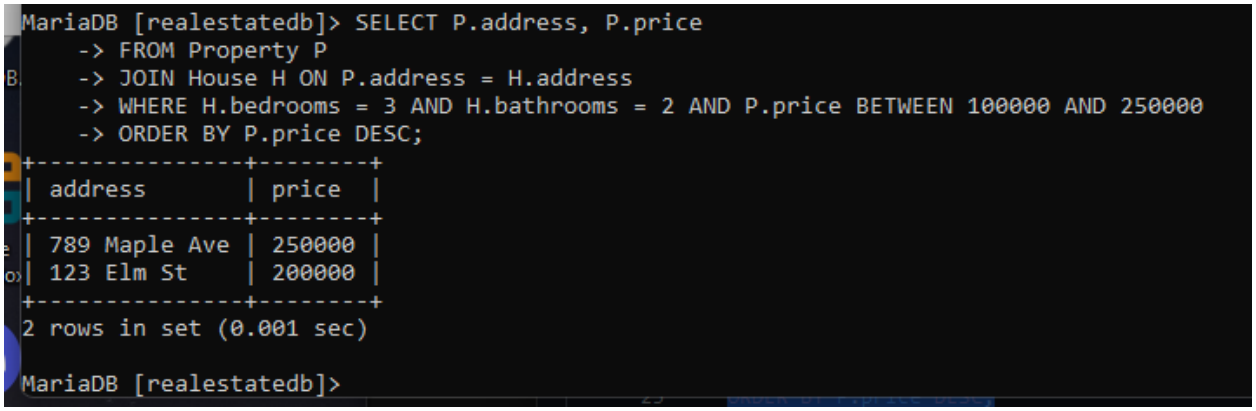
3) Find the addresses of all 3-bedroom, 2-bathroom houses currently listed.



```
MariaDB [realestatedb]> SELECT P.address
    -> FROM Property P
    -> JOIN House H ON P.address = H.address
    -> JOIN Listings L ON P.address = L.address
    -> WHERE H.bedrooms = 3 AND H.bathrooms = 2;
+---------------+
| address       |
+---------------+
| 123 Elm St    |
| 789 Maple Ave |
+---------------+
2 rows in set (0.000 sec)

MariaDB [realestatedb]>
```

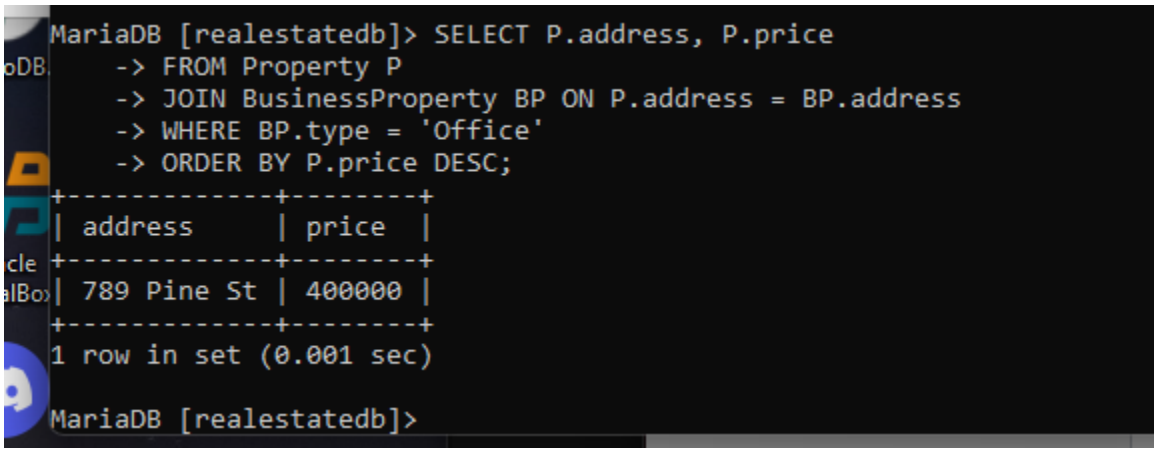
4) Find the addresses and prices of all 3-bedroom, 2-bathroom houses with prices in the range $100,000 to $250,000, with the results shown in descending order of price.



```
MariaDB [realestatedb]> SELECT P.address, P.price
    -> FROM Property P
    -> JOIN House H ON P.address = H.address
    -> WHERE H.bedrooms = 3 AND H.bathrooms = 2 AND P.price BETWEEN 100000 AND 250000
    -> ORDER BY P.price DESC;
+---------------+--------+
| address       | price  |
+---------------+--------+
| 789 Maple Ave | 250000 |
| 123 Elm St    | 200000 |
+---------------+--------+
2 rows in set (0.001 sec)

MariaDB [realestatedb]>
```

5) Find the addresses and prices of all business properties that are advertised as office space in descending order of price.



```
MariaDB [realestatedb]> SELECT P.address, P.price
    -> FROM Property P
    -> JOIN BusinessProperty BP ON P.address = BP.address
    -> WHERE BP.type = 'Office'
    -> ORDER BY P.price DESC;
+-------------+--------+
| address     | price  |
+-------------+--------+
| 789 Pine St | 400000 |
+-------------+--------+
1 row in set (0.001 sec)

MariaDB [realestatedb]>
```

6) Find all the ids, names, and phones of all agents, together with the names of their firms and the dates when they started.

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```
MariaDB [realestatedb]> SELECT A.agentId, A.name AS agent_name, A.phone, F.name AS firm_name, A.dateStarted
    -> FROM Agent A
    -> JOIN Firm F ON A.firmId = F.id;
+---------+------------+--------------+---------------------+-------------+
| agentId | agent_name | phone        | firm_name           | dateStarted |
+---------+------------+--------------+---------------------+-------------+
|       1 | John Doe   | 123-456-7890 | Sunset Realty       | 2020-01-01  |
|       2 | Jane Smith | 987-654-3210 | Oceanview Properties | 2021-02-15  |
|       3 | Lucas Scott | 555-123-4567 | Dream Realty        | 2018-07-20  |
|       4 | Mia Green  | 555-987-6543 | Premium Properties  | 2020-08-15  |
|       5 | Ethan Black | 555-444-5555 | Urban Estates       | 2021-05-12  |
+---------+------------+--------------+---------------------+-------------+
5 rows in set (0.001 sec)

MariaDB [realestatedb]>
```

7) Find all the properties currently listed by an agent with id "001" (or some other suitable id).

```
MariaDB [realestatedb]> SELECT P.address, P.price
    -> FROM Property P
    -> JOIN Listings L ON P.address = L.address
    -> WHERE L.agentId = 3;
+----------------+--------+
| address        | price  |
+----------------+--------+
| 202 Birch Blvd | 600000 |
| 654 Oak Dr     | 450000 |
+----------------+--------+
2 rows in set (0.001 sec)

MariaDB [realestatedb]>
```

8) Find all Agent.name-Buyer.name pairs where the buyer works with the agent, sorted alphabetically by Agent.name.

```
MariaDB [realestatedb]> SELECT A.name AS agent_name, B.name AS buyer_name
    -> FROM Works_With WW
    -> JOIN Agent A ON WW.agentId = A.agentId
    -> JOIN Buyer B ON WW.buyerId = B.id
    -> ORDER BY A.name;
+-------------+---------------+
| agent_name  | buyer_name    |
+-------------+---------------+
| Ethan Black | Olivia Harris |
| Jane Smith  | Emily Blunt   |
| John Doe    | Chris Evans   |
| Lucas Scott | Rachel Adams  |
| Mia Green   | David Nelson  |
+-------------+---------------+
5 rows in set (0.001 sec)

MariaDB [realestatedb]>
```

9) For each agent, find the total number of buyers currently working with that agent (Agent.id-count pairs).

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```
MariaDB [realestatedb]> SELECT A.agentId, COUNT(WW.buyerId) AS buyer_count
    -> FROM Agent A
    -> LEFT JOIN Works_With WW ON A.agentId = WW.agentId
    -> GROUP BY A.agentId;
+---------+-------------+
| agentId | buyer_count |
+---------+-------------+
|       1 |           1 |
|       2 |           1 |
|       3 |           1 |
|       4 |           1 |
|       5 |           1 |
+---------+-------------+
5 rows in set (0.001 sec)

MariaDB [realestatedb]>
```

10) For a buyer (e.g., identified by id "001"), find all houses that meet the buyer's preferences, with the results shown in descending order of price.

```
MariaDB [realestatedb]> SELECT P.address, P.price
    -> FROM Property P
    -> JOIN House H ON P.address = H.address
    -> JOIN Buyer B ON B.id = 3
    -> WHERE B.propertyType = 'House'
    ->   AND H.bedrooms = B.bedrooms
    ->   AND H.bathrooms = B.bathrooms
    ->   AND P.price BETWEEN B.minimumPreferredPrice AND B.maximumPreferredPrice
    -> ORDER BY P.price DESC;
+-------------+--------+
| address     | price  |
+-------------+--------+
| 321 Pine Ct | 350000 |
+-------------+--------+
1 row in set (0.001 sec)

MariaDB [realestatedb]>
```