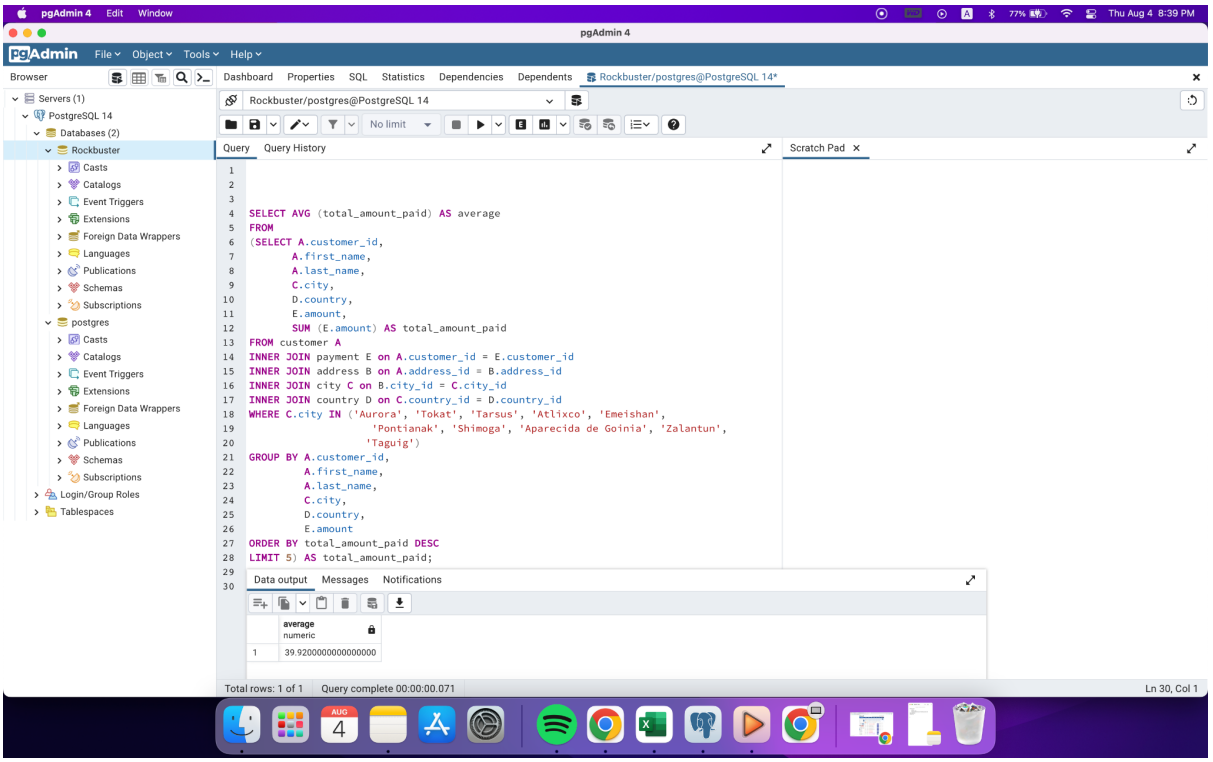
Answers 3.8

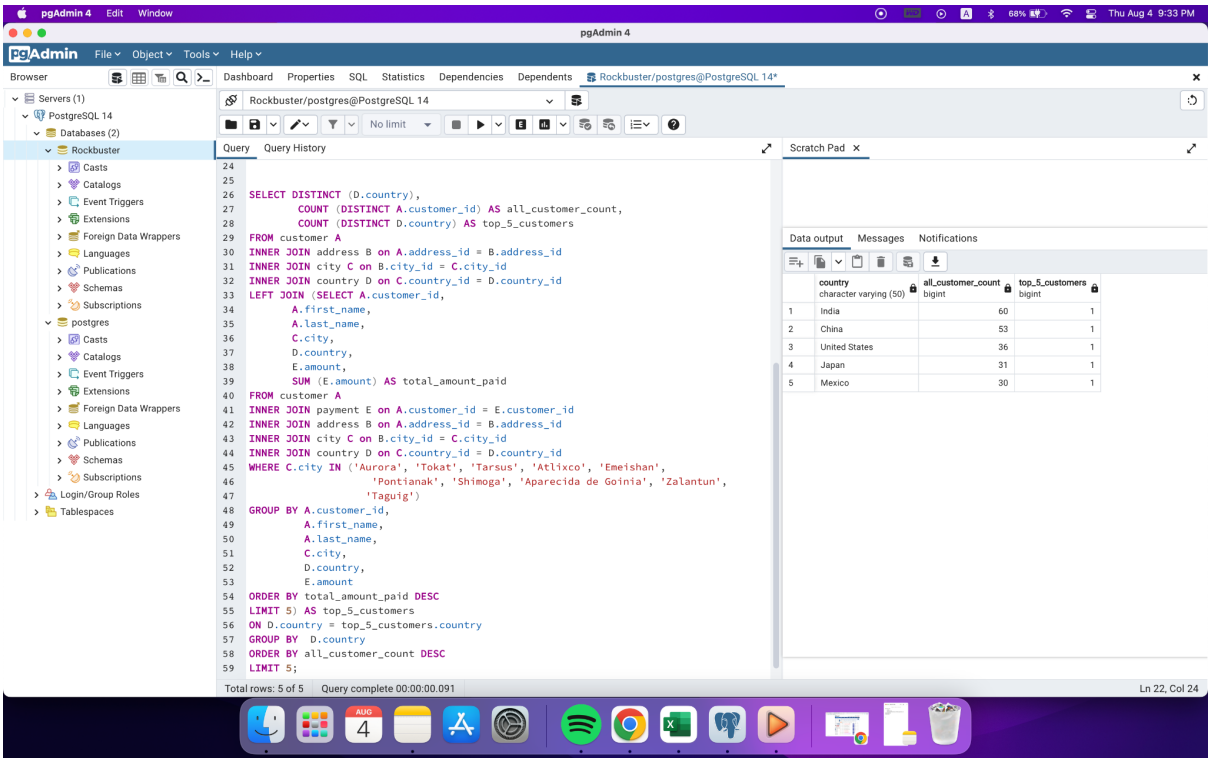
1.




```
SELECT AVG (total_amount_paid) AS average
FROM
(SELECT A.customer_id,
      A.first_name,
      A.last_name,
      C.city,
      D.country,
      E.amount,
      SUM (E.amount) AS total_amount_paid
FROM customer A
INNER JOIN payment E on A.customer_id = E.customer_id
INNER JOIN address B on A.address_id = B.address_id
INNER JOIN city C on B.city_id = C.city_id
INNER JOIN country D on C.country_id = D.country_id
WHERE C.city IN ('Aurora', 'Tokat', 'Tarsus', 'Atlixco', 'Emeishan',
                 'Pontianak', 'Shimoga', 'Aparecida de Goinia', 'Zalantun',
                'Taguig')
GROUP BY A.customer_id,
      A.first_name,
      A.last_name,
      C.city,
      D.country,
```

```
        E.amount
ORDER BY total_amount_paid DESC
LIMIT 5) AS total_amount_paid;
```

2.




```
  SELECT DISTINCT (D.country),
        COUNT (DISTINCT A.customer_id) AS all_customer_count,
        COUNT (DISTINCT D.country) AS top_5_customers
FROM customer A
INNER JOIN address B on A.address_id = B.address_id
INNER JOIN city C on B.city_id = C.city_id
INNER JOIN country D on C.country_id = D.country_id
LEFT JOIN (SELECT A.customer_id,
        A.first_name,
        A.last_name,
        C.city,
        D.country,
        E.amount,
        SUM (E.amount) AS total_amount_paid
FROM customer A
INNER JOIN payment E on A.customer_id = E.customer_id
INNER JOIN address B on A.address_id = B.address_id
INNER JOIN city C on B.city_id = C.city_id
INNER JOIN country D on C.country_id = D.country_id
WHERE C.city IN ('Aurora', 'Tokat', 'Tarsus', 'Atlixco', 'Emeishan',
```

```
                'Pontianak', 'Shimoga', 'Aparecida de Goinia', 'Zalantun',
                'Taguig')
GROUP BY A.customer_id,
        A.first_name,
        A.last_name,
        C.city,
        D.country,
        E.amount
ORDER BY total_amount_paid DESC
LIMIT 5) AS top_5_customers
ON D.country = top_5_customers.country
GROUP BY  D.country
ORDER BY all_customer_count DESC
LIMIT 5;
```

3.

The subquery is not needed for step 1. It can be done by using the aggregate function. However, for step 2, the subquery is needed because it requires 2 different tables for the output.

When I am working with data that is constantly changing, subqueries are needed.