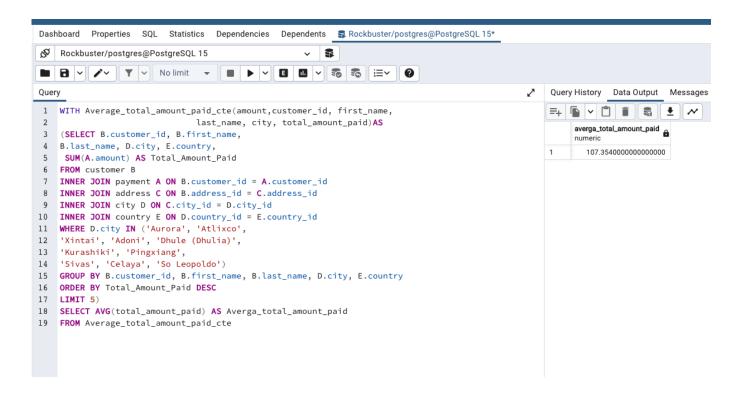
# 3.9- Common Table Expressions

### **Answers 3.9**

• Step 1:

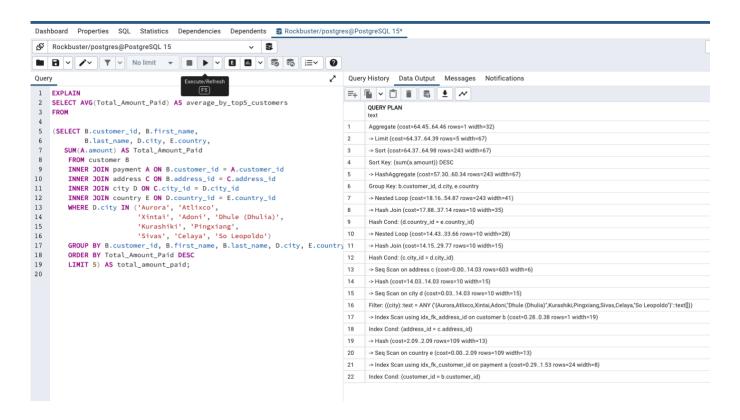
```
Subquerie----SELECT AVG(Total Amount Paid) AS average by top5 customers
      (SELECT B.customer_id, B.first_name,
                     B.last_name, D.city, E.country,
SUM(A.amount) AS Total_Amount_Paid
             FROM customer B
             INNER JOIN payment A ON B.customer_id = A.customer_id
             INNER JOIN address C ON B.address_id = C.address_id
             INNER JOIN city D ON C.city_id = D.city_id
             INNER JOIN country E ON D.country_id = E.country_id
             WHERE D.city IN ('Aurora', 'Atlixco',
                                             'Xintai', 'Adoni', 'Dhule (Dhulia)',
                                            'Kurashiki', 'Pingxiang',
                                            'Sivas', 'Celaya', 'So Leopoldo')
             GROUP BY B.customer_id, B.first_name, B.last_name, D.city, E.country
             ORDER BY Total Amount Paid DESC
             LIMIT 5) AS total_amount_paid;
     CTE----WITH Average_total_amount_paid_cte(amount,customer_id, first_name,
                                                     last_name, city, total_amount_paid)AS
      (SELECT B.customer id, B.first name,
      B.last_name, D.city, E.country,
      SUM(A.amount) AS Total_Amount_Paid
      FROM customer B
     INNER JOIN payment A ON B.customer_id = A.customer_id
     INNER JOIN address C ON B.address_id = C.address_id
     INNER JOIN city D ON C.city_id = D.city_id
     INNER JOIN country E ON D.country_id = E.country_id
     WHERE D.city IN ('Aurora', 'Atlixco',
     'Xintai', 'Adoni', 'Dhule (Dhulia)',
      'Kurashiki', 'Pingxiang',
      'Sivas', 'Celaya', 'So Leopoldo')
      GROUP BY B.customer_id, B.first_name, B.last_name, D.city, E.country
     ORDER BY Total_Amount_Paid DESC
     SELECT AVG(total_amount_paid) AS Averga_total_amount_paid
     FROM Average_total_amount_paid_cte
```



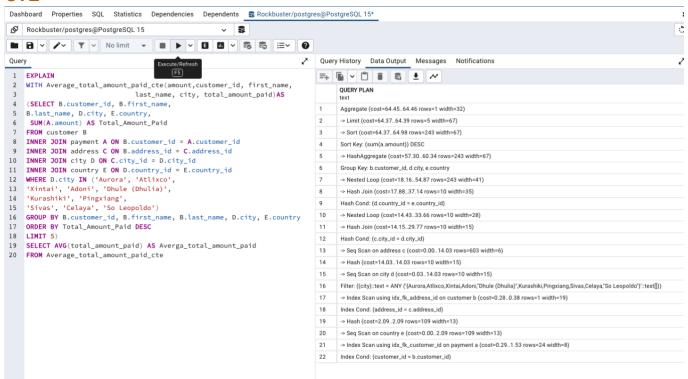
After copying the subquery from the previous exercise, I define the CTE using the WITH clause. I gave it a CTE name; "Average\_total\_amount\_paid\_cte" I provided the AS keyword, and I added the query from step 2 in parentheses where it generates the average total amount paid.

Step 2: Compare the performance of your CTEs and subqueries.

#### **SUBQUERY**



#### CTE



I don't see any difference in the cost between CTE and subquery.

## Step 3:

Replacing the subquery with a CTE wasn't as straightforward as in the example in the exercise. I had to dive deeper into what to do. I need to practice more to become more confident in querying complex queries with confidence.