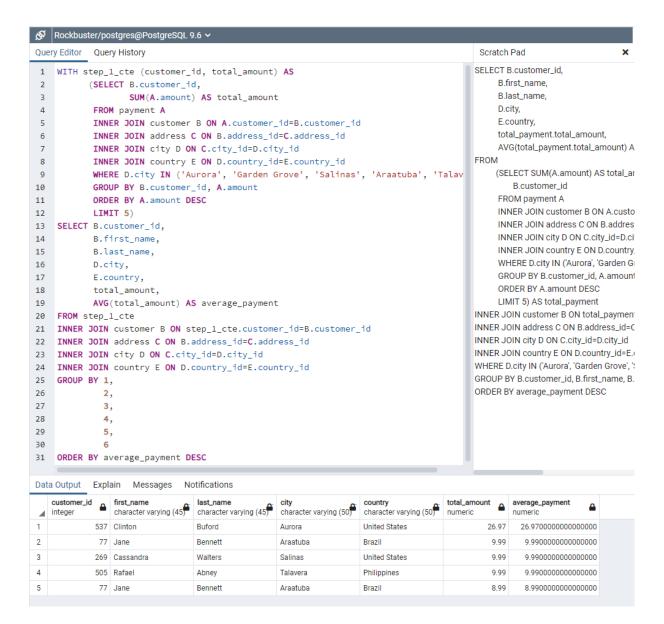
### **3.9 CTEs**

# 1. Convert Subqueries to CTE



#### Script:

```
WITH step_1_cte (customer_id, total_amount) AS

(SELECT B.customer_id,

SUM(A.amount) AS total_amount

FROM payment A

INNER JOIN customer B ON A.customer_id=B.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

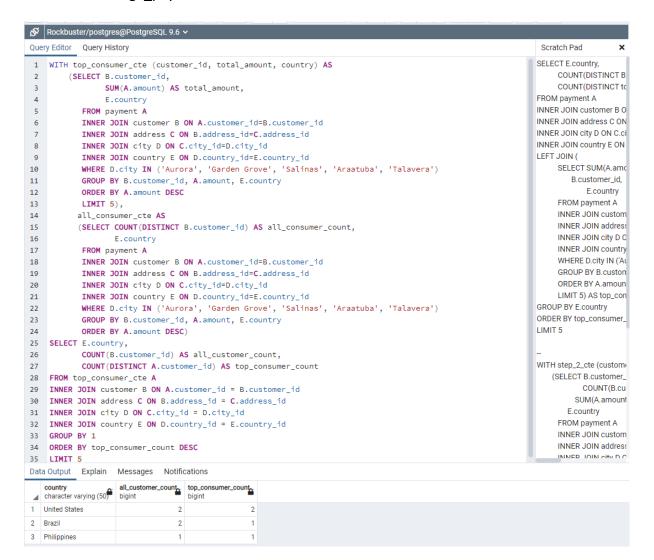
WHERE D.city IN ('Aurora', 'Garden Grove', 'Salinas', 'Araatuba', 'Talavera')

GROUP BY B.customer_id, A.amount

ORDER BY A.amount DESC
```

```
Alejandra Castro
30012025
        LIMIT 5)
SELECT B.customer id,
        B.first name,
        B.last name,
        D.city,
        E.country,
        total amount,
        AVG(total amount) AS average payment
FROM step 1 cte
INNER JOIN customer B ON step 1 cte.customer id=B.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
GROUP BY 1,
              2,
              3,
               4,
               5,
               6
```

# ORDER BY average\_payment DESC



```
Alejandra Castro 30012025
```

## **Script:**

```
WITH top consumer cte (customer id, total amount, country) AS
       (SELECT B.customer id,
                    SUM(A.amount) AS total amount,
           E.country
        FROM payment A
        INNER JOIN customer B ON A.customer id=B.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', 'Garden Grove', 'Salinas', 'Araatuba', 'Talavera')
        GROUP BY B.customer id, A.amount, E.country
        ORDER BY A.amount DESC
        LIMIT 5),
        all consumer cte AS
        (SELECT COUNT(DISTINCT B.customer id) AS all consumer count,
                      E.country
        FROM payment A
        INNER JOIN customer B ON A.customer_id=B.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', 'Garden Grove', 'Salinas', 'Araatuba', 'Talavera')
        GROUP BY B.customer id, A.amount, E.country
        ORDER BY A.amount DESC)
SELECT E.country,
        COUNT(B.customer id) AS all customer count,
        COUNT(DISTINCT A.customer id) AS top consumer count
FROM top consumer cte A
INNER JOIN customer B ON A.customer id = B.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
GROUP BY 1
ORDER BY top consumer count DESC
LIMIT 5
```