Achievement 3.7
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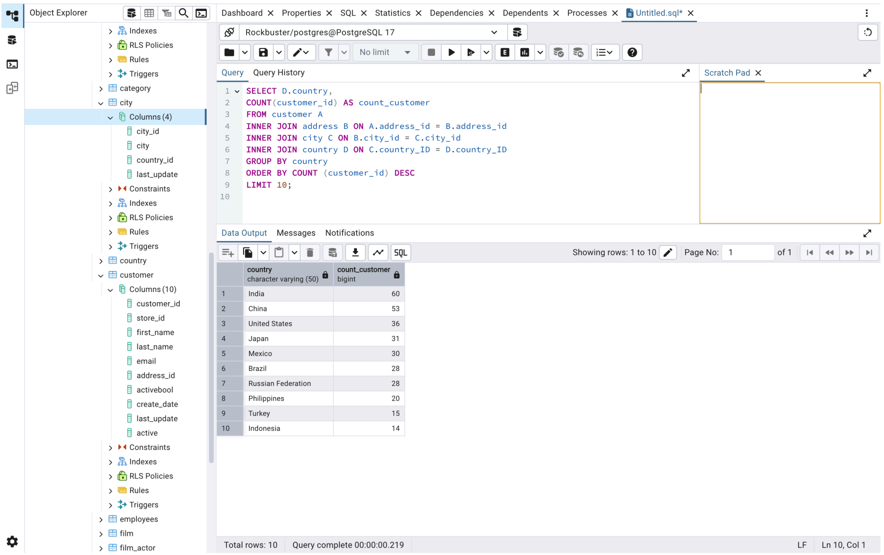
Join Tables for Data

Step 1. Write a query to find the top 10 countries for Rockbuster in terms of customer numbers. (Tip: you'll have to use GROUP BY and ORDER BY, both of which follow the join.)

Query

SELECT D.country,
COUNT(customer_id) AS count_customer
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
GROUP BY country
ORDER BY COUNT (customer_id) DESC
LIMIT 10;

Output



```
SELECT D.country,
COUNT(customer_id) AS count_customer
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
GROUP BY country
ORDER BY COUNT (customer_id) DESC
LIMIT 10;
```

Showing rows: 1 to 10 Page No: 1 of 1

	country character varying (50)	count_customer bigint
1	India	60
2	China	53
3	United States	36
4	Japan	31
5	Mexico	30
6	Brazil	28
7	Russian Federation	28
8	Philippines	20
9	Turkey	15
10	Indonesia	14

Total rows: 10 Query complete 00:00:00.219 LF Ln 10, Col 1

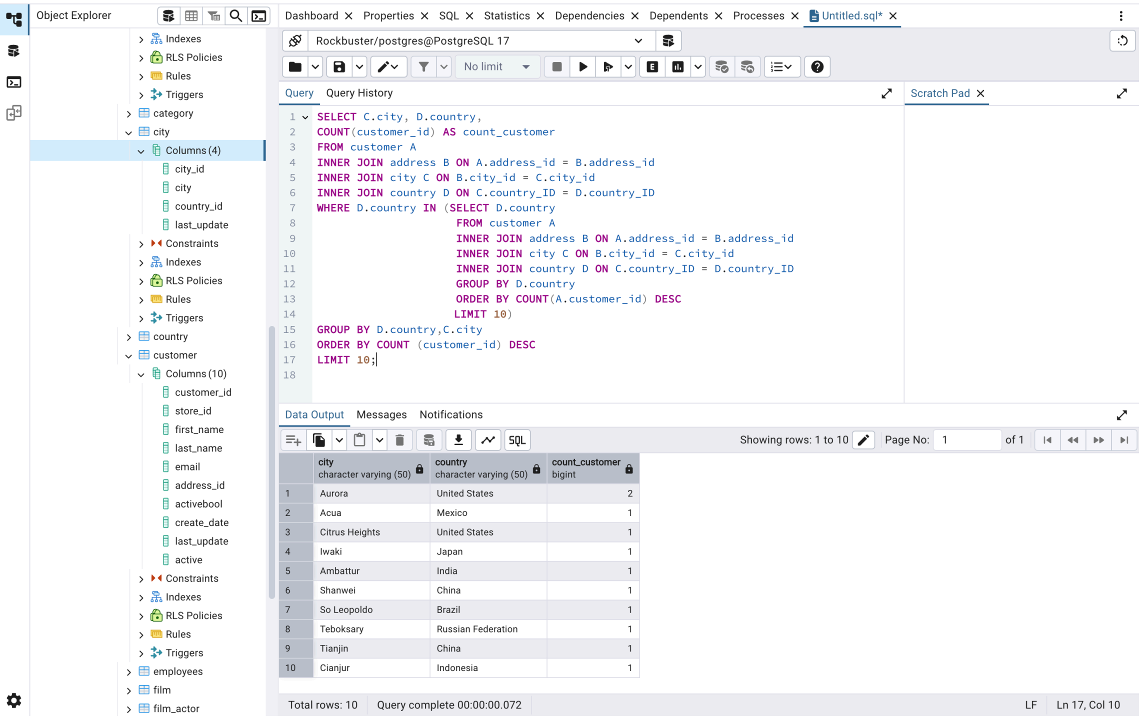
<u>How and why approaching this query thinking of future interviews.</u>
I selected first the columns I want to see and rename the count of customer_id. I begin the connection between the tables that are involved starting for costumer table (denominated table A). As the key for table A and B those tables are address_id, I use the INNER JOIN between those matching columns. And so on with B on C and Con D, until I arrive to country ID that is the last key between the last tables to join to get the country column.

Then I group them by country because that's the information I need and I order them in descent, just the top 10.

Step 2. Next, write a query to identify the top 10 cities that fall within the top 10 countries you identified in step 1. (Hint: the top 10 cities can be in any of the countries identified—you don't need to create a separate list for each country.)

Query

```
SELECT C.city, D.country,
COUNT(customer_id) AS count_customer
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
WHERE D.country IN (SELECT D.country
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
GROUP BY D.country
ORDER BY COUNT(A.customer_id) DESC
LIMIT 10)
GROUP BY D.country,C.city
ORDER BY COUNT (customer_id) DESC
LIMIT 10;
```



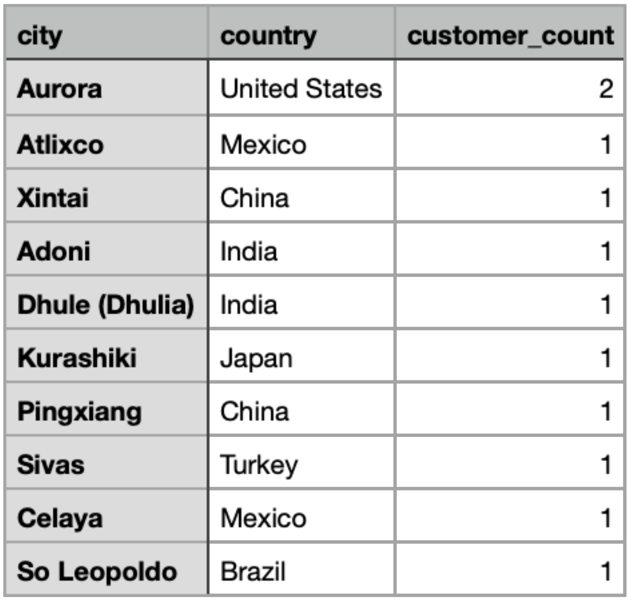
```
SELECT C.city, D.country,
COUNT(customer_id) AS count_customer
FROM customer A
INNER JOIN address B ON A.address_id = B.address_id
INNER JOIN city C ON B.city_id = C.city_id
INNER JOIN country D ON C.country_ID = D.country_ID
WHERE D.country IN (SELECT D.country
                    FROM customer 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
                    GROUP BY D.country
                    ORDER BY COUNT(A.customer_id) DESC
                   LIMIT 10)
GROUP BY D.country,C.city
ORDER BY COUNT (customer_id) DESC
LIMIT 10;
```

	city character varying (50)	country character varying (50)	count_customer bigint
1	Aurora	United States	2
2	Acua	Mexico	1
3	Citrus Heights	United States	1
4	Iwaki	Japan	1
5	Ambattur	India	1
6	Shanwei	China	1
7	So Leopoldo	Brazil	1
8	Teboksary	Russian Federation	1
9	Tianjin	China	1
10	Cianjur	Indonesia	1

Total rows: 10 Query complete 00:00:00.072 LF Ln 17, Col 10

Output

Output 3.7 S2



city	country	customer_count
Aurora	United States	2
Atlixco	Mexico	1
Xintai	China	1
Adoni	India	1
Dhule (Dhulia)	India	1
Kurashiki	Japan	1
Pingxiang	China	1
Sivas	Turkey	1
Celaya	Mexico	1
So Leopoldo	Brazil	1

How and why approaching this query thinking of future interviews:
I have selected first the columns I need to see for my output, and made everything match to the first query, due the need of having the top 10 cities from the first output. So, to get that, I opened the clause, for the country column, WHERE and IN to filter and include the cities within the countries that I had in the first place, making the same INNER JOINS, GROUP and ORDER BY D.country, DESC, LIMIT 10. Closing the parenthesis of what I want to see in the country column to finish with the big picture and structure of the query: GROUP and ORDER BY C.city and D.country and again LIMIT 10 in DESC order.

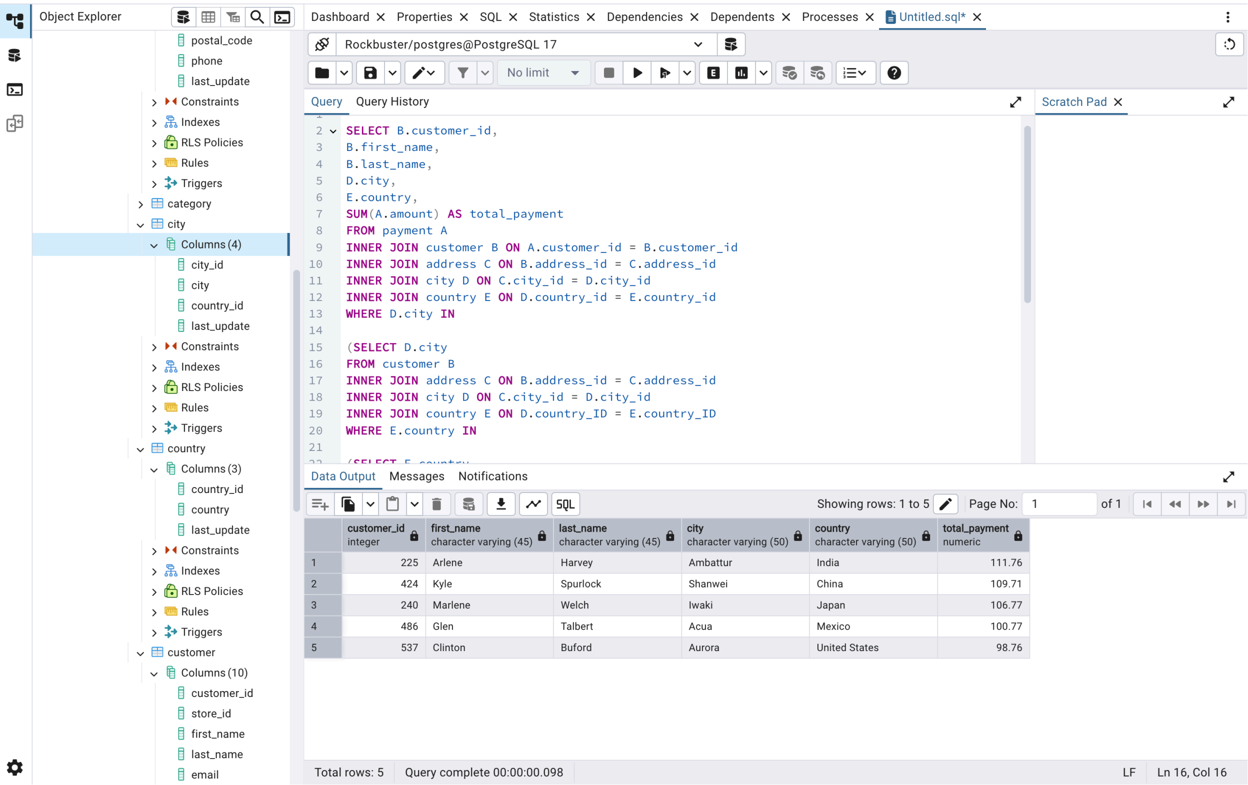
Step 3. Now write a query to find the top 5 customers from the top 10 cities who've paid the highest total amounts to Rockbuster. The customer team would like to reward them for their loyalty!

Tip: After the join syntax, you'll need to use the WHERE clause with an operator, followed by GROUP BY and ORDER BY. Your output should include the following columns: Customer ID, Customer First Name and Last Name, Country, City, and Total Amount Paid.

Query

```
SELECT B.customer_id,
B.first_name,
B.last_name,
D.city,
E.country,
SUM(A.amount) AS total_payment
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

(SELECT D.city
FROM customer B
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 E.country IN

(SELECT E.country
FROM customer B
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 E.country
ORDER BY COUNT(B.customer_id) DESC
LIMIT 10)

GROUP BY
E.country,
D.city
ORDER BY COUNT(B.customer_id) DESC
LIMIT 10)

GROUP BY E.country,D.city, B.customer_id, B.first_name, B.last_name
ORDER BY SUM(A.amount) DESC
LIMIT 5;
```

Output



```sql
SELECT B.customer_id,
B.first_name,
B.last_name,
D.city,
E.country,
SUM(A.amount) AS total_payment
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

(SELECT D.city
FROM customer B
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 E.country IN

(SELECT E.country
```

	customer_id integer	first_name character varying (45)	last_name character varying (45)	city character varying (50)	country character varying (50)	total_payment numeric
1	225	Arlene	Harvey	Ambattur	India	111.76
2	424	Kyle	Spurlock	Shanwei	China	109.71
3	240	Marlene	Welch	Iwaki	Japan	106.77
4	486	Glen	Talbert	Acua	Mexico	100.77
5	537	Clinton	Buford	Aurora	United States	98.76

Total rows: 5 Query complete 00:00:00.098

Ouput 3.7.S.3

customer_id	first_name	last_name	city	country	total_payment
225	Arlene	Harvey	Ambattur	India	111.76
424	Kyle	Spurlock	Shanwei	China	109.71
240	Marlene	Welch	Iwaki	Japan	106.77
486	Glen	Talbert	Acua	Mexico	100.77
537	Clinton	Buford	Aurora	United States	98.76