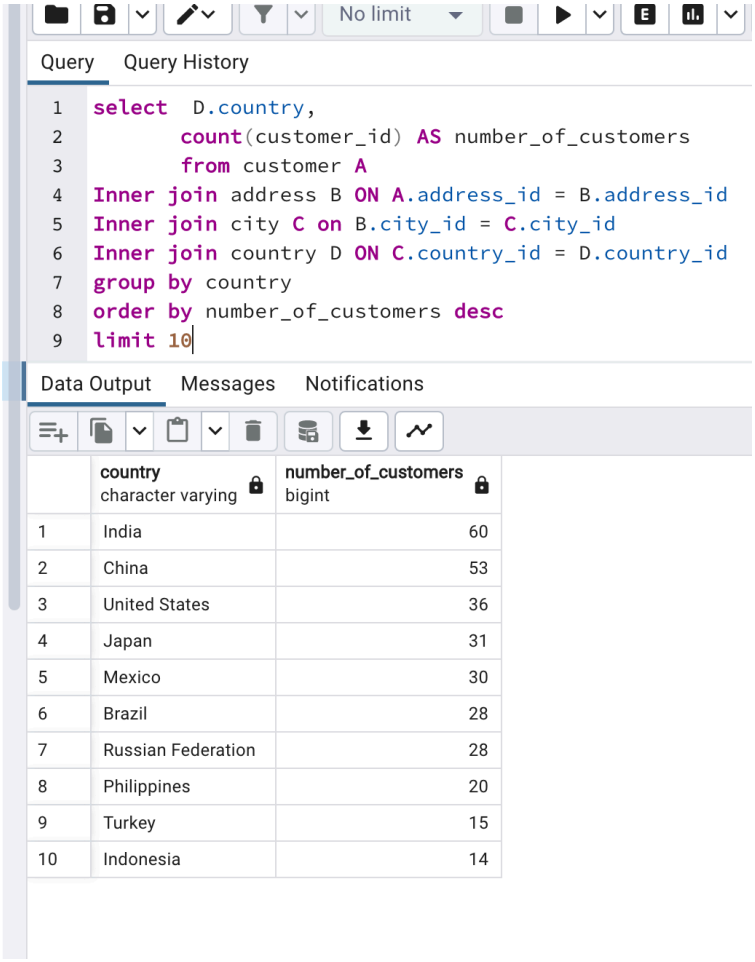
3.7: Joining Tables of Data

Write a query to find the top 10 countries for Rockbuster in terms of customer numbers.

SELECT D.country, count(customer_id) AS number_of_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
GROUP BY country
ORDER BY number_of_customers DESC
LIMIT 10

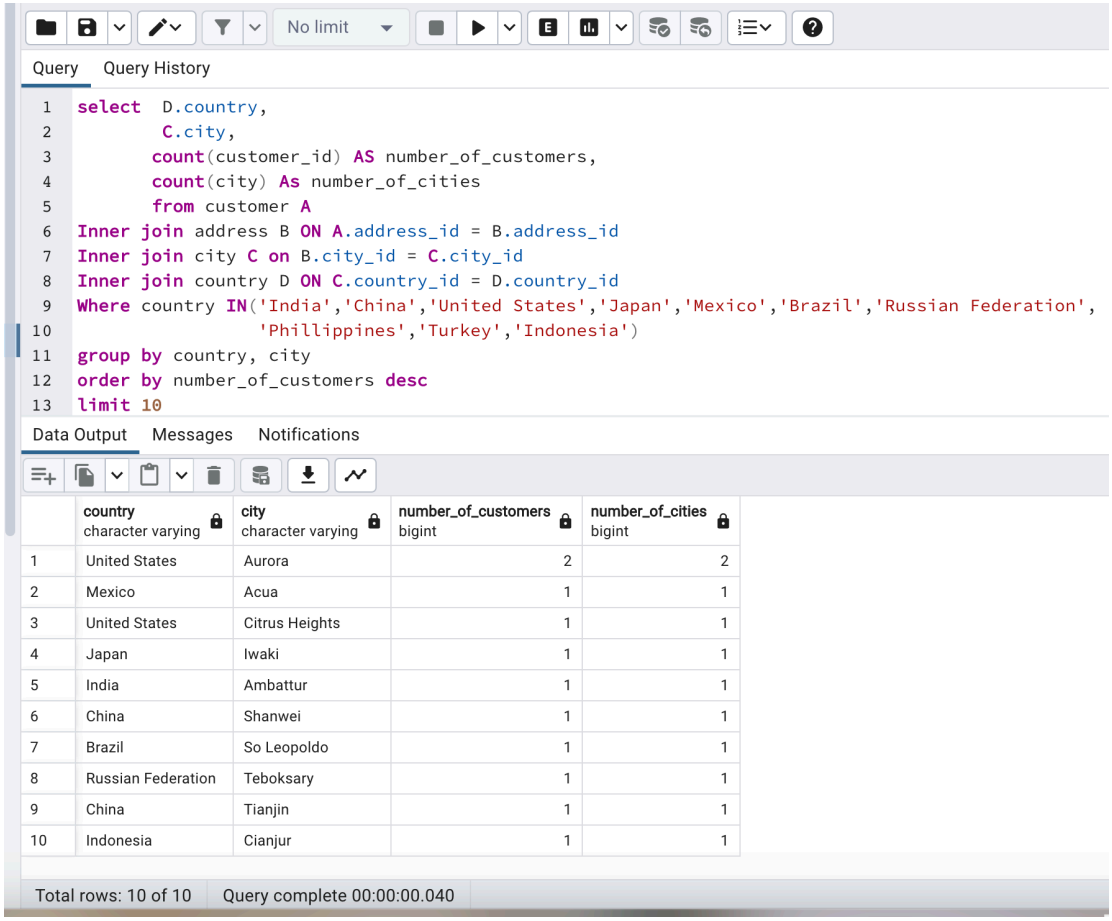


	country character varying	number_of_customers bigint
1	India	60
2	China	53
3	United States	36
4	Japan	31
5	Mexico	30
6	Brazil	28
7	Russian Federation	28
8	Philippines	20
9	Turkey	15
10	Indonesia	14

We have 4 tables to fetch this information and we need to connect them with each other. So I connect customer table with address table, address table with city table and finally city table with country table. Because we need top 10 countries based on customer numbers and we can not fetch this data directly from two tables. I used Inner join to get data from the tables. It is much more efficient and less costly and its works fine for this information. Then I used count and group by clause to get number of customers and order by is used to get top 10 countries.

Write a query to find the top 10 cities within the top 10 countries identified in step 1.

```
SELECT  D.country,
        C.city,
       COUNT(customer_id) AS number_of_customers,
             count(city) AS number_of_cities
             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 country IN('India','China','United States','Japan','Mexico','Brazil','Russian Federation',
'Phillippines','Turkey','Indonesia')
GROUP BY country, city
ORDER BY number_of_customers DESC
LIMIT 10
```



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Query | Query History

```
1  select  D.country,
2          C.city,
3         count(customer_id) AS number_of_customers,
4         count(city) As number_of_cities
5         from customer A
6  Inner join address B ON A.address_id = B.address_id
7  Inner join city C on B.city_id = C.city_id
8  Inner join country D ON C.country_id = D.country_id
9  Where country IN('India','China','United States','Japan','Mexico','Brazil','Russian Federation',
10                 'Phillippines','Turkey','Indonesia')
11 group by country, city
12 order by number_of_customers desc
13 limit 10
```

Data Output | Messages | Notifications

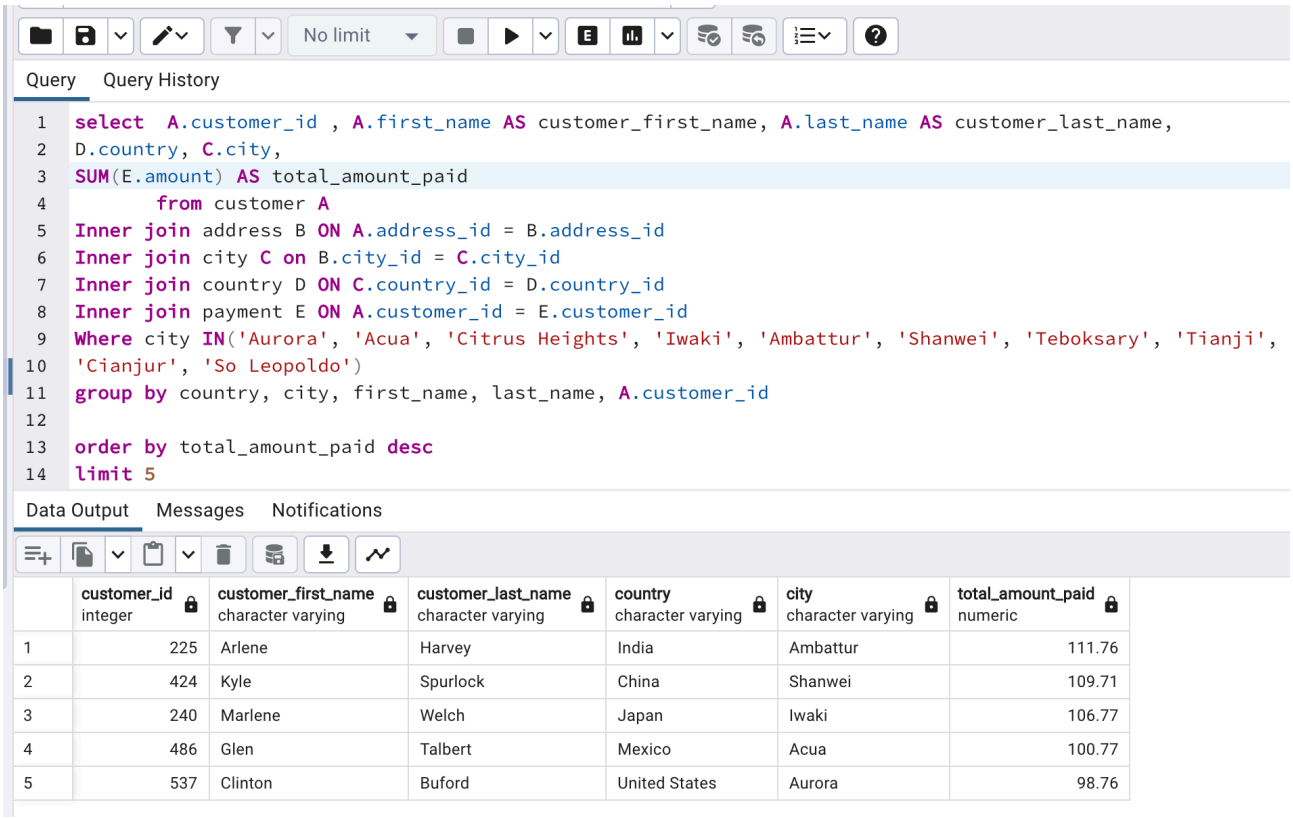
	country character varying	city character varying	number_of_customers bigint	number_of_cities bigint
1	United States	Aurora	2	2
2	Mexico	Acua	1	1
3	United States	Citrus Heights	1	1
4	Japan	Iwaki	1	1
5	India	Ambattur	1	1
6	China	Shanwei	1	1
7	Brazil	So Leopoldo	1	1
8	Russian Federation	Teboksary	1	1
9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

Total rows: 10 of 10 | Query complete 00:00:00.040

To get the top 10 cities from top 10 countries, I add city column in SELECT clause from step 1. Then include top 10 countries using WHERE clause. Finally I grouped them by country and city.

- Write a query to find the top 5 customers in the top 10 cities who have paid the highest total amounts to Rockbuster. The customer team would like to reward them for their loyalty!

```
SELECT  A.customer_id , A.first_name AS customer_first_name, A.last_name AS
customer_last_name, D.country, C.city,
SUM(E.amount) AS total_amount_paid
        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
INNER JOIN payment E ON A.customer_id = E.customer_id
WHERE city IN('Aurora', 'Acua', 'Citrus Heights', 'Iwaki', 'Ambattur', 'Shanwei',
'Teboksary', 'Tianji',
'Cianjur', 'So Leopoldo')
GROUP BY country, city, first_name, last_name, A.customer_id
ORDER BY total_amount_paid DESC
LIMIT 5
```



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

To get the 5 customers from top 10 cities who paid highest amounts, we need one more table which is Payment table. I added one more inner join for connecting payment table to customer table. I perform aggregate function SUM to get the highest amount from the table. Then added the costumer id in group by clause and ordered by total amount paid so that we can get one new column with amount paid.