









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.)

- Copy-paste your query and its output into your answers document.

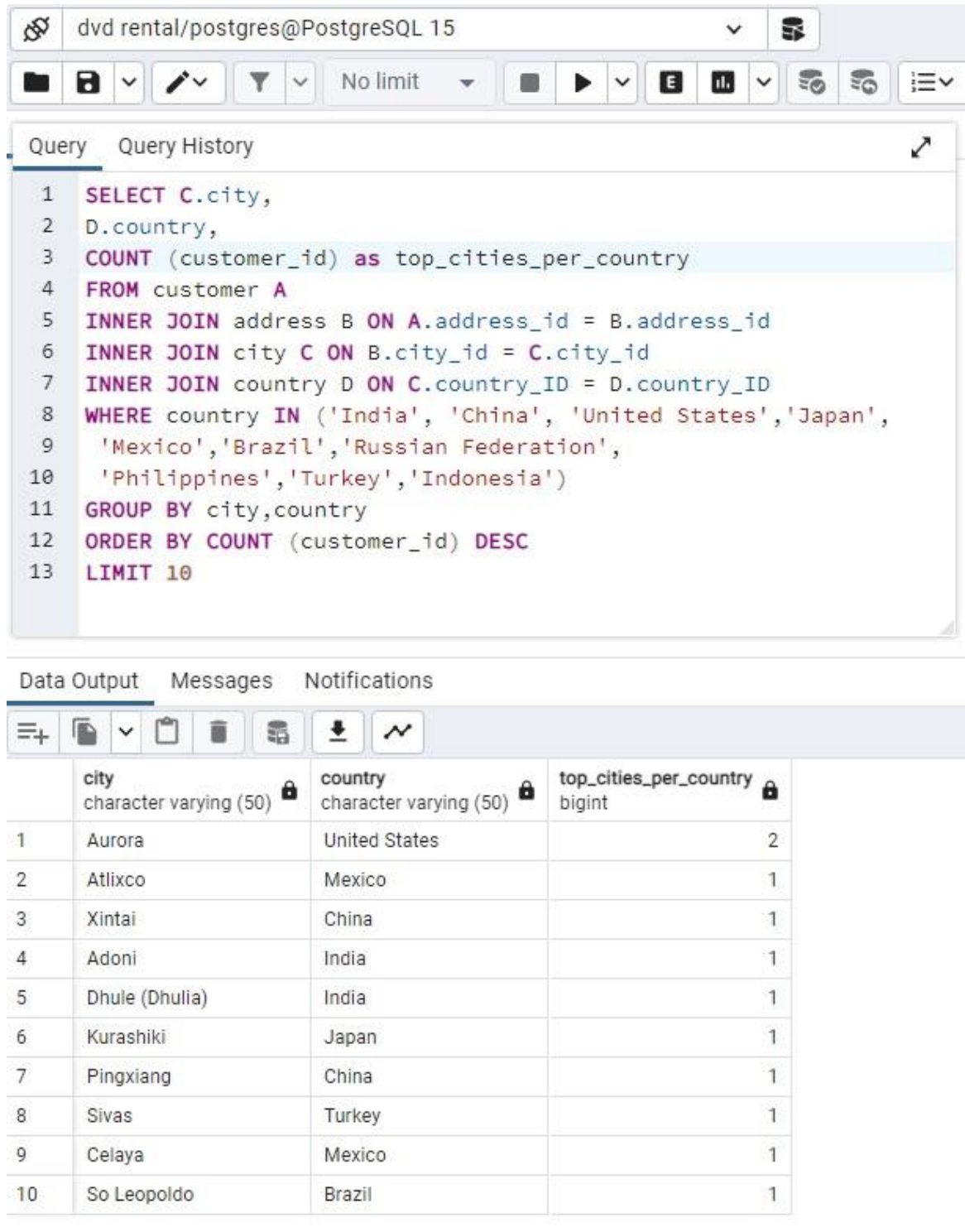
Query		Query History	
1	SELECT	D. country,	
2	COUNT	(customer_id) as total_customers_per_country	
3	FROM	customer A	
4	INNER JOIN	address B ON A.address_id = B.address_id	
5	INNER JOIN	city C ON B.city_id = C.city_id	
6	INNER JOIN	country D ON C.country_ID = D.country_ID	
7	GROUP BY	country	
8	ORDER BY	COUNT (customer_id) DESC	
9	LIMIT	10	

Data Output		Messages	Notifications
<div></div>			
	country character varying (50)		total_customers_per_country 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

- Write a few sentences on how you approached this query and why. It's important that you can explain your thought process when writing queries, especially for future interviews.
- a) First and foremost, I reviewed the ERD created in a previous assignment (3.2) to determine which tables I needed to join.

- b) My query required four different tables: customer, nation, address, and city, thus I realized I should have used multiple joins.
- c) Infact, in order to access the information necessary for the query, I needed to join the "customer" and "country" tables, but since they weren't directly related, I first had to connect the customer table with the address table, then the address table with the city table, and finally the city table with the country one.
- d) I used the COUNT function to count the number of customer ids and the INNER JOIN function to find the intersections between the tables.
- e) Finally, I grouped all of the information by country and ordered it by the count of customer IDs in descendant order, because we wanted the bigger numbers first.
- f) I ultimately limited the number of results at 10 because we only required the top 10 nations.

2. Write a query to find the top 10 cities within the top 10 countries identified in step 1.
 - Copy-paste your query and its output into your answers document.



The screenshot shows a PostgreSQL query editor interface. The top bar indicates the connection is 'dvd rental/postgres@PostgreSQL 15'. Below the toolbar, the 'Query' tab is active, displaying the following SQL query:

```

1  SELECT C.city,
2  D.country,
3  COUNT (customer_id) as top_cities_per_country
4  FROM customer A
5  INNER JOIN address B ON A.address_id = B.address_id
6  INNER JOIN city C ON B.city_id = C.city_id
7  INNER JOIN country D ON C.country_ID = D.country_ID
8  WHERE country IN ('India', 'China', 'United States', 'Japan',
9  'Mexico', 'Brazil', 'Russian Federation',
10 'Philippines', 'Turkey', 'Indonesia')
11 GROUP BY city, country
12 ORDER BY COUNT (customer_id) DESC
13 LIMIT 10
  
```

Below the query editor, the 'Data Output' tab is active, showing the results of the query in a table. The table has four columns: 'city' (character varying (50)), 'country' (character varying (50)), 'top_cities_per_country' (bigint), and an unnamed column for the count. The results are as follows:

	city character varying (50)	country character varying (50)	top_cities_per_country bigint
1	Aurora	United States	2
2	Atlixco	Mexico	1
3	Xintai	China	1
4	Adoni	India	1
5	Dhule (Dhulia)	India	1
6	Kurashiki	Japan	1
7	Pingxiang	China	1
8	Sivas	Turkey	1
9	Celaya	Mexico	1
10	So Leopoldo	Brazil	1

- Write a short explanation of how you approached this query and why.

This time, I slightly modified the previous query. I started by including "city" in SELECT at the start of the query. After that, I updated the "WHERE" function by

adding IN in order to include only the ten nations we were interested in. Finally, I grouped all of the data not only by country, but also by city.

3. 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!

- 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, Total Amount Paid.

Query

Query History

```
1 SELECT B.customer_id,
2 B.first_name,
3 B.last_name,
4 D.city,
5 E.country,
6 SUM(A.amount) as Total_Amount_Paid
7 FROM payment A
8 INNER JOIN customer B ON A.customer_id = B.customer_id
9 INNER JOIN address C ON B.address_id = C.address_id
10 INNER JOIN city D ON C.city_id = D.city_id
11 INNER JOIN country E ON D.country_id = E.country_id
12 WHERE country IN ('India', 'China', 'United States', 'Japan',
13 'Mexico', 'Brazil', 'Russian Federation',
14 'Philippines', 'Turkey', 'Indonesia')
15 GROUP BY B.customer_id, B.first_name, B.last_name, D.city, E.country
16 ORDER BY Total_Amount_Paid DESC
17 LIMIT 5
```

Data Output

Messages

Notifications

	customer_id integer	first_name character varying (45)	last_name character varying (45)	city character varying (50)	country character varying (50)	total_amount_paid numeric
1	526	Karl	Seal	Cape Coral	United States	208.58
2	178	Marion	Snyder	Santa Brbara dOeste	Brazil	194.61
3	181	Ana	Bradley	Memphis	United States	167.67
4	236	Marcia	Dean	Tanza	Philippines	166.61
5	403	Mike	Way	Valparai	India	162.67