

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

The screenshot shows a SQL query editor with a toolbar at the top. The query is as follows:

```
1 SELECT D.country,  
2       COUNT(A.customer_id) AS customer_number  
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 customer_number DESC LIMIT 10;
```

Below the query editor, the 'Data Output' tab is active, displaying the results of the query in a table:

	country character varying (50)	customer_number 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.

I checked the ERD charts in order to understand the contents of each table and how to link the country and customer table together. I need the country column from the country table as well as the customer_id from the customer table. An aggregate function "count" was applied to the customer_id to know the number of each customer from each country. Afterwards, I joined (INNER JOIN) the tables together with the help of the ERD charts. I later group by countries, ordered it by the customer number top to bottom and returned the first 10 countries.

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 query is as follows:

```

1 SELECT C.city,
2       D.country,
3       COUNT(A.customer_id) AS customer_number
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',
9                  'China',
10                 'United States',
11                 'Japan',
12                 'Mexico',
13                 'Brazil',
14                 'Russian Federation',
15                 'Philippines',
16                 'Turkey',
17                 'Indonesia')
18 GROUP BY city, country
19 ORDER BY customer_number DESC LIMIT 10;

```

The results are displayed in a table with the following columns: city, country, and customer_number.

city	country	customer_number
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

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

The query is a build upon the previous result. I checked the city table to know the column with the city name. I added that to my SELECT. I filtered the result with WHERE to return only top cities in the top 10 identified countries. I grouped the result by the city and countries, ordered by number of customer and returned the top 10 cities.

- 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.

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Query EditorQuery History

```
2      B.first_name,
3      B.last_name,
4      E.country,
5      D.city,
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','Mexico','Brazil',
13                  'Russian Federation','Philippines','Turkey','Indonesia')
14 AND city IN ('Aurora','Atlixco','Xintai','Adoni','Dhule (Dhulla)','Kurashiki',
15             'Pingxiang','Sivas','Celaya','So Leopoldo')
16 GROUP BY A.customer_id,
17          B.first_name,
18          B.last_name,
19          D.city,
20          E.country
21 ORDER BY total_amount_paid DESC LIMIT 5;
```

Data Output

Explain

Messages

Notifications

	customer_id smallint	first_name character varying (45)	last_name character varying (45)	country character varying (50)	city character varying (50)	total_amount_paid numeric
1	84	Sara	Perry	Mexico	Atlixco	128.70
2	518	Gabriel	Harder	Turkey	Sivas	108.75
3	587	Sergio	Stanfield	Mexico	Celaya	102.76
4	537	Clinton	Buford	United States	Aurora	98.76
5	367	Adam	Gooch	India	Adoni	97.80