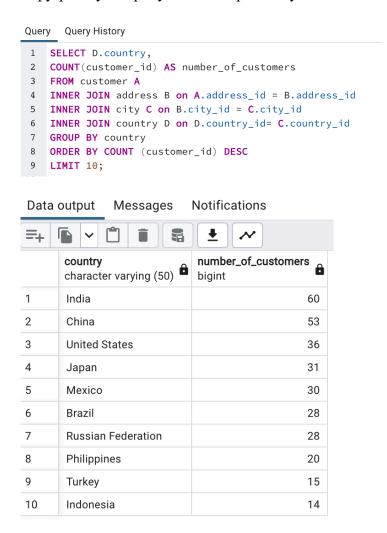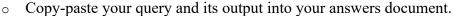1. Write a query to find the top 10 countries for Rockbuster in terms of customer numbers. (Tip: you'll have to use GROUP BY and ORDER BY, both of which follow the join.)
    o Copy-paste your query and its output into your answers document.

Query   Query History

```
1   SELECT D.country,
2   COUNT(customer_id) AS number_of_customers
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 D.country_id= C.country_id
7   GROUP BY country
8   ORDER BY COUNT (customer_id) DESC
9   LIMIT 10;
```

Data output   Messages   Notifications

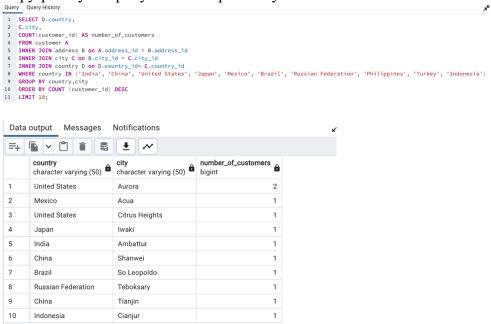|	country character varying (50)	number_of_customers bigint
1	India	60
2	China	53
3	United States	36
4	Japan	31
5	Mexico	30
6	Brazil	28
7	Russian Federation	28
8	Philippines	20
9	Turkey	15
10	Indonesia	14

    o 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.

Answer: I first looked at the ERD map, and identify the tables (customer, address, city, country) I will need for this particular query. Then I decided to use INNER JOIN instead of the other joins since it is the most time efficient one.

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

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

```sql
1   SELECT D.country,
2   C.city,
3   COUNT(customer_id) AS number_of_customers
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 D.country_id= C.country_id
8   WHERE country IN ('India', 'China', 'United States', 'Japan', 'Mexico', 'Brazil', 'Russian Federation', 'Philippines', 'Turkey', 'Indonesia')
9   GROUP BY country,city
10  ORDER BY COUNT (customer_id) DESC
11  LIMIT 10;
```

Data output   Messages   Notifications

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

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

  Answer: I modify my query based on the pervious one, as we want to the top 10 cities, so I added C.city in the SELECT demand, also we are asked to find the top 10 cities within the top 10 countries, so I used the WHERE command to add this condition.

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!

- o 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.

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

```
Query   Query History                              Execute options
                                                   Option  Ctrl  D
1   SELECT A.customer_id,
2   A.first_name,
3   A.last_name,
4   D.country,
5   C.city,
6   SUM (E.amount) AS total_payment
7   FROM customer A
8   INNER JOIN address B on A.address_id = B.address_id
9   INNER JOIN city C on B.city_id = C.city_id
10  INNER JOIN country D on D.country_id= C.country_id
11  INNER JOIN payment E on A.customer_id = E.customer_id
12  WHERE city IN ('Aurora', 'Acua', 'Citrus Heights', 'Iwaki', 'Ambattur', 'Shanwei', 'So Leopoldo', 'Teboksary', 'Tianjin', 'Cianjur')
13  GROUP BY A.customer_id, D.country, C.city
14  ORDER BY SUM (E.amount) DESC
15  LIMIT 5;
```

	customer_id integer	first_name character varying (45)	last_name character varying (45)	country character varying (50)	city character varying (50)	total_payment 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