Answers 3.7

Step 1)

Query | Query History

```sql
SELECT co.country AS country_name,
       COUNT(c.customer_id) AS customer_count
FROM customer c
INNER JOIN address a ON c.address_id = a.address_id
INNER JOIN city ci ON a.city_id = ci.city_id
INNER JOIN country co ON ci.country_id = co.country_id
GROUP BY co.country
ORDER BY customer_count DESC
LIMIT 10;
```

country_name	customer_count
India	60
China	53
United States	36
Japan	31
Mexico	30
Brazil	28
Russian Federation	28
Philippines	20
Turkey	15
Indonesia	14

Explanation:

To determine the top 10 countries where Rockbuster customers are based, I followed a structured approach leveraging SQL joins and aggregation: I first analyzed the relationships between the tables (customer, address, city, and country) and determined that the customer data could be linked to countries using foreign keys. Then, I started from the customer table, as it contains the customer IDs, and by using inner joins, I connected the customer table to the address, city, and country tables sequentially based on their respective keys (address_id, city_id, and country_id). Then, I used COUNT to calculate the number of customers in each country. Also, I used GROUP BY on the country name to aggregate customers by their respective countries. To prioritize the results, I used ORDER BY to sort the customer counts in descending order. Finally, I applied LIMIT 10 to display only the top 10 countries.

Step 2)

Query | Query History

```sql
SELECT ci.city AS city_name,
       co.country AS country_name,
       COUNT(c.customer_id) AS customer_count
FROM customer c
INNER JOIN address a ON c.address_id = a.address_id
INNER JOIN city ci ON a.city_id = ci.city_id
INNER JOIN country co ON ci.country_id = co.country_id
WHERE co.country IN ('India', 'China', 'United States', 'Japan', 'Mexico',
                     'Brazil', 'Russian Federation', 'Philippines', 'Turkey', 'Indonesia')
GROUP BY ci.city, co.country
ORDER BY customer_count DESC
LIMIT 10;
```

city_name	country_name	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

Explanation

To identify the top 10 cities based on customer counts, I followed a systematic approach: I used a WHERE clause to limit the results to only those cities located in the top 10 countries identified earlier in step 1. Starting from the customer table, I joined it to address, city, and country sequentially using their foreign keys to establish the necessary relationships. Then, by using GROUP BY, I grouped the data by city and country to aggregate customer counts for each city. Last, I sorted the results in descending order of customer_count using ORDER BY and restricted the output to the top 10 cities with the highest customer counts using LIMIT 10.

Step 3)

Query | Query History

```sql
SELECT c.customer_id,
       c.first_name,
       c.last_name,
       co.country AS country_name,
       ci.city AS city_name,
       SUM(p.amount) AS total_amount_paid
FROM customer c
INNER JOIN address a ON c.address_id = a.address_id
INNER JOIN city ci ON a.city_id = ci.city_id
INNER JOIN country co ON ci.country_id = co.country_id
INNER JOIN payment p ON c.customer_id = p.customer_id
WHERE ci.city IN ('Aurora', 'Atxlixo', 'Xintai', 'Adoni', 'Dhule (Dhulia)',
                  'Kurashiki', 'Pingxiang', 'Sivas', 'Celaya', 'So Leopoldo')
GROUP BY c.customer_id, c.first_name, c.last_name, co.country, ci.city
ORDER BY total_amount_paid DESC
LIMIT 5;
```

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	customer_id integer	first_name character varying (45)	last_name character varying (45)	country_name character varying (50)	city_name character varying (50)	total_amount_paid numeric
1	518	Gabriel	Harder	Turkey	Sivas	108.75
2	587	Sergio	Stanfield	Mexico	Celaya	102.76
3	537	Clinton	Buford	United States	Aurora	98.76
4	367	Adam	Gooch	India	Adoni	97.80
5	443	Francisco	Skidmore	Brazil	So Leopoldo	93.79

Explanation

To find the top 5 customers from the top 10 cities who have paid the highest total amounts to Rockbuster, I used a structured approach: first I used the WHERE clause, I restricted the data to customers located in the top 10 cities identified in step 2. This ensured that only the customers from those cities were considered. Then, I joined the customer table with address, city, and country tables to retrieve customer location details. Then the payment table was joined to calculate the total amount paid by each customer.
I used the SUM(p.amount) function to calculate the total payments made by each customer. Here, customers were grouped by their ID, name, and location to ensure accurate aggregation of their payments.
Then I sorted in descending order of total payment (ORDER BY total_amount_paid DESC) and applied the LIMIT 5 clause to display only the top 5 customers with the highest total amounts paid.