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### Answers 3.7

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

Query

Query History

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SELECT

co.country AS country,

COUNT(customer\_id) AS customer\_count

FROM customer AS c

FULL JOIN address AS a ON a.address\_id = c.address\_id

FULL JOIN city AS ci ON ci.city\_id = a.city\_id

FULL JOIN country AS co ON co.country\_id = ci.country\_id

GROUP BY country

ORDER BY customer\_count DESC

LIMIT 10

Data Output

Messages

Notifications

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SQL

	country character varying (50)	customer_count 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

- b) Write a few sentences on how you approached this query and why. You must be able to explain your thought process when writing queries, especially for future interviews.

*When creating the query, I first focused on understanding the structure of the database and the relationships between tables. In this case, I knew that the data required for the analysis—customer counts grouped by country—was distributed across multiple tables (customer, address, city, and country). I used FULL JOIN to ensure no data was excluded, even if there were missing relationships between the tables.*

*To count the customers in each country, I grouped the data by the country column and used the COUNT(customer\_id) function. This ensures that the count accurately reflects the number of customers associated with each country. Finally, I ordered the results in descending order of customer\_count to identify the top countries with the most customers and limited the output to the top 10 for simplicity and clarity.*

2. Next, write a query to identify the top 10 cities that fall within the top 10 countries you identified in step 1. (Hint: the top 10 cities can be in any of the countries identified—you don't need to create a separate list for each country.)

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

```
14 SELECT
15 ci.city AS city,
16 co.country AS country,
17 COUNT(c.customer_id) AS customer_count
18 FROM customer AS c
19 FULL JOIN address AS a ON a.address_id = c.address_id
20 FULL JOIN city AS ci ON ci.city_id = a.city_id
21 FULL JOIN country AS co ON co.country_id = ci.country_id
22 WHERE co.country IN ('India', 'China', 'United States', 'Japan', 'Mexico', 'Brazil', 'Russian Federation', 'Philippines', 'Turkey', 'Indonesia')
23 GROUP BY 1,2
24 ORDER BY customer_count DESC
25 LIMIT 10
26 --*/
```

city	country	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

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

I began by identifying the relationships between the tables. The customer table links to address, which connects to city and finally to country. Using these relationships, I joined the tables to access all necessary fields such as city, country, and customer\_id.

Next, I filtered the results to include only cities from the top 10 countries identified in the first query. This was achieved by using a WHERE clause with the country names.

To determine the top cities, I grouped the data by city and country and used the COUNT function to calculate the number of customers in each city.

Finally, I sorted the results in descending order of customer count and limited the output to display only the top 10 cities.

3. Now write a query to find the top 5 customers from the top 10 cities who've paid the highest total amounts to Rockbuster. The customer team would like to reward them for their loyalty!

a) 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, and Total Amount Paid.

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

```
27 --/*
28 SELECT
29 c.customer_id,
30 --c.first_name,
31 --c.last_name,
32 CONCAT(c.first_name, ' ', c.last_name) AS full_name,
33 co.country AS country,
34 ci.city AS city,
35 SUM(p.amount) AS total_payment
36 --COUNT(c.customer_id) AS customer_count
37 FROM customer AS c
38 FULL JOIN address AS a ON a.address_id = c.address_id
39 FULL JOIN city AS ci ON ci.city_id = a.city_id
40 FULL JOIN country AS co ON co.country_id = ci.country_id
41 FULL JOIN payment AS p ON p.customer_id = c.customer_id
42 WHERE ci.city IN ('Aurora', 'Atlixco', 'Xintai', 'Adoni', 'Dhule (Dhulia)', 'Kurashiki', 'Pingxiang', 'Sivas', 'Celaya', 'So Leopoldo')
43 GROUP BY 1,2,3,4,5,6
44 ORDER BY total_payment DESC
45 LIMIT 5
46 --*/
```

Data Output Messages Notifications

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	customer_id integer	full_name text	country character varying (50)	city character varying (50)	total_payment 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