Answers 3.7

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.

```
SELECT D.country,
COUNT(A.customer_id) AS customer_number
FROM customer A
INNER JOIN address B ON A.address_id = B.address_id
INNER JOIN city C ON B.city_id = C.city_id
INNER JOIN country D ON C.country_ID = D.country_ID
GROUP BY country
ORDER BY customer_number DESC
LIMIT 10
```

country	customer_number
India	60
China	53
United States	36
Japan	31
Mexico	30
Brazil	28
Russian Federation	28
Philippines	20
Turkey	15
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.
     - The country information is stored in a table that is not directly connected to the customer table, so in order to join this information, customer information and country needed to be joined via the address and city tables. Only an inner join is necessary here, as we are interested in the matching values in the customer and country tables. As we are looking at number of customers customer_id's have to be counted. The results can also be limited to the top 10 results of customer numbers, so they should be sorted in descending order and grouped by the 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.

```
SELECT C.city,
COUNT(A.customer_id) AS customer_number
FROM customer A
INNER JOIN address B ON A.address_id = B.address_id
INNER JOIN city C ON B.city_id = C.city_id
INNER JOIN country D ON C.country_id = D.country_id
WHERE country IN('India', 'China', 'United States', 'Japan', 'Mexico', 'Brazil', 'Russion Federation', 'Philippines', 'Turkey', 'Indone
GROUP BY city
ORDER BY customer_number DESC
LIMIT 10
```

city	customer_number
Aurora	2
Shimoga	1
Aparecida de Goinia	1
Emeishan	1
Pontianak	1
Tarsus	1

   - Write a short explanation of how you approached this query and why.
     - Looking for the cities in the top 10 countries identified earlier, limiting output to top 10 after grouping by city and sorting by number of customers in each city.

city	customer_number
Atlixco	1
Zalantun	1
Rio Claro	1
Tokat	1

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.

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

```
SELECT A.customer_id,
A.first_name,
A.last_name,
C.city,
D.country,
SUM(E.amount) AS total_amount
FROM customer A
INNER JOIN address B ON A.address_id = B.address_id
INNER JOIN city C ON B.city_id = C.city_id
INNER JOIN country D ON C.country_id = D.country_id
INNER JOIN payment E ON A.customer_id = E.customer_id
WHERE city IN('Aurora', 'Shimoga', 'Aparecida de Goinia', 'Emeishan', 'Pontianak', 'Tarsus', 'Atlixco', 'Zalantun', 'Rio Claro', 'Tokat
GROUP BY A.customer_id, C.city, D.country
ORDER BY total_amount DESC
LIMIT 5
```

customer_id	first_name	last_name	city	country	total_amount
566	Casey	Mena	Tokat	Turkey	130.68
84	Sara	Perry	Atlixco	Mexico	128.7
506	Leslie	Seward	Pontianak	Indonesia	123.72
389	Alan	Kahn	Emeishan	China	119.75
537	Clinton	Buford	Aurora	United States	98.76