1. Write a query to find the top 10 countries for Rockbuster in terms of customer numbers. Write a few sentences on how you approached this query and why.

Query | Query History

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

To find the top 10 countries with the most customers, I followed the relationships between the tables starting from country, joining to city (country_id), then address (city_id), and finally customer (address_id). I used COUNT(customer_id) to calculate the number of customers per country, grouped by country, sorted the result in descending order & restricted the output to the top 10, as requested.

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

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

Data Output | Messages | Notifications

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

To find the top 10 cities by customer count within the top 10 countries identified earlier, I used a series of inner joins, as before, to connect the country, city, address, and customer tables. I filtered the data using a WHERE clause to include only the 10 specific countries from the previous step. Then, I grouped the data by both country and city to ensure each city was correctly associated with its country. I used COUNT(customer_id) to calculate the number of customers in each city, sorted the results in descending order of customer count, and limited the output to the top 10.

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!
   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.

```sql
SELECT A.customer_id,
       A.first_name,
       A.last_name,
       E.country,
       D.city,
       SUM(B.amount) AS total_amount_paid
FROM customer A
INNER JOIN payment B ON A.customer_id = B.customer_id
INNER JOIN address C ON A.address_id = C.address_id
INNER JOIN city D ON C.city_id = D.city_id
INNER JOIN country E ON D.country_id = E.country_id
WHERE D.city IN (
    'Aurora', 'Acua', 'Citrus Heights', 'Iwaki', 'Ambattur',
    'Shanwei', 'So Leopoldo', 'Teboksary', 'Tianjin', 'Cianjur'
)
GROUP BY A.customer_id, A.first_name, A.last_name, E.country, D.city
ORDER BY total_amount_paid DESC
LIMIT 5;
```

Data Output | Messages | Notifications

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

To find the top 5 customers who paid the most (spent the most with Rockbuster) and live in the top 10 cities identified in the previous step, I connected several tables: customers, payments, addresses, cities, and countries. I used the WHERE filter to include only the 10 cities we found earlier. Then, I added up how much each customer paid using SUM. I grouped the results by customer so we get one total per person. Finally, I sorted them from highest to lowest and picked the top 5.