Exercise 3.7 Joining Tables of Data

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

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

Data Output | Messages | Notifications

	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. It's important that you can explain your thought process when writing queries, especially for future interviews.

As I asked to find the top 10 countries for Rockbuster in terms of customer numbers, first I checked ERD to find which tables I need to join. The data that I want, is stored in customer and country tables. However, these tables aren't directly connected, so I need to join the customer table with the address table, the address table with the city table, and finally the city table with the country table using INNER JOIN command to get the relevant information.

2. Write a query to find the top 10 cities within the top 10 countries identified in step 1.
    a. Copy-paste your query and its output into your answers document.

Query | Query History

```
SELECT D. country,c.city,
COUNT(customer_id) As "customer_count"
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',
                 'Russian Federation','Philippines','Turkey','Indonesia')
GROUP BY country,city
ORDER BY COUNT(customer_id) DESC
LIMIT 10
```

Data Output | Messages | Notifications

	country character varying (50)	city character varying (50)	customer_count 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

b. Write a short explanation of how you approached this query and why. As I explained in 1b , same steps are followed here only added step is , I have selected top ten countries from first query. Then similarity grouped them by country and city and INNER JOIN command used to join all 4 tables .

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.

Query | Query History

```
SELECT A.customer_id,
A.first_name,
A.last_name,
C.city,
D.country,
SUM (E.amount) AS Total_amount_paid
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','Acua','Citrus Heights','Iwaki','Ambattur','Shanwei',
              'So Leopoldo','Teboksary','Tianjin','Cianjur')
GROUP BY A.customer_id,A.first_name,A.last_name,C.city,D.country
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)	city character varying (50)	country character varying (50)	total_amount_paid numeric
1	225	Arlene	Harvey	Ambattur	India	111.76
2	424	Kyle	Spurlock	Shanwei	China	109.71
3	240	Marlene	Welch	Iwaki	Japan	106.77
4	486	Glen	Talbert	Acua	Mexico	100.77
5	537	Clinton	Buford	Aurora	United States	98.76