# 3.7: Joining Tables of Data

**Directions:**

In this Task you'll get to practice everything you learned in the Exercise. Said simply, you'll need to write a couple of queries combined with joins between the tables address, country, city, customer and payment using their common keys. Create a new text document and call it "Answers 3.7." You'll save your queries, outputs and written answers in this document, as you've done in previous tasks.

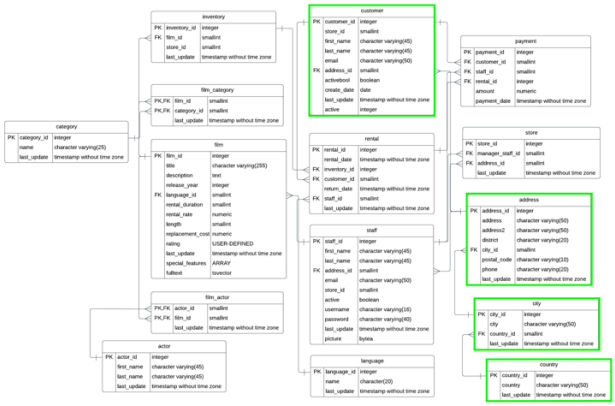
1. Write a query to find the top 10 countries for Rockbuster in terms of customer numbers. (Tip: you'll have to use GROUP BY and ORDER BY, both of which follow the join.)
   - Copy-paste your query and its output into your answers document.

Query | Query History

```
1  SELECT D.country,
2  COUNT(customer_id) AS Total_number_of_customers
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 Total_number_of_customers DESC
9  LIMIT 10;
```

Data Output | Messages | Notifications

| | country character varying (50) | total_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 |



   - 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.

Firstly, is to review de Entity Relationship Diagram that was created on task 3.2. Secondly, was to identify the top ten countries with the total of customers. Thirdly, the path was customer, address, city, and country (screenshot above). Followed by a query and made an inner join.

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, D.country,
COUNT(customer_id) AS Total_number_of_customers
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 city, country
ORDER BY Total_number_of_customers DESC
Limit 10
```

| | city character varying (50) | country character varying (50) | total_number_of_customers bigint |
|---|---|---|---|
| 1 | Aurora | United States | 2 |
| 2 | Atlixco | Mexico | 1 |
| 3 | Xintai | China | 1 |
| 4 | Adoni | India | 1 |
| 5 | Dhule (Dhulia) | India | 1 |
| 6 | Kurashiki | Japan | 1 |
| 7 | Pingxiang | China | 1 |
| 8 | Sivas | Turkey | 1 |
| 9 | Celaya | Mexico | 1 |
| 10 | So Leopoldo | Brazil | 1 |

   - Write a short explanation of how you approached this query and why.
     Utilizing previous query, the only thing needed was to add the city and to group the data according to city and country and not only just country. The WHERE query was utilized to locate the top 10 countries that were found on the last query.

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 B.customer_id,
B.first_name,
B.last_name,
D.city,
E.country,
SUM(A.amount) AS Total_amount_paid
FROM payment A
INNER JOIN customer B ON A.customer_id = B.customer_id
INNER JOIN address C ON B.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 city IN ('Aurora','Atlixco','Xintai','Adoni','Dhule (Dhulia)',
               'Kurashiki','Pingxiang','Sivas','Celaya','So Leopoldo')
GROUP BY B.customer_id, B.first_name, B.last_name, D.city, E.country
ORDER BY Total_Amount_Paid DESC
LIMIT 5;
```

| | 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 | 84 | Sara | Perry | Atlixco | Mexico | 128.70 |
| 2 | 518 | Gabriel | Harder | Sivas | Turkey | 108.75 |
| 3 | 587 | Sergio | Stanfield | Celaya | Mexico | 102.76 |
| 4 | 537 | Clinton | Buford | Aurora | United States | 98.76 |
| 5 | 367 | Adam | Gooch | Adoni | India | 97.80 |

4. Save your "Answers 3.7" document as a PDF and upload it here for your tutor to review.