

Task 3.7 Joining Tables of Data

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Reminder: You know by now that a database can hold multiple tables. In the Rockbuster case you have this too. If you want a reminder what tables are included in the database and how they are called, simply execute this query and look in the column "tablename":

```
SELECT * FROM pg_catalog.pg_tables
```

Rockbuster's management team would like to know the top 10 countries where Rockbuster customers are based so they can focus on building a better brand image in those markets. Follow the instructions below to find out how you can help.

Directions:

In this Task you will get to practice everything you learned in the Exercise. Said simply, you will 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 "Answer 3.7". You will save your queries, outputs and written answers in this document, as you have done in previous tasks.

1. Write a query to find the top 10 countries for Rockbuster in terms of customer numbers (Tip: you 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

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Query Query History Scratch Pad

```
1 SELECT D.country,
2     COUNT(A.customer_id) AS customer_number
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_number DESC
9 LIMIT 10
```

Data output Messages Notifications

	country character varying (50)	customer_number 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

Total rows: 10 of 10 Query complete 00:00:00.112 Ln 4, Col 23

b. Write a few sentences on how you approached this query and why. It is important that you can explain your thought process when writing queries, especially for future interviews.

I revisited and understood the customer, address, city, and country data. I then joined the customer data with the address, city, and country data with the inner join query. I put the GROUP BY query and counted the customer based on country. Later, I put the ORDER BY command based on customer numbers from highest to lowest and LIMIT to 10.

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

The screenshot shows a PostgreSQL query editor interface. The query is as follows:

```

1 SELECT C.city,
2       COUNT(A.customer_id) AS customer_number
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 WHERE country IN ('India',
8                  'China',
9                  'United States',
10                 'Japan',
11                 'Mexico',
12                 'Brazil',
13                 'Russian Federation',
14                 'Philippines',
15                 'Turkey',
16                 'Indonesia')
17 GROUP BY city
18 ORDER BY customer_number DESC
19 LIMIT 10

```

The results are displayed in a table with two columns: city and customer_number.

	city character varying (50)	customer_number bigint
1	Aurora	2
2	Tokat	1
3	Tarsus	1
4	Atlixco	1
5	Emeishan	1
6	Pontianak	1
7	Shimoga	1
8	Aparecida de Goiania	1
9	Zalantun	1
10	Taguig	1

Total rows: 10 of 10 | Query complete 00:00:00.060 | Ln 16, Col 31

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

I revisited my existing query. I changed the SELECT from country to city. To find the top 10 cities within the top 10 countries, I listed out the top 10 countries by the WHERE query. Lastly, I changed the GROUP BY from country to city.
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.
 - a. Tip: After the join syntax, you will 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
 - b. Copy-past your query and its output into your answers document

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Query Query History Scratch Pad

```

1 SELECT A.customer_id,
2       A.first_name,
3       A.last_name,
4       C.city,
5       D.country,
6       SUM(E.amount) AS total_payment
7 FROM customer A
8 INNER JOIN address B ON A.address_id = B.address_id
9 INNER JOIN city C ON B.city_id = C.city_id
10 INNER JOIN country D ON C.country_id = D.country_id
11 INNER JOIN payment E ON A.customer_id = E.customer_id
12 WHERE city IN ('Aurora',
13               'Tokat',
14               'Tarsus',
15               'Atlixco',
16               'Emeishan',
17               'Pontianak',
18               'Shimoga',
19               'Aparecida de Goinia',
20               'Zalantun',
21               'Taguig')
22 GROUP BY A.customer_id, C.city, D.country
23 ORDER BY total_payment DESC
24 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_payment numeric
1	566	Casey	Mena	Tokat	Turkey	130.68
2	84	Sara	Perry	Atlixco	Mexico	128.7
3	506	Leslie	Seward	Pontianak	Indonesia	123.72
4	389	Alan	Kahn	Emeishan	China	119.75
5	537	Clinton	Buford	Aurora	United States	98.76

Total rows: 5 of 5 Query complete 00:00:00.059 Ln 21, Col 25

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