

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

```

SELECT D.country,
COUNT(customer_id)
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 COUNT(customer_id) DESC
LIMIT 10

```

The screenshot shows the pgAdmin 4 web interface in a browser. The left sidebar displays the database structure, including the 'Rockbusters' database. The main window shows the 'Query Editor' with the following SQL query:

```

1 SELECT D.country,
2 COUNT (customer_id)
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 COUNT (customer_id) DESC
9 LIMIT 10

```

Below the query editor, the 'Data Output' tab is active, displaying the results of the query in a table format:

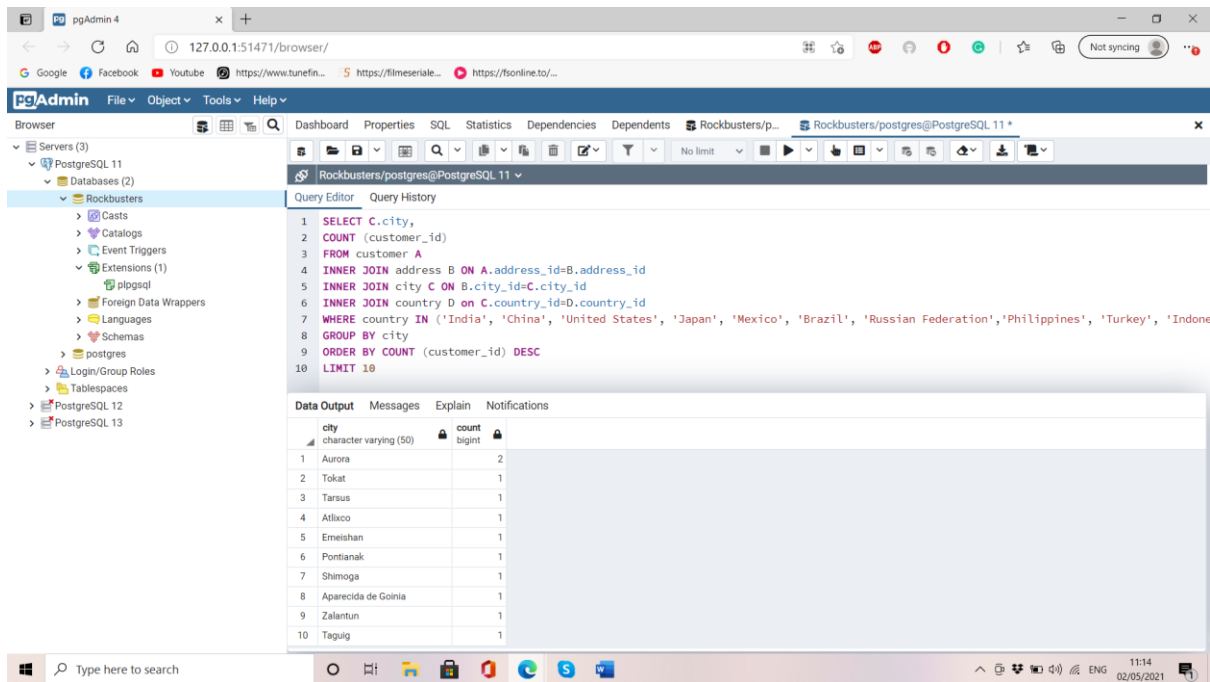
country	count
India	60
China	53
United States	36
Japan	31
Mexico	30
Brazil	28
Russian Federation	28
Philippines	20
Turkey	15
Indonesia	14

- First, I have thought about the connection between customer and country.
  - To identify the relationship, I used the entity-relationship diagram, which I learnt task 3.2, and found out the chained tables from the customer table to the country table.
  - Only I needed is count of the costumer which has country information, so I picked INNER JOIN, build query with identical columns between table and used GROUP BY, ORDER BY and LIMIT to make top 10 countries that customer based on.
- 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.
    - Write a short explanation of how you approached this query and why.

```

SELECT C.city,
COUNT(customer_id)
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','Philippones','Turkey','Indonesia')
GROUP BY city
ORDER BY COUNT(customer_id) DESC
LIMIT 10

```



- I instantly came up the constrained command like WHERE because it instructed where I must extract.
- To shows top 10 cities, I swap to city column in SELECT command and GROUP BY command.
- 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 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.
- Copy-paste your query and its output into your answers document.

SELECT C.first\_name,

C.last\_name,

SUM(amount)

FROM payment A

INNER JOIN rental B ON A.rental\_id = B.rental\_id

INNER JOIN customer C ON B.customer\_id = C.customer\_id

INNER JOIN address D ON C.address\_id = D.address\_id

INNER JOIN city E ON D.city\_id = E.city\_id

INNER JOIN country F ON E.country\_id = F.country\_id

WHERE city IN ('Aurora','Atlixco','Zalantun','Pontianak','Tarsus','Aparecida de Goinia','Eneishan','Rio Claro','Yingkou','Tokat')

GROUP BY first\_name, last\_name

ORDER BY SUM(amount) DESC

LIMIT 5

The screenshot shows the pgAdmin 4 web interface in a browser. The left sidebar displays the database structure for 'PostgreSQL 11', including 'Rockbusters' and 'Databases (2)'. The main panel shows the 'Query Editor' with the following SQL query:

```
1 SELECT C.first_name,
2 C.last_name,
3 SUM(amount)
4 FROM payment A
5 INNER JOIN rental B ON A.rental_id=B.rental_id
6 INNER JOIN customer C ON B.customer_id=C.customer_id
7 INNER JOIN address D ON C.address_id=D.address_id
8 INNER JOIN city E ON D.city_id=E.city_id
9 INNER JOIN country F ON E.country_id=F.country_id
10 WHERE city IN ('Aurora', 'Atlixco', 'Zalantun', 'Pontianak', 'Tarsus', 'Aparecida de Goinia', 'Eneishan', 'Rio Claro', 'Yingkou', 'Tokat')
11 GROUP BY first_name, last_name
12 ORDER BY SUM (amount) DESC
13 LIMIT 5
```

Below the query editor, the 'Data Output' tab shows the results of the query:

first_name	last_name	sum
Casey	Mena	130.68
Sara	Perry	128.70
Leslie	Seward	123.72
Clinton	Buford	98.76
Denise	Kelly	96.74

- Took what we had in problem 2 so I knew what I Inner joins would be we just need to change FROM to payments table and add in Customer\_id and First\_name, Last\_name, then added the top city I pulled from problem 2 and grouped by first name last name city country and amount.