Joining Tables of Data

Ann Mariya Francis

Exercise 3.7

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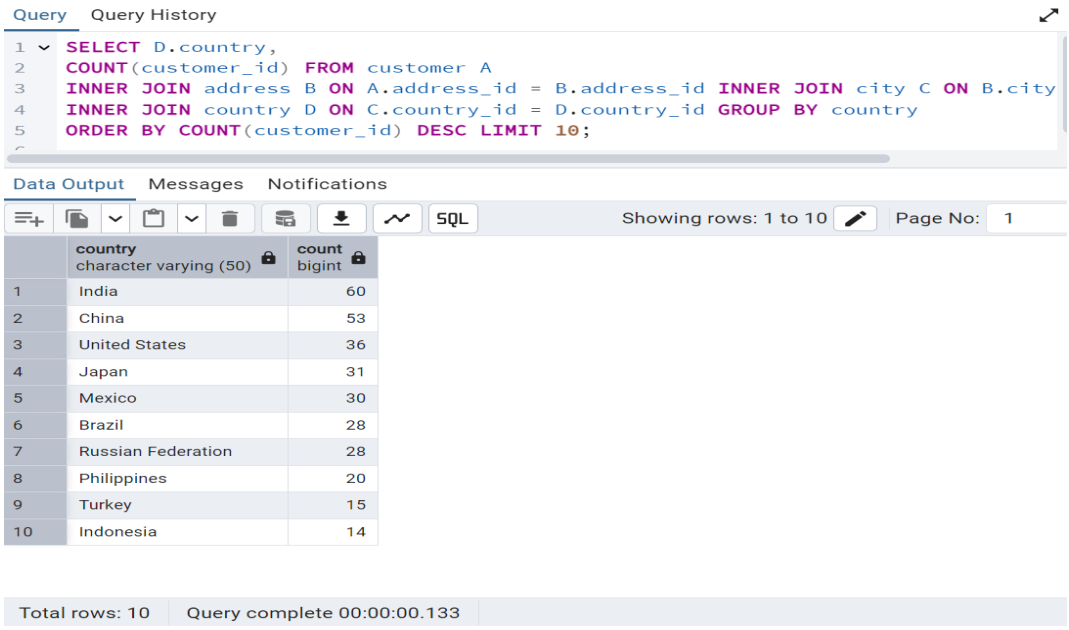
1. Write a query to find the top 10 countries for Rockbuster in terms of customer numbers.

```
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;
```



Query | Query History

```
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
INNER JOIN country D ON C.country_id = D.country_id GROUP BY country
ORDER BY COUNT(customer_id) DESC LIMIT 10;
```

Data Output | Messages | Notifications

SQL | Showing rows: 1 to 10 | Page No: 1

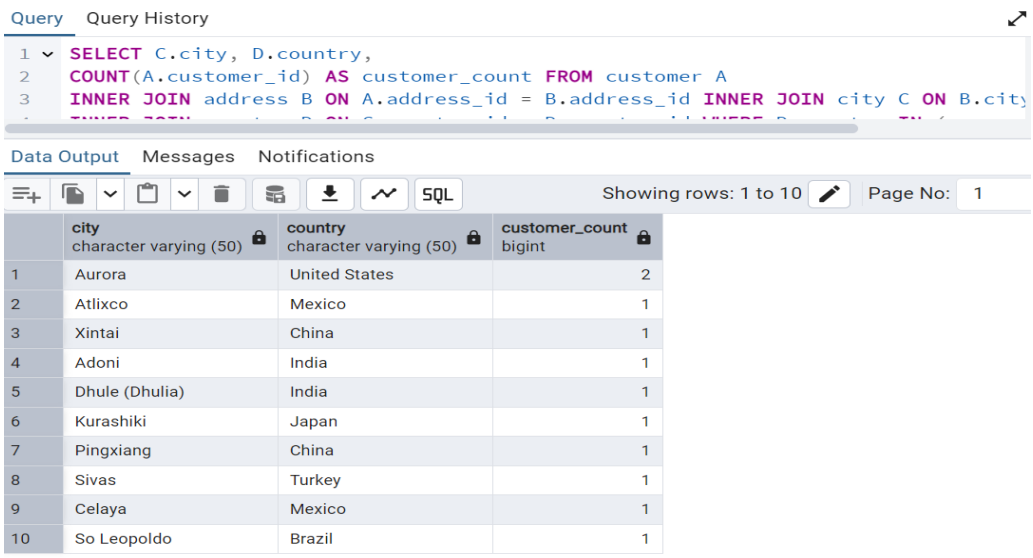
	country character varying (50)	count bigint
1	India	60
2	China	53
3	United States	36
4	Japan	31
5	Mexico	30
6	Brazil	28
7	Russian Federation	28
8	Philippines	20
9	Turkey	15
10	Indonesia	14

Total rows: 10 | Query complete 00:00:00.133

To find the top 10 countries with the highest number of Rockbuster customers, I first identified the necessary tables and their relationships. Since the customer table only has an address_id, I joined it with the address table to get the city_id, then linked it to the city table to access the country_id, and finally joined with the country table to retrieve country names. I used COUNT(customer_id) to count customers per country, grouped by country, then ordered the results in descending order to get the top 10. Finally, I applied LIMIT 10 to return only the top results efficiently.

2.Write a query to identify the top 10 cities that fall within the top 10 countries you identified in step 1.

```
SELECT C.city, D.country,
        COUNT(A.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 D.country IN (
SELECT D.country
FROM customer A
JOIN address B ON A.address_id = B.address_id
JOIN city C ON B.city_id = C.city_id
JOIN country D ON C.country_id = D.country_id
GROUP BY D.country
ORDER BY COUNT(A.customer_id) DESC
LIMIT 10)
GROUP BY C.city, D.country
ORDER BY customer_count DESC
LIMIT 10;
```



Query | Query History

```
1 SELECT C.city, D.country,
2 COUNT(A.customer_id) AS customer_count FROM customer A
3 INNER JOIN address B ON A.address_id = B.address_id INNER JOIN city C ON B.city
```

Data Output | Messages | Notifications

Showing rows: 1 to 10 | Page No: 1

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

To identify the top 10 cities within the top 10 countries with the highest number of Rockbuster customers, I first used a subquery to find the top 10 countries by counting customers per country, grouping by country, and ordering in descending order. This subquery was then used in the WHERE clause of the main query to filter only those cities belonging to these top 10 countries. The main query joined the customer, address, city, and country tables to retrieve city and country names, then grouped by city and country to count customers per city. Finally, the results were sorted in descending order of customer count, and the top 10 cities were selected using LIMIT 10

3.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!

```
SELECT B.customer_id,
            B.first_name,
            B.last_name,
            E.country,
            D.city,
            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 (E.country, D.city) IN(
            SELECT D.country, C.city
            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 D.country IN(
                  SELECT D.country
                  FROM customer A
                  JOIN address B ON A.address_id = B.address_id
                  JOIN city C ON B.city_id = C.city_id
                  JOIN country D ON C.country_id = D.country_id
                  GROUP BY D.country
                  ORDER BY COUNT(A.customer_id) DESC
                  LIMIT 10
                  )
            GROUP BY D.country, C.city
            ORDER BY COUNT(A.customer_id) DESC
            LIMIT 10
            )
      GROUP BY B.customer_id, B.first_name, B.last_name, D.city, E.country
      ORDER BY total_amount_paid DESC
      LIMIT 5;
```

Query Query History

```
8  INNER JOIN address B ON A.address_id = B.address_id INNER JOIN city C ON B.city
9  INNER JOIN country D ON C.country_id = D.country_id WHERE D.country IN(
10 SELECT D.country FROM customer A
11 JOIN address B ON A.address_id = B.address_id JOIN city C ON B.city_id = C.city
12 JOIN country D ON C.country_id = D.country_id GROUP BY D.country
13 ORDER BY COUNT(A.customer_id) DESC LIMIT 10
14 )
15 GROUP BY D.country, C.city
16 ORDER BY COUNT(A.customer_id) DESC LIMIT 10
17 )
18 GROUP BY B.customer_id, B.first_name, B.last_name, D.city, E.country ORDER BY
19 LIMIT 5;
20
```

Scratch Pad ×

Data Output Messages Notifications

Showing rows: 1 to 5 Page No: 1 of 1

	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

Total rows: 5 Query complete 00:00:00.109 CRLF Ln 20, Col 1