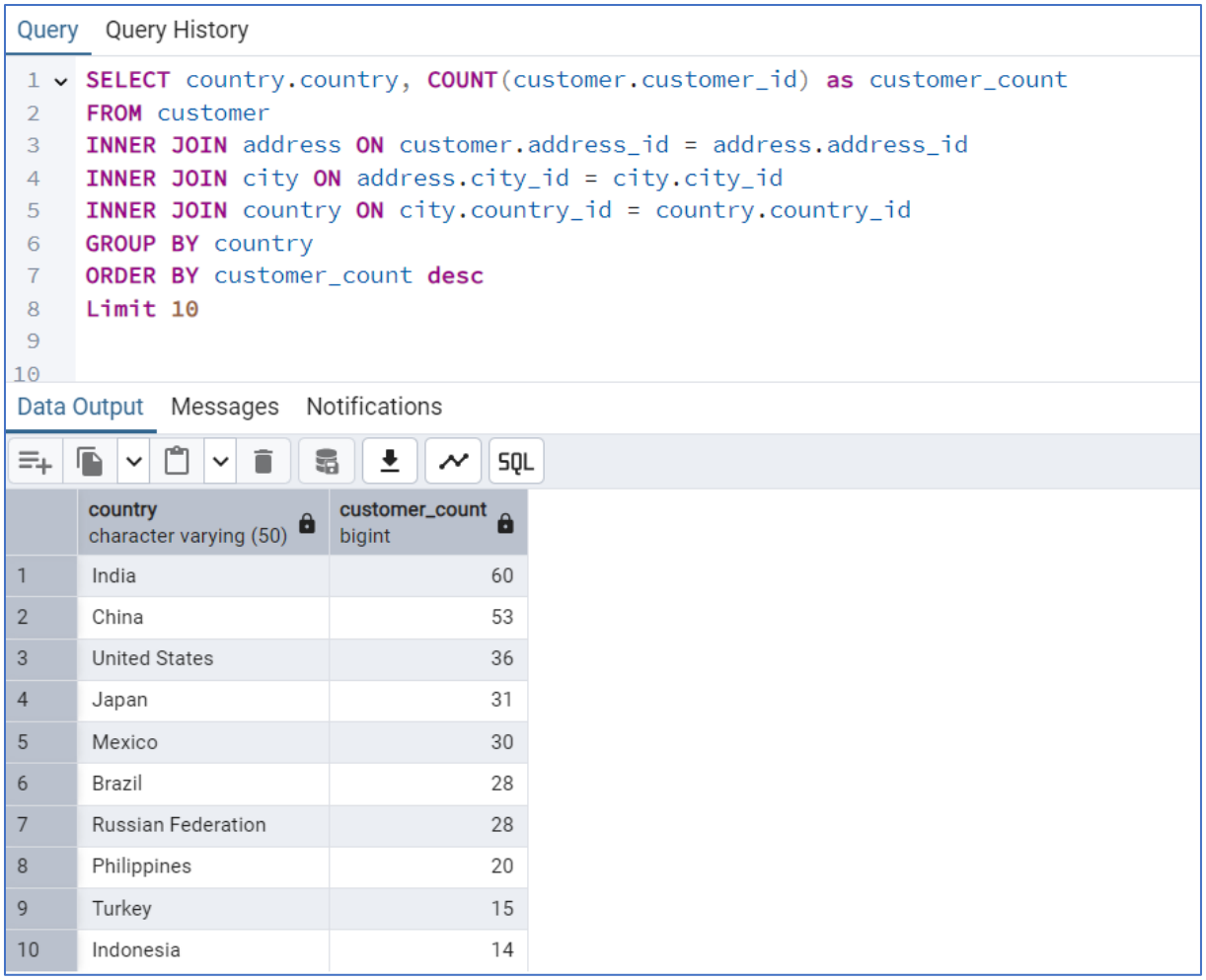
Answers 3.7

STEP 1:



	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

CODE:

```
SELECT country.country, COUNT(customer.customer_id) as customer_count
FROM customer
INNER JOIN address ON customer.address_id = address.address_id
INNER JOIN city ON address.city_id = city.city_id
INNER JOIN country ON city.country_id = country.country_id
GROUP BY country
ORDER BY customer_count desc
Limit 10
```

Approach:

1. Identify the necessary tables: The customer table contains customer data, but the country information is in the country table.
2. Establish relationships: Used INNER JOIN to connect customer - address - city - country.
3. Aggregation: Used COUNT(customer.customer_id) to count customers per country.
4. Sorting & Limiting: Ordered results in descending order and limited to the top 10 countries.

STEP 2:

Query | Query History

```
1  SELECT city.city, country.country, COUNT(customer.customer_id) as customer_count
2  FROM customer
3  INNER JOIN address ON customer.address_id = address.address_id
4  INNER JOIN city ON address.city_id = city.city_id
5  INNER JOIN country ON city.country_id = country.country_id
6  WHERE country.country_id IN (SELECT country.country_id
7  FROM customer
8  INNER JOIN address ON customer.address_id = address.address_id
9  INNER JOIN city ON address.city_id = city.city_id
10 INNER JOIN country ON city.country_id = country.country_id
11 GROUP BY country.country_id
12 ORDER BY COUNT(customer.customer_id) DESC
13 LIMIT 10)
14 GROUP BY city.city, country.country
15 ORDER BY customer_count DESC
16 LIMIT 10
```

Data Output | Messages | Notifications

SQL

	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

CODE:

SELECT city.city, country.country, COUNT(customer.customer_id) as customer_count

FROM customer

INNER JOIN address ON customer.address_id = address.address_id

INNER JOIN city ON address.city_id = city.city_id

INNER JOIN country ON city.country_id = country.country_id

WHERE country.country_id IN (SELECT country.country_id

FROM customer

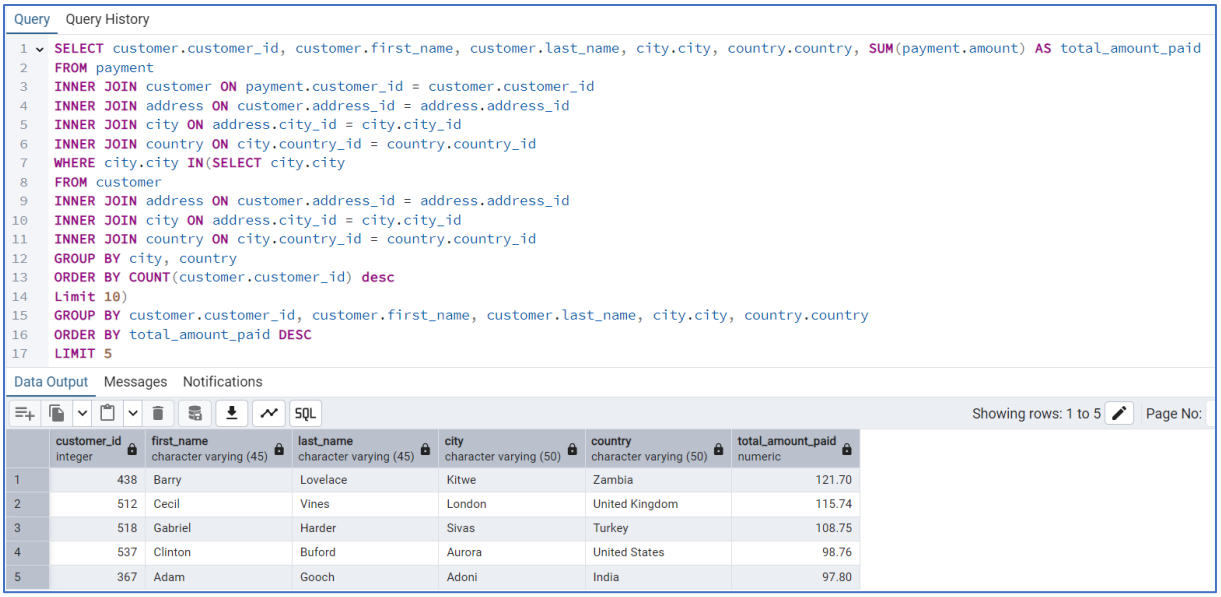
INNER JOIN address ON customer.address_id = address.address_id

```
INNER JOIN city ON address.city_id = city.city_id
INNER JOIN country ON city.country_id = country.country_id
GROUP BY country.country_id
ORDER BY COUNT(customer.customer_id) DESC
LIMIT 10)
GROUP BY city.city, country.country
ORDER BY customer_count DESC
LIMIT 10
```

Approach:

1. Built on the first query by focusing on cities instead of countries.
2. Used a subquery to filter cities from countries that have the most customers.
3. Ensured correct grouping by including both city.city and country.country in GROUP BY.
4. Ordered the results based on customer count to get the top 10 cities.

STEP 3:



Query | Query History

```
SELECT customer.customer_id, customer.first_name, customer.last_name, city.city, country.country, SUM(payment.amount) AS total_amount_paid
FROM payment
INNER JOIN customer ON payment.customer_id = customer.customer_id
INNER JOIN address ON customer.address_id = address.address_id
INNER JOIN city ON address.city_id = city.city_id
INNER JOIN country ON city.country_id = country.country_id
WHERE city.city IN(SELECT city.city
FROM customer
INNER JOIN address ON customer.address_id = address.address_id
INNER JOIN city ON address.city_id = city.city_id
INNER JOIN country ON city.country_id = country.country_id
GROUP BY city, country
ORDER BY COUNT(customer.customer_id) desc
Limit 10)
GROUP BY customer.customer_id, customer.first_name, customer.last_name, city.city, country.country
ORDER BY total_amount_paid DESC
LIMIT 5
```

Data Output | Messages | Notifications

Showing rows: 1 to 5 | Page No:

	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	438	Barry	Lovelace	Kitwe	Zambia	121.70
2	512	Cecil	Vines	London	United Kingdom	115.74
3	518	Gabriel	Harder	Sivas	Turkey	108.75
4	537	Clinton	Buford	Aurora	United States	98.76
5	367	Adam	Gooch	Adoni	India	97.80

CODE:

SELECT customer.customer_id, customer.first_name, customer.last_name, city.city, country.country, SUM(payment.amount) AS total_amount_paid

FROM payment

INNER JOIN customer ON payment.customer_id = customer.customer_id

INNER JOIN address ON customer.address_id = address.address_id

INNER JOIN city ON address.city_id = city.city_id

INNER JOIN country ON city.country_id = country.country_id

WHERE city.city IN(SELECT city.city

FROM customer

INNER JOIN address ON customer.address_id = address.address_id

INNER JOIN city ON address.city_id = city.city_id

INNER JOIN country ON city.country_id = country.country_id

GROUP BY city, country

ORDER BY COUNT(customer.customer_id) desc

Limit 10)

GROUP BY customer.customer_id, customer.first_name, customer.last_name, city.city, country.country

ORDER BY total_amount_paid DESC

LIMIT 5

Approach:

1. Filtered customers based on the top 10 cities from the second query.
2. Included payment data by JOIN the payment table to get total spending per customer.
3. Grouped by customer ID to ensure aggregation worked correctly with SUM(payment.amount).
4. Used a subquery in WHERE city.city_id IN to get the top 10 cities with the most customers.
5. Sorted by spending and limited to the top 5 customers