SQL Queries & Syntax

1. Connecting the Customer Table to the Country Table to display the Top 10 Countries with Total Customers.

Select COUNT (A. customer_id) AS total_customers,
 D. country

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 D.country

ORDER BY total_customers DESC

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

Identifying the Top 10 Cities that fall within the Top 10 Countries identified in step 1 above.

2. Select COUNT (A. customer_id) AS total_customers, C. city, D.country 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 ('India','China','United States','Japan','Mexico','Brazil','Russian

Federation', 'Philippines', 'Turkey', 'Indonesia')

GROUP BY d.country, C.city

ORDER BY total_customers DESC

	total_customers bigint	city character varying (50)	country character varying (50)	
1	2	Aurora	United States	
2	1	Cianjur	Indonesia	
3	1	Acua Mexico		
4	1	So Leopoldo	Brazil	
5	1	lwaki	Japan	
6	1	Ambattur	India	
7	1	Shanwei	China	
8	1	Citrus Heights	United States	
9	1	Teboksary Russian Federation		
10	1	Tianjin China		

Top 5 customers from the top 10 cities who've paid the highest total amounts to Rockbuster.

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

FROM payment

INNER JOIN customer ON customer.customer_id = payment.customer_id

INNER JOIN address ON address_id = customer.address_id

INNER JOIN city ON city.city_id = address.city_id

INNER JOIN country ON country.country_id = city.country_id

WHERE city.city IN (SELECT city.city

FROM customer

LEFT JOIN address ON address_id = customer.address_id

LEFT JOIN city ON city.city_id = address.city_id

LEFT JOIN country ON country.country_id = city.country_id

GROUP BY city.city

ORDER BY COUNT(customer_id)

DESC LIMIT 10)

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

country.country, city.city

ORDER BY total_amount_paid DESC

LIMIT 5

	ner_id r	first_name character varying (45)	last_name character varying (45)	country character varying (50)	city character varying (50)	total_amount_paid f
1	148	Eleanor	Hunt	Runion	Saint-Denis	211.5
2	144	Clara	Shaw	Belarus	Molodetno	189.60
3	566	Casey	Mena	Turkey	Tokat	130.6
4	84	Sara	Perry	Mexico	Atlixco	128.70
5	506	Leslie	Seward	Indonesia	Pontianak	123.7:

2. Average Amount paid by Top 5 Customers

1. SELECT AVG(total_amount_paid) AS Average

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

INNER JOIN customer ON customer.customer_id = payment.customer_id

INNER JOIN address ON address_id = customer.address_id

INNER JOIN city ON city.city_id = address.city_id

INNER JOIN country ON country.country_id = city.country_id

WHERE city.city IN (SELECT city.city

FROM customer

LEFT JOIN address ON address.address_id = customer.address_id

LEFT JOIN city ON city.city_id = address.city_id

LEFT JOIN country ON country.country id = city.country id

GROUP BY city.city

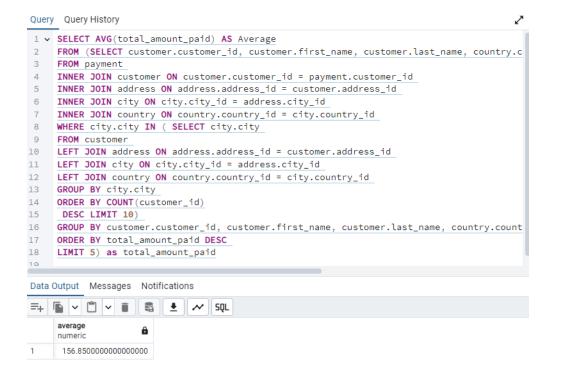
ORDER BY COUNT(customer_id)

DESC LIMIT 10)

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

ORDER BY total_amount_paid DESC

LIMIT 5) as total_amount_paid



Identifying Country of each Top 5 Customer

2. SELECT E.country,

COUNT(DISTINCT B.customer_id) AS all_customer_count,

COUNT(DISTINCT top_5_customers) AS top_customer_count

FROM customer B

JOIN address C ON B.address_id = C.address_id

JOIN city D ON C.city_id = D.city_id

JOIN country E ON D.country_id = E.country_id

LEFT JOIN (SELECT B.customer_id, B.first_name, B.last_name, E.country, D.city, SUM(A.amount) AS total_amount_paid

FROM payment A

JOIN customer B ON A.customer_id = B.customer_id

JOIN address C ON B.address_id = C.address_id

JOIN city D ON C.city_id = D.city_id

JOIN country E ON D.country_id = E.country_id

WHERE D.city IN (SELECT D.city FROM customer B JOIN address C ON B.address_id = C.address_id JOIN city D ON C.city_id = D.city_id JOIN country E ON D.country_id = E.country_id

WHERE E.country IN (SELECT E.country FROM customer B JOIN address C ON B.address_id = C.address_id

JOIN city D ON C.city_id = D.city_id

JOIN country E ON D.country_id = E.country_id

GROUP BY E.country

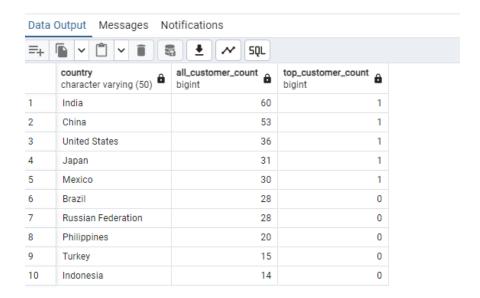
ORDER BY COUNT(B.customer_id) DESC LIMIT 10)

GROUP BY E.country, D.city

ORDER BY COUNT(B.customer_id) DESC LIMIT 10)

GROUP BY B.customer_id, B.first_name, B.last_name, E.country, D.city ORDER BY SUM(A.amount) DESC LIMIT 5) AS top_5_customers ON B.customer_id = top_5_customers.customer_id

GROUP BY E.country ORDER BY all_customer_count DESC LIMIT 10



3. Rewriting Subqueries as Common Table Expressions

Average Amount Paid by Top 5 Customers

WITH average_customer_payment (total_amount_paid) AS (SELECT SUM(payment.amount) AS total_amount_paid FROM payment INNER JOIN customer ON customer.customer_id = payment.customer_id INNER JOIN address ON address_id = customer.address_id

INNER JOIN city ON city.city_id = address.city_id

INNER JOIN country ON country.country_id = city.country_id

WHERE city.city IN (SELECT city.city

FROM customer

LEFT JOIN address ON address_id = customer.address_id LEFT JOIN city ON city.city_id = address.city_id

LEFT JOIN country ON country.country_id = city.country_id

GROUP BY city.city

ORDER BY COUNT(customer_id)

DESC LIMIT 10)

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

ORDER BY total_amount_paid DESC LIMIT 5)

SELECT AVG(total_amount_paid)

FROM average_customer_payment

```
Identifying Country of each Top 5 Customer
WITH TopCities AS (
 SELECT E.country, D.city
 FROM customer B
 JOIN address C ON B.address_id = C.address_id
 JOIN city D ON C.city_id = D.city_id
 JOIN country E ON D.country_id = E.country_id
 GROUP BY E.country, D.city
 HAVING COUNT(B.customer_id) > 0
 ORDER BY COUNT(B.customer_id) DESC
 LIMIT 10
),
Top5Customers AS (
 SELECT B.customer_id, B.first_name, B.last_name, E.country, D.city, SUM(A.amount) AS
total_amount_paid
 FROM payment A
 JOIN customer B ON A.customer_id = B.customer_id
 JOIN address C ON B.address_id = C.address_id
 JOIN city D ON C.city_id = D.city_id
 JOIN country E ON D.country_id = E.country_id
 WHERE D.city IN (SELECT city FROM TopCities WHERE country = E.country)
 GROUP BY B.customer_id, B.first_name, B.last_name, E.country, D.city
 ORDER BY SUM(A.amount) DESC
 LIMIT 5
SELECT E.country,
   COUNT(DISTINCT B.customer_id) AS all_customer_count,
   COUNT(DISTINCT top_5_customers.customer_id) AS top_customer_count
FROM customer B
```

JOIN address C ON B.address_id = C.address_id

JOIN city D ON C.city_id = D.city_id

JOIN country E ON D.country_id = E.country_id

LEFT JOIN Top5Customers top_5_customers ON B.customer_id = top_5_customers.customer_id

GROUP BY E.country

ORDER BY all_customer_count DESC

LIMIT 10;