

SQL Queries & Syntax

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

1. 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	Iwaki	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.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

```

	customer_id numeric	first_name character varying (45)	last_name character varying (45)	country character varying (50)	city character varying (50)	total_amount_paid numeric
1	148	Eleanor	Hunt	Runion	Saint-Denis	211.51
2	144	Clara	Shaw	Belarus	Molodetno	189.61
3	566	Casey	Mena	Turkey	Tokat	130.61
4	84	Sara	Perry	Mexico	Atlixco	128.71
5	506	Leslie	Seward	Indonesia	Pontianak	123.71

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.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
```

Query Query History

```
1 SELECT AVG(total_amount_paid) AS Average
2 FROM (SELECT customer.customer_id, customer.first_name, customer.last_name, country.c
3 FROM payment
4 INNER JOIN customer ON customer.customer_id = payment.customer_id
5 INNER JOIN address ON address.address_id = customer.address_id
6 INNER JOIN city ON city.city_id = address.city_id
7 INNER JOIN country ON country.country_id = city.country_id
8 WHERE city.city IN ( SELECT city.city
9 FROM customer
10 LEFT JOIN address ON address.address_id = customer.address_id
11 LEFT JOIN city ON city.city_id = address.city_id
12 LEFT JOIN country ON country.country_id = city.country_id
13 GROUP BY city.city
14 ORDER BY COUNT(customer_id)
15 DESC LIMIT 10)
16 GROUP BY customer.customer_id, customer.first_name, customer.last_name, country.count
17 ORDER BY total_amount_paid DESC
18 LIMIT 5) as total_amount_paid
19
```

Data Output Messages Notifications

average numeric

1	156.850000000000000000
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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
```



	country character varying (50) 🔒	all_customer_count bigint 🔒	top_customer_count bigint 🔒
1	India	60	1
2	China	53	1
3	United States	36	1
4	Japan	31	1
5	Mexico	30	1
6	Brazil	28	0
7	Russian Federation	28	0
8	Philippines	20	0
9	Turkey	15	0
10	Indonesia	14	0

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.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)
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;