Common Table Expressions

**To find the average amount paid by the top 5 customers**

**QUERY :**

WITH top\_locations AS (

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

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 COUNT(A.customer\_id) DESC

LIMIT 10

)

GROUP BY D.country, C.city

ORDER BY COUNT(A.customer\_id) DESC

LIMIT 10

),

top\_customers AS (

SELECT B.customer\_id,

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 \* FROM top\_locations)

GROUP BY B.customer\_id

ORDER BY total\_amount\_paid DESC

LIMIT 5

)

SELECT AVG(total\_amount\_paid) AS average

FROM top\_customers;

A screenshot of a computer code

Description automatically generated

A screenshot of a computer program

Description automatically generated

**Explanation :**

1. First, I created a CTE called **top\_locations** to get the top 10 countries and cities with the most customers. This step grouped the data by country and city and used filtering to focus on the top 10 countries with the highest customer count.
2. Second, I created another CTE, top\_**customer**s to identify the top 5 customers based on the total amount they paid. Here, I joined all the necessary tables (payment, customer, address, city and country) and used the first CTE to filter the data to include only those top countries and cities.
3. The main query calculates the average amount paid by the top 5 customers from the second CTE.