**1.1)**

WITH top\_five\_customer (customer\_id, first\_name, last\_name, country, city, total\_amount\_paid) AS (SELECT

A.customer\_id As customer\_id,

A.first\_name AS first\_name,

A.last\_name AS last\_name,

D.country AS country,

C.city AS city,

SUM(E.amount) AS total\_amount\_paid

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

INNER JOIN payment E ON A.customer\_id = E.customer\_id

WHERE city IN ('Aurora', 'Tokat', 'Tarsus', 'Altixco', 'Emeishan', 'Pontainak', 'Shimoga', 'Aparaceida de Goiania', 'Zalantun', 'Taguig')

GROUP BY

A.customer\_id,

D.country,

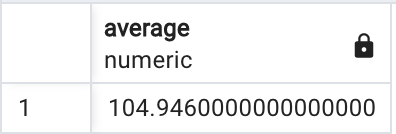
C.city

ORDER BY total\_amount\_paid DESC

LIMIT 5)

SELECT AVG(total\_amount\_paid) AS average FROM top\_five\_customer;

**Output**:



**1.2)**

WITH top\_five\_customer (customer\_id, total\_amount\_paid) AS (

SELECT

A.customer\_id as customer\_id,

SUM(E.amount) as total\_amount\_paid

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

INNER JOIN payment E ON A.customer\_id = E.customer\_id

WHERE city IN ('Aurora', 'Tokat', 'Tarsus', 'Altixco', 'Emeishan', 'Pontainak', 'Shimoga', 'Aparaceida de Goiania', 'Zalantun', 'Taguig')

GROUP BY

A.customer\_id,

D.country,

C.city

ORDER BY total\_amount\_paid DESC

LIMIT 5)

SELECT country.country, COUNT(customer) AS all\_customer\_count, COUNT(top\_five\_customer) AS top\_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 country.country\_id = city.country\_id

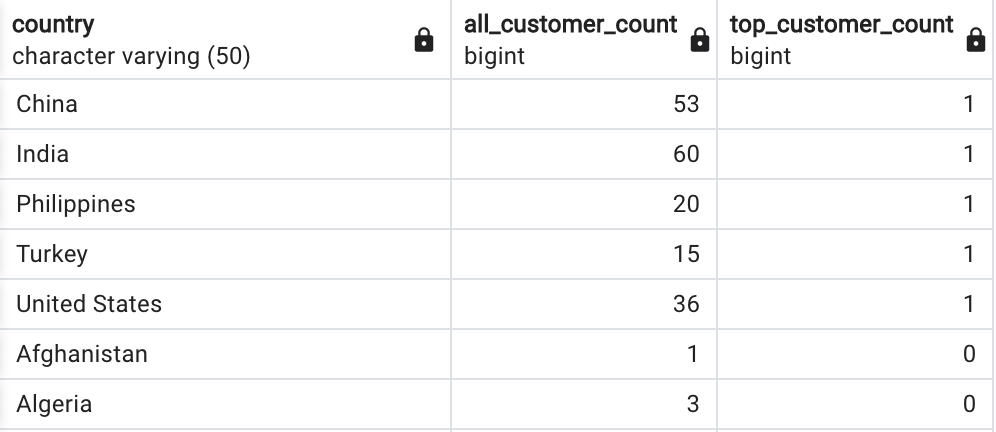
LEFT JOIN top\_five\_customer

ON customer.customer\_id = top\_five\_customer.customer\_id

GROUP BY country.country

ORDER BY top\_customer\_count DESC, country.country;

**Output**:



……. every single country

Comment:

The rewriting of the queries was simple. I just grabbed the inner query and implemented it as the CTE's foundation. I then replaced the inner query for the CTE name. My code was therefore more readable and better organized.

**2)**

Costs

1.1: average: cost 44-53 msc

2.1: average: cost 46-64 msc

1.2: average: cost 43-50 msc

2.2: average: cost 46-72 msc

Comment:

The fact that the computer needs additional time because we generate a table that requires storage space does not really surprise me. But with such short queries, the difference is not all that significant. It will only get worse, in my opinion, if you use larger queries. I believe it is wise to use CTEs first before integrating them into an inner/outer query. Through this method, we may benefit from the speedier query while simultaneously using the enhanced readability.

**3)**

I haven't had any difficulties because everything in the task article was quite clear.