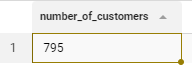
##### --1.How many customers do we have in the data?

*SELECT*

*COUNT(DISTINCT customer\_id) AS number\_of\_customers*

*FROM customers;*



##### -- 2.What was the city with the most profit for the company in 2015?

*WITH most\_profitable\_cities AS (*

*SELECT*

*o.shipping\_city,*

*SUM(od.order\_profits) AS profit\_in\_2015*

*FROM orders o*

*JOIN order\_details od*

*ON o.order\_id=od.order\_id*

*WHERE EXTRACT (YEAR FROM o.order\_date)=2015*

*GROUP BY o.shipping\_city*

*ORDER BY profit\_in\_2015 DESC)*

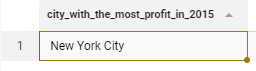
*SELECT*

*shipping\_city AS city\_with\_the\_most\_profit\_in\_2015*

*FROM*

*most\_profitable\_cities*

*LIMIT 1;*



##### 

##### -- 3.In 2015, what was the most profitable city's profit?

*WITH most\_profitable\_cities AS (*

*SELECT*

*o.shipping\_city,*

*SUM(od.order\_profits) AS profit\_in\_2015*

*FROM orders o*

*JOIN order\_details od*

*ON o.order\_id=od.order\_id*

*WHERE EXTRACT (YEAR FROM o.order\_date)=2015*

*GROUP BY o.shipping\_city*

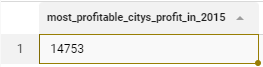
*ORDER BY profit\_in\_2015 DESC*

*LIMIT 1)*

*SELECT*

*profit\_in\_2015 AS most\_profitable\_citys\_profit\_in\_2015*

*FROM most\_profitable\_cities;*

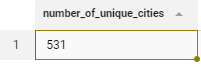


##### -- 4.How many different cities do we have in the data?

*SELECT*

*COUNT(DISTINCT shipping\_city) AS number\_of\_unique\_cities*

*FROM orders;*



##### 

##### -- 5.Show the total spent by customers from low to high.

*SELECT*

*o.customer\_id,*

*c.customer\_name,*

*c.customer\_segment,*

*SUM(od.order\_sales) AS total\_spent*

*FROM orders o*

*JOIN order\_details od*

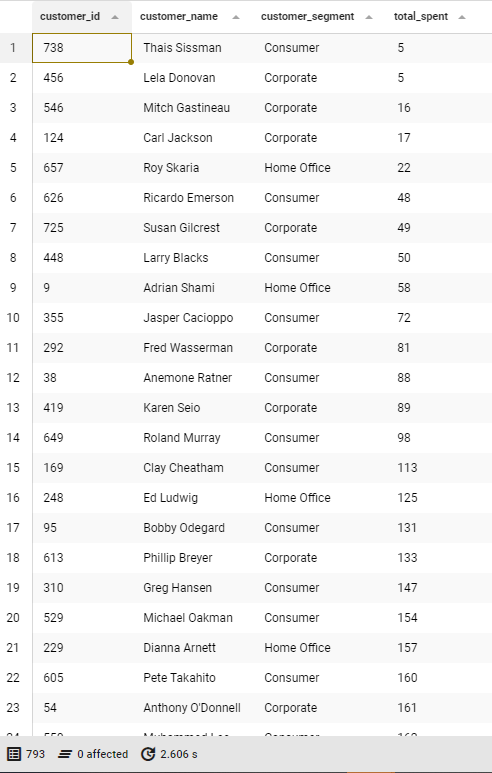
*ON o.order\_id=od.order\_id*

*JOIN customers c*

*ON o.customer\_id=c.customer\_id*

*GROUP BY o.customer\_id, c.customer\_name, c.customer\_segment*

*ORDER BY total\_spent;*



##### 

##### --6. What is the most profitable city in the State of Tennessee?

*SELECT*

*orders.shipping\_city*

*FROM orders*

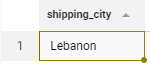
*JOIN order\_details USING(order\_id)*

*WHERE shipping\_state = 'Tennessee'*

*GROUP BY orders.shipping\_city*

*ORDER BY SUM(order\_details.order\_profits) DESC*

*LIMIT 1;*



##### --7. What’s the average annual profit for that city across all years?

*SELECT*

*o.shipping\_city,*

*ROUND(AVG(od.order\_profits::NUMERIC),2) AS average\_profit\_of\_Lebanon*

*FROM orders o*

*JOIN order\_details od*

*ON o.order\_id=od.order\_id*

*WHERE o.shipping\_city='Lebanon'*

*GROUP BY o.shipping\_city --, year*

*ORDER BY average\_profit\_of\_Lebanon DESC;*



##### --8. What is the distribution of customer types in the data?

*SELECT*

*customer\_segment, COUNT(\*),*

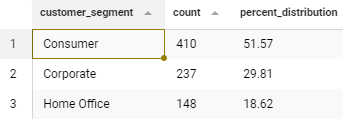
*ROUND(*

*COUNT(\*)\*100.0 / SUM(COUNT(\*)) OVER ()*

*, 2) AS percent\_distribution*

*FROM customers*

*GROUP BY customer\_segment;*



*WITH number\_of\_orders AS (*

*SELECT DISTINCT*

*c.customer\_id,*

*COUNT(DISTINCT o.order\_id) AS number\_of\_orders\_by\_customer*

*FROM customers c*

*JOIN orders o*

*ON c.customer\_id=o.customer\_id*

*JOIN order\_details od*

*ON o.order\_id=od.order\_id*

*JOIN product p*

*ON od.product\_id=p.product\_id*

*GROUP BY c.customer\_id*

*)*

*SELECT--Quartiles - query (averages)*

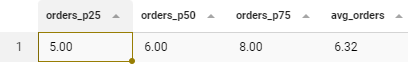
*ROUND (PERCENTILE\_CONT(0.25) WITHIN GROUP (ORDER BY number\_of\_orders\_by\_customer ASC) :: NUMERIC,2) AS orders\_p25,*

*ROUND (PERCENTILE\_CONT (0.5) WITHIN GROUP (ORDER BY number\_of\_orders\_by\_customer ASC) :: NUMERIC,2) AS orders\_p50,*

*ROUND (PERCENTILE\_CONT (0.75) WITHIN GROUP (ORDER BY number\_of\_orders\_by\_customer ASC) :: NUMERIC,2) AS orders\_p75,*

*ROUND(AVG (number\_of\_orders\_by\_customer) :: NUMERIC, 2) AS avg\_orders*

*FROM number\_of\_orders;*



##### --9. What’s the most profitable product category on average in Iowa across all years?

*SELECT*

*p.product\_category*

*FROM order\_details od*

*JOIN orders o*

*ON od.order\_id = o.order\_id*

*JOIN product p*

*ON od.product\_id = p.product\_id*

*WHERE o.shipping\_state ILIKE 'iowa%'*

*GROUP BY p.product\_category*

*ORDER BY AVG(od.order\_profits) DESC*

*LIMIT 1;*

**

##### --10 What is the most popular product in that category across all states in 2016?

*WITH quantity AS(*

*SELECT DISTINCT*

*p.product\_name,*

*SUM(od.quantity) AS total\_quantity\_of\_products*

*FROM orders o*

*JOIN order\_details od*

*ON o.order\_id=od.order\_id*

*JOIN product p*

*ON od.product\_id=p.product\_id*

*WHERE EXTRACT (YEAR FROM o.order\_date)=2016 AND p.product\_category='Furniture'*

*GROUP BY p.product\_name)*

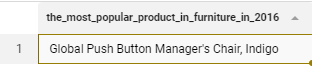
*SELECT*

*product\_name AS the\_most\_popular\_product\_in\_Furniture\_in\_2016*

*FROM quantity*

*ORDER BY total\_quantity\_of\_products DESC*

*LIMIT 1;*

**

##### --11. Which customer got the most discount in the data? (in total amount)

*WITH discount AS(*

*SELECT DISTINCT*

*c.customer\_id,*

*c.customer\_name,*

*c.customer\_segment,*

*SUM(od.order\_sales\*od.order\_discount) AS amount\_of\_discount*

*FROM customers c*

*JOIN orders o*

*ON c.customer\_id=o.customer\_id*

*JOIN order\_details od*

*ON o.order\_id=od.order\_id*

*JOIN product p*

*ON od.product\_id=p.product\_id*

*GROUP BY c.customer\_id,c.customer\_name,c.customer\_segment)*

*SELECT*

*customer\_id, customer\_name, customer\_segment*

*FROM discount*

*ORDER BY amount\_of\_discount DESC*

*LIMIT 1;*



##### 

##### --12. How widely did monthly profits vary in 2018?

*WITH monthly\_profit AS (*

*SELECT*

*EXTRACT (MONTH FROM order\_date) AS months\_number,*

*TO\_CHAR (order\_date, 'Month') AS months,*

*SUM(order\_profits) AS profit*

*FROM orders*

*JOIN order\_details USING (order\_id)*

*WHERE EXTRACT (YEAR FROM order\_date) = 2018*

*GROUP BY months\_number, months*

*ORDER BY months\_number*

*)*

*SELECT*

*months,*

*profit,*

*profit - LAG (profit, 1, 0) OVER() AS profit\_variations*

*FROM monthly\_profit;*



##### --13. Which was the biggest order regarding sales in 2015?

*SELECT order\_id*

*FROM order\_details*

*JOIN orders USING (order\_id)*

*WHERE DATE\_PART('year', order\_date)=2015*

*GROUP BY order\_id*

*ORDER BY SUM(order\_sales) DESC*

*LIMIT 1;*



##### 

##### --14 What was the rank of each city in the East region in 2015 in quantity?

*SELECT*

*shipping\_city, SUM(quantity),*

*RANK() OVER (ORDER BY SUM(quantity) DESC) AS city\_rank*

*FROM*

*orders o*

*JOIN order\_details od*

*ON o.order\_id = od.order\_id*

*WHERE*

*shipping\_region = 'East'*

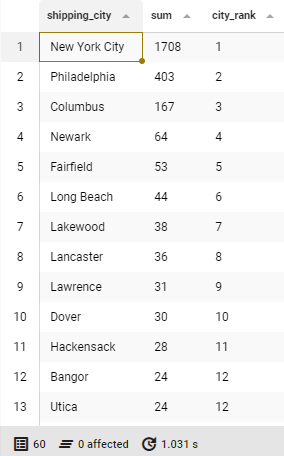
*AND EXTRACT(YEAR FROM order\_date) = 2015*

*GROUP BY*

*shipping\_city*

*ORDER BY*

*SUM(quantity) DESC;*



##### --15. Display customer names for customers who are in the segment ‘Consumer’ or ‘Corporate.’ How many customers are there in total?

*SELECT*

*customer\_segment,*

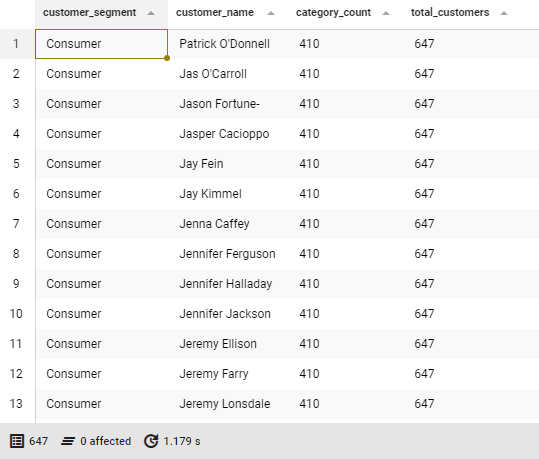
*customer\_name,*

*COUNT(customer\_id) OVER (PARTITION BY customer\_segment) AS category\_count,*

*COUNT(customer\_id) OVER () AS total\_customers*

*FROM customers*

*WHERE customer\_segment IN ('Consumer', 'Corporate');*



##### --16. Calculate the difference between the largest and smallest order quantities for product id ‘100.’

*SELECT*

*MAX(quantity) - MIN(quantity) AS difference*

*FROM order\_details*

*WHERE product\_id = 100*

*GROUP BY product\_id;*



##### --17. Calculate the percent of products that are within the category ‘Furniture.’

*SELECT percentage*

*FROM (*

*SELECT product\_category,*

*ROUND(*

*SUM(COUNT(\*)) OVER (PARTITION BY product\_category)\*100.0/SUM(COUNT(\*)) OVER ()*

*,2) AS percentage*

*FROM product*

*GROUP BY product\_category*

*)AS sub*

*WHERE product\_category = 'Furniture';*



##### --18. Display the number of product manufacturers with more than 1 product in the product table.

*SELECT COUNT(product\_manufacturer) as total\_number\_of\_manufacturers*

*FROM (*

*SELECT product\_manufacturer*

*FROM product*

*GROUP BY product\_manufacturer*

*HAVING COUNT(product\_id)>1*

*) AS sub;*



##### --19. Show the product\_subcategory and the total number of products in the subcategory.

##### – Show the order from most to least products and then by product\_subcategory name ascending.

*SELECT*

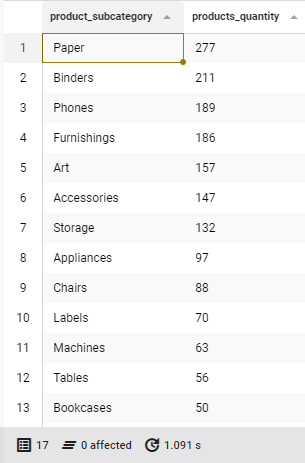
*product\_subcategory,*

*COUNT(product\_id) AS products\_quantity*

*FROM product*

*GROUP BY product\_subcategory*

*ORDER BY products\_quantity DESC, product\_subcategory;*



##### --20. Show the product\_id(s), the sum of quantities, where the total sum of its product quantities is greater than or equal to 100.

*SELECT*

*product\_id,*

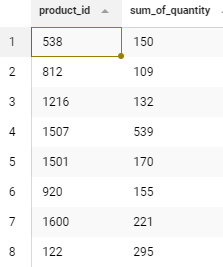
*SUM(quantity) AS sum\_of\_quantity*

*FROM order\_details*

*JOIN orders USING (order\_id)*

*GROUP BY product\_id*

*HAVING SUM(quantity)>=100;*



##### --Bonus question: Join all database tables into one dataset that includes all unique columns and download it as a .csv file.

SELECT

c.customer\_id,

c.customer\_name,

c.customer\_segment,

od.order\_details\_id,

od.order\_id,

od.quantity,

od.order\_discount,

od.order\_profits,

od.order\_profit\_ratio,

od.order\_sales,

o.order\_date,

o.shipping\_city,

o.shipping\_state,

o.shipping\_region,

o.shipping\_country,

o.shipping\_postal\_code,

o.order\_date,

o.shipping\_mode,

p.product\_name,

p.product\_category,

p.product\_subcategory,

p.product\_manufacturer

FROM customers c

JOIN orders o

ON c.customer\_id=o.customer\_id

JOIN order\_details od

ON o.order\_id=od.order\_id

JOIN product p

ON od.product\_id=p.product\_id;