**Questions:**

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

SELECT Count(\*)

FROM customers;

OUTPUT: 795

1. What was the city with the most profit for the company in 2015?

SELECT o.shipping\_city, SUM(od.order\_profits) as total\_profit

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 total\_profit DESC

LIMIT 1;

OUTPUT: NEWYORK CITY

Note: Extract(Year FROM datecoulum) le year extract garxa and this has got another alternative as well: Date\_Part(‘year’,o.order\_date) also works.

1. In 2015, what was the most profitable city's profit?

SELECT o.shipping\_city, SUM(od.order\_profits) as total\_profit

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 total\_profit DESC

LIMIT 1;

OUTPUT: 14753

1. How many different cities do we have in the data?

SELECT COUNT(DISTINCT(o.shipping\_city))

FROM orders o;

OUTPUT: 531

1. Show the total spent by customers from low to high.

SELECT c.customer\_name, SUM(od.order\_sales) as total\_spent

FROM customers c

JOIN orders o

ON c.customer\_id=o.customer\_id

JOIN order\_details od

ON o.order\_id=od.order\_id

GROUP BY customer\_name

ORDER BY total\_spent;

OUTPUT: LIST OF 793 Row

1. What is the most profitable city in the State of Tennessee?

SELECT o.shipping\_city, SUM(od.order\_profits) as total\_profit

FROM orders o

JOIN order\_details od

ON o.order\_id=od.order\_id

WHERE o.shipping\_state='Tennessee'

GROUP BY o.shipping\_city

ORDER BY total\_profit DESC

LIMIT 1;

OUTPUT: LEBANON       83

1. What’s the average annual profit for that city across all years?

SELECT ROUND(AVG(od.order\_profits),2) as Average\_annual\_profit

FROM orders o

JOIN order\_details od

ON o.order\_id=od.order\_id

WHERE o.shipping\_city ='Lebanon';

OUTPUT: 27.67

1. What is the distribution of customer types in the data?

SELECT customer\_segment, COUNT(\*) as count

FROM customers

GROUP BY 1;

OUTPU **customer\_segment                                               count**

TEXT                                                                      INT8

Consumer                                                               410

Corporate                                                               237

Home Office                                                           148

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

SELECT p.product\_category, ROUND(AVG(od.order\_profits)::Numeric,2) as Average\_annual\_profit

FROM product p

JOIN order\_details od

ON p.product\_id=od.product\_id

JOIN orders o

ON od.order\_id=o.order\_id

WHERE o.shipping\_state='Iowa'

GROUP BY p.product\_category

ORDER BY Average\_annual\_profit DESC

LIMIT 1;

OUTPUT: Furniture       130.25

1. What is the most popular product in that category across all states in 2016?

SELECT p.product\_name, COUNT(od.quantity) as Total\_quantity\_sold

FROM product p

JOIN order\_details od

USING(product\_id)

JOIN orders o

USING(order\_id)

WHERE p.product\_category='Furniture' AND Extract(year from o.order\_date)='2016'

GROUP BY 1

ORDER BY 2 DESC

LIMIT 1;

OUTPUT:

Product\_name                                          total\_quantity\_sold

Bretford CR4500 Series Slim Rectangular Table               4

Deflect-o Glass Clear Studded Chair Mats                    4

Atlantic Metals Mobile 3-Shelf Bookcases, Custom color     4

Eldon Expressions Wood Desk Accessories,Oak                 4

1. Which customer got the most discount in the data? (In total amount)

SELECT c.customer\_id,c.customer\_name,

ROUND(Sum(od.order\_discount \* od.order\_sales)::Numeric,2) as Total\_discount

FROM customers c

JOIN orders o

USING(customer\_id)

JOIN order\_details od

USING(order\_id)

GROUP BY 1,2

ORDER BY 3 DESC

LIMIT 1;

OUTPUT:

Customer\_id                Customer\_name              total\_discount

1. Sean Miller                11988.90
2. How widely did monthly profits vary in 2018?

SELECT

Date\_trunc('month',order\_date)::DATE AS Month,

SUM(order\_profits) AS monthly\_profits,

LAG(SUM(order\_profits)) OVER ( ORDER BY Date\_trunc('month',order\_date)::DATE) as Previous\_month\_profit,

SUM(order\_profits)- LAG(SUM(order\_profits)) OVER (ORDER BY Date\_trunc('month',order\_date)::DATE) as monthly\_profit\_variance

FROM orders

JOIN order\_details

USING(order\_id)

WHERE EXTRACT(year FROM order\_date)=2018

GROUP BY 1;

OUTPUT:

Month Monthly\_profit Pre\_month\_pro Monthly\_dif

2018-01-01 7137 null null

2018-02-01 1612 7137 -5525

2018-03-01 14758 1612 13146

1. Which order was the highest in 2015?

SELECT order\_id, SUM(order\_sales) AS total\_sale

FROM order\_details

JOIN orders

USING(order\_id)

WHERE EXTRACT(year FROM order\_date)=2015

GROUP BY order\_id

ORDER BY total\_sale DESC

LIMIT 1;

OUTPUT:

Order\_id Total\_sale

CA-2015-145317 23660

1. What was the rank of each city in the East region in 2015?

SELECT shipping\_city, SUM(quantity) as total\_quantity\_sold, RANK() OVER (ORDER BY SUM(quantity) DESC)

FROM orders

JOIN order\_details

USING(order\_id)

WHERE shipping\_region = 'East' AND EXTRACT(year FROM order\_date)=2015

GROUP BY 1

ORDER BY 2 DESC;

OUTPUT:

Shipping\_city total\_quantity rank

NEW YORK CITY 1708 1

Philadelphia 403 2

Columbus 167 3

Newark 64 4

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

SELECT customer\_name, COUNT(\*) as Total\_customers

FROM customers

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

GROUP BY 1;

Output: 647 rows (total count) with number of rows

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

SELECT (MAX(quantity)-MIN(quantity)) as Diff

FROM order\_details

JOIN product

USING(product\_id)

WHERE product\_id=100;

Output:

Diff

4

1. Calculate the percent of products that are within the category ‘Furniture.’

SELECT COUNT(\*)\*100/(SELECT COUNT(\*) FROM product) AS furniture\_percentage

FROM product

WHERE product\_category = 'Furniture';

OUTPUT:

Furniture\_percentage

20

1. Display the number of duplicate products based on their product manufacturer.

SELECT product\_manufacturer, count(\*) as num\_duplicate

FROM product

GROUP BY 1

HAVING COUNT(\*)>1;

OUTPUT: 169 rows

1. 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(\*) as total\_products

FROM product

GROUP BY product\_subcategory

ORDER BY total\_products DESC, product\_subcategory ASC;

1. 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 total\_quantity

FROM product

JOIN order\_details

USING(product\_id)

GROUP BY product\_id

HAVING SUM(quantity)>=100;