Questions and answers utilizing SQL queries

1. How many customers do we have in the data?
2. What was the city with the most profit for the company in 2015?
3. In 2015, what was the most profitable city's profit?
4. How many different cities do we have in the data?
5. Show the total spent by customers from low to high.
6. What is the most profitable city in the State of Tennessee?
7. What's the average annual profit for that city across all years?
8. What is the distribution of customer types in the data?
9. What's the most profitable product category on average in Iowa across all years?
10. What is the most popular product in that category across all states in 2016?
11. Which customer got the most discount in the data?
12. How widely did monthly profits vary in 2018?
13. Which order was the highest in 2015?
14. What was the rank of each city in the East region in 2015 in quantity?
15. Display customer names for customers who are in the segment 'Consumer' or 'Corporate.' How many customers are there in total?
16. Difference between the largest and smallest order quantities for product id '100.'
17. Percent of products that are within the category 'Furniture.'
18. Number of product manufacturers with more than 1 product in the product table.
19. Product subcategory and the total number of products in the subcategory.
20. Product_id(s), the sum of quantities, where the total sum of its product quantities is greater than or equal to 100.

SQL :

1. **795**

```sql
SELECT count(distinct "customer_id") FROM "customers";
```

2. **New York City**

```sql
SELECT o.shipping_city AS city, sum(od.order_profits) AS sum_profit
FROM "orders" AS o
JOIN "order_details" AS od
ON o.order_id = od.order_id
GROUP BY city
ORDER BY 2 desc;
```

3. **14753**

4. **531**

```sql
SELECT distinct o.shipping_city
FROM "orders" AS o
```

5. **793 rows. Why?? We have 795 customers with one 0 paid.**

```sql
SELECT c.customer_name , sum(od.order_sales) as total_paid
FROM "customers" AS c
JOIN "orders" as o
ON c.customer_id = o.customer_id
JOIN order_details as od
ON o.order_id = od.order_id
GROUP BY 1
ORDER BY 2;
```

6. **Lebanon**

```sql
SELECT o.shipping_city, sum(od.order_profits) as total_profit
FROM "orders" as o
JOIN order_details as od
ON o.order_id = od.order_id
WHERE o.shipping_state = 'Tennessee'
GROUP BY 1
order by 2 desc;
```

7. **27.67**

```
SELECT ROUND(SUM(od.order_profits)/(COUNT(DISTINCT extract(YEAR FROM
o.order_date))),2)
        AS avg_annual_profit
FROM "orders" as o
JOIN order_details as od
ON o.order_id = od.order_id
WHERE o.shipping_state = 'Tennessee'
    AND o.shipping_city = 'Lebanon';
```

8. **The distribution shows that consumers make up the largest group of customers, followed by corporates and then home office customers. This could indicate that consumer products and services are the most important revenue stream for the company, followed by corporate and home office sales.**

```
SELECT customer_segment , COUNT(*) AS count_customer_type
FROM "customers"
GROUP BY customer_segment;
```

9. **Furniture: 130.25**

```
SELECT p.product_category, ROUND(avg(od.order_profits),2) as
avg_profits
FROM "orders" as o
JOIN order_details as od
ON o.order_id = od.order_id
JOIN product as p
ON od.product_id = p.product_id
WHERE o.shipping_state = 'Iowa'
GROUP BY 1
order by 2 desc
LIMIT 1;
```

10. **Global Push Button Manager's Chair, Indigo**

```
SELECT p.product_name, sum(od.quantity) as avg_profits
FROM "orders" as o
JOIN order_details as od
ON o.order_id = od.order_id
JOIN product as p
ON od.product_id = p.product_id
WHERE p.product_category = 'Furniture'
```

```
    AND extract(YEAR FROM o.order_date) = 2016
GROUP BY 1
order by 2 desc
LIMIT 1;
```

11. 687

```
SELECT c.customer_id, sum((order_sales / (1 - order_discount)) - order_sales)
as discount_amount
FROM customers as c
JOIN orders as o
ON c.customer_id = o.customer_id
JOIN order_details as od
ON o.order_id = od.order_id
GROUP BY 1
order by 2 desc
LIMIT 1;
```

12. 13824

```
select r.order_month,
  total_profits,
  (total_profits - previous_month_profit) diff
from (
  select date_trunc('month', o.order_date)::date order_month,
    sum(od.order_profits) total_profits,
    lag(sum(od.order_profits)) over (order by date_trunc('month',
o.order_date)::date) previous_month_profit
    --lead(sum(od.order_profits)) over (order by date_trunc('month',
o.order_date)::date) next_month_profit
  from orders o
  join order_details od on o.order_id = od.order_id
  group by 1
) r
where extract(year from r.order_month) = 2018
order by 1
```

13. Order_id : CA-2015-145317

```sql
SELECT distinct od.order_id, sum(od.order_sales) as total_sale
FROM order_details as od
JOIN orders as o
ON od.order_id = o.order_id
WHERE extract(YEAR FROM o.order_date) = 2015
GROUP BY 1
order by 2 desc
LIMIT 1;
```

14.

```sql
  SELECT o.shipping_city,
        SUM(od.quantity) as total_sale,
        RANK() OVER (ORDER BY SUM(od.quantity) desc)
 FROM orders AS o
 JOIN order_details AS od
   ON o.order_id = od.order_id
WHERE extract(YEAR FROM o.order_date) = 2015 AND o.shipping_region = 'East'
GROUP BY 1
ORDER BY 2 DESC;
```

15. 647 customers

```sql
SELECT DISTINCT c.customer_name AS total_customer
  FROM customers AS c
 WHERE customer_segment IN ('Consumer', 'Corporate');
```

16. Difference: 4

```sql
SELECT MAX(quantity) - MIN(quantity) AS difference
  FROM order_details
 WHERE product_id = 100;
```

17. 20.54 %

```sql
WITH furniture AS(
SELECT p.product_category
FROM product AS p
WHERE product_category = 'Furniture')
SELECT (SELECT COUNT(*) FROM furniture) * 100.00 /
COUNT(p.product_category) as Furniture_percent
from product as p;
```

18.

```sql
SELECT product_manufacturer, COUNT(*) duplicate_product
FROM product AS p
GROUP BY 1
Having count (*) > 1
ORDER BY 2 DESC;
```

19.

```sql
SELECT product_subcategory, COUNT(*) as subcat_count
FROM product AS p
GROUP BY 1
ORDER BY 2 DESC, 1 ASC;
```

20.

```sql
SELECT product_id, SUM(quantity) as quantity_sum
FROM order_details
GROUP BY 1
HAVING SUM(quantity) >= 100
ORDER BY 2;
```