AS PART OF OUR CAPSTONE PROJECT, THE DOCUMENT EXPLORES A UNICORN DATA SAMPLE ORGANIZED INTO A DATABASE WITH FOUR TABLES. ANSWERED PREDEFINED QUESTIONS EMPLOYING SQL

Questions:

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

```
SELECT count(customer_name)
FROM "customers";
```

Answer: **795**

```
--2.    What was the city with the most profit for the company in 2015?
SELECT shipping_city, SUM(order_profits) AS total_city_profit
FROM (
    SELECT *, EXTRACT(YEAR FROM order_date) AS order_year
    FROM orders)t1
INNER JOIN order_details od
ON od.order_id = t1.order_id
WHERE order_year = 2015
GROUP BY  1
ORDER BY 2 DESC
```

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

Answer: 8,400

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

```
SELECT COUNT(DISTINCT shipping_city)
FROM orders
```

Answer: 531

```
--5.    Show the total spent by customers from low to high.
SELECT c.customer_id, o.customer_id, SUM(order_sales) AS total_sales
FROM customers c
    JOIN orders o
        ON o.customer_id = c.customer_id
    JOIN order_details od
        ON o.order_id = od.order_id
GROUP BY 1,2
ORDER BY 3
```

```
--6.    What is the most profitable city in the State of Tennessee?
SELECT o.shipping_city, SUM(od.order_profits) AS total_city_profit
FROM orders o
    INNER JOIN order_details od
    ON o.order_id = od.order_id
WHERE shipping_state = 'Tennessee'
GROUP BY 1
ORDER BY 2 DESC
```

```
--Answer: Lebanon
```

```
--7. What's the average annual profit for that city across all years?
SELECT o.shipping_city, AVG(od.order_profits) AS avg_city_profit
FROM orders o
    INNER JOIN order_details od
    ON o.order_id = od.order_id
WHERE shipping_city = 'Lebanon'
GROUP BY 1

--Answer: 27.67
```

```
--9.    What's the most profitable product category on average in Iowa across all
years?
SELECT product_category, SUM(ave_order_profit)
FROM (
    SELECT p.product_category, od.order_profits, o.shipping_city,
AVG(order_profits) ave_order_profit
    FROM order_details od
        JOIN product p
        ON p.product_id = od.product_id
        JOIN orders o
        ON od.order_id = o.order_id
    GROUP BY 1,2,3
    ORDER BY 2 DESC) t1
WHERE shipping_city = 'Iowa City'
GROUP BY 1
```

```
--10.   What is the most popular product in that category across all states in
2016?
SELECT p.product_name,  SUM(quantity)
FROM (
        SELECT *, EXTRACT(Year from shipping_date) AS year
        FROM orders)t1
    JOIN order_details od
    ON t1.order_id = od.order_id
    JOIN product p
    ON od.product_id = p.product_id
    WHERE year = 2016 AND product_category = 'Furniture'
GROUP BY 1
ORDER BY 2 DESC

--Answer: Global Push Button Manager's Chair, Indigo
```

```sql
--11.   Which customer got the most discount in the data? (in total amount)This
question is required. *

SELECT customer_id, original_price - order_sales AS discount_amonunt
FROM(
    SELECT o.customer_id, od.order_discount, od.order_sales, od.order_sales/(1-
order_discount) AS original_price
    FROM orders o
        LEFT JOIN order_details od
        ON o.order_id = od.order_id)t1
ORDER BY 2 DESC

--Answer: customer_id 687
```

```sql
-- 12.  How widely did monthly profits vary in 2018?
SELECT month, total_month_profit, LAG(total_month_profit) OVER(ORDER BY month) AS
next_month_total, (total_month_profit-LAG(total_month_profit) OVER(ORDER BY
month)) AS month_diff_var
FROM (
    SELECT t1.month, SUM(od.order_profits) AS total_month_profit
    FROM (
        SELECT *, EXTRACT(Year from order_date) AS year, EXTRACT(Month from
order_date) AS month
        FROM orders) t1
    RIGHT JOIN order_details od
    ON od.order_id = t1.order_id
    WHERE year = 2018
    GROUP BY 1
    ORDER BY month) T2
```

```sql
-- 13.  Which order was the highest in 2015?
SELECT t1.year, od.order_id, od.order_sales
FROM (
    SELECT *, EXTRACT(Year from order_date) AS year
    FROM orders)t1
    JOIN order_details od
    ON t1.order_id = od.order_id
    WHERE year = 2015
ORDER BY 3 DESC

--Answer: CA-2015-145317
```

```sql
-- 14.  What was the rank of each city in the East region in 2015?
SELECT year, shipping_region,shipping_city, RANK() OVER(PARTITION BY shipping_city
ORDER BY year) AS city_rank
FROM (
SELECT *, EXTRACT(Year from order_date) AS year
    FROM orders)t1
```

```sql
WHERE year = 2015 AND shipping_region = 'East'
GROUP BY 1,2,3

--Answer: 1
```

```sql
-- 15. Display customer names for customers who are in the segment ‘Consumer’ or ‘Corporate.’ How many customers are there in total?
SELECT COUNT (customer_id)
FROM customers
WHERE customer_segment = 'Consumer' OR customer_segment = 'Corporate'
ORDER BY 1

--Answer: 647. this is based on number of rows displayed
```

```sql
--16. Calculate the difference between the largest and smallest order quantities for product id ‘100.’
SELECT MAX(quantity)-MIN(quantity)
FROM order_details
WHERE product_id = 100

--Answer: 4
```

```sql
--18. Display the number of duplicate products based on their product manufacturer.
--Example: A product with an identical product manufacturer can be considered a duplicate.
SELECT product_manufacturer, COUNT(product_manufacturer)
FROM product
GROUP BY product_manufacturer
HAVING COUNT(product_manufacturer) > 1
```

```sql
--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_subcategory) AS total_subcategory
FROM product
GROUP BY product_subcategory
ORDER BY 2 DESC,  1 ASC
```

```sql
--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
FROM (
    SELECT product_id, SUM(quantity) AS Sum_Quantity
    FROM order_details
    GROUP BY 1)t1
WHERE Sum_Quantity >= 100
```