Unicorn - SQL Codes

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

```
SELECT
        COUNT (DISTINCT customer_id) as num_customers
 FROM customers;
```

-- Antwort: 795

/* 2.
What was the city with the most profit for the company in 2015?*/

```
SELECT
        o.shipping_city,
        SUM (od.order_profits) as total_order_profit
FROM orders o
LEFT JOIN order_details od ON od.order_id = o.order_id

WHERE EXTRACT (YEAR FROM o.order_date) = 2015

GROUP BY o.shipping_city
ORDER BY total_order_profit DESC
LIMIT 1;
```

-- Antwort: ew York City, 14753

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

```
SELECT
        o.shipping_city,
        SUM (od.order_profit_ratio) as total_order_profit_ratio
FROM orders o
LEFT JOIN order_details od ON od.order_id = o.order_id
WHERE EXTRACT (YEAR FROM o.order_date) = 2015

GROUP BY o.shipping_city
ORDER BY total_order_profit_ratio DESC
LIMIT 1;
```

– Antwort: New York City, Ratio: 47,28

/* 4. How many different cities do we have in the data? Please refer just to the city name and not similar city names in different states*/

```
SELECT

	COUNT (DISTINCT shipping_city) as num_unique_cities

FROM orders;
```

-- Antwort: 531 cities

/* 5. Show the total spent by customers from low to high.*/

```
SELECT
	c. customer_id,
	SUM (od.order_sales) as total_spent
FROM customers c
JOIN orders o ON o.customer_id = c.customer_id
JOIN order_details od ON od.order_id = o.order_id

GROUP BY c.customer_id
ORDER BY total_spent ASC;
```

-- Antwort: Total spent amounts: 793 items, ID: 456 min. 5, ID: 687 max. 25042

/* 6. What is the most profitable city in the State of Tennessee?*/

```
SELECT
	o.shipping_city,
	SUM (od.order_profits) as total_order_profit
FROM orders o
LEFT JOIN order_details od ON od.order_id = o.order_id
WHERE o.shipping_state = 'Tennessee'

GROUP BY o.shipping_city
ORDER BY total_order_profit DESC
LIMIT 1;
```

-- Antwort: Lebanon, 83

/* 7. What's the average annual profit for that city across all years?*/

```
SELECT
        AVG (od.order_profits) as avg_order_profit
FROM order_details od
JOIN orders o ON od.order_id = o.order_id

WHERE o.shipping_city = 'Lebanon';
```

-- Antwort: Average annual Profit: 27.66

/* 8. What is the distribution of customer types in the data?*/

```
SELECT
        customer_segment,
        COUNT (DISTINCT customer_segment) as num_customer_types
FROM customers

GROUP BY customer_segment;
```

– Antwort: Consumer, Corporate, Home Office

/* 9. What's the most profitable product category on average in Iowa across all years?*/

```
SELECT
        p.product_category,
        AVG (od.order_profits) as avg_order_profit
FROM product p
LEFT JOIN order_details od ON od.product_id = p.product_id
JOIN orders o ON o.order_id = od.order_id

WHERE o.shipping_state = 'Iowa'

GROUP BY p.product_category
ORDER BY avg_order_profit DESC
LIMIT 1;
```

– Antwort: Furniture, 130.25

/* 10. What is the most popular product in that category across all states in 2016?*/

```
SELECT
	p.product_subcategory,
	SUM (od.quantity) as total_quantity
FROM product p
JOIN order_details od ON od.product_id = p.product_id
JOIN orders o ON o.order_id = od.order_id

WHERE p.product_category = 'Furniture' AND EXTRACT (YEAR FROM
o.order_date) = 2016

GROUP BY product_subcategory

ORDER BY total_quantity DESC

LIMIT 1;
```

-- Antwort: Furnishings, units: 770

/* 11. Which customer got the most discount in the data? (in total amount)*/

```
SELECT
	c.customer_id,
	SUM (od.order_sales * od.order_discount) AS total_discount_amount
FROM customers c
JOIN orders o ON o.customer_id = c.customer_id
JOIN order_details od ON od.order_id = o.order_id

GROUP BY c.customer_id

ORDER BY total_discount_amount DESC
LIMIT 1;
```

– Antwort: ID: 687, 11988.9

/* 12. How widely did monthly profits vary in 2018?*/

```
WITH total_profit AS (

SELECT
        EXTRACT (MONTH FROM o.order_date) AS month_order,
        SUM (od.order_profits) as monthly_total_profits
FROM order_details od
LEFT JOIN orders o ON o.order_id = od.order_id

WHERE EXTRACT (YEAR FROM o.order_date) = 2018

GROUP BY month_order

)

SELECT
        month_order,
        monthly_total_profits,
        LAG(monthly_total_profits, 1, 0) OVER (ORDER BY month_order) AS
        previous_month_profit,
        monthly_total_profits - LAG(monthly_total_profits, 1, 0) OVER (ORDER
        BY month_order) AS profit_difference

FROM total_profit
;
```

-- Antwort: 13824 is the widely difference range

/* 13. What was the biggest order regarding sales in 2015? */

```
SELECT
        od.order_id,
        MAX(od.order_sales) AS max_order_sales
FROM order_details od
LEFT JOIN orders o ON o.order_id = od.order_id
WHERE EXTRACT (YEAR FROM o.order_date) = 2015

GROUP BY od.order_id
ORDER BY max_order_sales DESC
;
```

-- Antwort: CA-2015-145317, 22638

/* 14. What was the rank of each city in the East region in 2015 in quantity?*/

```
WITH city_quantity AS (
SELECT
        o.shipping_city,
        SUM(od.quantity) AS total_quantity
FROM order_details od
LEFT JOIN orders o ON o.order_id = od.order_id

WHERE EXTRACT (YEAR FROM o.order_date) = 2015 AND shipping_region =
'East'

GROUP BY o.shipping_city

)

SELECT
        shipping_city,
        RANK () OVER (ORDER BY total_quantity DESC) AS rank
FROM city_quantity
;
```

-- Antwort: Rank 1, New York City, 1708 units

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

```
SELECT
        customer_name,
        COUNT(DISTINCT customer_name) AS num_customers
FROM customers

WHERE customer_segment in ('Consumer', 'Corporate')

GROUP BY customer_name;
```

-- Antwort: 647 Customers

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

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

-- Antwort: Difference: 4 units

/* 17. Calculate the percent of products that are within the category ‘Furniture.’ */

```
SELECT
        (COUNT(*) * 100.0 / (SELECT COUNT(*) FROM product)) AS
        furniture_percentage
FROM product
WHERE product_category = 'Furniture';
```

-- Antwort: 20.54 %

/* 18. Display the number of product manufacturers with more than 1 product in the product table.*/

```
SELECT
        product_manufacturer,
        COUNT (product_id) AS num_products
FROM product

GROUP BY product_manufacturer
HAVING COUNT (product_id) > 1
;
```

-- Antwort: 169 Manufactuer

/* 19. Show the product_subcategory and the total number of products in the subcategory. Show the order for the most to least number of products.*/

```
SELECT
        p.product_subcategory,
        COUNT (DISTINCT p.product_id) AS num_products
FROM product p
JOIN order_details od ON od.product_id = p.product_id

GROUP BY p.product_subcategory
ORDER BY num_products DESC;
```

-- Paper, 277 products

/* 20. Show the product_id(s), the sum of quantities, where for each sale of product quantities is greater than or equal to 100.*/

```
SELECT
        p.product_id,
        SUM (od.quantity) AS total_quantities
FROM product p
JOIN order_details od ON od.product_id = p.product_id
WHERE od.quantity >= 100

GROUP BY p.product_id
ORDER BY total_quantities DESC;
```

-- Antwort: 4 customers, ID: 1507, Max is 324 units and ID 920, MIN 130 units