Sales Analysis of Parch and Posey Company

Case Study:

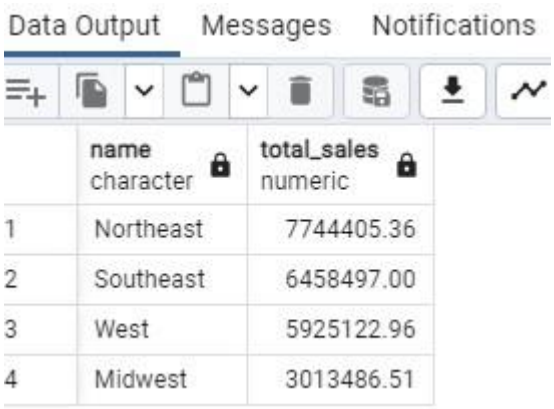
In this analysis, we explore the intricate fabric of Parch and Posey Company. The dataset at hand offers a comprehensive view of customers, their orders, regional operations, web events, and the diligent efforts of our sales representatives. The primary aim of this investigation is to uncover significant insights across various data facets, with the overarching goal of enhancing decision-making and deepening our understanding of sales dynamics.

1. What region has the highest total revenue ?

Query:

```
SELECT region.name,
SUM(total_amt_usd) total_sales
FROM orders
LEFT JOIN accounts
ON accounts.id = orders.account_id
LEFT JOIN sales_reps
ON sales_reps.id= accounts.sales_rep_id
lEFT JOIN region
ON sales_reps.region_id= region.id
GROUP BY region.name
ORDER by total_sales desc
```

Result:



	name character	total_sales numeric
1	Northeast	7744405.36
2	Southeast	6458497.00
3	West	5925122.96
4	Midwest	3013486.51

Insight: Regional Sales Performance Analysis

This query provides a valuable insight into the total sales performance across different regions, with a focus on summing the total sales amounts in USD. Analyzing regional sales

Sales Analysis of Parch and Posey Company

data is crucial for businesses seeking to understand which regions are driving revenue and which might require more attention or tailored strategies.

Key Findings:

1. **Top-Performing Regions:** The query identifies the “Northeast” regions has the region with the highest total sales amounts in USD followed by the Southeast. These top-performing regions are significant contributors to the company's overall revenue.
2. **Performance Benchmark:** By analyzing total sales amounts over time, Parch and Possey can establish performance benchmarks and track regional growth or decline trends. This data can aid in setting realistic sales targets.
3. **Data-Driven Decision-Making:** Armed with this data, Parch and Possey can make data-driven decisions to optimize their regional sales strategies and maximize revenue

2. Monthly trend of total orders

Query:

```
SELECT DATE_TRUNC('month', o.occurred_at) AS month,
COUNT(*) AS total_orders
FROM Orders AS o
GROUP BY month
ORDER BY month
```

Insight:
This query offers valuable insights into the monthly order volume by grouping orders based on their occurrence month and counting the total number of orders within each month. Analyzing monthly order volume can reveal patterns, trends, and seasonality in customer purchasing behavior, enabling businesses to make informed decisions.

Key Findings:

1. **Marketing and Promotion Timing:** Parch and Possey can use insights from this analysis to time their marketing campaigns, promotions, and product launches strategically. It helps maximize the impact of marketing spend during peak order months.

Sales Analysis of Parch and Posey Company

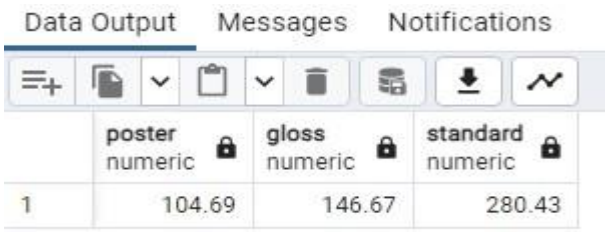
2. **Operational Efficiency:** Knowledge of monthly order trend can help optimize order processing and fulfillment operations. It ensures that the business is adequately prepared to handle order spikes efficiently.
3. **Data-Driven Decision-Making:** Armed with this data, Parch and Possey can make data-driven decisions to adapt to changing customer behavior and market conditions effectively.

3. What are the Average order per paper

Query:

```
SELECT round(AVG(poster_qty),2) poster,round(avg(gloss_qty),2) gloss,
round(AVG(standard_qty),2) standard
FROM orders AS o
JOIN Accounts AS a
ON o.account_id = a.ID;
```

Result:



	poster numeric	gloss numeric	standard numeric
1	104.69	146.67	280.43

Insight:

This query calculates and presents the average quantities of three product types (posters, gloss, and standard) per order. Analyzing the average order quantities for different product categories can provide insights into customer preferences and ordering behaviors.

Key Findings:

1. **Product Category Preferences:** The query helps identify which product categories customers tend to order in larger quantities. It reveals that customers typically order more of standard products.
2. **Customer Demand:** Understanding the average quantities per order can assist in demand forecasting. Parch and Possey can ensure they have adequate stock levels for products that are frequently ordered in larger quantities.

Sales Analysis of Parch and Posey Company

3. **Data-Driven Decision-Making:** Armed with this data, Parch and Possey can make data-driven decisions to optimize inventory, pricing, and marketing strategies for different product categories.

4. Calculate bonuses for sales representatives based on the total_amt in USD for the accounts they manage. A 5% bonus for total_amt exceeding $10,000 and a 2% bonus otherwise.

Query:

```
select sales_reps.name, sum(total_amt_usd) as total_sales, case
when sum(total_amt_usd)>10000 THEN sum(total_amt_usd) *0.05
ELSE sum(total_amt_usd)*0.02
END as bonus
FROM orders
LEFT JOIN accounts
ON accounts.id = orders.account_id
LEFT JOIN sales_reps
ON sales_reps.id= accounts.sales_rep_id
GROUP BY sales_reps.name
ORDER by bonus desc
```

Insight: Sales Representative Bonuses Based on Total Sales

This query calculates bonuses for sales representatives based on the total sales amounts (in USD) for the accounts they manage. Sales representatives receive a 5% bonus for total sales exceeding $10,000 and a 2% bonus for total sales below or equal to $10,000. This bonus calculation provides an incentive for sales representatives to achieve higher sales targets.

Key Findings:

1. **Performance-Based Bonuses:** The query demonstrates a performance-based bonus structure that rewards sales representatives for their contribution to total sales. Representatives who achieve higher sales volumes are eligible for a larger bonus.
2. **Motivation and Incentives:** Offering bonuses tied to sales performance can motivate sales representatives to actively pursue and close larger deals. It encourages them to exceed the $10,000 threshold to earn a higher bonus.
3. **Data-Driven Decision-Making:** Armed with this data, Parch and Possey can make data-driven decisions regarding bonus structures, sales targets, and sales team management.

Sales Analysis of Parch and Posey Company

5. Retrieve a list of all sales representative and their region, as well as the total number of products sold by each sales representatives.

Query:

```
SELECT sr.Name AS sales_rep_name, r.name AS region_name,
SUM(o.standard_qty + o.Poster_qty) AS total_products_sold
FROM Sales_reps AS sr
JOIN Region AS r ON sr.Region_id = r.Id
LEFT JOIN Accounts AS a ON sr.Id = a.Sales_rep_id
LEFT JOIN Orders AS o ON a.ID = o.account_id
GROUP BY sr.Name, r.name
ORDER BY SUM(o.standard_qty + o.Poster_qty)desc
```

Result:

Data Output | Messages | Notifications

	sales_rep_name character	region_name character	total_products_sold bigint
1	Earlie Schleusner	Southeast	127350
2	Vernita Plump	Southeast	110004
3	Tia Amato	Northeast	104542
4	Moon Torian	Southeast	96870
5	Maryanna Fiorentino	West	95784
6	Dorotha Seawell	Southeast	89805

Insight: Sales Representatives, Regions, and Total Products Sold

This query retrieves a comprehensive list of sales representatives and their respective regions, along with the total number of products sold by each sales representative. Analyzing this data provides insights into the performance of sales representatives in terms of product sales, as well as their regional assignments.

Key Findings:

1. **Sales Representative Performance:** The query offers a clear overview of the performance of each sales representative in terms of the total number of products sold. This data can be used to identify top-performing representatives.
2. **Regional Sales Analysis:** By including the sales representatives' assigned regions, the query allows businesses to evaluate sales performance on a regional basis. It helps in understanding which regions are strong performers and which might need additional attention.

Sales Analysis of Parch and Posey Company

3. **Data-Driven Decision-Making:** The insights from this query support data-driven decision-making in terms of resource allocation, territory planning, and sales team management.

6. Find all customers who placed an order in the current year and the sales representative who handled those orders.

```
SELECT DATE_PART('year', o.occurred_at) AS order_year, a.Name AS customer_name,
sr.Name AS sales_rep_name
FROM Accounts AS a
JOIN Sales_reps AS sr ON a.Sales_rep_id = sr.Id
JOIN Orders AS o ON a.ID = o.account_id
WHERE DATE_PART('year', o.occurred_at)<= DATE_PART('year', CURRENT_DATE)
GROUP BY order_year, a.Name, sr.Name
ORDER BY order_year, customer_name;
```

1.

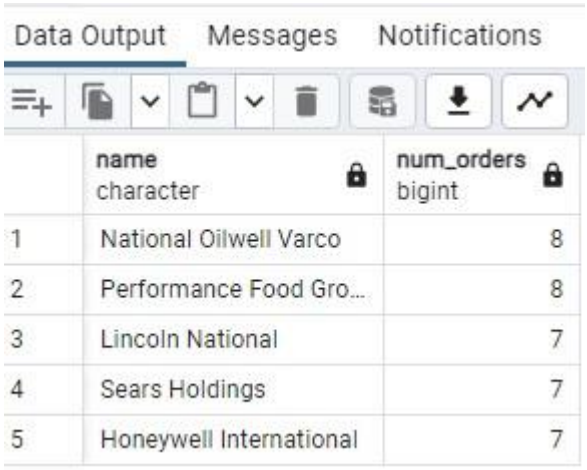
7. Which region has the highest customer acquisition cost?

Query:

```
SELECT accounts.name, COUNT(orders.id) AS num_orders
FROM accounts
JOIN orders ON accounts.id = orders.account_id
WHERE orders.occurred_at >= DATE '2016-10-01' AND orders.occurred_at <= DATE '2016-12-
31'
GROUP BY accounts.name
ORDER BY num_orders DESC
LIMIT 5;
```

Result:

Sales Analysis of Parch and Posey Company



Data Output | Messages | Notifications

	name character	num_orders bigint
1	National Oilwell Varco	8
2	Performance Food Gro...	8
3	Lincoln National	7
4	Sears Holdings	7
5	Honeywell International	7

8. which marketing channels that generate the most traffic for customers who have made a purchase in the year 2016 ?

Query:

```
SELECT web_events.channel, COUNT(web_events.id) AS num_web_events
FROM web_events
JOIN orders ON web_events.account_id = orders.account_id
WHERE orders.occurred_at >= '2016-01-01'
AND orders.occurred_at <= '2016-12-01'
GROUP BY web_events.channel
ORDER BY num_web_events DESC;
```

Result:

Sales Analysis of Parch and Posey Company

Data Output | Messages | Notifications

	channel character	num_web_events bigint
1	direct	74768
2	organic	12232
3	facebook	11805
4	adwords	11413
5	banner	6191
6	twitter	5987

Insight: Understanding Website Engagement by Channel in 2016

This query provides valuable insights into website engagement by channel for the year 2016. By analysing web event data and correlating it with order data, we gain a better understanding of how different channels contributed to customer interactions and conversions during this period.

Key Findings:

1. **Channel Performance:** The query reveals the performance of various marketing channels in terms of web event engagement. It identifies which channels attracted the most attention and interaction from users. From the result generated, "direct" channel has the highest number of engagement while "twitter" has the lowest.
2. **Channel Optimization:** Channels with lower engagement can be analysed further to understand why they might not be performing as well and how they can be optimized to attract more user interaction and conversions.
3. **Data-Driven Decision Making:** Armed with this information, marketing and sales teams can make data-driven decisions. For example, they can allocate resources to the most effective channels, refine targeting strategies, and adjust marketing campaigns based on channel performance.

9.The day of the week that has the highest orders

Query:

Sales Analysis of Parch and Posey Company

```
SELECT DATE_PART('DOW', occurred_at) AS day_of_week,
SUM(total_amt_usd) AS total_order_amount,
COUNT(occurred_at) AS total_orders
FROM orders

GROUP BY DATE_PART('DOW', occurred_at)
ORDER BY total_order_amount DESC
```

Insight:

This query analyses order data to determine which day of the week experiences the highest order activity in terms of both the total order amount and the total number of orders. Understanding the day of the week with the highest order activity can provide valuable insights for businesses.

Key Findings:

1. **Resource Allocation:** Knowledge of peak order days will allow Parch and Possey to allocate resources, such as customer support and order processing staff, more efficiently. Adequate staffing can be scheduled to handle increased order activity on specific days.
2. **Marketing and Sales Strategies:** The company can adjust marketing campaigns and sales strategies to target peak order days more effectively. Promotions and special offers can be timed to coincide with high-order days.
3. **Data-Driven Decision-Making:** Armed with this data, the company can make data-driven decisions to optimize operations, marketing, and customer engagement strategies.

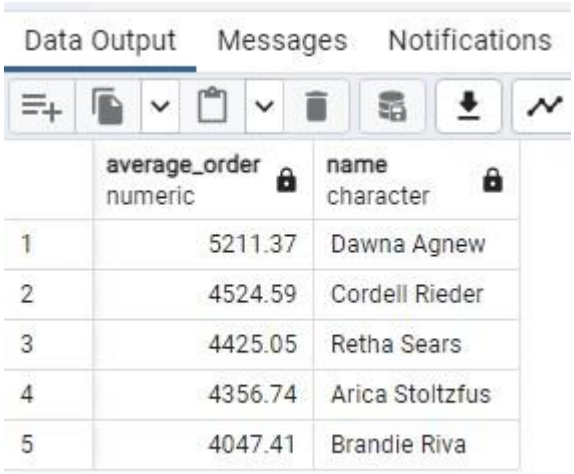
10. What's the average order value for each sales rep?

Query:

```
SELECT round(AVG (total_amt_usd),2 )average_order,sales_reps.name
FROM orders
LEFT JOIN accounts
ON accounts.id = orders.account_id
LEFT JOIN sales_reps
ON sales_reps.id= accounts.sales_rep_id
GROUP BY sales_reps.name
ORDER by average_order desc
limit 5
```

Sales Analysis of Parch and Posey Company

Result:



	average_order numeric	name character
1	5211.37	Dawna Agnew
2	4524.59	Cordell Rieder
3	4425.05	Retha Sears
4	4356.74	Arica Stoltzfus
5	4047.41	Brandie Riva

Insight:

This query calculates and presents the average order value for each sales representative, allowing businesses to assess the performance of sales representatives in terms of the average revenue generated per order. Understanding these averages can provide valuable insights into sales team performance.

Key Findings:

1. **Top Performers:** The query orders the results by average order value in descending order. This identifies the top-performing sales representatives who consistently generate higher revenue per order. From the result, the top performing sales representative is “Dawna Agnew”.
2. **Resource Allocation:** The company can use this data to allocate resources and support to sales representatives based on their performance. Top performers may receive additional support or incentives.
3. **Data-Driven Decision-Making:** Armed with this data, the company can make data-driven decisions to enhance sales team performance, optimize sales strategies, and allocate resources effectively.