Axon Sales Insights

MySQL Case Study

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Introduction:

Axon Classic Cars is renowned for its collection of classic automobiles, ships, trains, planes, trucks, motorcycles, and more. As a hub for enthusiasts seeking iconic vehicles across various modes of transport, Axon prides itself on offering top-notch quality, authenticity, and customer satisfaction. In their pursuit of continued growth, Axon seeks our expertise to analyze their data effectively.
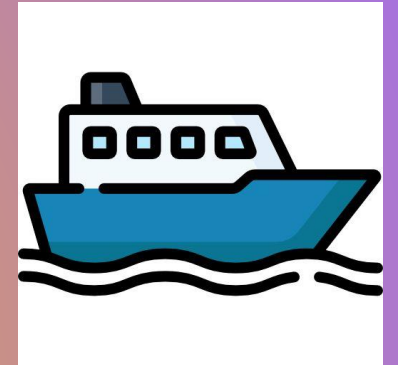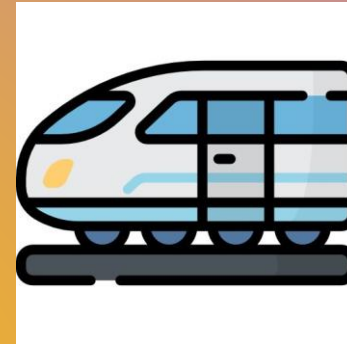
Problem Statement:

- A small company Axon, which is a retailer selling classic cars, is facing issues in managing and analyzing their sales data. The sales team is struggling to make sense of the data and they do not have a centralized system to manage and analyze the data. The management is unable to get accurate and up-to-date sales reports, which is affecting the decision-making process.

- To address this issue, the company has decided to implement a Business Intelligence (BI) tool that can help them manage and analyze their sales data effectively. They have shortlisted Microsoft PowerBI and SQL as the BI tools for this project.

- The goal of the capstone project is to design and implement a BI solution using PowerBI and SQL that can help the company manage and analyze their sales data effectively.

MySQL Sample Database Schema:

The MySQL sample database schema consists of the following 8 tables:

- **Customers**: stores customer's data.

- **Products**: stores a list of scale model cars.

- **ProductLines**: stores a list of product line categories.

- **Orders**: stores sales orders placed by customers.

- **OrderDetails**: stores sales order line items for each sales order.

- **Payments**: stores payments made by customers based on their accounts.

- **Employees**: stores all employee information as well as the organization structure such as who reports to whom.

- **Offices**: stores sales office data

Entity Relationship Diagram:
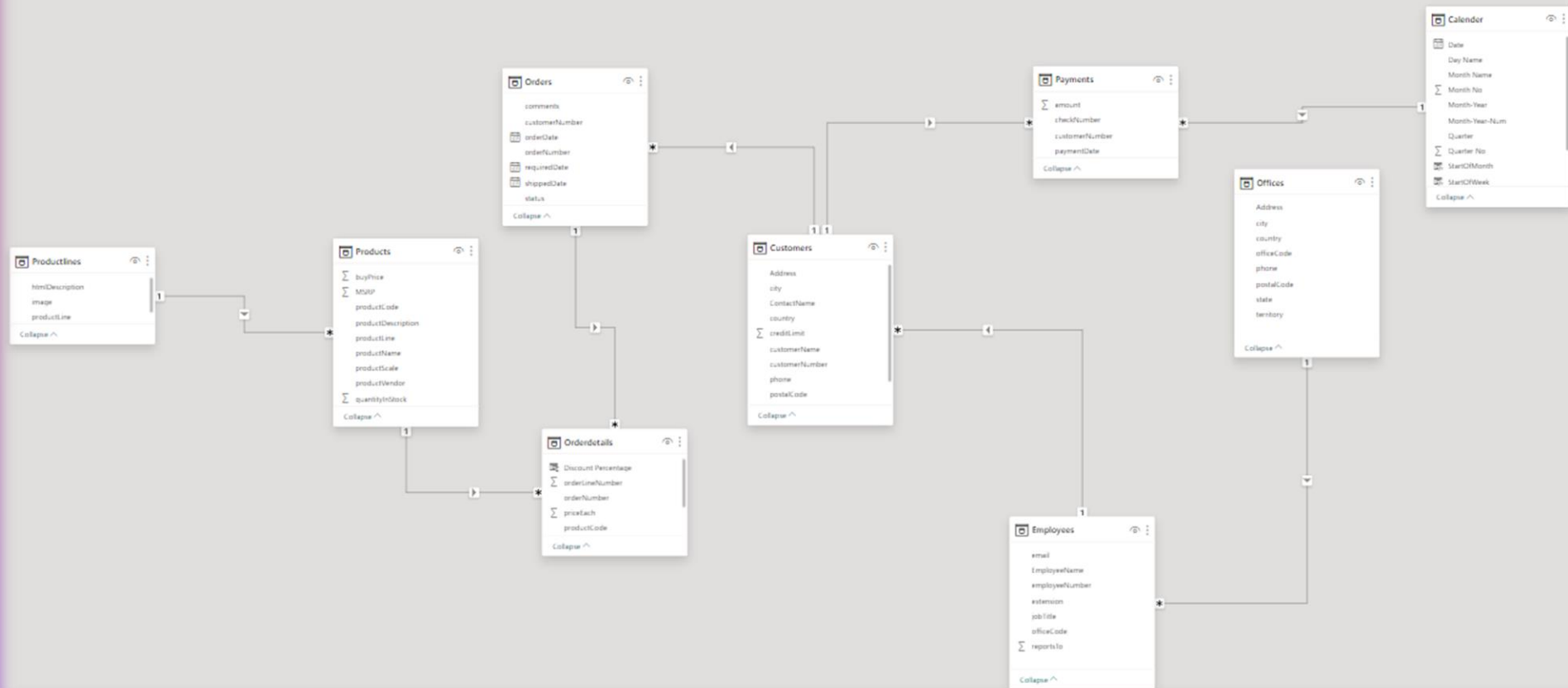
Which country has the largest number of customers?

```
select country,count(*) as No_of_Customers

from customers

group by country

order by No_of_customers desc

limit 5;
```

country	No_of_Customers
USA	36
Germany	13
France	12
Spain	7
Australia	5

➤ **Highlight the USA as the country with the most significant customer base, boasting 36 customers, followed by Germany with 13 customers, showcasing a strong presence in both markets.**

Which customers are among the top 5 based on the highest number of products ordered?

```sql
select customername,count(ordernumber)as Total_orders
from customers
inner join orders using(customernumber)
group by customername
order by Total_orders desc
limit 5;
```

customername	Total_orders
Euro+ Shopping Channel	26
Mini Gifts Distributors Ltd.	17
Danish Wholesale Imports	5
Australian Collectors, Co.	5
Dragon Souveniers, Ltd.	5

➢ **To acknowledge and appreciate these high-volume customers, consider offering exclusive loyalty rewards or discounts on future purchases. This gesture can enhance their satisfaction and potentially foster long-term relationships with your brand.**

What are the top 10 most ordered products based on the total quantity ordered?

```sql
select productname,sum(quantityordered)as Total_qty_Ordered
from orderdetails
inner join Products using(productcode)
group by productname
order by Total_qty_Ordered desc
limit 5;
```

productname	Total_qty_Ordered
1992 Ferrari 360 Spider red	1808
1937 Lincoln Berline	1111
American Airlines: MD-11S	1085
1941 Chevrolet Special Deluxe Cabriolet	1076
1930 Buick Marquette Phaeton	1074

➢ **Highlight popular products such as 1992 Ferrari 360 Spider red with 1808 orders and 1937 Lincoln Berline with 1111 orders to drive sales.**

Identify the products that haven't been ordered by any customer.

```sql
select productname ,quantityinstock from products

where productcode

not in (select productcode from orderdetails);
```

productname	quantityinstock
1985 Toyota Supra	7733

➢ **To increase sales of the 1985 Toyota Supra, focus on targeted marketing campaigns highlighting its unique features. Consider bundling it with related accessories or offering limited-time promotions to attract potential buyers.**

Determine the number of orders placed annually.

```sql
select year(orderdate)as Year, count(ordernumber) as Total_orders
from orders
group by year;
```

Year	Total_orders
2003	111
2004	151
2005	64

➢ **Maintain the current growth trajectory throughout 2005 by mirroring the successful strategies and initiatives implemented in the prosperous year of 2004 at Axon.**

Determine the count of customers assigned to each sales representative.

```sql
select Employeenumber,
concat(firstname," ",lastname)as full_name,
count(customernumber)as Total_customers
from Employees e
inner join
Customers c on c.salesrepemployeenumber = e.employeenumber
group by 1
order by Total_customers desc;
```

Employeenumber	full_name	Total_customers
1401	Pamela Castillo	10
1504	Barry Jones	9
1323	George Vanauf	8
1501	Larry Bott	8
1286	Foon Yue Tseng	7
1370	Gerard Hernandez	7
1165	Leslie Jennings	6
1166	Leslie Thompson	6
1188	Julie Firrelli	6
1216	Steve Patterson	6

➤ **Recognize and reward exemplary performance by offering incentives or rewards to top achievers like Pamela Castillo and Barry Jones, further motivating others to enhance their customer engagement.**

Display customers categorized by credit limit status, segmented into three distinct groups, and indicate the count of customers within each category.

```sql
/* Creating a view to categorize customer credit status based on their credit limits*/
create view Cust_Credit_Status as
(

select customerNumber,creditlimit,concat(contactFirstName,contactLastName) as Full_Name,
case
    when creditLimit < 10000 then 'Low Credit Limit'
    when  creditLimit > 10000 and creditLimit < 70000 then 'Medium Credit Limit'
    when  creditLimit > 70000 then 'High Credit Limit'
    end as Cust_Credit_Status
from customers


);
```

	Cust_Credit_Status	Total_Customers
▶	High Credit Limit	66
	Medium Credit Limit	32
	Low Credit Limit	24

➢ **Consider offering customized services or special incentives based on different credit limit categories to enhance customer satisfaction and retention.**

```sql
/*Querying the created view to count customers based on their credit status categories*/

select Cust_Credit_Status, count(customerNumber) as Total_Customers
from Cust_Credit_Status
group by Cust_Credit_Status
order by Total_Customers desc;
```

Determine the remaining stock for each product at the classic model warehouse.

```sql
with cte as
(select p.productcode,productname,quantityinstock,sum(quantityOrdered)as qty_ordered
from products p
inner join orderdetails o on o.productcode= p.productcode
group by p.productcode,quantityInStock,productname
order by qty_ordered desc)

select productname,(quantityInStock-(qty_Ordered))as SKU
from cte
order by SKU;
```

productname	SKU
1960 BSA Gold Star DBD34	-1000
1968 Ford Mustang	-865
1997 BMW F650 ST	-836
1928 Ford Phaeton Deluxe	-836
Pont Yacht	-544
F/A 18 Hornet 1/72	-496
2002 Yamaha YZR M1	-392
1928 Mercedes-Benz SSK	-332
1911 Ford Town Car	-292
1996 Peterbilt 379 Stake Bed with Outrigger	-174

➢ Ensure to manage inventory levels effectively by reviewing the stock movement of high-inventory products like **1900s Vintage Bi-Plane** and **1956 Porsche 356A Coupe**.

➢ Additionally, consider liquidating or strategizing sales for products like **1992 Ferrari 360 Spider red** and **1957 Vespa GS150** with higher negative stock levels.

Create a query that calculates the number of orders shipped each year.

```sql
select year(shippedDate) as Year , count(orderNumber) Total_orders
from orders
where status = 'Shipped'
group by Year
order by Year;
```

Year	Total_orders
2003	108
2004	145
2005	50

➢ **Identify the trend in order shipments from 2003 to 2005 to discern any fluctuations or patterns that could impact future shipping strategies**

Key Insights

1. **Customer Retention**: Varied from 60.7% (2003) to 73% (2004) but dropped to 36.1% in 2005.

2. **New Customers**: Ranged from 48 (2003) to 78 (2005), showing fluctuations.

3. **Total Sales**: Reached an impressive $9.60 million.

4. **Top Products**: Classic Cars and Vintage Cars are top sellers.

5. **Best Performer**: Gerard Hernandez led in order generation.

6. **Shipping Success**: A robust 92.9% shipping success rate was maintained.

7. **Key Markets**: USA and Germany are primary customer bases.

8. **Paris Office**: Shone in workforce and sales performance.

9. **Notable Sales Disruption**: November showed substantial surges across 2003-2005, possibly due to seasonal promotions.

10. **Vendor Partnerships**: Strengthen relationships with top-performing vendors like **Unimax Art Galleries**, **Classic Metal Creations**, and **Second Gear Diecast** to ensure a steady supply of high-quality products.

Recommendations:

1. **Expand into European Markets:** Use Germany's success as a base, tailor strategies for growth.

2. **Diversify Product Lines:** Introduce new models and accessories for Classic and Vintage Cars.

3. **Promote Top Products:** Focus marketing on best-sellers like 1992 Ferrari 360 Spider Red.

4. **Prioritize the USA:** Concentrate efforts on maintaining and growing market share in the USA.

5. **Reward and Develop Employees:** Recognize top performers, provide growth opportunities.

Thank You !

For in-depth insights and extensive details, access my project's **GitHub** repository.