

Capstone Project

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.

Aim: 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. The action plan includes the following:

1. Import and integrate the data from MySQL database into PowerBI.
2. Clean and transform the data to make it ready for analysis.
3. Build interactive dashboards and reports using PowerBI that can help the sales team and management make sense of the data.
4. Use SQL to perform advanced analytics on the data and extract insights that can help the company improve its sales.
5. Enable the management to access the dashboards and reports in real-time and make data-driven decisions.

About Dataset: The dataset contains business data from 06/01/2003 until 31/05/2005. It consists of 8 tables and a brief description of these table are:

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

Steps for Analysis

1. Data Extraction: Created a new database in MySQL and used it as a data source to load data in PowerBI.
2. Data Transformation: Performed cleaning of data by using Power Query Editor. It included removing duplicates, rectifying datatype, removing null rows and ensuring data consistency. The cleaned data was loaded to Power BI desktop.

3. Data Modelling: Managed the different table relationships and created two additional tables as Dim Date and Calculations for using Date Intelligence feature and calculating measures.
4. Preparing Report: Used different types of visualizations to create dashboards with useful insights and information for the management. Link for the dashboard- <https://www.novypro.com/project/sales-dashboard-109>
5. Advanced Analysis: Used MySQL to perform further analysis using the dataset.

SQL Queries:

#1 Question Total sales where order status is shipped.

```
1 #1 Question Toatal sales where order status is shipped.
2 • select o.ordernumber, sum(quantityordered) totalSales
3   from orderdetails o join orders o1
4  on o.ordernumber = o1.ordernumber
5  group by 1;
```

	ordernumber	totalSales
▶	10123	156
	10298	71
	10345	43
	10124	448
	10278	318
	10346	163
	10120	525
	10125	66
	10223	497
	10342	420
	10347	418
	10275	601

#2 which product has the highest sales

```
#2. which product has the highest sales
with cte as (select productCode,sum(quantityOrdered) as total_sales from orderdetails
group by 1
order by 2 asc
limit 5)
select cte.productCode,products.productName,cte.total_sales from products
join cte
on cte.productCode=products.productCode;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

productCode	productName	total_sales
S18_4933	1957 Ford Thunderbird	767
S24_1046	1970 Chevy Chevelle SS 454	803
S24_3969	1936 Mercedes Benz 500k Roadster	824
S18_2248	1911 Ford Town Car	832
S18_2870	1999 Indy 500 Monte Carlo SS	855

##3. Average shipped_rate of Product.

```
1 #3. Average shipped_rate of Product
2 • SELECT round(100*sum(case when status='Shipped' then 1 else 0 end)/count(*),2) as shipped_rate FROM classicmodels.o
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

shipped_rate
92.94

Result Grid

##4 Total Profit Earned by the Sales

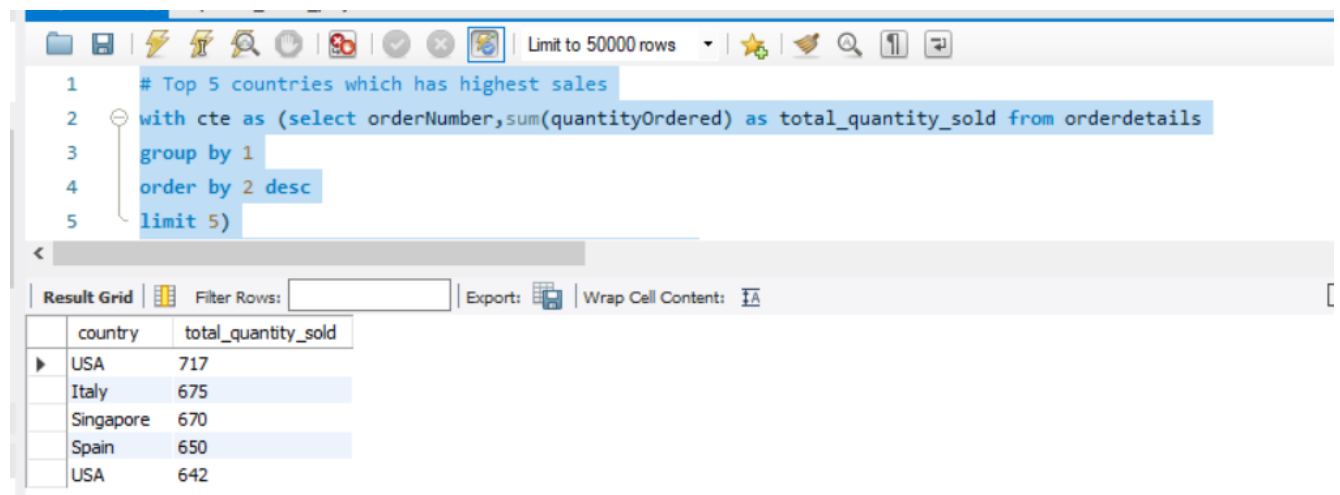
```
SQL File | capstone_sales_project
Limit to 50000 rows
1 #4 Total Profit Earned by the Sales
2 SELECT sum(quantityOrdered*priceEach)-sum(buyPrice*quantityOrdered) as profit FROM classicmodels.orderdetails
3 join products
4 on orderdetails.productCode=products.productCode;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

profit
3825880.25

Result Grid

Top 5 countries which has highest sales



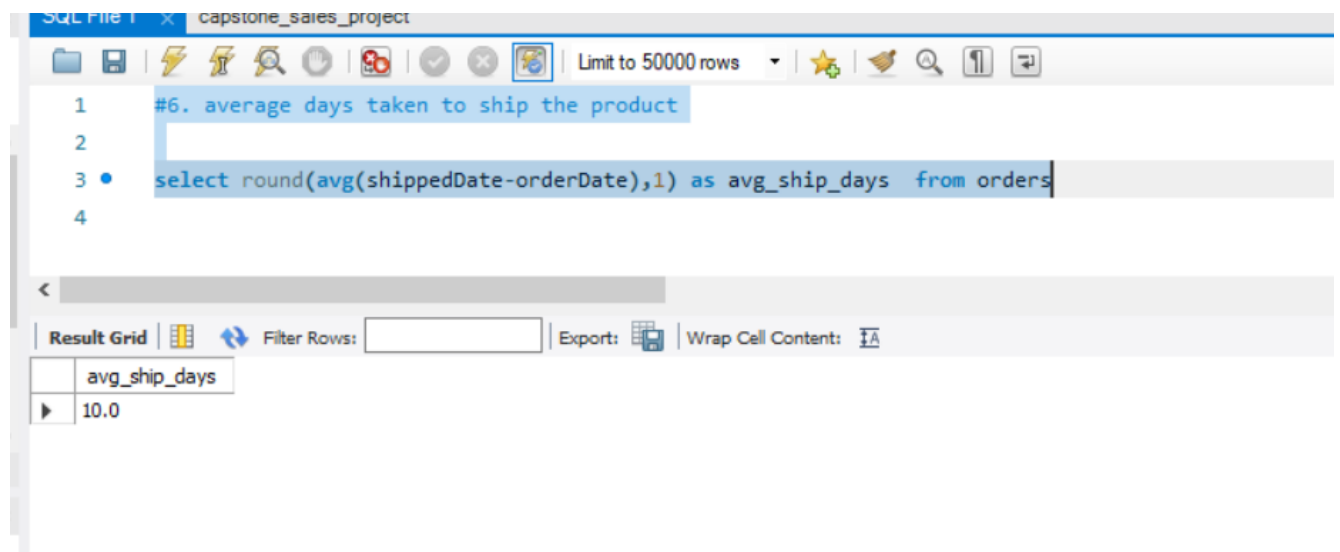
The screenshot shows a SQL IDE window with a query editor and a result grid. The query is as follows:

```
1 # Top 5 countries which has highest sales
2 with cte as (select orderNumber,sum(quantityOrdered) as total_quantity_sold from orderdetails
3 group by 1
4 order by 2 desc
5 limit 5)
```

The result grid displays the following data:

country	total_quantity_sold
USA	717
Italy	675
Singapore	670
Spain	650
USA	642

6. average days taken to ship the product.



The screenshot shows a SQL IDE window with a query editor and a result grid. The query is as follows:

```
1 #6. average days taken to ship the product
2
3 select round(avg(shippedDate-orderDate),1) as avg_ship_days from orders
4
```

The result grid displays the following data:

avg_ship_days
10.0