Project Overview :

- **This project aims to analyze online sales data to uncover insights and trends.**

- **SQL is used for data manipulation and analysis to ensure accurate results.**

- **The project covers data cleaning and exploratory data analysis (EDA).**

Objectives :

Understand	Understand sales trends across different product categories and regions.
Identify	Identify top-performing products and sales patterns.
Provide	Provide actionable insights for business decision-making.

Dataset Description:

➤ **The dataset consists of the following columns:**

- ▪ **Transaction id**
- ▪ **Date**
- ▪ **Product category**
- ▪ **Product name**
- ▪ **Units sold**
- ▪ **Unit price**
- ▪ **Total revenue**
- ▪ **Region**
- ▪ **Payment method**

Data Source :

❖ **The data was sourced from the company's sales database, capturing transactions from various regions and product categories.**

Data Cleaning :

Removed duplicate records to ensure data integrity.

Filled missing values in unit price with the average price of respective products.

Corrected data types for Date, units sold, and total revenue.

Analysis :

1. **Calculate the total revenue for all sales?**

```sql
select sum(Total_Revenue) as Total_Revenue from online_data;
```

OUTPUT :-

Result Grid	Filter Rows:	Export:	Wrap Cell Content:

Total_Revenue
80567.85000000008

Analysis :

2. Calculate the average unit price for each product category?

```sql
select Product_Category , avg(Unit_Price) as average_price
from online_data
group by Product_Category;
```

OUTPUT -

Product_Category	average_price
Electronics	691.5915000000003
Home Appliances	320.18549999999993
Clothing	67.53649999999999
Books	16.153000000000006
Beauty Products	61.623000000000005
Sports	261.2839999999999

Result Grid | Filter Rows:

Analysis :

3. Calculate the total units sold in each region?

```sql
select region, sum(Units_Sold) as total_units_sold
from online_data group by region;
```

OUTPUT -

region	total_units_sold
North America	180
Europe	105
Asia	233

Result Grid | Filter Rows:

Analysis :

4. Count the number of transactions for each payment method?

```
select Payment_Method , count(*) as Transaction_count
from online_data group by Payment_Method;
```

OUTPUT -

Result Grid	Filter Rows:	
	Payment_Method	Transaction_count
	Credit Card	120
	PayPal	80
	Debit Card	40

Analysis :

5. Revenue by Product Category and Region?

```sql
select Product_Category, Region, sum(Total_Revenue) as Total_Revenue
from online_data group by Product_Category,Region;
```

OUTPUT -

Result Grid		Filter Rows:	Export:
Product_Category	Region	Total_Revenue	
Electronics	North America	34982.41000000001	
Home Appliances	Europe	18646.16	
Clothing	Asia	8128.93000000001	
Books	North America	1861.9300000000007	
Beauty Products	Europe	2621.8999999999996	
Sports	Asia	14326.51999999997	

Analysis :

6. Find the top 5 products by total units sold?

```sql
select Product_Name, sum(Units_Sold) as Total_Units_Sold
from online_data group by Product_Name
order by Total_Units_Sold desc limit 5;
```

OUTPUT -

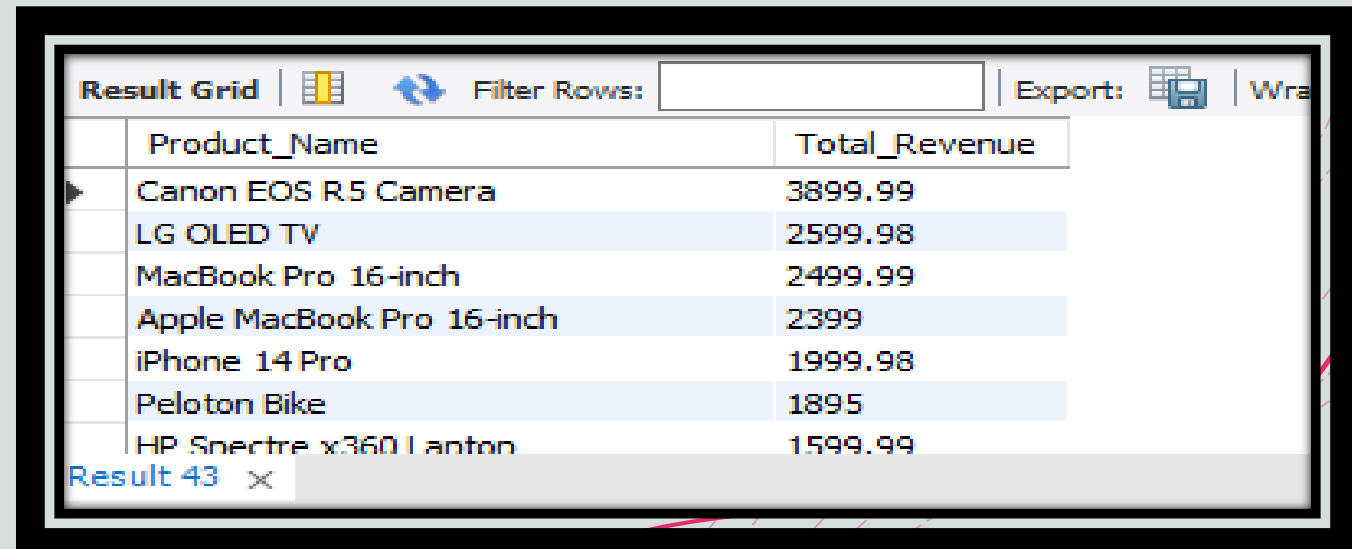| Product_Name	Total_Units_Sold
Hanes ComfortSoft T-Shirt	10
The Catcher in the Rye by J.D. Salinger	7
Spalding NBA Street Basketball	6
Gap Essential Crewneck T-Shirt	6
Nike Air Force 1	6

Result Grid | Filter Rows: | Export:

Analysis :

7. Calculate the revenue contribution of the top 10 products?

```sql
SELECT Product_Name, SUM(Total_Revenue) AS Total_Revenue
FROM online_data
GROUP BY Product_Name
ORDER BY Total_Revenue DESC
LIMIT 10;
```

OUTPUT -

Product_Name	Total_Revenue
Canon EOS R5 Camera	3899.99
LG OLED TV	2599.98
MacBook Pro 16-inch	2499.99
Apple MacBook Pro 16-inch	2399
iPhone 14 Pro	1999.98
Peloton Bike	1895
HP Spectre x360 Laptop	1599.99

Result Grid | Filter Rows: | Export: | Wra

Result 43 ✕

Analysis :

8. Calculate the total number of units sold per transaction?

```sql
SELECT sum(Units_Sold) AS total_units_sold
FROM online_data;
```

OUTPUT -

Result Grid | Filter Rows:

total_units_sold
518

Analysis :

9. Compare total sales between different regions?

```sql
SELECT region, SUM(Total_Revenue) AS Total_Revenue
FROM online_data
GROUP BY Region;
```

OUTPUT -

	region	Total_Revenue
▶	North America	36844.34000000002
	Europe	21268.060000000005
	Asia	22455.44999999997

Result Grid | Filter Rows:

Analysis :

10. Find the most popular payment method in each region?

```sql
SELECT Region, Payment_Method, COUNT(*) AS Transaction_count
FROM online_data
GROUP BY Region, Payment_Method
ORDER BY Region, Transaction_count DESC;
```

OUTPUT -

Region	Payment_Method	Transaction_count
Asia	Debit Card	40
Asia	Credit Card	40
Europe	PayPal	80
North America	Credit Card	80

Analysis :

11. Calculate the average revenue per transaction for each product category?

```sql
SELECT Product_Category, AVG(Total_Revenue) AS average_revenue
FROM online_data
GROUP BY Product_Category;
```

OUTPUT -

Product_Category	average_revenue
Electronics	874.5602500000002
Home Appliances	466.154
Clothing	203.2232500000004
Books	46.5482500000002
Beauty Products	65.5474999999999
Sports	358.1629999999999

Result Grid | Filter Rows: | E

Online Sales Data Dashboard

80.57K Total Revenue

518 Total Units Sold

Region
| Asia | Europe | North America |

Sales by Region

Product_Cate... ● Beauty Prod... ● Books ● Clothing ● Electronics

Sales by Product Category

1.86K (2%)

8.13K (10%)

34... (4...)

18.65K (23%)

Product_Category
- ● Electronics
- ● Home Applia...
- ● Sports
- ● Clothing
- ● Beauty Produ...
- ● Books

Sales Trend Over Time

4K — 3.9K
3K — 2.5K
2.6K
2.4K — 2.0K
2K — 1.6K 1.6K 1.5K
1.9K 1.5K 1.3K 1.2K 1.2K 1.2K
1K — 1.6K
1.2K 1.2K 1.2K
0K
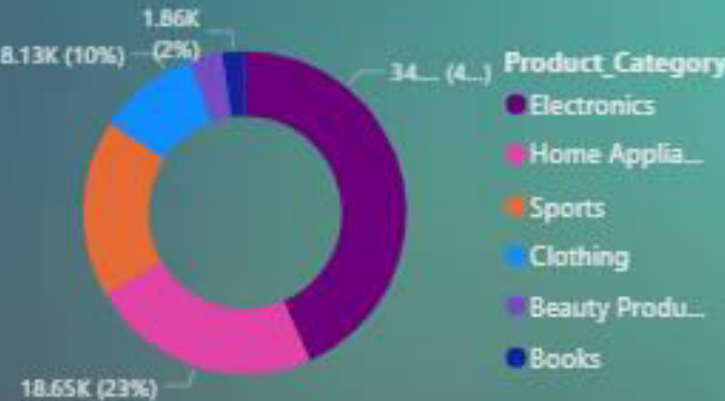
Date

Units_Sold by Payment_Method

- Credit Card — 268
- Debit Card — 145
- PayPal — 105

Distribution of Payment Methods

40 (16.67%)

Payment_Method
- ● Credit Card
- ● PayPal
- ● Debit Card

120 (50%)

80 (33.33%)

Total Sales by Product Category

- Clothing — 145
- Books — 114
- Sports — 88
- Electronics — 66
- Home Appliances — 59
- Beauty Products — 46
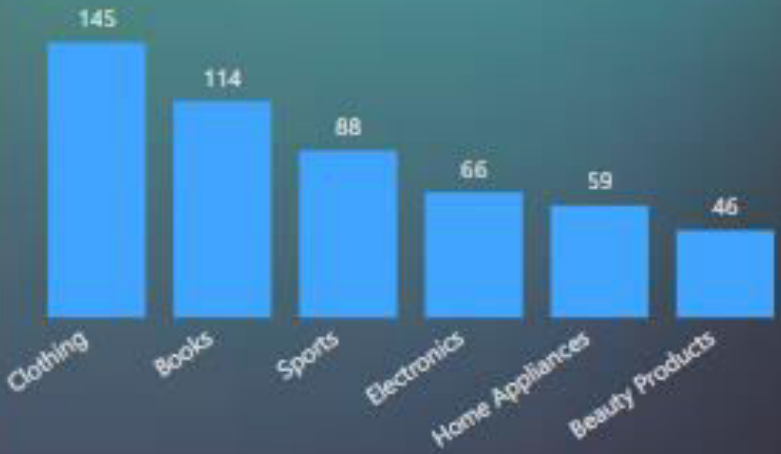
Key Insights :

Credit cards are the most popular payment method, followed by debit cards and PayPal. This is evident from the **Distribution of Payment Methods** section of the dashboard, which shows that credit cards account for 40% of total sales, debit cards account for 33.33% of total sales, and PayPal accounts for 26.67% of total sales.

The top-selling product category is electronics, followed by beauty products and clothing. The **Sales by Product Category** section shows that electronics have the highest total revenue at 8.13K, followed by beauty products at 3.4K and clothing at 2.5K.

Key Insights :

North America is the top-selling region, followed by Asia and Europe. The **Sales by Region** section shows that North America has the highest total revenue at 18.65K, followed by Asia at 8.13K and Europe at 518.

Book sales are very low across all regions. This is evident from the **Sales by Product Category** section, which shows that the total revenue from book sales is very low across all regions. For instance, in North America, book sales account for only OK.

Key Insights :

Sales are trending upwards over time. This is evident from the **Sales Trend Over Time** section of the dashboard.

The Atlantic region within North America has the highest sales for Beauty Products. While North America is the top-selling region overall, the Atlantic region within North America accounts for the highest sales in Beauty Products at 1.2K.

THANK YOU!