E-Commerce Sales Data Analysis

PROJECT OBJECTIVE:

The objective of this capstone project is to analysis e-commerce sales data using Microsoft Excel, perform data cleaning and transformation, apply descriptive analysis techniques, and generate actionable insights through visualizations and dashboards to support decision-making.

DATASET DESCRIPTION:

The dataset consists of multiple sheets including Sales Fact, Product Dim, and Customer Dim. It contains transactional sales records, product details, pricing, discounts, quantity sold, stock information, and customer purchase history used for analytical reporting.

COLUMN DESCRIPTION:

COLUMN NAME	DESCRIPTION
Customer ID	Unique identifier for each customer
Product ID	Unique identifier for each product
Unit Price	Price per unit of the product
Quantity	Number of units sold
Discount	Discount applied to the product
Total Amount	Final sales value after discount
Category	Product category
Stock	Available inventory quantity

DATA CLEANING & TRANSFORMATION:

TOTAL PRICE:

=IF(ISBLANK([@[Total_Amount]]),[@Quantity]*N8,[@[Total_Amount]])

UNIT PRICE:

=IF(ISBLANK(Unit_Price),Total_amount/Quantity,Unit_Price)

QUANTITY:

=IF(ISBLANK([@Quantity]),[@[Total Amount]]/[@[Unit_Price]],[@Quantity])

DISCOUNT:

=IF(ISBLANK([@Discount]),(([@[Unit_Price]])-([@[Total Amount]]/[@Quantity]))/[@[Unit_Price]]*100,[@Discount])

LOYALTY LEVEL:

=IF([@[Total Amount]]>=4000,"Platinum",IF([@[Total Amount]]>=3000,"gold",IF([@[Total Amount]]>=2000,"silver","bronze")))

CREATED SEPARATE SHEET FOR LOYALTY:

=VLOOKUP([@[Customer_ID3]],Table7[[#All],[Customer_ID]]:Table7[[#All],[Column1]],3,FALSE)

SEPARATE SHEET IS CREATED FOR PIVOT TABLE :

1.Category pivot table:

=XLOOKUP(A2,D:D,E:E)

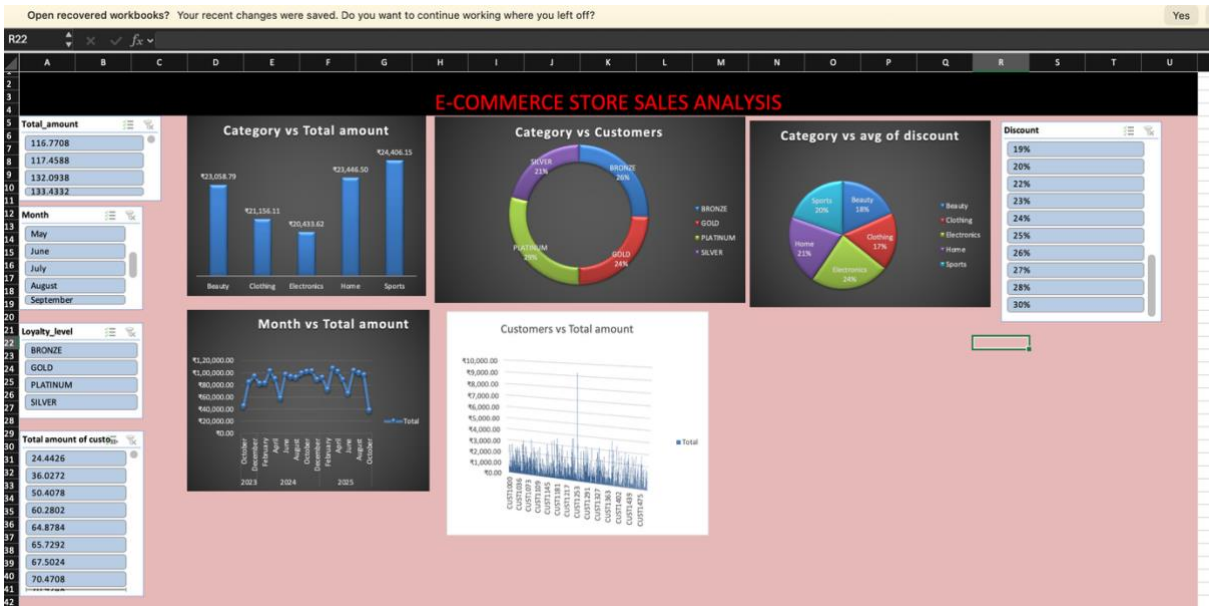
2.To find the discount in pivot table 5:

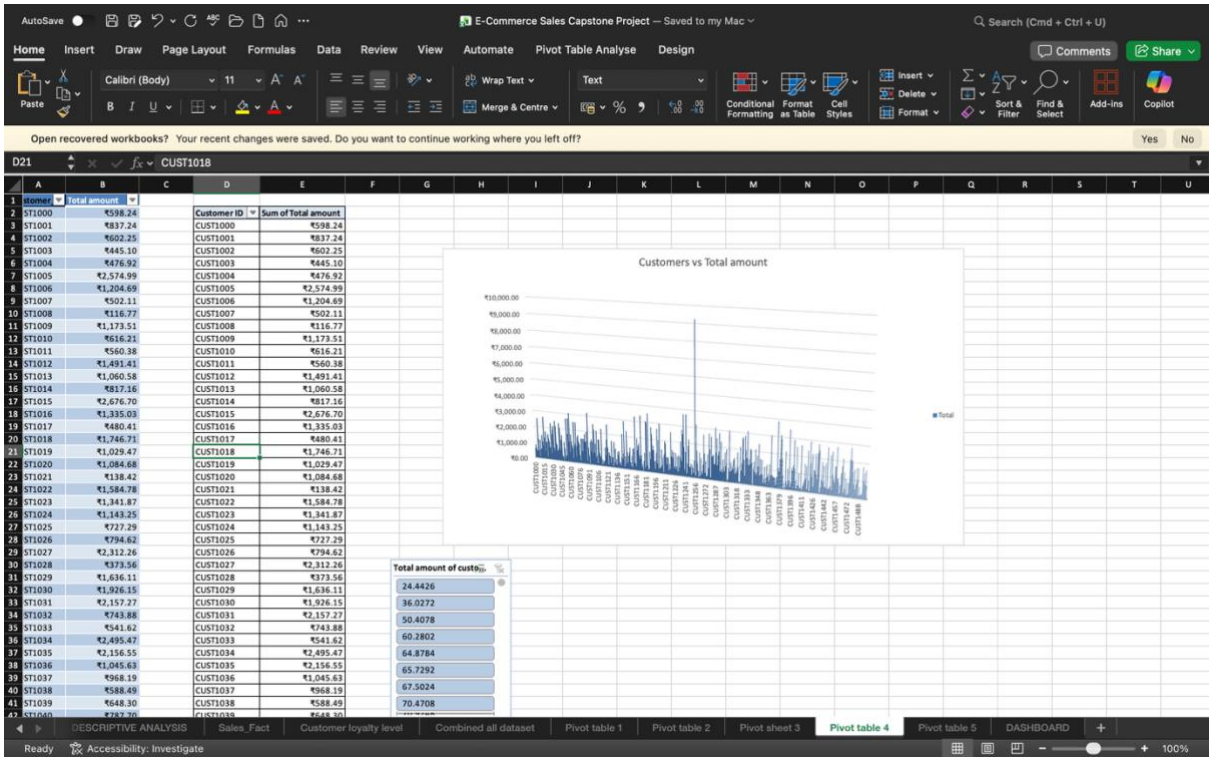
=XLOOKUP(A2,D:D,E:E)

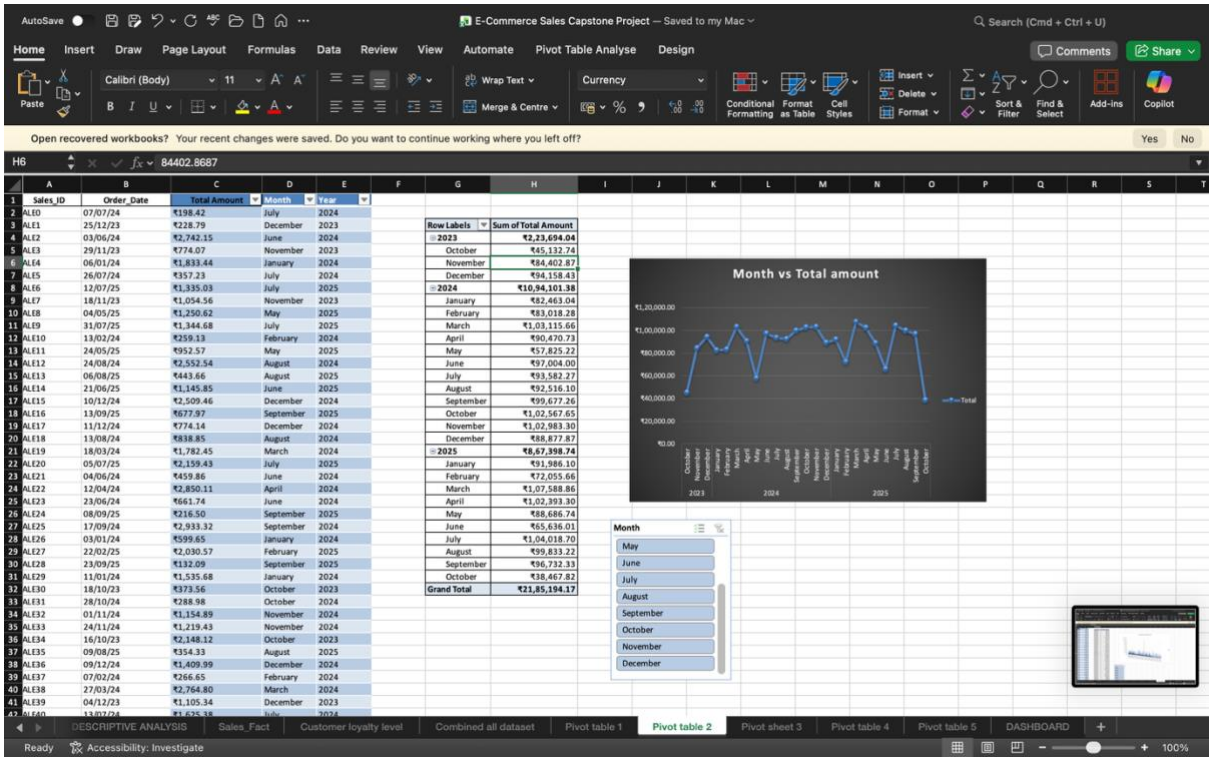
3.To find the category :

=XLOOKUP(D2,A:A,B:B)

VISUALIZATION AND INSIGHTS ARRIVED WITH SCREENSHOT OF VISUALIZATION:







Descriptive statistics such as mean, median, mode, and standard deviation were calculated to understand sales trends, pricing behaviour , and quantity distribution. Sales variations across categories and brands were analysed to identify causes of high and low performance. Discount impact and stock availability were also evaluated. Historical sales and customer purchase behaviour were used to identify high-value customers and top-performing products, helping predict future sales opportunities. Focus marketing strategies on high-loyalty customers, Maintain sufficient stock for high-demand products, Optimize discount strategies to improve revenue and profitability

CONCLUSION:

This project demonstrates effective application of Excel for data cleaning, analysis, and visualization. The insights generated help support informed business decisions related to sales performance, customer retention, and inventory management.