Project: Ecommerce Sales Analysis

Objective:

The objective is to analyse sales trends across products, categories, and regions, identify top selling products and seasonal patterns, and provide insights to improve sales and business decisions.

Data Description:

The dataset contains **order level sales information** for an ecommerce platform. It includes the following columns:

1. **order_id** : Unique identifier for each order.
2. **product** : Name of the product sold (e.g., Watch, Bag, Shoes).
3. **category** : Product category (e.g., Electronics, Fashion).
4. **price** : Price of a single unit of the product.
5. **quantity** : Number of units purchased in the order.
6. **payment_method** : Payment method used (e.g., Easypaisa, Credit Card, JazzCash).
7. **date** : Date of the order.
8. **total** : Total order value (price × quantity).
9. **Month** : Month when the order was placed.
10. **Discount** : Discount applied to the order (if any).
11. **City Code** : Numeric code representing the city of the buyer:

- 1 = Karachi
- 2 = Lahore
- 3 = Islamabad
- 4 = Faisalabad
- 5 = Quetta
- 6 = Peshawar

12. **Order Priority Code** : Numeric code representing order priority:

- 0 = LOW
- 1 = MEDIUM
- 2 = HIGH
- 3 = CRITICAL

13. **Latitude** : Latitude of the buyer's location.
14. **Longitude** : Longitude of the buyer's location.

Data Preprocessing and Wrangling

1. Load the dataset using Python Library Pandas
2. Check types of data
3. Drop irrelevant columns (Latitude, Longitude)
4. Rename columns City Code to City & Order Priority Code to Order Priority

5. Check duplicate rows
6. Drop duplicate records
7. Check missing and null values
8. Fill missing sales value by their median

Exploratory Data Analysis (Key Observations)

1) Top 5 Best Selling Products
   a) Write Observation
   b) (Bar Chart) Using Seaborn

2) Payment Method Distribution
   a) Write Observation
   b) (Pie Chart) Using Matplotlib

3) Monthwise Sales
   a) Write Observation
   b) (Line Chart) Using Matplotlib

4) Show City wise sales

   a) Replace City Names
   b) Horizontal Bar Chart using Seaborn
   c) Write Observation

5) Show monthly Sales by Category
   a) Side by side bar chart using matplotlib
   b) Write Observation

Conclusion

Write a short conclusion (4 to 5 lines) summarizing the key insights from your analysis, including top selling products, sales trends, city wise performance, and payment preferences. Briefly explain how these findings can help improve business decisions.