

# 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 value by their median/mode

### **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.