

## Project 4: Create a Sales Analysis Dashboard in Tableau

### Objective:

You are required to analyze the provided dataset on customer shopping data and create an interactive and visually appealing dashboard in Tableau. The dashboard should provide insights into customer behavior, product categories, shopping mall performance, and payment methods.

### Dataset Description:

The dataset contains information about customer transactions across various shopping malls. The key fields in the dataset include:

- **Invoice Number:** Unique identifier for each transaction.
- **Customer ID:** Unique identifier for each customer.
- **Gender:** Gender of the customer.
- **Age:** Age of the customer.
- **Category:** Product category of the purchase.
- **Quantity:** Number of items purchased.
- **Price:** Unit price of the product.
- **Payment Method:** Mode of payment used (e.g., Cash, Credit Card, Debit Card).
- **Invoice Date:** Date of the transaction.
- **Shopping Mall:** Name of the shopping mall where the transaction occurred.
- **Total Sales:** (Calculated column:  $\text{Quantity} \times \text{Price}$ ).

### Project Instructions:

#### 1. Data Preparation:

- Load the dataset into Tableau.
- Perform basic cleaning and validation of data to ensure consistency.
- Create a calculated column for **Total Sales** by multiplying **Quantity** with **Price**.

## 2. Dashboard Requirements: Create a Tableau dashboard that includes the following visuals:

- **Top 5 Malls by Customer Sales:**
  - A bar chart showing the top 5 shopping malls based on total sales.
- **Top 5 Sales by Category:**
  - A bar chart displaying the total sales for the top 5 product categories.
- **Payment Method Analysis:**
  - A column chart showing the count of transactions for each payment method.
- **Orders vs. Sales:**
  - A combo chart or any other suitable chart comparing the total sales and the count of unique orders by month.
- **Sales by Gender:**
  - A pie chart visualizing the percentage of sales contributed by male and female customers.
- **Yearly Sales Trend:**
  - A clustered column chart comparing monthly sales across different years.

## 3. Filters and Slicers:

- **Add interactive slicers for the following:**
  - Year
  - Month
  - Category
  - Payment Method

- Shopping Mall

#### **4. KPI Cards:**

- **Include KPI cards at the top of the dashboard showing:**
  - Total Revenue
  - Total Transactions
  - Total Customers

#### **5. Enhancements:**

- Ensure the dashboard is interactive and allows drill-through functionality for detailed insights.
- Use appropriate labels, titles, and tooltips to make the visuals user-friendly.

#### **Deliverables:**

- **Submit the Power BI .twbx file or github link as well.**
- **Write a brief explanation (200-300 words) of the insights derived from the dashboard, such as:**
  - Which shopping mall performed the best?
  - Which product category generated the highest revenue?
  - Which payment method is most commonly used?