

## Dataset Summary:

### 1. Customers Dataset:

- o **Columns:** CustomerID, CustomerName, Region, SignupDate
- o **Row Count:** 200
- o **Key Details:** Contains customer details like region and sign-up date.
- o All columns have non-null values.

### 2. Products Dataset:

- o **Columns:** ProductID, ProductName, Category, Price
- o **Row Count:** 100
- o **Key Details:** Contains product information including category and price.
- o No missing values.

### 3. Transactions Dataset:

- o **Columns:** TransactionID, CustomerID, ProductID, TransactionDate, Quantity, TotalValue, Price
- o **Row Count:** 1000
- o **Key Details:** Tracks transactions including customer and product IDs, quantities, and total transaction value.
- o No missing data.

## EDA business Insights

### Customer Demographics:

- The majority of customers are from **South America** (59), followed by **Europe** (50), **North America** (46), and **Asia** (45).
- Customer distribution across regions is relatively balanced.

### Product Categories:

- The dataset contains 4 product categories: **Books**, **Electronics**, **Clothing**, and **Home Decor**.
- Books and Electronics are the most common (26 each), while Home Decor has the fewest products (23).

### Transaction Insights:

- Average transaction value is approximately \$690, with a wide range from \$16 to \$1991.

- Most transactions involve **2 to 4 items**, with an average quantity of 2.5 per transaction.

### **Region-wise Sales:**

- **South America** leads in total sales (\$219,352), followed by **Europe** (\$166,254). Asia and North America show similar sales performance (~\$152,000 each).

### **Category Performance:**

- **Books** are the top-performing category, generating \$192,147 in total sales.
- Electronics (\$180,784) and Clothing (\$166,171) follow closely, while Home Decor (\$150,894) ranks lowest.

### **Regional Spending Behaviour:**

- Customers from **South America** have the highest average transaction value (\$721), while **North America** has the lowest (\$624).

### **Top-Selling Products:**

- The **ActiveWear Smartwatch** leads with 100 units sold, followed by **SoundWave Headphones** (97) and **HomeSense Desk Lamp** (81).