**Steps Followed for Data Analysis Using EXCEL**

* **Data Cleaning & Formatting**
* Changed data types for each column (e.g., date, numeric, text).
* Checked for and handled null values.
* Checked for duplicate rows using **Conditional Formatting**.
* **Data Validation**
* Applied **Conditional Formatting** to Buying Price and Marked Price columns to highlight any **negative values**.
* Sorted Date column in ascending order to analyze trends and time-based patterns.
* **Date-Based Filtering**
* Created a new column **"Valid Dates"** using the formula:
* =IF(DAY(A3)<=10, "Valid", "Invalid")
* → This identified transactions from the **first 10 days of the month**.
* **Item Master Validation**
* Compared **Item codes** from the Store Data with the **Master Details** sheet. Identified and flagged unnecessary or **invalid item codes** that do not exist in the master list.
* =IF(COUNTIF('Master Details'!B:B, B4), "Valid", "Invalid")
* **Free Item Code Validation Based on Item Category:**
* **Validated** whether the assigned Free Item code corresponds correctly to the item's category.
* The mapping used:
  + **DVD Player (Free Item Code 2)** → must be assigned for **Home Goods**
  + **Duffel Bag (Free Item Code 3)** → must be assigned for **Apparel/Gifts**
  + **Mug (Free Item Code 1)** → must be assigned for **all other categories**
* Each row was assessed to ensure the Free Item provided aligns with the item's category, and mismatches were flagged as **Invalid**.
* Calculated the **profit** for each transaction by subtracting the **Buying Price (For Store)** from the **Marked Price (For Store)**.

**Dashboard Summary using Power BI**

**1. Key Performance Indicators (KPIs)**

* **Count of Items:**  
  Displays a total of **93** item transactions recorded.
* **Sum of Items Sold:**  
  Shows the cumulative total of items sold, which is **48.86K**.

**2. Monthly Performance (Top Left Chart)**

**Chart:** *Sum of ItemSold and Count of Item by Month*

* **Blue bars** represent the **sum of items sold** per month.
* **Line graph** shows the **count of items** per month.
* **Observation:**
  + August and October experienced higher sales volumes.
  + March had a high count of items sold.

**3. Quarterly Revenue Analysis (Top Right Chart)**

**Chart:** *Sum of Buying Price and Sum of Marked Price by Quarter*

* Compares the **buying price** (light blue) and **marked price** (dark blue) for each quarter.
* **Observation:**
  + Q2 and Q3 saw the highest marked and buying prices, indicating increased business activity.
  + Q1 and Q4 reflect lower transaction volumes or smaller scale transactions.

**4. Profit Distribution by Quarter (Bottom Left Pie Chart)**

**Chart:** *Sum of Profit by Quarter*

* Displays profit contribution from each quarter.
* **Breakdown:**
  + Q3 contributed the most (29.82%).
  + Q2 followed with 28.98%.
  + Q1 and Q4 had smaller contributions (16.32% and 25.45%, respectively).
* **Observation:**  
  Q3 was the most profitable quarter, aligning with higher sales activity.

**5. Discount Analysis by State (Center Bar Chart)**

**Chart:** *Sum of Discount% by State Code*

* Shows total discount percentages granted across three states:
  + **2002:** Highest overall discount percentage.
  + **1001 and 3003:** Lower and roughly similar discount levels.
* **Insight:**  
  Higher discounts may have influenced higher sales volume or strategic pricing in that region.

**6. Sales by State Code (Bottom Right Donut Chart)**

**Chart:** *Sum of ItemSold by State Code*

* **State 2002 (Blue):** Highest contribution with **17.64K** (36.1%)
* **State 3003 (Dark Blue):** Close second with **17.54K** (35.9%)
* **State 1001 (Orange):** Lower contribution at **13.68K** (28%)
* **Insight:**  
  State 2002 leads in item sales, likely due to more discounts, higher demand, or strategic distribution.