Lesson 03: Data Preparation and Analysis with Tableau

Overview

In this exercise, you will learn to prepare and analyze sales data using Tableau. The exercise focuses on connecting to data and cleaning it, applying filters, and utilizing advanced analysis techniques. By completing these steps, you will demonstrate your proficiency in preparing, filing, and analyzing data in Tableau. This will enable you to extract actionable insights from the dataset provided.

Instructions

- Review the learning materials in Lesson 03 to familiarize yourself with the concepts of filters, groups, sets, and calculations in Tableau
- Carefully read through the situation, task, actions, and result sections to understand the assignment thoroughly
- Utilize the transaction dataset provided in the Reference Material section on the Learning Management System (LMS)
- Create and submit your assignment via the Learning Management System (LMS), ensuring your workbook effectively communicates key insights and trends

Situation

As a data analyst for a retail company, you are tasked with analyzing sales data to identify trends and opportunities for improvement. Your objective is to create an interactive visualization that provides insights into product performance, sales trends, and customer behavior.

Task

Your task is to follow the provided instructions to prepare, clean, and analyze the sales data using Tableau. This involves importing the dataset, applying data source and extract filters, utilizing dimension and measure filters, analyzing

sales trends by month, and performing advanced analysis techniques such as context filters, group, and sets.

Action

1. **Data Preparation and Connection**
    - Import the **transaction.csv** dataset into Tableau
    - Connect Tableau to the dataset and ensure proper data preparation

2. **Data Cleaning and Preparation**
    - Use Data Source filters
        - Open the dataset in Tableau and navigate to the **Data Source** tab
        - Click on **Add** next to the **Filters** section. Then again click on **Add** on the pop-up screen
        - Set the filter to **exclude** rows with missing essential information, then select **field** and click on **OK**
        - Select **Null**, then select **Exclude** and click on **OK**

NOTE: Follow the same procedure for all the fields (**Category, Date, Product, Quantity, Store, Transaction ID, and Unit Price**)

    - Apply Extract filters
        - In the **Data Source** tab, after applying source filters, click on **Extract Data** instead of using live data
        - Add a filter for the **Date** column to include only February, March, June, September, and November data, focusing analysis on the relevant timeframe
        - Click on **Edit** under Filters sections and click on **Add**
        - Select **Date** and click on **OK**
        - Select **Months** and click on **Next**
        - Select February, March, June, September, November and click on **OK**

3. **Data Analysis**
    - Use Dimension filters
        - Click on **Sheet 1** and save a local extract copy of the data
        - Drag the **Category** fields into the Filters shelf
        - Customize the filter to display only **Accessories** and **Gadgets** Category for further analysis

- Apply Measure filters
    - Add the **Unit Price** field to the Filters shelf and click on **Next**
    - Set a minimum value to focus on products with significant sales figures, choose **At least** to exclude lower performing products, enter minimum **250** value, and click on **OK**
    - Drag **Product** to Columns and **Unit Price** to Rows, and click on **T** icon above the Columns
- Utilize Date filters
    - Create new **Worksheet Sheet2**, drag the **Date** field into the Filters shelf and choose **Months** to view monthly data and analyze monthly sales trends
    - Exclude **March** month data and click on **OK**
    - Drag **Date** to columns and select **Line** option under Marks section
    - Drag **Unit Price** to Rows
    - In the top-right corner, click on **Show Me** and select line chart

4. **Advanced Analysis**
    - Implement Context filters
        - Navigate to **Sheet 1**, right-click on **Category**, and select **Add to Context** to make it a context filter, providing a baseline for subsequent analysis
    - Create Groups
        - Create a new **Worksheet Sheet3** and identify similar products for grouping
        - Right-click on the **Product** field, select **Create**, and then select **Group**
        - Now, select **two products**, provide **group name** under Field Name, and click on **OK**
    - Use Sets
        - To identify top-performing products, right-click on the **Product** field and select **Create**, then select **Set**
        - Define the set to include **top 5 products** based on unit price, click on **Top** tab, and then mention **5** under **By field** section, and then click on **OK**
        - Drag **Product Set**, **Group** (for example Charger and Headphone) into the Columns and **Unit Price** to Rows

Result

Your submission should include screenshots illustrating each step performed in the Word document showcasing actionable insights into sales performance,

including top-performing products, monthly sales trends, and product categories driving sales. Upload the Word document to the Learning Management System (LMS).

Rubric

Your submission will be evaluated based on the following key criteria, each representing a crucial aspect of the project. These criteria are:

Criteria	Complete or Incomplete
Data Preparation and Connection: Successfully import and connect the dataset in Tableau	
Data Cleaning and Preparation: Apply data source and extract filters effectively to clean and prepare the dataset for analysis	
Data Analysis: Utilize dimension, measure filters, and date filters, to analyze sales data accurately	
Advanced Analysis: Implement context filters, create groups, and use sets to perform advanced analysis and identify key insights	