**Sales and Profit Performance Dashboard**

**1. Project Overview**

This project aims to teach you how to work with a dataset in Tableau, perform data exploration and cleaning, build interactive visualizations, and combine them into a meaningful dashboard.

**2. Data Understanding and Preparation**

**Dataset Fields Breakdown**:

Dataset link: - [Sales Dataset](https://drive.google.com/file/d/10k215MBd_Lo20DztWN1ejisDtQJHkm46/view?usp=sharing)

* **Customer Information**: Customer’s personal data like **City**, **Country**, and **Segment** (Consumer, Corporate).
* **Order Information**: Includes **Order Date**, **Region**, **Product Price**, **Sales**, **Profit Margin**, and more.
* **Product Information**: Product **Category Name** (e.g., Camping & Hiking, Hunting & Shooting).

**Steps:**

1. **Load Data into Tableau**:
   * Open Tableau and connect to your data source (Excel/CSV).
   * Import the dataset into Tableau by selecting the appropriate file.
2. **Clean and Structure the Data**:
   * **Format Dates**: Ensure that the **Order Date** field is correctly interpreted as a date.
   * **Handle Missing Data**: Identify and address any missing or null values.
   * **Create Calculated Fields**:
     + For example, if profit is not given directly, calculate it:  
        Profit = Sales - (Order Quantity \* Product Price)
   * **Create Profit Margin**:
     + Profit Margin = Profit / Sales to evaluate profitability.

**3. Data Exploration & Initial Analysis**

Begin exploring the dataset using basic visualizations to identify trends and patterns.

**1. Create a Line Chart for Sales and Profit Trends Over Time**:

* **X-Axis**: Order Date (aggregated by Month or Year).
* **Y-Axis**: Sales and Profit.
* **Insight**: Identify which periods have the highest or lowest sales and profits.

**2. Create a Bar Chart for Profit by Region and Category**:

* **X-Axis**: Order Region.
* **Y-Axis**: Sum of Profit.
* **Color**: Category Name to break down profits by product category.
* **Insight**: See which regions and product categories are the most profitable.

**3. Create a Stacked Bar Chart for Sales by Customer Segment**:

* **X-Axis**: Customer Segment.
* **Y-Axis**: Sum of Sales.
* **Color**: Order Region to evaluate regional sales trends.
* **Insight**: Assess which customer segments are driving sales.

**4. Deeper Analysis and Visualizations**

Conduct more advanced analysis to uncover hidden patterns and make predictions.

**4. Scatter Plot for Order Quantity vs. Profit Margin**:

* **X-Axis**: Order Quantity.
* **Y-Axis**: Profit Margin.
* **Size**: Sales.
* **Insight**: Explore if larger orders tend to have higher or lower profit margins.

**5. Bar Chart for Profit by Product Category**:

* **X-Axis**: Total Profit.
* **Y-Axis**: Category Name.
* **Insight**: Identify which categories are driving profitability and which need attention.

**6. Scatter Plot for Product Price vs. Sales**:

* **X-Axis**: Product Price.
* **Y-Axis**: Sales.
* **Insight**: Investigate the correlation between product price and sales volume.

**5. Building an Interactive Dashboard**

Combine all visualizations into a comprehensive dashboard for stakeholders.

**1. Layout and Design**:

* Organize your charts in a clean, easy-to-follow layout.
* Use filters to allow viewers to interact with the dashboard and view different segments of data.

**2. KPI Indicators**:

* Add key performance indicators (KPIs) like **Total Sales**, **Total Profit**, and **Average Profit Margin** for a quick overview.

**3. Filters**:

* Add filters for **Customer Segment**, **Region**, and **Category Name** so users can explore the data by different dimensions.
* Include a time filter based on **Order Date** to allow users to see sales trends over time.

**4. Interactivity**:

* **Actions**: Create dashboard actions that allow users to click on specific regions or categories to update other charts dynamically.
* **Tooltips**: Add tooltips to provide more detailed information when users hover over specific data points.