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| **Project Title** | **Analyzing and Visualizing Regional Sales Performance** |
| **Skills take away From This Project** | **Data cleaning and preprocessing in Excel.**<br>**Searching and filtering data.**<br>**Working with Excel formulas for calculations and analysis.**<br>**Creating and interpreting charts (bar chart, pie chart, stacked bar chart).**<br>**Using Pivot Tables for dynamic data summarization.**<br>**Building interactive dashboards.**<br>**Performing basic regression analysis.** |
| **Domain** | **Retail Sales Analytics** |

**Problem Statement:**

ABC Electronics wants to assess its sales performance across different regions and product categories. The management needs a summarized report with visual insights to identify top-performing regions, products, and trends. As a business analyst, your task is to clean the data, analyze it using formulas, and create a basic dashboard that provides actionable insights.

**Business Use Cases:**

Identifying top-performing regions and product categories.

Understanding the impact of discounts on sales and profit margins.

Providing actionable insights for marketing and inventory management.

Monitoring key sales metrics for strategic decision-making.

**Approach:**

**Tasks**

1. **Searching and Filtering Data**
    - **Task:** Filter the dataset to find all orders placed in the "South" region for the "Electronics" category within the last year.
    - **Objective:** Practice using date filtering and category-based filtering.
2. **Data Cleaning with Text Functions**

- **Task:** Use text functions (TRIM, UPPER, LOWER) to clean and standardize the Region and Product Category columns.
- **Objective:** Ensure uniformity in text data for analysis.

3. **Merging Data**
   - **Task:**
   - Calculate the average sales amount for each region and merge this calculated value back into the dataset based on the Region column.
   - **Objective:**
   - Learn to calculate summarized metrics and merge them into the dataset for enriched analysis.
4. **Excel Formulas**
   - **Task:**
     a. Calculate total sales for each region using the SUM formula.
     b. Compute the average discount percentage and profit for the "Furniture" category using AVERAGE.
     - **Objective:** Reinforce formula usage for summary statistics.
5. **Pivot Tables**
   - **Task:** Create a Pivot Table to summarize total sales and profit by region and product category. Add slicers to filter by region or category dynamically.
   - **Objective:** Explore advanced summarization and filtering techniques.
6. **Charts**
   - **Task:**
     a. Create a **bar chart** showing total sales for each region.
     b. Create a **pie chart** showing the percentage contribution of each product category to total sales.
     - **Objective:** Practice visualizing categorical and regional sales data.
7. **Regression Analysis**
   - **Task:** Perform a simple regression analysis to understand the impact of Discount (%) on Sales Amount. Use a scatter plot to visualize the relationship.
   - **Objective:** Analyze continuous relationships and interpret results.
8. **Stacked Bar Chart**
   - **Task:** Create a stacked bar chart showing total sales by region and product category.

- **Objective:** Practice creating detailed comparative visualizations to analyze sales distribution across regions and product categories.

9. **Basic Dashboard**
   - **Task:**
     a. Create a dashboard showing key metrics (e.g., total sales, total profit, highest-selling product category).
     b. Add interactive elements like slicers or dropdowns for dynamic filtering.
     - **Objective:** Learn to design an interactive and user-friendly dashboard.
10. **Highlight High Performers (Conditional Formatting)**
    - **Task:** Use conditional formatting to highlight orders with a profit margin greater than 50% or sales amounts above ₹4000.
    - **Objective:** Enhance analytical insights through visual cues.

**Results:**

A cleaned and structured dataset ready for analysis.

Key insights presented in visualizations, such as the best-performing region and product category.

An interactive dashboard summarizing sales performance metrics.

A basic regression analysis showing the relationship between discounts and sales.

**Project Evaluation metrics:**

Completeness and accuracy of data cleaning and preprocessing.

Appropriate use of Excel formulas and functions.

Effectiveness of charts in conveying insights.

Quality of the interactive dashboard and visualizations.

Clarity of documentation and adherence to project guidelines

**Technical Tags:**

Excel, Data Cleaning, Pivot Tables, Charts, Dashboard,Regression Analysis

**Data Set:**

**Sales_Performance_Analysis**

**Format:** CSV file with columns:

- Order ID
- Order Date
- Region
- Product Category
- Sales Amount
- Quantity Sold
- Discount (%)
- Profit

**Data Set Explanation:**

The dataset contains 4000 rows of sales records for ABC Electronics. Each record includes details such as order ID, date, region, product category, sales amount, quantity sold, discount percentage, and profit. You are required to preprocess the dataset (e.g., cleaning, merging) and perform data analysis.

**Project Deliverables:**

A cleaned and structured Excel file.

Key insights documented in a summary report.

Visualizations created in Excel (charts, Pivot Tables).

An interactive Excel dashboard.

Documentation explaining the steps taken and insights gained.

**Project Guidelines:**

Follow best practices for Excel data analysis and visualization.

Ensure consistent formatting and naming conventions in the dataset.

Submit the project in the form of an Excel file with embedded charts and a separate documentation file.

**Approval Workflow**

| Created By: | Verified By: | Approved By: |
|---|---|---|
| Gaurav Kumar | Pooranam Annamalai | Pooranam Annamalai |