**Application Project Outline with a Well-Known Excel Dataset and Dashboard Requirement**

**Project Title: Analyzing Sales Data for Decision-Making Using the "Sample - Superstore" Dataset**

**Objective:**

**To provide students with hands-on experience in data import, cleaning, summarization, decision-making, and dashboard creation using Power Query, Pivot Tables, and Excel's dashboard tools.**

**Dataset Description:**

**The "Sample - Superstore" dataset is a commonly used dataset in data analysis and visualization exercises, often provided by Tableau. It contains information about sales, profits, products, and customers. The dataset includes various columns such as:**

* **Order Date**
* **Ship Date**
* **Ship Mode**
* **Customer ID**
* **Customer Name**
* **Segment**
* **Country**
* **City**
* **State**
* **Postal Code**
* **Region**
* **Product ID**
* **Category**
* **Sub-Category**
* **Product Name**
* **Sales**
* **Quantity**
* **Discount**
* **Profit**

**Download Link: Sample - Superstore Dataset**

**Task Description:**

1. **Data Import and Cleaning:**
   * **Import the "Sample - Superstore" dataset into Excel using Power Query.**
   * **Clean the data by addressing any missing values, correcting data types, and removing any duplicates.**
   * **Ensure that the dataset is free from errors and ready for analysis.**
2. **Data Analysis using Pivot Tables:**
   * **Create Pivot Tables to analyze the data. Students should consider the following analyses:**
     + **Total Sales by Region 0**
     + **Total Sales by Product Category 0**
     + **Total Sales by Sub-Category 0**
     + **Total Sales by Customer Segment 0**
     + **Total Profit by Region 0**
     + **Total Profit by Product Category 0**
     + **Units Sold by State 0**
     + **Average Discount by Product Category 0**
     + **Total Sales by Month/Quarter 0**
3. **Decision Making:**
   * **Based on the analyses from the Pivot Tables, students should make decisions and provide insights on the following:**
     + **Which regions are performing the best in terms of sales and profit? West**
     + **Which product categories and sub-categories are the most profitable? Technology - Copiers**
     + **Identify the top-performing customer segments. Consumer**
     + **Determine which states have the highest sales volumes. California**
     + **Recommend strategies to increase sales and profit based on seasonal trends and discount patterns.**
4. **Dashboard Creation:**
   * **Create an interactive dashboard in Excel to visualize key insights. The dashboard should include:**
     + **Sales and Profit by Region (Map or Bar Chart) --**
     + **Sales by Product Category and Sub-Category (Bar or Pie Chart)**
     + **Sales and Profit Trends over Time (Line Chart)**
     + **Top 10 Products by Sales (Bar Chart)**
     + **Sales by Customer Segment (Pie Chart)**
   * **Ensure the dashboard is interactive, using slicers and filters to allow users to explore the data.**
5. **Documentation:**
   * **Students should document their process, including:**
     + **Steps taken for data import and cleaning.**
     + **Detailed explanation of the Pivot Tables created and the insights derived from them.**
     + **Decisions and recommendations based on the analysis.**
     + **Instructions on how to use the dashboard and key insights from the visualizations.**

**Deliverables:**

* **Cleaned Excel dataset.**
* **Excel file containing Pivot Tables.**
* **An interactive dashboard in Excel.**
* **A report documenting the entire process, insights, and recommendations (Word document or PDF).**

**Example Steps:**

1. **Data Import and Cleaning:**
   * **Download the "Sample - Superstore" dataset from the provided link.**
   * **Open Excel and use Power Query to load the dataset.**
   * **Check for missing values and handle them appropriately (e.g., fill with mean, median, or remove rows).**
   * **Convert data types where necessary (e.g., ensure dates are in date format, numbers are in numeric format).**
   * **Remove any duplicate rows to ensure data integrity.**
2. **Creating Pivot Tables:**
   * **Insert Pivot Tables for each of the analyses mentioned.**
   * **Customize the Pivot Tables by adding filters, sorting data, and formatting for better readability.**
3. **Analyzing Data and Making Decisions:**
   * **Analyze each Pivot Table and note down key findings.**
   * **Based on the findings, make data-driven decisions and provide actionable recommendations.**
4. **Creating the Dashboard:**
   * **Insert charts and graphs based on the Pivot Tables.**
   * **Use slicers and filters to make the dashboard interactive.**
   * **Arrange the charts and graphs in a clear and visually appealing layout.**
5. **Documentation:**
   * **Create a well-structured report covering all steps from data import and cleaning to the final insights, dashboard creation, and recommendations.**
   * **Use screenshots of Pivot Tables, charts, and the dashboard to support the findings.**

**Notes for Students:**

* **Ensure that each step is clearly documented.**
* **Provide justification for any cleaning steps taken.**
* **Use clear and concise language in the report.**
* **Apply structured thinking throughout the project to define the problem, analyze the data, make decisions, and create an interactive dashboard.**