**Project Documentation: Supermarket Sales Data Analysis**

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**1. Introduction**

In this project, I analysed a supermarket sales dataset to uncover insights that can help a hypothetical company make informed decisions. The dataset includes sales transactions across various product categories, customer demographics, and locations.

**2. Data Cleaning**

**Steps Taken:**

* **Remove Duplicates:** I checked and try remove duplicate records to maintain data integrity.
  + Excel: Data > Remove Duplicates > No duplicates
* **Fixing Number and Number Signs:** I ensured all numerical data, including sales figures and quantities, were formatted correctly and consistently.
  + Excel: Used number formatting options in the Home tab.
* **Fixing Dates and Time:** I verified that all dates and times were in a consistent format.
  + Excel: Used the DATEVALUE and TIMEVALUE functions where necessary.
* **Removing Spaces and Non-Printing Characters:** I removed unnecessary spaces and non-printing characters to clean the dataset.
  + Excel: Used TRIM and CLEAN functions.

**3. Data Formatting**

**Steps Taken:**

* **Changing Case of Text:** I ensured consistency in text data by converting to a uniform case for the headers.
  + Excel: Used PROPER functions.
* **Transforming and Rearranging Columns and Rows:** I adjusted the layout to optimize data structure and readability.
  + Excel: Manually rearranged columns and rows as needed.

**4. Formula Utilization**

**Key Formulas Used:**

* **Card and No Card Calculation:**

excel

=IF(D2=1, "Card", "No Card")

This formula calculates the customers that has cards and does without cards.

* **Replace the Gender Column:**

I replaced the FM in the Gender column with F which is 341 replacement.

* **Delete the Customer Type Column :**

I deleted the customer type column after classifying the customers type to cards user and No Cards Users.

**5. Visualization and Key Findings**

**Dashboard Elements:**

1. **Sales Trends Over Time:**
   * A line chart showing sales trends from January to March 2019.
2. **Total Sales By Gender:**
   * A pie chart displaying the distribution of sales by gender (Male vs Female).
3. **% of Total Sales By Customer Type:**
   * A pie chart indicating the percentage of sales by customer type (Card vs No Card).
4. **Top 3 Selling Products:**
   * A bar chart highlighting the top 3 selling product categories.
5. **Rating By City:**
   * A bar chart comparing customer ratings across different cities.
6. **Sum of 5% Tax Collected per Platform:**
   * A bar chart showing the total tax collected from different payment platforms (Ewallet, Credit Card, Cash).
7. **Interactive Filters:**
   * Slicers for Date, City, and Product Line to filter data dynamically.

**6. Conclusion**

By thoroughly cleaning, formatting, and analyzing the supermarket sales dataset, I have uncovered valuable insights. The visualizations on the dashboard provide a clear representation of sales trends, customer demographics, and product performance. This analysis can help the hypothetical company make data-driven decisions to optimize operations and drive growth.

**Steps to Create the Dashboard in Excel:**

1. **Data Preparation:**
   * Clean and format the data as described above.
   * Use the relevant formulas to derive additional insights (e.g., age groups, job categories).
2. **Insert Charts and Graphs:**
   * Insert the required charts (line, pie, bar) by selecting the relevant data ranges.
   * Customize the charts by adding titles, labels, and formatting for clarity.
3. **Add Slicers:**
   * Select the pivot table/chart you want to filter.
   * Go to PivotTable Analyze > Insert Slicer and choose the fields you want to filter by.
4. **Arrange Dashboard Elements:**
   * Arrange all charts, slicers, and summary boxes neatly on a single Excel sheet.
   * Ensure consistent formatting and alignment for a professional look.
5. **Review and Finalize:**
   * Review the entire dashboard to ensure accuracy and readability.
   * Save the Excel workbook and prepare a PowerPoint presentation summarizing the key findings.

This documentation should provide a clear and concise guide to my project, making it easy to understand and follow.