Project Documentation: Tea Store Data Analysis

Project Title: Comprehensive Analysis of Retail Transaction Data

Prepared By: Rohanur Rahman

Date: 9.1.2025

---

1. Introduction

This project focuses on analyzing retail transaction data to uncover trends, patterns, and actionable insights that can inform business decisions. The data is sourced from a retail chain's sales transactions over a specified period and includes key metrics such as sales volume, revenue, and customer behavior.

---

2. Objectives

- To analyze sales trends across different store locations and product categories.
- To identify peak sales periods and customer purchase behavior.
- To provide actionable recommendations for inventory management and marketing strategies.

---

3. Data Overview

The analysis is based on a dataset provided in an Excel file with the following key sheets:

3.1. DataBase

This sheet contains detailed transaction records with the following attributes:

- **Transaction Details**: Unique transaction ID, date, and time.
- **Store Information**: Store ID and location.
- **Product Information**: Product ID, category, type, detail, and size.
- **Sales Metrics**: Quantity, unit price, and total bill.
- **Time Attributes**: Month, day of the week, and hour of the transaction.

3.2. Utility

This sheet is currently empty but appears to be a placeholder for auxiliary data.

3.3. PivotTable

Summarized data insights, likely using metrics such as total sales, quantities, and category-wise performance (not fully reviewed due to technical constraints).

3.4. Dashboard

A visual representation of data insights, potentially including charts and graphs to highlight key trends and metrics (not fully reviewed).

---

4. Key Insights

4.1. Transaction Trends

- Most transactions occurred during business hours, with peaks in the early afternoon (e.g., 11:00 AM to 2:00 PM).
- Sales are distributed across various store locations, with specific stores like Astoria showing consistent activity.

4.2. Product Performance

- The majority of transactions involved brewed herbal tea, particularly the “Peppermint” variant in large sizes.
- Unit pricing is uniform across similar products, suggesting a standard pricing strategy.

4.3. Seasonal Trends

- The dataset captures sales across months, indicating potential for analyzing monthly or seasonal demand patterns.

---

5. Recommendations

1. **Inventory Management**
    - Ensure adequate stock of high-performing products like brewed herbal tea (Peppermint, Large size).
    - Analyze time-based trends to optimize inventory levels during peak hours and days.
2. **Marketing Strategies**
    - Develop promotional campaigns targeting peak sales hours and high-demand products.

    - Use location-specific insights to tailor marketing efforts for stores like Astoria.
3. **Data Enhancement**
    - Populate the Utility sheet with additional data points such as customer demographics or promotional details for enhanced analysis.
    - Ensure dashboards provide actionable visual summaries for quick decision-making.

---

6. Conclusion

This analysis provides a foundational understanding of transaction patterns and sales performance. With further refinement and integration of additional datasets, the insights can significantly enhance decision-making in inventory management, marketing, and customer engagement.

---

7. Next Steps

- Conduct a detailed review of the PivotTable and Dashboard sheets to finalize key insights.
- Integrate customer feedback or demographic data for a more holistic analysis.
- Automate data extraction and visualization for real-time insights.