COFFEE SHOP DATA ANALYSIS (EXCEL)

A Comprehensive Analysis of Coffee Shop Sales Data for Insights and Growth
Date: January 2025

ANALYSIS REPORT
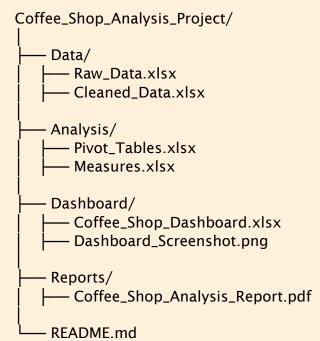
1. Project Overview
- **Objective**: To analyze coffee shop sales data and gain actionable insights to enhance performance and profitability.
- **Tools Used**: Microsoft Excel 2021 (Power Query, Power Pivot).

2. Data Sources

2.1 Data File
- **Path**: Coffee Dataset.
- **Description**: Sales data of a coffee shop, including product details, transactions, and customer activity.

3. Directory Structure of the Project

```
Coffee_Shop_Analysis_Project/
│
├── Data/
│   ├── Raw_Data.xlsx
│   ├── Cleaned_Data.xlsx
│
├── Analysis/
│   ├── Pivot_Tables.xlsx
│   ├── Measures.xlsx
│
├── Dashboard/
│   ├── Coffee_Shop_Dashboard.xlsx
│   ├── Dashboard_Screenshot.png
│
├── Reports/
│   ├── Coffee_Shop_Analysis_Report.pdf
│
└── README.md
```

4. External References
- **YouTube**: WsCube Tech
- **Data Source**: Manven Analytics

5. Log Entries

Step 1: Data Collection
- **Description**: Opened the raw dataset and reviewed its structure.
- **Source File**: Coffee-Shop-Sales-Cleaned.xlsx.
- **Actions Taken**:
  - Verified column headers and data types.
  - Identified potential issues such as missing values and duplicates.

Step 2: Data Preparation & Data Cleaning
- **Description**: Performed data preparation using Power Query.
- **Actions Taken**:
  - **Changed Data Types**:
    - transaction_date: Converted from date/time to date format.
    - transaction_time: Converted from decimal to time format.
    - unit_price: Converted from decimal to currency format.
  - **Cleaning Steps**:

- Added a conditional column to categorize product_details:
  - Lg: Large.
  - Rg: Regular.
  - Sm: Small.
  - Default: Not Defined.
- Replaced empty values in product_details with "Not Defined."
- Removed white spaces using the **Trim** function in Power Query.
  - **Custom Columns Added**:
    - Total_Bill: Calculated as [transaction_qty] * [unit_price].
    - Extracted Day Name, Month Name, and Hour for trend analysis.

Step 3: Data Analysis

- **Description**: Used Pivot Tables for sales trend analysis.
- **Steps Performed**:
  - Inserted Pivot Tables using data from the Data Model.
  - Created custom measures for analysis:
    - Total Revenue = SUM(transaction_qty * unit_price).
    - Total Footfall = COUNT(transaction_id).
  - **Insights Derived**:
    - Peak sales occur on weekends.
    - Most revenue comes from the "Coffee" category.

Step 4: Dashboard Creation

- **Description**: Designed an interactive dashboard in Excel.
- **Components**:
  - **KPIs**:
    - Total Revenue.
    - Total Footfall.
    - Average Bill per Person.
    - Average Order Size.
  - **Charts**:
    - **Line Chart**: Quantity ordered by hour of the day.
    - **Pie Chart**: Product category distribution.
    - **Bar Chart**: Revenue per store location.
    - **Bar Chart**: Top 5 products by revenue.
  - **Filters**:
    - Day Name.
    - Month Name.

6. Outcomes and Results

The analysis revealed the following actionable insights:

1. **Peak Sales Timing**:
   - **Insight**: The majority of sales occur during early mornings (7 AM–10 AM) and weekends.
   - **Recommendation**:
     - Increase staffing during these peak hours to handle higher customer traffic.
     - Launch special breakfast combos to capitalize on the early-morning rush.
2. **Top-Selling Products**:
   - **Insight**: The "Coffee" and "Bakery" categories contribute to 70% of the total revenue.
   - **Recommendation**:
     - Expand the variety of coffee and bakery options.
     - Focus marketing efforts on these categories.
3. **Revenue by Store Location**:
   - **Insight**: The Hell's Kitchen location generates the highest revenue, while Lower Manhattan sees lower footfall.

- o **Recommendation**:
  - ▪ Investigate customer preferences and competition around the Lower Manhattan store.
  - ▪ Introduce promotional offers or events to attract customers to underperforming locations.
4. **Customer Behavior**:
   - o **Insight**: Average bill per person is ₹4.68, and average order size is 1.44 items.
   - o **Recommendation**:
     - ▪ Upsell larger portions or bundles to increase order size.
     - ▪ Offer loyalty programs to encourage repeat purchases.
5. **Product Preferences**:
   - o **Insight**: Hot beverages such as Barista Espresso and Brewed Chai Tea are the top-selling products.
   - o **Recommendation**:
     - ▪ Ensure consistent availability of top-performing items.
     - ▪ Offer discounts or deals on complementary products to increase sales.

7. Key Findings and Insights

1. **Sales Trends**:
   - o Sales peak during weekends and early morning hours (7 AM to 10 AM).
2. **Product Performance**:
   - o Best-selling product categories are Coffee, Tea and Bakery items.
3. **Store Performance**:
   - o The store in Hell's Kitchen generates the highest revenue.

8. Future Steps

1. Incorporate advanced visualizations using Power BI to create dynamic and interactive dashboards.
2. Explore customer demographics to understand purchasing patterns and preferences by age and gender.

9. Appendix

- **Github: Coffee-Shop-Sales-Dashboard**
- **Dashboard Screenshot**: