**Problem Description**

To keep track of my daily spending, I've been using Microsoft Excel. While Excel's basic sorting and filtering provide a high-level overview, I wanted to perform deeper data analysis. To achieve this, I decided to transform my static Excel data into dynamic Power BI dashboards.

**Project Goals**

The primary questions I aimed to answer using Power BI dashboards include:

1. **Monthly Spending**: What is my spending each month in a given year?
2. **Item Categories**: How much money is spent per item category?
3. **Expense List**: What are all my expenses, including comments?
4. **Spending by Location**: How much money is spent at each location?
5. **Price Range Analysis**: How many purchases fall into various price ranges?
6. **Quarterly and Weekly Spending**: What are the spending patterns on a quarterly and weekly basis?
7. **Average Costs**: What are the average costs per week, month, and day?
8. **Food vs. Restaurant Costs**: How do my food costs compare to restaurant costs?
9. **Spending Behavior When Sick**: How does my spending change when I'm sick?
10. **Weekday vs. Weekend Spending**: How does my spending compare between weekdays and weekends?

To answer these questions, I planned the necessary Power BI measures and outlined the dashboard visuals.

**Overview of Microsoft Power BI**

Microsoft Power BI is a data analytics tool that provides business intelligence capabilities, including data loading, modeling, and visualization. Initially released in July 2011, Power BI has been continuously updated, with new functionalities added monthly. The tool can be used locally via Power BI Desktop or through the cloud with Power BI Services. While it offers features similar to Excel, Power BI allows for the creation of more interactive visualizations known as 'dashboards.'

**Explanation of Project Files**

This GitHub repository contains the following files and folders:

* **Finance\_Data.xlsx**: A copy of the original Excel file used to track personal spending.
* **Personal Finance Spend Dashboard.pbix**: The main Power BI file containing the finance dashboards.

**Data Collection Methodology**

The data was collected manually by keeping all purchase receipts and entering the following information into Excel:

* Date
* Item Category
* Price
* Location
* Comment

To import this data into Power BI, I had to separate the data from multiple sheets within a single Excel workbook into individual workbooks, which turned out to be the easiest method for importing the data.

**Data Cleaning**

Data cleaning involved several steps:

* **Category Standardization**: Ensuring consistency by unifying variations like 'hair cut', 'Hair cut', and 'Hair-Cut' under a single 'Hair Cut' category.
* **Date Standardization**: Converting dates from various formats (Text, General, Date) into a consistent format.
* **Handling Null Entries**: Removing rows with null entries to maintain data integrity without significantly affecting the dataset's variance.

**Measure Creation & Visualizations**

To answer the project goals, I created three key lookup tables:

1. **Calendar Lookup**: Contains date ranges and calculated columns such as month name/number, month-and-year, quarter, and end of week/month.
2. **Item Lookup**: Includes distinct item categories with a Boolean column for filtering out rental payments.
3. **Location Lookup**: Lists distinct purchase locations.

With these tables, I created various measures, such as:

* Total cost
* Price ranges
* Average cost per day, week, year
* A Boolean measure to address spending during sick days

The primary visualizations used were 'slicers,' which allowed for filtering by date ranges, weekday/weekend, healthy/sick days, and price ranges.

**Conclusion**

Using Microsoft Power BI, I transformed my spending data into interactive visualizations. This enabled me to explore my spending behavior more deeply, providing insights that help me make more informed financial decisions.