

# **Daily Transactions Analysis Report**

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## Objective

The primary objective of this project is to perform an in-depth exploratory data analysis (EDA) of daily household transactions to uncover insights about personal finance management. The project focuses on understanding income and expense trends, spending behavior, category-wise expenses, and visualizing financial patterns for better budgeting decisions.

## Dataset Information

- **File:** Daily Household Transactions.xlsx
- **Records:** 2,461 transactions
- **Features (Columns):** 8
- **Key Columns Used:**
  - **Date:** Date of transaction
  - **Mode:** Payment method (Cash, Bank, etc.)
  - **Category:** Broad classification (Money Transfer, Tourism, etc.)
  - **Amount:** Transaction amount
  - **Income/Expense:** Type of transaction (Income, Expense, Transfer-Out)

## Workflow & Methodology

### 1. Data Loading & Cleaning:

- Loaded Excel file using `pandas` and `openpyxl`
- Checked and handled missing values in `Subcategory` and `Note`

### 2. Exploratory Data Analysis (EDA):

- Checked data types, column-wise null counts, and value distributions
- Summarized income, expenses, and transaction modes

### 3. Insights Computed:

- Total income and expense
- Average expense per transaction
- Most used payment modes
- Top spending categories
- Highest spending month

### 4. Visualization & Trend Analysis:

- Pie chart of category-wise expense share
- Bar chart for monthly income vs expense
- Line chart for daily expense trends

## 5. Insight Block / Summary:

- Generated summary statistics to help understand budgeting patterns

## Tools & Technologies Used

- **Platform:** Google Colab
- **Programming Language:** Python
- **Libraries:**
  - `pandas` – Data manipulation
  - `matplotlib`, `seaborn` – Visualization
  - `openpyxl` – Excel file reading

## Challenges Faced

- Missing values in non-essential columns (`Subcategory`, `Note`)
- Inconsistent categorization across transactions
- Visualizing large date-wise data required appropriate resampling

## **Conclusion**

This project provides a strong foundation in analyzing real-world personal financial data using Python. By understanding income vs expense flows and identifying spending patterns, this analysis helps improve money management and promotes data-driven budgeting decisions.

## **Future Improvements**

- Convert this notebook into a Streamlit dashboard for interactive use
- Add budget forecasting or prediction using time series models
- Integrate with live data entry tools (e.g., Google Sheets) for ongoing tracking
- Classify transactions automatically using NLP or rule-based logic