Experiment No: 12

Household Expenses Tracker using File and Data Handling

Objective:

To develop a Python-based household expense tracker that supports data entry, analysis, categorization, budget management, and visual reporting through CSV handling and plotting libraries.

Task Description: You have been tasked with creating a Python program to help manage household expenses. The program should allow family members to input their daily expenses, store them in a CSV file, andprovide functionalities for analysis and reporting.

1. Expense Logging: Create a Python program that allows users to input their daily expenses. The program should prompt the user for their name, date of the expense, description, and amount spent. The data should be stored in a CSV file named expenses.csv with columns 'Name', 'Date', 'Description', and 'Amount'.
2. Expense Analysis: Develop a function that reads the expenses.csv file and calculates the total expenses for each family member. Display the total expenses for each member along with the average daily expense for the household.
3. Expense Trends: Implement a feature that generates a line chart using a plotting library (e.g., Matplotlib) to visualize the expense trends over the last month. The x-axis should represent the dates, and the y-axis should show the cumulative expenses for each day.
4. Expense Categorization: Enhance the program to allow users to categorize their expenses. Prompt the user to assign a category (e.g., groceries, utilities, entertainment) to each expense entry. Update the CSV file to include a 'Category' column.
5. Expense Reporting: Create a monthly expense report by reading the data from expenses.csv and generating a report that includes the following:
   - Total expenses for each family member for the month.
   - A breakdown of expenses by category.
   - A comparison of monthly expenses over different months using bar charts.
6. Expense Budgeting: Add an option for users to set a monthly budget for each category. After entering expenses, the program should calculate the remaining budget for each category and provide a warning if the budget is exceeded.
7. Data Backup and Restore: Implement a backup and restore feature that allows users to save a copy of the expenses.csv file to a backup location and restore it if needed. Handle cases where the file might be missing or corrupted.