Personal Finance Tracker

Task Objective

Develop a Personal Finance Tracker (PFT) in Python, incorporating various programming concepts and tools covered in the module. This project will integrate complex data structures, control statements, iterations, custom functions, various Python libraries, file management, data visualization, graphical user interface (GUI) design, Python virtual environment, and version control with Git and GitHub. Additional libraries or concepts may be used, provided you can thoroughly explain and debug your code as needed.

Program Features

1. Initial Setup:

- On startup, prompt for the user's name.
- Open a main window titled "Personal Finance Tracker".
- Display a personalized greeting.
- Show the user's current account balance (initialized at $0).
- Present a summary of the last transaction (initially empty) including transaction ID, type (income or expense), category, amount, and date.

2. Transaction Management:

- Include buttons for adding transactions.
- Provide a "Summary" button to view transaction summaries.
- Add a button to delete transactions.

3. Adding Transactions:

- Clicking opens a new window titled "Add Transaction" and the user can choose between "Income" and "Expenses".
- For income, categories include: Salary, Pension, Interest, Others.
- For expenses, categories include: Food, Rent, Clothing, Car, Health, Others.
- Allow category selection from a drop-down menu, input of amount, transaction date, and payee (for expenses) or source (for income).
- Assign a unique 4-digit random number as the transaction ID.
- Close the transaction window and update the main window (such as the account balance) after each transaction is added.

4. Data Storage and Display:

- Store all transactions in an appropriate data structure.
- Update the main window with the latest transaction details.

5. Transaction Summary ("Dashboard"):

- The "Summary" button opens a new window titled "Dashboard".
- This window provides transaction summaries and visualizations.
- Features include:
  - **View Transactions:** Filter transactions by time range, class (income/expense), category, and payee/source name. Put a “show” button to show the result on the window and a “Print” button, a feature to write the displayed, filtered transactions to an external .txt file.
  - **Bar Chart:** Visualize income or expenses in a bar chart by category, with the option to filter by time range.
  - **Pie Chart:** Display income or expenses in a pie chart, showing the percentage per category, with time range filtering options.

6. Transaction Deletion:

- The "Delete Transaction" button opens a window listing all transactions.
- Users can delete a transaction by selecting or typing its ID.
- Update the user's balance and last transaction summary on the main window accordingly.

Note

- Ensure your program's GUI is user-friendly and intuitive.
- Comment your code thoroughly for clarity and ease of understanding.
- Be prepared to explain your code and reasoning during code reviews.

This task will assess your ability to apply and integrate different programming concepts in a practical project. Your PFT should be robust, user-friendly, and efficient in managing personal finance data.