

Final Project: Extended Features Income/Budget Management For +20 Bonus Points

In addition to the existing functionalities of the **Personal Finance Tracker App**, this version includes **income and budget management** features. These enhancements will help users better manage their finances by tracking income, setting budgets, and providing alerts or suggestions when spending exceeds the budget.

Extended Features Description

1. Income Management:

- Users can enter their income details, which will be used to calculate total income over a specified period.
- This allows users to compare income to expenses and understand their financial balance.

2. Budget Setting and Alerts:

- Users can set a budget for specific categories (e.g., Food, Rent, Utilities) or an overall monthly budget.
- The app will compare spending against the budget:
 - If spending exceeds the budget, it will alert the user with a message.
 - If spending is close to the budget (e.g., within 10%), it will warn the user.
 - It will suggest adjustments like reducing specific category spending to stay within budget.

3. Suggestions for Better Budgeting:

- Based on the analysis of spending patterns, the app will provide suggestions, such as:
 - Reducing spending on non-essential categories.

- Saving more in months with lower spending.
- Adjusting the budget based on average spending trends.

Sample Output for Income/Budget Management

Below are sample outputs demonstrating how the new income and budget management features will behave within the **Personal Finance Tracker App**. These outputs are based on interactions using the provided `sampledata.csv`.

Initial Menu Display with Extended Features

When users start the app, the main menu now includes options for income and budget management:

```
=== Personal Finance Tracker ===
0. Import a CSV File
1. View All Transactions
2. View Transactions by Date Range
3. Add a Transaction
4. Edit a Transaction
5. Delete a Transaction
6. Analyze Spending by Category
7. Calculate Average Monthly Spending
8. Show Top Spending Category
9. Set Monthly Income
10. Set Category Budget
11. Check Budget Status
12. Visualize Spending Trends
13. Save Transactions to CSV
14. Exit
Choose an option (1-14):
```

1. Set Monthly Income

If the user chooses this option, they can set their monthly income:

```
Enter your total monthly income: 3000.00
```

```
Your monthly income is set to: $3000.00
```

2. Set Category Budget

If the user chooses this option, they can set budgets for specific categories:

```
Enter your budget for Food: 500.00
```

```
Enter your budget for Rent: 1200.00
```

```
Enter your budget for Utilities: 200.00
```

```
Enter your budget for Transport: 150.00
```

```
Your budgets have been set:
```

- Food: \$500.00
- Rent: \$1200.00
- Utilities: \$200.00
- Transport: \$150.00

3. Check Budget Status

This option compares actual spending against the set budget and displays alerts or suggestions:

```
--- Budget Status ---
```

- Food: \$200.75 / \$500.00
- Rent: \$2400.00 / \$1200.00 (Alert: Exceeded budget!)
- Utilities: \$100.00 / \$200.00
- Transport: \$27.75 / \$150.00

```
Suggestions:
```

- Consider reducing rent spending or adjusting the budget.
- You are within budget for other categories. Keep up the good work!

If the user's spending is nearing the budget limit:

--- Budget Status ---

- Food: \$480.00 / \$500.00 (Warning: Close to budget!)
- Rent: \$1200.00 / \$1200.00
- Utilities: \$180.00 / \$200.00
- Transport: \$140.00 / \$150.00

Suggestions:

- Monitor food spending closely to avoid exceeding the budget.
- You are on track for other categories.

4. Visualize Spending Trends

This option visualizes income, spending, and budget trends using charts:

1. Line Chart for Monthly Income vs. Spending:

- A line chart opens showing monthly income compared to total spending.

[Line Chart Opens]

- X-axis: Months
- Y-axis: Amount
- Line 1: Total Income
- Line 2: Total Spending

2. Bar Chart for Category Spending vs. Budget:

- A bar chart displays category-wise spending against the set budget.

[Bar Chart Opens]

- X-axis: Categories (e.g., Food, Rent, Utilities)
- Y-axis: Amount
- Bars: Actual Spending vs. Budget

3. Pie Chart for Income and Expense Distribution:

- A pie chart shows the distribution of income and expenses, providing a clear view of how the user's money is allocated.

[Pie Chart Opens]

- Slices: Income, Food, Rent, Utilities, Transport, etc.

Example Output Using `sampledata.csv`

Viewing All Transactions

If the user selects this option, it displays the content of the `sampledata.csv` file:

--- All Transactions ---

	Date	Category	Description	Amount	Type
0	2024-10-01	Food	Grocery	50.75	Expense
1	2024-10-02	Rent	Monthly Rent	1200.00	Expense
2	2024-10-02	Utilities	Electricity Bill	60.00	Expense
3	2024-10-03	Food	Dinner	30.00	Expense
4	2024-10-04	Transport	Bus Ticket	2.75	Expense
5	2024-10-05	Food	Breakfast	15.00	Expense
6	2024-10-06	Income	Salary	2000.00	Income
7	2024-10-10	Income	Freelance Work	500.00	Income
8	2024-10-12	Utilities	Water Bill	40.00	Expense
9	2024-10-15	Food	Lunch	25.00	Expense
10	2024-10-18	Transport	Taxi	25.00	Expense
11	2024-10-20	Income	Investment Return	200.00	Income
12	2024-10-25	Food	Groceries	80.00	Expense
13	2024-10-28	Rent	Monthly Rent	1200.00	Expense

Saving Transactions to CSV

If the user selects this option, they can save the updated transactions list to a CSV file:

```
Enter file name to save (e.g., 'transactions.csv'): updated_transactions.csv
```

```
Transactions saved to updated_transactions.csv successfully!
```

Final Summary

- **Income and Budget Management:** Helps users track income, set budgets, and manage finances effectively.
- **Alerts and Suggestions:** Provides real-time feedback on spending patterns.
- **Visualizations:** Offers a clear graphical representation of financial trends, making it easier for users to understand their financial health.