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Final Project: Finance Assistant

Goal

The goal of this project is to create an automated system for tracking personal finances. Instead of relying on multiple apps or manual spreadsheets, the system records spending, income, savings, and investment activity in a single code. It aims to make finances easy to read by automatically sorting transactions and plotting how they are distributed across different categories such as food, transport, bills, income, gifts, or freelance. It is also able to track savings growth over time and monitor the performance of an investment portfolio.

Working Principle

The system operates with a simple input interface where simple text is used like "spent 10 coffee" or "salary 1200". With the use of keywords, the code detects the type, date, and amount of the transaction and stores it in a CSV file.

Savings are tracked separately. The user can manually transfer money between spending and savings accounts or allow the system to automatically calculate monthly leftover income and move it into savings.

The investment portfolio uses the S&P 500 index. Users can buy or sell shares, which is tied to the spending balance, and the system fetches real-time index prices to calculate cost basis, current value, and profit. The portfolio's value can be plotted over time.

Expenses Distribution

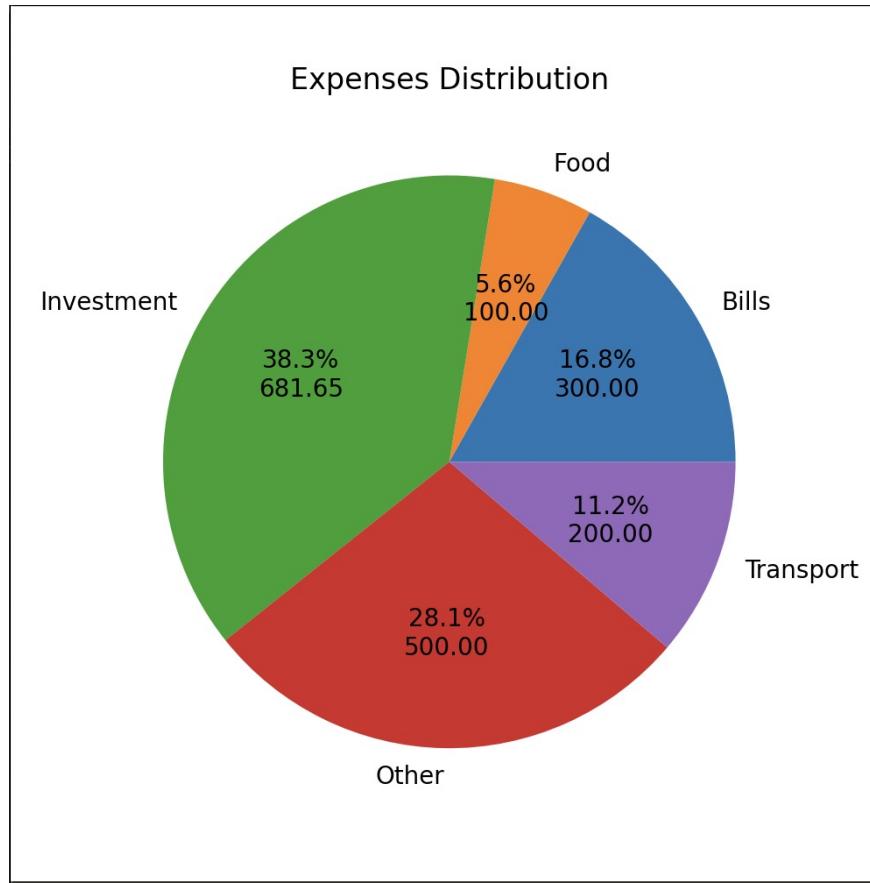


Figure 1: Expenses Distribution Pie Chart

Income Distribution

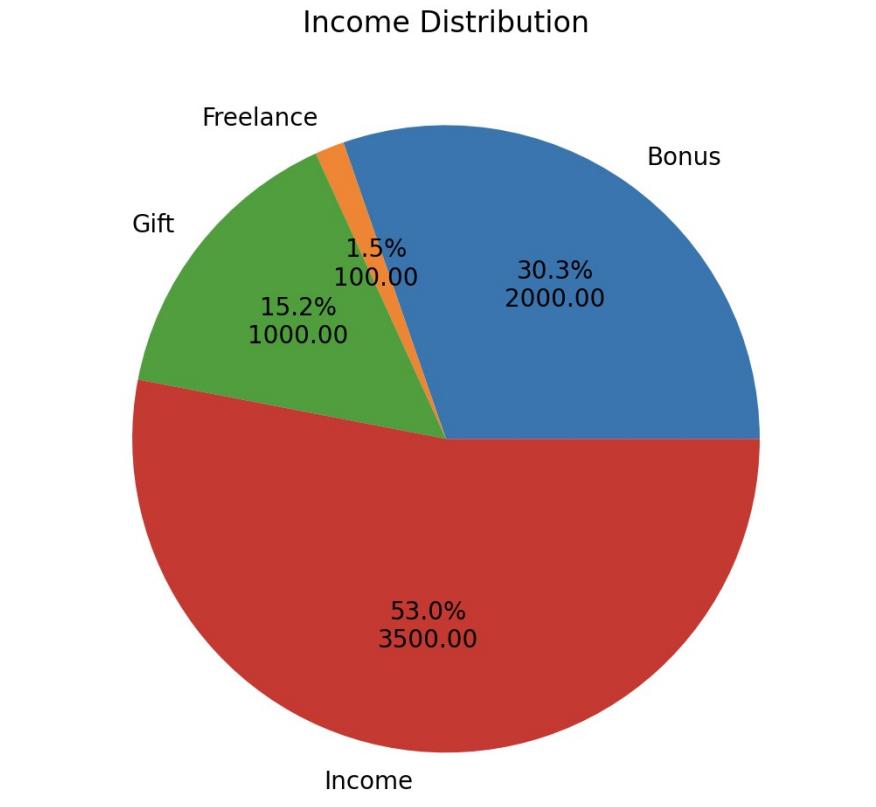


Figure 2: Income Distribution Pie Chart

S&P 500 Performance

---- S&P 500 PERFORMANCE ----
Period: 2025-12-02 → 2025-12-15
Start price: 6829.37
End price: 6816.51
Change: -0.19%
Latest value: 6816.51

Figure 3: S&P 500 Performance: Short-Term View

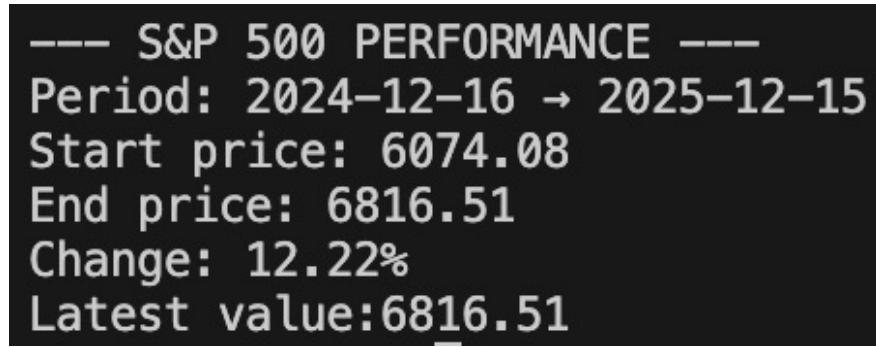


Figure 4: S&P 500 Performance: Extended View

Savings Over Time

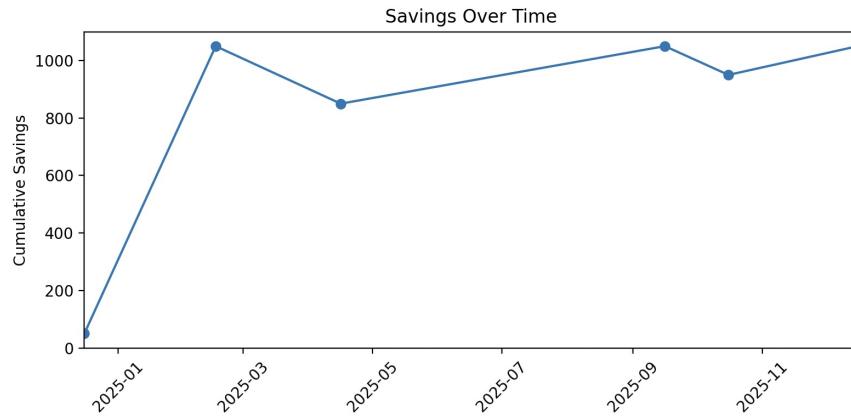


Figure 5: Savings Growth Over Time

Investment Portfolio Over Time

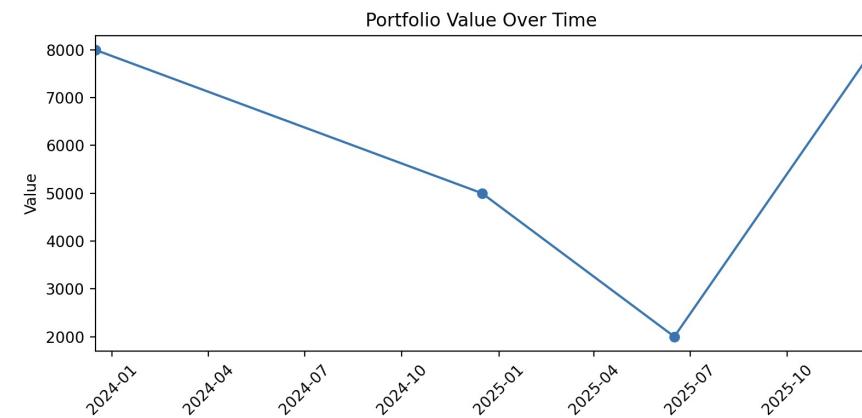


Figure 6: Investment Portfolio Value Over Time

Overall Balance

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---- BALANCE ----
Income: 6600.00
Expenses: 1863.30
Net spending: 4736.70
Savings: 1050.00
Portfolio value (SP500 1.15 shares at $6806.23 each): 7827.16
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Figure 7: Total Account Balance Over Time