

SmartBudget — Ultra-Short Project Description

SmartBudget is a lightweight Python package for managing household financial records. It allows users to add income and expense entries, save and load data using JSON files, and generate simple financial summaries. The project demonstrates modular programming, object-oriented design, and practical data handling in Python.

The system is structured into four sub-packages:

1. entity – Defines the core data models.

- RecordBase provides validation and shared attributes.
- Income and Expense extend the base class with additional fields.
- constants stores global limits for amounts and name lengths.

2. analysis – Implements financial calculations.

- Functions compute total income, total expenses, and net balance.
- Additional helpers generate formatted income and expense details.

3. io – Handles persistent storage.

- Saving, loading, and appending JSON data.
- Listing and deleting files within the files/ directory.

4. core – Provides application logic and user interaction.

- Controllers manage record creation, summaries, backups, and system utilities.
- A menu-based console interface guides user operations.

SmartBudget delivers a clean and maintainable codebase that integrates OOP, modular design, and data persistence. It serves as both a functional budgeting tool and a demonstration of good software engineering practices.