

Budget tracker

Final Hands on Assigned project

Project Overview

The Budget Tracker is a Java-based Command-Line Interface (CLI) application designed to help users record, monitor, and manage their personal finances. Users can log in securely, record income and expenses, and view a summary of their financial activity. The application stores data persistently, ensuring no information is lost between sessions.

The project is being extended to a GUI-based version in the future using either JavaFX/Swing or Spring Boot with REST API to make it more user-friendly.

Pain Points Addressed

- Lack of organized expense tracking – The Budget Tracker centralizes all transactions in one place.
- Difficulty in monitoring spending habits – Provides an updated balance and transaction list.
- Security concerns for personal financial records – Integrates user authentication and password hashing.
- Manual and time-consuming calculations – Automatically updates the balance after every transaction.
- No portability or flexibility – Uses persistent data storage for resuming sessions.

Key Features

- User Authentication with secure password hashing.
- Transaction Management – Add income and expenses with descriptions.
- View Transactions – Display all past transactions.
- Balance Calculation – Automatic real-time updates.
- Persistent Data Storage – Saves data to local files.
- Input Validation & Error Handling.
- Future GUI Development using JavaFX/Swing or Spring Boot.

Technologies & Tools Used

- Programming Language: Java
- Development Environment: Visual Studio code
- Security: SHA-256 password hashing
- Data Storage: Local file system (text-based storage)
- Version Control: Git & GitHub
- Planned GUI Tools: JavaFX/Swing or Spring Boot + REST API

How It Works (CLI Version Flow)

- User Registration/Login – New users create an account, passwords stored securely.
- Menu Options – Add Income, Add Expense, View All Transactions, View Balance, Exit.
- Persistent Storage – All changes are saved immediately to a file.
- Exit & Resume – Users can exit anytime and resume later without losing data.

Project Structure

- BudgetTracker/
 - |— src/
 - | |— Main.java
 - | |— model/
 - | | |— Transaction.java
 - | | |— Income.java
 - | | |— Expense.java
 - | |— manager/
 - | | |— BudgetManager.java
 - | |— io/
 - | | |— DataStorage.java
 - | |— util/
 - | | |— InputValidator.java (optional for now)

Future Plans

- GUI Implementation – JavaFX/Swing interface for better usability.
- Data Export – Export reports in CSV or PDF format.
- Multi-User Support – Enable multiple independent budgets.
- Cloud Integration – Store data remotely for multi-device access.