Smart Expense Tracker

A JavaFX desktop application to manage personal finances

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Project Overview

- Objective: Develop a JavaFX desktop application to manage personal finances, including income, expenses, and budgets.
- Scope: User authentication, transaction tracking, budget setting, real-time financial summaries, and alerts.
- Technologies: Java 21, JavaFX, MySQL, Maven, JDBC.

Welcome, BenGJ

Add Income

Add Expense

Add Budget

View Profile

Logout

Total Income: **₹12750.00**

Total Expense: ₹2450.00

Current Balance: ₹10300.00

Recent Activity

Expense: ₹1000.00 (Transport) on 2025-07-14

Expense: ₹1100.00 (Shopping) on 2025-07-14

Income: ₹2750.00 (Freelance) on 2025-07-14

Budget exceeded for Transport (WEEKLY): ₹1100.00/₹1000.00

OOPS Concepts used in Project

Encapsulation

Private fields in classes with public getters/setters ensure data protection and access.

Polymorphism

Interfaces allow polymorphic behavior in services enabling flexible transaction handling.

Inheritance

BaseDAO provide database methods inherited by User, Income, Expense, Budget classes.

Abstraction

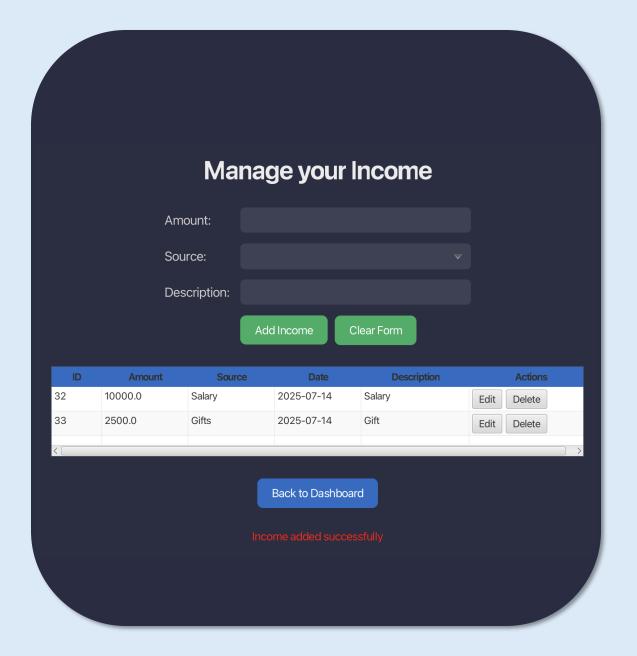
Abstracted logic in service and dao packages separates rules from UI and data access.

Smart Expense Tracker



Login and Authentication

- Secure Login: Validates username/password using PasswordUtil.
- Password Hashing: Uses SHA-256 for secure storage in MySQL.
- Password Validator: Ensures strong passwords.
- Session Management: SessionManager singleton tracks logged user.

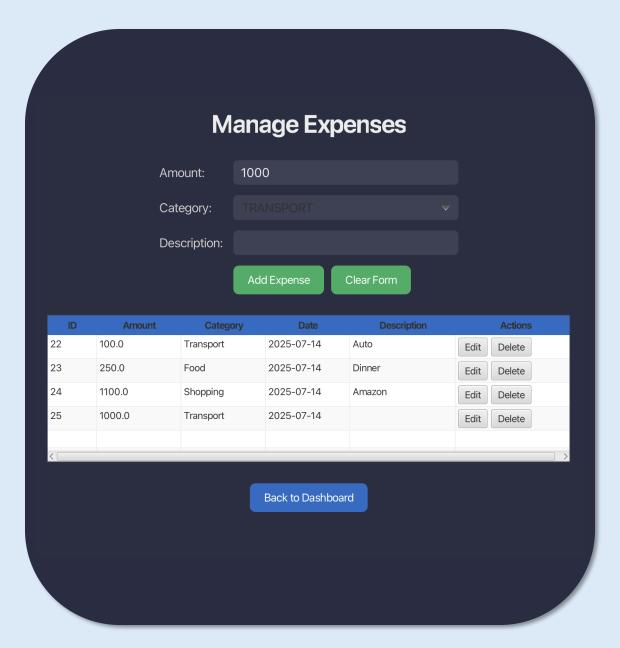


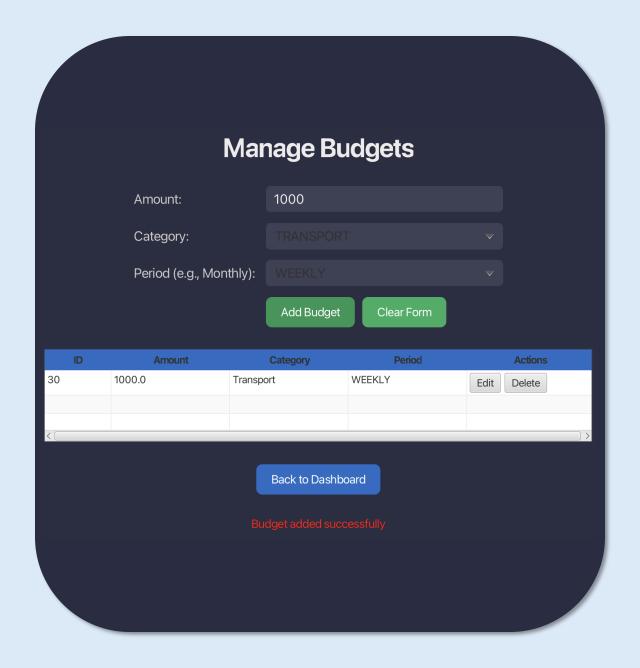
Income Management

- Form Input: Users enter amount, source, date, and description via AddIncomeController.
- Validation: Ensures positive amount and valid Income using enums (SALARAY, FREELANCE, GIFTS, OTHERS)
- Database Storage: IncomeDAO uses JDBC prepared statements to store income in MySQL.
- Real-Time Update: TableView refreshes to display new expense records instantly.
- Logging: CustomLogger to record income actions
 (e.g., "Added income: ₹10000, SALARY")

Expense Management

- Form Input: Users enter amount, category, date, and description via AddExpenseController.
- Validation: Ensures positive amount and valid Category using enums (FOOD, TRANSPORT, ENTERTAINMENT)
- Database Storage: ExpenseDAO uses JDBC prepared statements to store expense in MySQL.
- Real-Time Update: TableView refreshes to display new expense records instantly.
- Logging: CustomLogger to record expense actions
 (e.g., "Added expense: ₹5000, FOOD"





Budget Management

- Budget CRUD: Set, update, delete budgets via
 AddBudgetController.
- BudgetPeriod: WEEKLY, MONTHLY enums for flexible budgeting.
- Real-Time Alerts: BudgetService checks for overspending (e.g., "Budget exceeded for Food: ₹8000/₹5000").
- Multithreading: Uses Task for non-blocking alert checks.
- UI Feedback: Displays alerts on dashboard via errorLabel.

Data Flow Diagram

