

# Smart Expense Tracker - Java GUI Project

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## 1. Introduction

This project is a GUI-based Smart Expense Tracker built using Java, Swing, and MySQL. It allows users to register, log in, and manage their expenses by category. The project follows standard JDBC practices and MVC design principles to ensure modular and maintainable code.

## 2. Marking Rubric Fulfillment (GUVI)

- ✓ Creating the new project with JDK & IDE setup - 2 marks
  - Project built using JDK 17 and developed in VS Code.
- ✓ Define the project structure - 1 mark
  - Proper package structure: DBConnection, DAO classes, Model classes, and GUI frames.
- ✓ Design the database schema for the project - 1 mark
  - Two tables: users and expenses with appropriate fields and foreign key relationship.
- ✓ Create a MySQL table - 1 mark
  - Tables created using SQL scripts or from within Java using JDBC.
- ✓ Implement JDBC for database connectivity - 3 marks
  - Connection via mysql-connector-java using DBConnection class.
- ✓ Create Model, DAO classes for the database operations - 3 marks
  - Model: User, Expense
  - DAO: UserDAO, ExpenseDAO
- ✓ Aesthetics and Visual Appeal of the UI - 4 marks
  - Swing-based GUI with clean form design and intuitive layout.
- ✓ Component Placement and Alignment in the UI - 2 marks
  - Grid and border layout used for clean alignment and consistency.

✓ Responsiveness and Accessibility of the UI - 2 marks

- Input validation, real-time error messages, and logical flow.

### 3. Project Structure

```
ExpenseTracker/  
├── src/  
│   ├── DBConnection.java  
│   ├── User.java  
│   ├── Expense.java  
│   ├── UserDAO.java  
│   ├── ExpenseDAO.java  
│   ├── RegisterFrame.java  
│   ├── LoginFrame.java  
│   ├── ExpenseFrame.java  
│   └── Main.java  
├── lib/  
│   └── mysql-connector-java-8.x.xx.jar  
├── README.md  
└── expense_tracker.sql
```

### 4. Database Schema

```
CREATE DATABASE IF NOT EXISTS expense_tracker;  
USE expense_tracker;
```

```
CREATE TABLE IF NOT EXISTS users (  
    id INT AUTO_INCREMENT PRIMARY KEY,  
    username VARCHAR(50) NOT NULL UNIQUE,  
    password VARCHAR(50) NOT NULL  
);
```

```
CREATE TABLE IF NOT EXISTS expenses (  
    id INT AUTO_INCREMENT PRIMARY KEY,  
    user_id INT NOT NULL,  
    category VARCHAR(50),  
    amount DOUBLE,  
    date DATE,  
    FOREIGN KEY (user_id) REFERENCES users(id)
```

);

## 5. Technologies Used

- Java 17
- Swing for GUI
- JDBC for MySQL connectivity
- MySQL Server & MySQL Workbench
- VS Code IDE

## 6. Team Members

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