Smart Expense Tracker - Project Report

1. Project Overview

The Smart Expense Tracker is a Java-based GUI application built using Java Swing, JDBC, and MySQL. It allows users to register, log in, and add their daily expenses categorized under different labels like Food, Travel, etc. The application ensures data persistence via MySQL and follows a modular structure with DAO, Model, and View layers.

2. JDK and IDE Setup

• JDK Version: Java SE 17
• IDE Used: Visual Studio Code with Java Extension Pack
• MySQL Version: 8.0+
• MySQL Workbench used for database management

3. Project Structure

• model/: Contains Java classes like User.java and Expense.java
• dao/: Contains UserDAO.java and ExpenseDAO.java for database operations
• view/: Contains Swing-based frames like LoginFrame.java, RegisterFrame.java, and ExpenseFrame.java
• DBConnection.java: Handles database connectivity
• Main.java: Launches the application

4. Database Schema

Database Name: expense_tracker

Tables:
1. users:
   - id (INT, PK, AUTO_INCREMENT)
   - username (VARCHAR(50), UNIQUE)
   - password (VARCHAR(50))

2. expenses:
   - id (INT, PK, AUTO_INCREMENT)
   - user_id (INT, FK to users.id)
   - category (VARCHAR(50))
   - amount (DOUBLE)

- date (DATE)

5. JDBC Implementation

• DBConnection.java provides a static method to connect to MySQL
• DAO classes use PreparedStatement for secure query execution
• Proper exception handling for database errors

6. UI Design

• Built using Java Swing with modern aesthetics
• Forms for Login, Registration, and Adding Expenses
• Use of layout managers and spacing for component alignment
• Visual hierarchy with headers and action buttons
• Center-aligned, clean UI with color-consistent buttons

7. Evaluation Rubric Mapping

• JDK & IDE Setup - 2 Marks
• Project Structure - 1 Mark
• Database Schema - 1 Mark
• MySQL Table Creation - 1 Mark
• JDBC Implementation - 3 Marks
• Model & DAO Classes - 3 Marks
• UI Aesthetics - 4 Marks
• UI Component Placement - 2 Marks
• UI Responsiveness - 2 Marks

8. Conclusion

This project provides an efficient way for users to track and manage their daily expenses. With proper authentication and a clean user interface, the Smart Expense Tracker delivers a practical demonstration of core Java, JDBC, and database concepts, all integrated in a real-world application.

9. Team Members

- Anuj kumar Sharma

- Prachi Katiyar

- Kritika Singh

- Harsh

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