Introduction

The **Personal Finance Tracker** is a SQL-based mini project developed using **MySQL** and **Visual Studio Code (VS Code)** with the SQLTools extension.
The goal of this project is to design a database system that allows users to record, organize, and analyze their income and expenses efficiently.
This system provides **monthly and category-wise summaries**, helping users manage their finances, identify spending patterns, and make better budgeting decisions.
The tracker forms a foundational model for understanding real-world applications of database design and query execution using SQL.

Abstract

This project demonstrates the development of a **Personal Finance Tracker database system** using SQL.
It involves creating database tables for users, income, expenses, and categories, followed by inserting sample transaction data for testing.
SQL queries and views are used to summarize monthly income, expenses, and calculate total balance for each user.
The project implements **data retrieval, aggregation, and reporting** techniques using SQL statements such as SELECT, GROUP BY, and JOIN.
Overall, it showcases how SQL databases can efficiently manage personal financial data and automate monthly reporting.

Tools Used

1. **MySQL Community Server 8.0** – for database creation and query execution.
2. **Visual Studio Code (VS Code)** – as the development environment with SQLTools extension for running SQL files.
3. **SQL Language** – for creating schema, inserting data, and analyzing financial transactions.
4. **GitHub** – for version control and hosting the final project repository.

Steps Involved in Building the Project

1. **Database Design:**
   Created the personal_finance database with four main tables – users, categories,

income, and expenses.
Each table stores structured data related to transactions and categories.

2. **Data Insertion:**
   Inserted sample data including a user profile, income sources (salary, freelancing, interest), and expense categories (rent, groceries, utilities, etc.).

3. **Query Execution:**
   Executed SQL queries to calculate monthly income, total expenses, and net balance for each user.
   GROUP BY and DATE_FORMAT functions were used for monthly and category-wise summarization.

4. **View Creation:**
   Created SQL views (view_monthly_summary, view_category_spending, etc.) to simplify financial reporting and visualization.

5. **Testing and Verification:**
   Verified the correctness of the data and queries using the SQLTools Results panel in VS Code.

6. **GitHub Deployment:**
   Uploaded all SQL files (schema.sql, sample_data.sql, views.sql, queries.sql) and screenshots to a public GitHub repository along with this report.

Conclusion

The **Personal Finance Tracker SQL Mini Project** successfully demonstrates core database management concepts, including schema creation, data manipulation, and analytical querying.
It highlights the usefulness of SQL in building structured, query-based financial tracking systems.
The project enhances understanding of SQL commands such as CREATE, INSERT, SELECT, GROUP BY, and VIEW creation.
This mini project provides a practical foundation for beginners to learn how relational databases can support everyday applications like budgeting, income tracking, and financial analysis.