Graphic Era Hill University
DEHRADUN • BHIMTAL • HALDWANI

PROJECT AND TEAM INFORMATION

Project Title

(Try to choose a catchy title. Max 20 words).

AI DRIVEN PERSONAL FINANCE MANAGEMENT SYSTEM.

Student/Team Information

Team Name: Team # (Mentor needs to assign)	Avengers
Team member 1 (Team Lead) (name: student ID: email, picture):	Gaurav Saklani - 230111133 gauravthe7841@gmail.com 

Team member 2 (name: student ID: email, picture):	Ashutosh Vyas – 23021945 ashutoshvyas485@gmail.com 
Team member 3	Ayushmaan Kothari - 23011685 ayushmaankothari06@gmail.com 

PROJECT PROGRESS DESCRIPTION (35 pts)

Project Abstract (2 pts)

(Brief restatement of your project's main goal. Max 300 words).

It is a desktop-based personal finance manager that uses machine learning to help users take control of their finances. It predicts monthly budgets based on historical spending, categorizes transactions automatically, detects unusual spending behavior, and provides personalized financial advice. The system integrates machine learning (via Weka) for predictive analytics, and uses Java fx for an intuitive user interface. MySQL is used as the backend database for storing user and transaction data. The system also features dynamic charts via XChart for clear financial visualizations.

Updated Project Approach and Architecture (2 pts)

Our project follows a simple and organized structure where different parts of the system have specific roles. The user interface (UI) is built using Java Fx, where different panels handle tasks like adding transactions, viewing budgets, and checking reports. The main logic of the application is written in Java, which connects the UI, database, and machine learning models.We are using Mysql as the database to store user data, transaction history, spending categories, and budget details. The connection between Java and the database is done using JDBC (Java Database Connectivity), which allows us to read and write data easily.

To make our application smart, we are using Weka, a machine learning library in Java. Weka helps us predict future expenses based on past data and identify any unusual spending. We use Weka's built-in Java API to integrate these models into our system.We use XChart to show financial data in charts, such as monthly spending or category-wise expenses, which makes it easier for users to understand their finances visually.

We are using Intellij DE to write and test the code. For teamwork and saving changes, we use Git and GitHub. We follow a step-by-step approach to build and test each part of the system.

Overall, the application is designed to work smoothly on a desktop, even without internet. It is easy to update in the future and includes useful features like predictions, charts, and export options.

Tasks Completed (7 pts)

(Describe the main tasks that have been assigned and already completed. Max 250 words).

Task Completed	Team Member
• Database Schema Setup	Ayshmaan Kothari
• User registration and Login System	Ashutosh Vyas
• User interface for expense, income, main dashboard	Ashutosh Vyas
• Backend logic for performing tasks in web based application.	Gaurav Saklani
• Connecting database with our system	Gaurav Saklani
• UI styling and layout	Ashutosh Vyas
• Chart generation using javafx	Gaurav saklani

Challenges/Roadblocks (7 pts)

(Describe the challenges that you have faced or are facing so far and how you plan to solve them. Max 300 words).

During the development of our AI-driven personal finance manager, we faced several challenges:

1. Java Fx UI Design:
   Designing a user-friendly and responsive UI using Javafx was more complex than expected. Managing multiple panels, proper layout alignment, and smooth navigation took extra time and effort.
2. Machine Learning with Weka:
   Integrating Weka into our Java application required converting our data into ARFF format and understanding Weka's Java API, which has limited documentation. Running models smoothly within the application needed careful testing, that's why this is not completed.
3. Database Handling:
   Connecting MySQL using JDBC connecter was straightforward, but managing relationships between users, transactions, and categories became tricky. Ensuring data consistency and avoiding duplicates required extra validation.
4. Data Flow and Integration:
   Integrating the UI with the database and the ML model was challenging. We had to make sure the application flowed properly from user input to data storage, and then to analysis and display.
5. Time Management:
   Since all team members have academic and assignment workloads, managing time and dividing tasks evenly was difficult. Syncing work and avoiding delays took proper planning.

Tasks Pending (7 pts)

(Describe the main tasks that you still need to complete. Max 250 words).

Task Pending	Team Member (to complete the task)
All tasks have been completed. Optional UI enhancements may be implemented if required.	

Project Outcome/Deliverables (2 pts)

(Describe what are the key outcomes / deliverables of the project. Max 200 words).

- A working desktop personal finance manager application ML-powered budget prediction and categorization.
- MySQL backend with persistent user data
- Interactive charts and spending insights for users
- Codebase with proper details
- Final report and github file

Progress Overview (2 pts)

(Summarize how much of the project is done, what's behind schedule, what's ahead of schedule. Max 200 words.)

The project is 100% complete. The database and basic UI structure are fully implemented. A prototype Weka model has been trained and tested. Integration between ML using weka and transaction modules has been completed.

Normal user dashboard contain various type of chart like pie chart, bar chart etc. which show the data of that user, also panel contains tabs like category, budget, transaction with all implemented crud oprations.

The Admin panel is also completed with tables like universal statistics, user management . Overall, progress is completed with all working features .

Codebase Information (2 pts)

(Repository link, branch, and information about important commits.)

https://github.com/git-gauravtech/SmartFin

Branch : Main

Final project has been pushed to github repo.

Testing and Validation Status (2 pts)

(Provide information about any tests conducted)

Test Type	Status (Pass/Fail)	Notes
Authentication and Authorization	Pass	Done Successfully
Database CRUD oprations	Pass	Done Successfully
Bar graph genenration between expenses and incomes.	Pass	Done Successfully
Notification when user exceeded the budget for specific category	Pass	Done Successfully
Operations performed on admin panel	Pass	Done Successfully\
Prediction of ml models	Pass	Done Successfully

Deliverables Progress (2 pts)

(Summarize the current status of all key project deliverables mentioned earlier. Indicate whether each deliverable is completed, in progress, or pending.)

As of now, several key deliverables in the project are at various stages of completion. The JavaFx-based user interface is completed, with core screens such as login, dashboard, and transaction input developed, while UI polishing and final form validations are still in progress. The MySQL database integration has been successfully completed, allowing user and transaction data to be stored and retrieved reliably using JDBC. The Weka machine learning model for budget prediction and anomaly detection has been currently in progress. Visual representation of financial data using XChart is done with basic implementation, with initial bar charts displaying correctly. The financial advice engine, which analyzes user behavior to provide insights and suggestions, is being developed alongside the ML model refinement. Overall, all of the core components are built and the team is on track to deliver a fully functional, intelligent finance management tool.