Project Proposal: Personal Finance Manager

# Introduction

Effective financial management is crucial for individuals and families to optimize their saving, track expenses, and plan for the future. Therefore, there is a great need for a comprehensive tool that not only tracks expenses and incomes but also provides insight into spending habits. This proposal outlines the development of Personal Finance Manger (PFM), a Java-based application designed for facilitate users manage their personal/family finances efficiently and effectively.

# Objective

The primary objective of the PFM is to offer users a user-friendly platform to track and manage their finances (income, expenses, investments, and savings). It aims to provide a comprehensive overview of a user’s financial health, offering analytics on spending habits and assisting in budget planning.

# Features and Functionalities

1. **User Interface:** A clean and intuitive Java Swing-based interface that allow users to easily navigate through different sections of the application (dashboard, incomes/expenses, investments/savings, reports).
2. **Log in page:** In menu bar, there is a login option. A user can click the button and enter email and password to log in into their account. Only after successfully logged in, financial information in following sections is displayed.
3. **Dashboard:** Users can view their monthly incomes and expenses, total investment amount, and savings amount. There are buttons leading users to each section allowing users to view details, add new record, or view reports.
4. **Incomes/expenses section:** Users can view yearly and monthly incomes, expenses, and net income/expense. Users can also view yearly/monthly expenses based on category. Users can click the corresponding button to view transactions in a category from latest to earliest. Users can add expenses to each category as well as add incomes.
5. **Investments section:** Users can view their investment information (investment amount, expected yield) from earliest due to latest. User can also add their investment information (time, rate), and system will calculate the expected yield.
6. **Savings section:** Users can view their total savings amount and latest 4 deposits from latest to earliest. Users can also add deposits.
7. **Financial Report and Analytics:** A pie chart is used to show percentages of expense categories for current month.A curve chart is used to show net income for last 12 months. A curve chart is used to show investment amount for last 12 months. A curve chart is used to show savings amount for last 12 months.
8. **Database Integration:** Use of relational database to store user profiles as well as incomes and expenses, investments, and savings records.
9. **Multithreading:** Multiple users (say family members) can log in into the same account and view information at the same time, but, if they want to edit the information, they can only do it one by one. Also, during database operations, the adding request need to wait until the operation finished to ensure the application’s responsiveness.

# Advanced Concepts to be Used

1. **Swing and Graphics:** To develop the application’s user interface and graphical data representations.
2. **Database:** Integration with a relational database for data storage and management,
3. **Multithreading:** For improving application performance and responsiveness in handling multi-user and database operations.

# Timeline

* **Week 1:** Finalize the UI design and database schema.
* **Week 2:** Develop login page and dashboard functionalities.
* **Week 3:** Develop incomes/expenses section functionalities.
* **Week 4:** Develop investment section and savings section functionalities.
* **Week 5:** Develop report section functionalities.
* **Week 6:** Testing and debugging as well as finalized project.