**Capstone Project**

Managing personal finances can be challenging, particularly for individuals who lack financial literacy or struggle with impulse spending. For example, a young professional might find it difficult to stick to a budget, save for future goals, and avoid accumulating debt. Traditional budgeting tools often require manual input and offer limited insights, leaving users feeling overwhelmed and unsure of how to improve their financial situation. Without clear visibility into their spending habits and financial health, users may struggle to make informed decisions about their money. - Spending Patterns and Trends Backend: Create models to store transaction data (date, amount, category) and an API endpoint to retrieve spending data. Frontend: Display trends using line charts or bar graphs to show spending over time

**Core Features**

 Spending Patterns and Trends

 Income and Expense Forecasting

 Budgeting Tool

 Category Customization (Predefined & Custom)

 Collaboration and Sharing

 Expense Categorization and Tagging

 Bill Reminders and Due Dates in Callender

 Savings Goals

 Investment Tracking

 Financial Education Resources

 Data Exporting

 Currency Conversion

 Multi-User Access

 Personalized Insights and Recommendations

 Automatic Bank Synchronization

 Custom Reports and Analytics

 User Feedback Mechanism

**Workflow Overview**

**1. User Registration and Login**

- Registration

* Input: User provides name, email, and password.
* Action: Create a new user account in the database.
* Output: Redirect to login page with success message.

- Login

* Input: User enters email and password.
* Action: Validate credentials.
* Output: Redirect to dashboard upon successful login.

**2. Dashboard Overview**

- Display Dashboard

-Components:

* Current balance
* Total income (chart)
* Total expenses (chart)
* Alerts for budget limits

- Action: Load financial summaries from the database.

**3. Income and Expense Management**

- Add Income

* Input: User enters income source and amount, selects category.
* Action: Save income entry to the database.
* Output: Update dashboard with new income figures.

- Add Expenses

* Input: User enters expense details (amount, category).
* Action: Save expense entry to the database.
* Output: Update dashboard with new expense figures.

- Recurring Transactions

* Input: User sets up recurring income/expense.
* Action: Save recurrence settings in the database.
* Output: Automatically add these entries in the specified intervals.

4. Budgeting Tool

- Create Budgets

* Input: User enters category and budget amount.
* Action: Save budget to the database.
* Output: Update budget overview on dashboard.

- View Budget Overview

* Action: Retrieve budget data from the database.
* Output: Display summary of budgets, showing budgeted amounts, spent, and remaining.

- Edit/Delete Budgets

* Input: User selects a budget to edit/delete.
* Action: Modify or remove budget in the database.
* Output: Update budget overview on dashboard.

5. Forecasting Income and Expenses

- Generate Forecasts

* Action: System analyzes past income and expenses using pre-defined rules.
* Output: Predict future cash flow (monthly).

- View Forecasts

* Action: Display forecast data on dashboard with visual representation (charts).
* Output: User can see projected financial trends.

6. Track Progress

- Monthly Reports

* Action: User selects a date range for reports.
* Output: Generate and display detailed financial reports.

- Visual Insights

* Action: Create visual representations (graphs) of income and expenses.
* Output: Users view charts showing trends and performance.

- Notifications

* Action: Trigger alerts when budgets are approached/exceeded.
* Output: Display alerts on dashboard.

7. Historical Data Analysis

- Access Historical Budgets and Spending

* Action: User selects historical data period.
* Output: Retrieve and display historical budgets and expenses.

- Trends and Insights

* Action: Analyze historical data for patterns.
* Output: Display insights to help future budgeting decisions.

8. Collaboration and Sharing

- Share Budgets

* Input: User selects budget to share.
* Action: Send sharing invitation to collaborators.
* Output: Collaborators receive access to the budget.

- Comments and Suggestions

* Input: Collaborators leave feedback.
* Output: Display comments on shared budgets for user review.

9. Settings and Customization

- Profile Management

* Input: User updates personal info or password.
* Action: Save changes in the database.
* Output: Confirmation message on successful update.

- Category Customization

* Input: User adds/edits expense/income categories.
* Action: Save new categories in the database.
* Output: Updated category list on dashboard.

10. Logout

- Logout Action

* Action: Clear user session.
* Output: Redirect to login page with a confirmation message.