Smart Finance Hub

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Overview

This project aims to build a web-based financial application that helps users effectively manage their budget and track their debt repayment. Built using **Python**, **Flask**, and **SQLAlchemy** with an SQL backend, the app provides users with tools to set and monitor budgets, organize their expenses, and create a structured debt payoff plan. Key features include secure user login, a customizable budget tracker, a comprehensive debt repayment planner using the "snowball" method, and an intuitive dashboard displaying relevant financial information.

Problem to Be Solved

Many individuals struggle with managing their finances, especially when it comes to setting realistic budgets and formulating effective debt repayment strategies. High-interest debt, including credit cards and loans, can quickly spiral, leaving users with limited disposable income. Existing financial tools are often too generic and do not provide personalized solutions for budgeting and debt management, which leaves users lacking clear guidance on how to achieve financial stability.

Key Problems:

1. Difficulty tracking expenses and establishing a budget based on minimum required payments.
2. Limited awareness of the impact of debt interest on payoff timelines.
3. Lack of structured debt payoff strategies that adapt to individual user financial situations.

Target Audience

The primary target audience for this app includes individuals with multiple debts (such as credit cards, student loans, or other loans) who are seeking an efficient way to organize their finances, budget effectively, and accelerate their debt repayment. Secondary users may include financial advisors or counselors who wish to leverage the tool for guiding clients.

Benefits of the Project to Users

Simplified Budgeting: Provides users with a comprehensive budgeting tool that includes common expense categories and allows customization of additional expense items.

Organized Debt Management: Aggregates all debts in one place, providing a clear view of outstanding balances, interest rates, and minimum payments.

Effective Payoff Strategy: Uses the snowball debt repayment method, enabling users to efficiently allocate disposable income to accelerate their debt repayment.

Transparency and Forecasting: Offers a projected debt-free date based on budgeted inputs, giving users clear financial goals and milestones.

Scope of the Project

I. Core Components:

User Authentication:

- User registration and login with secure authentication (likely using Flask's built-in authentication or integrating with a third-party service like OAuth).
- Authorization to manage specific budget and debt data.

Dashboard:

- Summary of the user's budgets.
- Provides ability to edit, view or delete existing budgets
- Navbar has link to Profile Page and Weather API Page

Budget Tracker:

- Allows user to create customizable categories (e.g., rent, utilities, groceries, credit card payments).
- Ability to add sub-items under specific categories (e.g., individual credit cards under the "Credit Card" category).
- Automatic calculation of total expenses by category.

Debt Payoff Tool (This will be a future enhancement):

- This is NOT part of the capstone project but will be built after graduation on my own time.

II. Additional Features

Data Storage & Retrieval: SQL database with SQLAlchemy ORM to store and manage user data, budgets, and debt information.

Responsive Design: User interface optimized for both desktop and mobile devices.

User Notifications/Reminders: Potential future feature for reminders on payment due dates or updates on payoff progress.

Approach to Building the Project

I. Technology Stack:

- **Backend**: Python for handling requests, user authentication, and app logic.
- **Database**: SQL server (using SQLAlchemy for ORM) for managing data storage and retrieval.
- **Frontend**: Use the framework Flask for building the user interface; consider using a framework like Bootstrap for responsiveness.
- **Authentication**: Use Flask's built-in authentication, Bcrypt, for secure login.
- **API:** No available tax API's available, therefore will create a weather page API to showcase ability to use APIs.

II. Development Process:

Phase 1: Project Setup

- Set up a Flask application with a database connection.
- Configure user authentication (registration and login).

Phase 2: Build Budget Tracker

- Define budget categories and create forms for user inputs.
- Implement form validation and data storage to the SQL server.
- Create functionalities for adding custom sub-categories and aggregating expenses.

Phase 3: Dashboard and Visualization

- Design a dashboard that provides a high-level summary of user financials.
- Ensure responsive design for accessibility on various devices.

Phase 4 Testing & Debugging

- Conduct unit tests for individual components (budget tracker, debt payoff tool).
- Run integration tests to ensure seamless interaction between components.
- Perform usability testing with a small user base to refine the user experience.

Conclusion

This financial app represents a powerful, user-centered approach to personal finance management, providing individuals with an essential toolkit to budget effectively, reduce debt, and build long-term wealth. Designed with a modular structure and powered by Python, Flask, and SQLAlchemy, the app offers users a secure, intuitive platform to manage every aspect of their finances in one place.

The app's structured dashboard presents a clear snapshot of users' finance giving users both transparency and control. By offering customizable expense categories, the app adapts to individual financial situations, allowing users to track essential expenses, allocate disposable income toward debt repayment, and invest strategically. This personalized approach makes it accessible for a wide range of users, from those beginning their financial journey to those seeking advanced planning options.

As a scalable and future-proof solution, the app is designed with growth in mind. With plans to integrate enhanced features, such as real-time bank and market data, AI-driven financial insights, and tools for comprehensive diversification analysis, the app will continue to evolve to meet users' expanding financial needs. Furthermore, options for community engagement, financial coaching, and interactive features will foster an environment of support, education, and continuous improvement.

This comprehensive tool not only addresses immediate financial challenges—like debt management and budgeting—but also supports users' long-term aspirations by building a foundation for informed financial decisions and sustainable wealth. By following a phased approach, this project ensures the app remains flexible, future-ready, and relevant in an ever-changing financial landscape.