FULL STACK DEVELOPMENT
24AM733

Project Abstract

Submitted By;

Navaneeth S
AM.SC.P2AML24015
S2 M.Tech CSE AI & ML

AI-Powered Personal Finance Assistant

Abstract

Effective personal finance management is essential for financial stability and informed decision-making. The AI-Powered Personal Finance Assistant is a web-based application that leverages machine learning (ML) to help users track expenses, predict savings, and gain financial insights. The system enables users to log expenses manually or upload bank statements, which are then automatically categorized using ML algorithms. Additionally, LSTM (Long Short-Term Memory) models are utilized to forecast future savings and spending patterns based on historical financial data.

The application incorporates user authentication, a dynamic dashboard, real-time financial alerts, and budget recommendations tailored to individual spending habits. Users can also track their income, investments, and asset allocation while receiving AI-driven financial insights to optimize financial planning. The frontend is developed using HTML, CSS, and JavaScript, while the backend is powered by Python with Firebase as the database.

By integrating machine learning for expense classification and predictive analytics, this project provides a practical AI-driven solution for personal finance management, empowering users to make data-driven financial decisions with ease.

Features

Key features of the application include:
- User authentication for secure access
- A dynamic dashboard displaying real-time financial analytics
- Automated financial alerts to keep users informed
- Budget recommendations tailored to individual spending habits
- Tracking of income, investments, and asset allocation
- AI-driven financial insights for smarter financial planning

Users and Functionality

The system primarily involves the following users:

1) Registered Users (Individual Users)
The primary users who manage their personal finances using the platform.
Functionalities:
• User authentication (sign-up, login, password reset)
• Expense tracking (manual entry or bank statement upload)
• Automatic expense categorization using ML
• Budget planning and recommendations based on spending habits
• Financial forecasting (future savings and spending predictions using LSTM)
• Dynamic dashboard with insights into income, expenses, and savings
• Real-time financial alerts (e.g., overspending notifications)

2) Administrators (System Admins/Developers)
Manage system operations and ensure smooth functionality.
Functionalities:
• User management (approve, suspend, or remove accounts if needed)
• System monitoring (server health, performance tracking)
• Machine learning model updates (improving prediction accuracy)
• Security management (data privacy, access control)