Project Overview

Our **Hyper-Personalized Financial Recommendation System** is a cutting-edge solution designed to provide individualized financial guidance and recommendations using advanced AI technologies. The system tailors suggestions across various financial domains, including loans, credit cards, investments, and content, while also providing intelligent customer support through a multi-modal chatbot.

Key Components and Features

1. **Loan Recommendation System**:

   - **Objective**: Provides personalized loan options based on user financial profiles, spending behavior, and preferences.

   - **Technology**: Uses **RAG** (ChromaDB) to personalize loan suggestions and **Groq API** as the language model for decision-making.

2. **Credit Card Recommendation System**:

   - **Objective**: Offers tailored credit card suggestions based on the user's financial goals and spending patterns.

   - **Technology**: Integrates **RAG** (ChromaDB) for personalized credit card offers and uses **Groq API** for personalized decision-making.

3. **AI Chatbot**:

   - **Objective**: Provides users with a personalized finance assistant that answers queries and gives relevant suggestions.

   - **Technology**: A wrapper around **Groq** that is fine-tuned to provide finance-specific responses. It's multi-modal, meaning it can accept both text and voice inputs, and provide voice output for accessibility.

4. **Invest Now Model**:

   - **Objective**: Recommends investment options based on the user's risk profile, interests, and financial goals.

   - **Technology**: Leverages **FAISS** for fast similarity search and **DistilBERT** for analyzing user preferences and risk appetite.

5. **Knowledge Center Model**:

   - **Objective**: Curates personalized financial content (articles, videos, etc.) for users to stay informed about finance-related topics.

   - **Technology**: Uses **SERPAPI** to scrape the web for personalized content tailored to users' financial interests.

6. **Churn Prediction Scheduler & Automated Emails**:

- Objective: Predicts potential user churn and sends personalized offers to retain users.

- Technology: **APScheduler** schedules churn predictions, and **Outlook Win32** automates personalized email sending.

System Architecture Overview

The architecture is built around several key components:

1. **Recommendation Models**:

   - **Loan Recommendation System**: Uses **RAG** (ChromaDB) and **Groq** API for personalized loan suggestions.

   - **Credit Card Recommendation System**: Utilizes **RAG** (ChromaDB) and **Groq** API for tailored credit card offers.

   - **Invest Now Model**: Combines **FAISS** and **DistilBERT** to recommend personalized investment options.

   - **Knowledge Center**: Scrapes personalized financial content using **SERPAPI**.

2. **AI Components**:

   - **AI Chatbot**: A wrapper around **Groq** fine-tuned specifically for finance-related queries, offering multi-modal capabilities (text and voice).

3. **UI & Interactions**:

   - The **User Interface** serves as the main point of interaction for users, providing personalized recommendations from all models and facilitating interactions with the AI Chatbot.

4. **Churn Prediction & Retention**:

   - The **Churn Prediction Scheduler** and **Automated Email System** work behind the scenes to identify users at risk of leaving and deliver personalized retention offers.

Key Business Benefits

- **Personalization**: Deliver tailored financial solutions, increasing user satisfaction and conversion rates.

- **Improved Engagement**: Keep users actively engaged with personalized content and interactive support through the AI chatbot.

- **Retention**: Use predictive analytics to prevent churn and retain users with targeted offers.

- **Cross-Selling Opportunities**: By understanding user behavior, suggest additional financial products (loans, credit cards, investments) that align with their needs.