Hackathon Idea Submission

Theme Name : Financial Literacy for All

Team name:RSVD

Team Members:

Member 1:	Dariksha
Member 2:	Riya Jain
Member 3:	Vanshika Verma
Member 4:	Sakshi Kulkarni

Quick Links

Here is the deployed link of **FiHub**:- https://fihub.vercel.app

Here is the GitHub repository link:- https://github.com/jriyyya/FinanceHub

YouTube Video Link:- https://youtu.be/ZniI5oX7PiA

Introduction

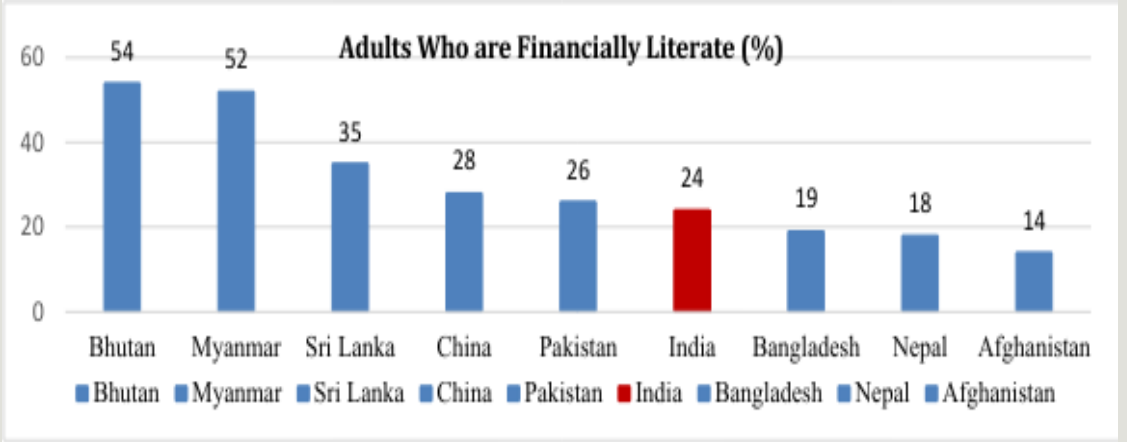
Welcome to a journey through India's financial literacy landscape. Despite a commendable overall **literacy rate** of 74%, only 27% of our population is deemed financially literate as per year 2019. This stark gap reveals deep challenges in economic understanding across the diverse socio-cultural fabric of the nation.

Financial literacy disparities are significant across states. Regions like **Goa, Chandigarh,** and **Delhi** boast financial literacy rates exceeding 50%, while states such as **Odisha, Sikkim,** and **Chhattisgarh** lag, with rates as low as 9% to 11%. Such inequalities underscore the urgency of addressing basic financial tasks.

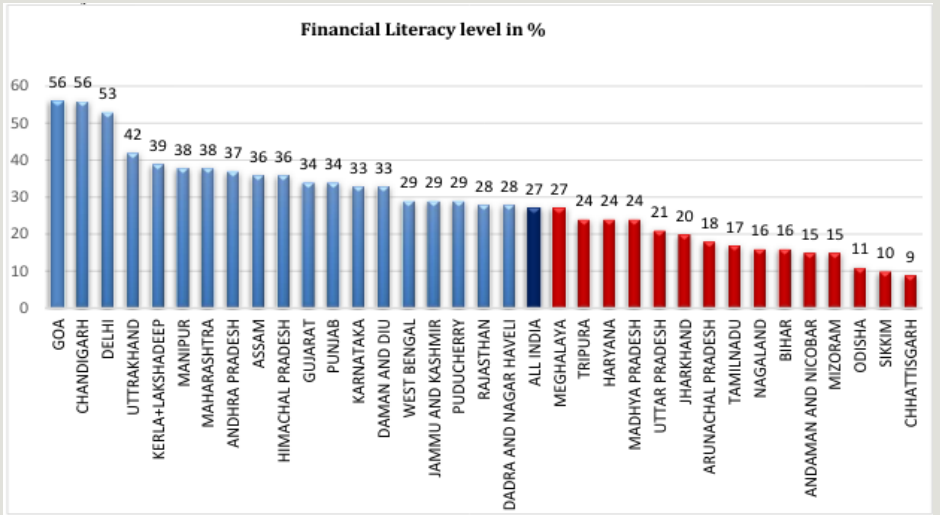
With 56% of **adults** reporting **financial anxiety** and 22% lacking **emergency funds**, the need for robust financial education is clear. The consequences are severe—**poor financial decisions** lead to **excessive debt**, **inadequate savings**, and **insufficient retirement planning**.

Join us as we delve into the complexities and opportunities that surround enhancing financial literacy in India.

References : A THEORETICAL STUDY OF FINANCIAL LITERACY IN INDIA



Source: Financial Literacy across the World: Insights from the S&P Global Fin Lit Survey



Source: Executive Summary: NCFE Financial Literacy and Inclusion Survey 2019

Market Analysis

1. Target Audience

- **Demographics and Needs:** Our primary target audience includes **young adults** and **professionals aged 18-35** in **urban** and **semi-urban** areas of India, who often struggle with financial management due to a lack of practical financial education.

- **Behavioral Insights:** This group is **tech-savvy**, heavily uses mobile devices, and prefers interactive and engaging learning experiences over traditional educational methods.

2. Analysis of Current Solutions

- **Gaps in Existing Offerings:** Most current financial literacy programs are either too **generic**, lack **interactive** elements, or do not provide ongoing **support**. Many fail to engage users continuously or adapt to individual learning paces and styles.

- **Competitive Overview:** Other apps and platforms, like financial advising services, educational courses, or gamified learning apps, are performing but missing **critical engagement** or **personalization elements**.

3. Market Needs

- **Personalization**: There is a high demand for **personalized learning** experiences that adapt to individual financial situations and learning speeds.

- **Community Support:** Users benefit from peer learning and mentorship, which are often absent in traditional financial education settings.

- **24/7 Accessibility:** Around-the-clock support is crucial for users who manage finances on their own and often have queries or need guidance after typical work hours.

Solution Overview

In light of the market analysis, it's clear that there is a significant need for a financial literacy solution that not only engages but also adapts to the unique circumstances and preferences of young adults in India. Traditional financial education tools have failed to captivate or sustain user interest, largely due to their generic content and lack of personalization and support. Recognizing these challenges ,our aim is to provide a personalized, interactive, and supportive learning environment through our solution.

Key Features:

Interactive Modules with Quizzes: Each educational module is designed to be completed in a sequential manner, culminating in a quiz/Assessments that tests the user's understanding. Successful completion earns XP points, enhancing motivation through gamification. User can give feedback by commenting and liking the modules.

Leaderboard and Mentorship: Top performers are not only recognized on our leaderboard but also play a crucial role in our community by providing mentorship to peers, fostering a supportive learning environment.

Dynamic Community Forum: A platform for users to discuss modules, share personal insights, and seek advice, enhancing the learning experience through peer interaction.

Personalized Dashboard: Users receive recommendations for new modules based on their activity and progress, coupled with visual tracking of daily streaks and rewards, making learning personalized and tracked.

AR Recommender: By pointing their phone at financial documents or related items, users can see overlaid financial insights and tailored educational content, providing an immersive learning experience.

24/7 Personalized Chatbot: Our chatbot offers round-the-clock support, answering queries and guiding users through financial concepts, by providing suitable modules ,ensuring help is always at hand.

Technical Architecture

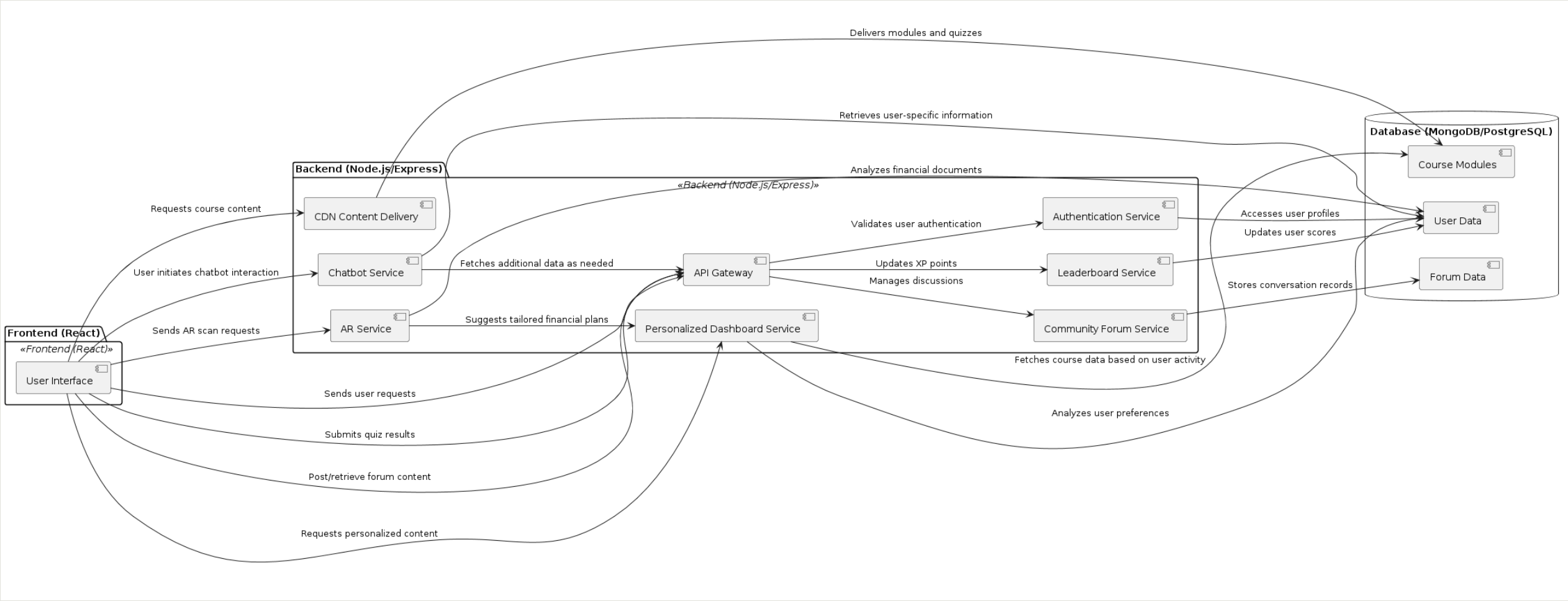


Fig1. Overall System Architecture

Methodology/Implementation

Here's a more detailed breakdown of each key feature, including the methodology and specific technologies used for development, ensuring a comprehensive understanding of how each component operates within the overall system.

1. Interactive Modules with Quizzes (Home)

User Interface (UI):

- Built with **React**, the UI captures user requests for educational content.
- ReactJS efficient handling of state ensures smooth user experiences during interactive quizzes.

CDN Content Delivery:

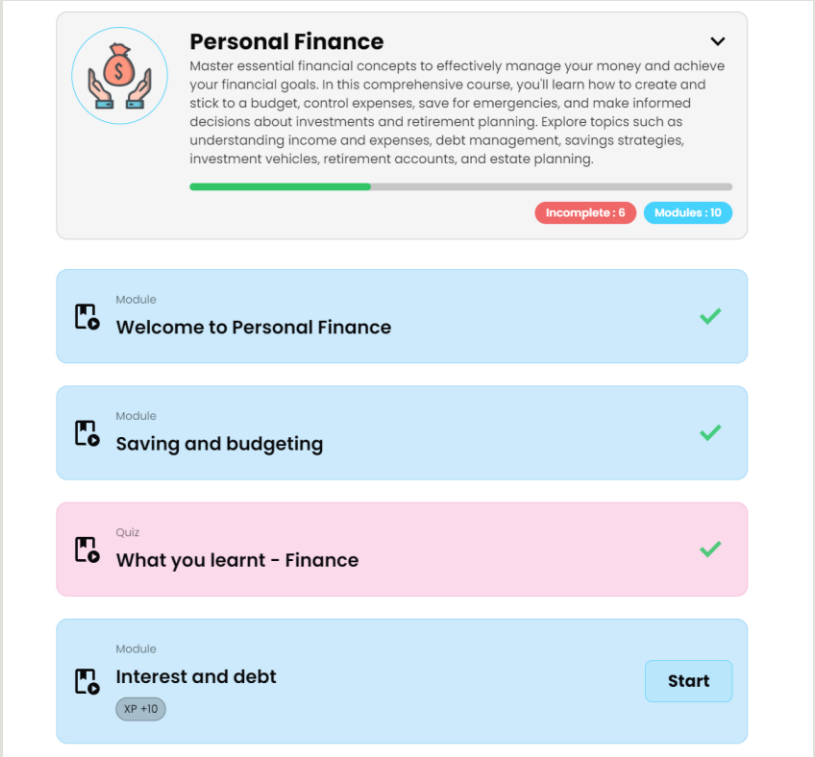
- Leveraging service **Amazon CloudFront**, this feature efficiently serves static and dynamic content, including **video modules** and **quiz materials**, directly to users, **minimizing latency** and **server load**.

API Gateway:

- Developed using **Node.js** with the **Express framework**, the **API Gateway** handles **CRUD** operations.
- It updates user progress and **gamification points** in the database after quiz completion.

Database:

- Utilizes **MongoDB** to store user data, including progress and **XP points**, ensuring quick retrieval and update capabilities.



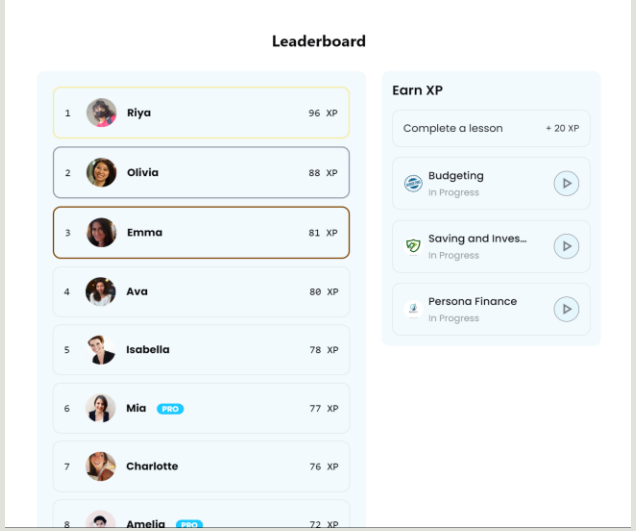
2. Leaderboard and Mentorship(Leaderboard)

Leaderboard Service:
This component regularly fetches and updates XP points and rankings from the database.

- It's implemented with **server-side** technologies (**Node.js/Express**), and can use real-time data processing framework **Socket.IO** to **dynamically** update leaderboards without needing a page refresh.

Database Integration:

- User performance data stored in a NoSQL database is accessed to calculate and update rankings.



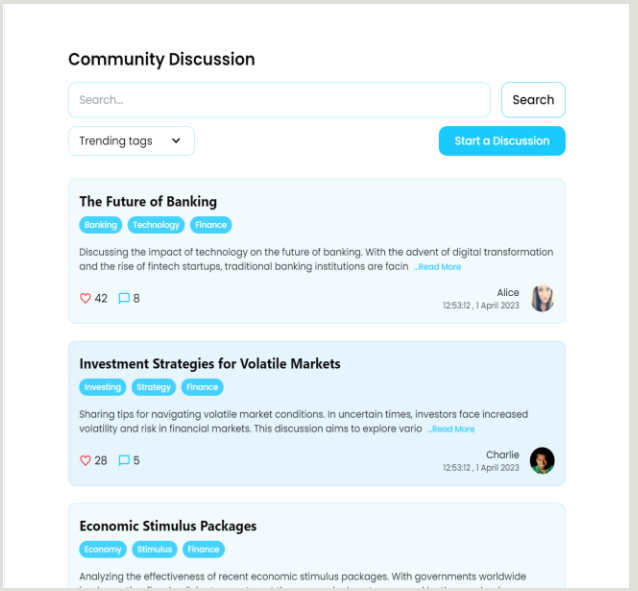
3. Dynamic Community Forum(Community Discussion)

Community Forum Service:

- Handles the creation, retrieval, and management of forum threads and posts.
- This service is built using **Node.js** and can integrate with real-time communication with **WebSocket** for live interaction.

Database:

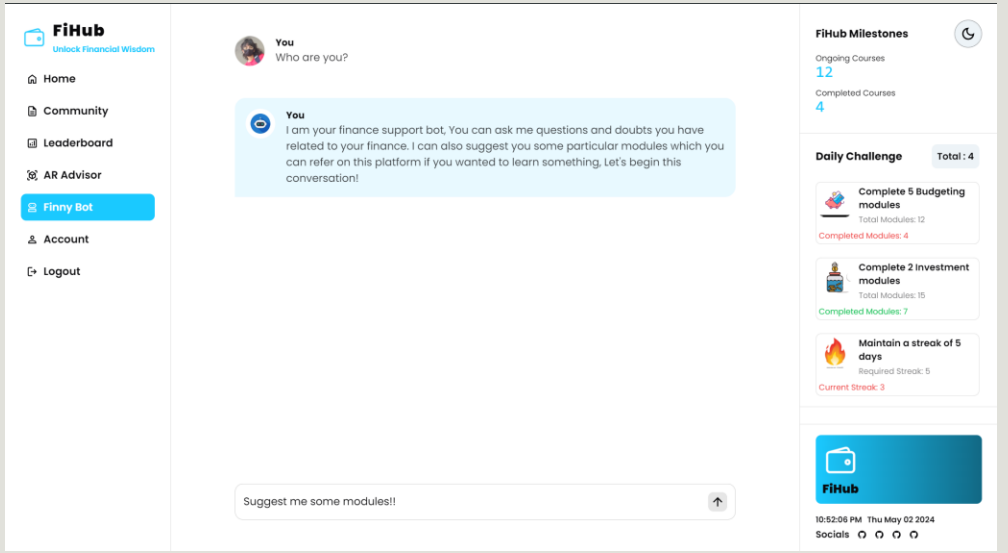
- Forum data is managed in **MongoDB**, which allows flexible document schemas for storing varied post and thread data.



6. 24/7 Personalized Chatbot (Finny Bot)

Chatbot Service:

- Implemented using AI framework **Microsoft Bot Framework**, this service interacts with users to provide navigation help and course recommendations.
- It uses **NLP** to understand and respond to user queries effectively.
- **Integration:**
- The chatbot pulls user-specific information from the database via the API Gateway to provide **personalized responses**, enhancing user engagement and satisfaction.



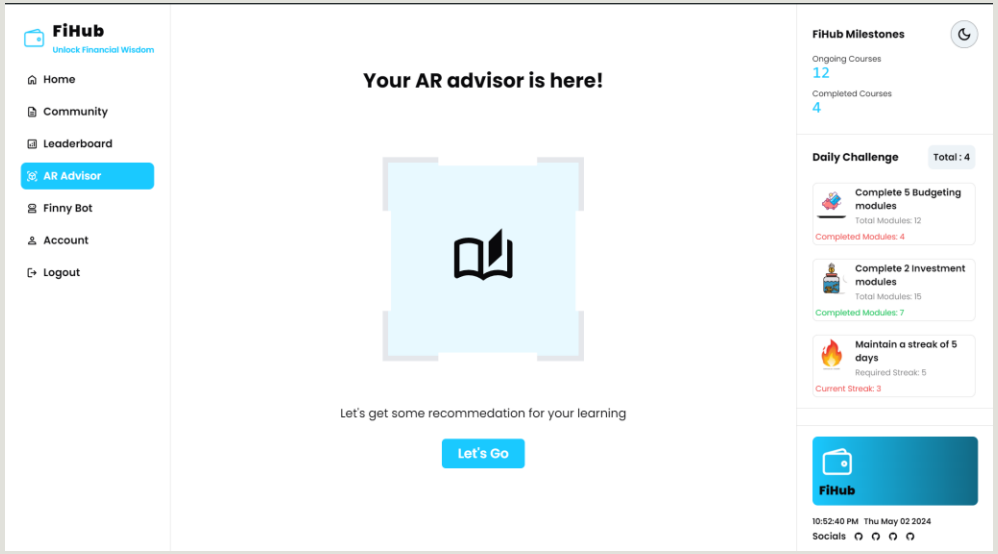
5. AR Recommender(AR Advice)

AR Service:

- This service processes AR scan requests using mobile device cameras.
- It can be developed using **ARKit for iOS and ARCore for Android**, integrating with native or **React Native** applications to create seamless AR experiences.

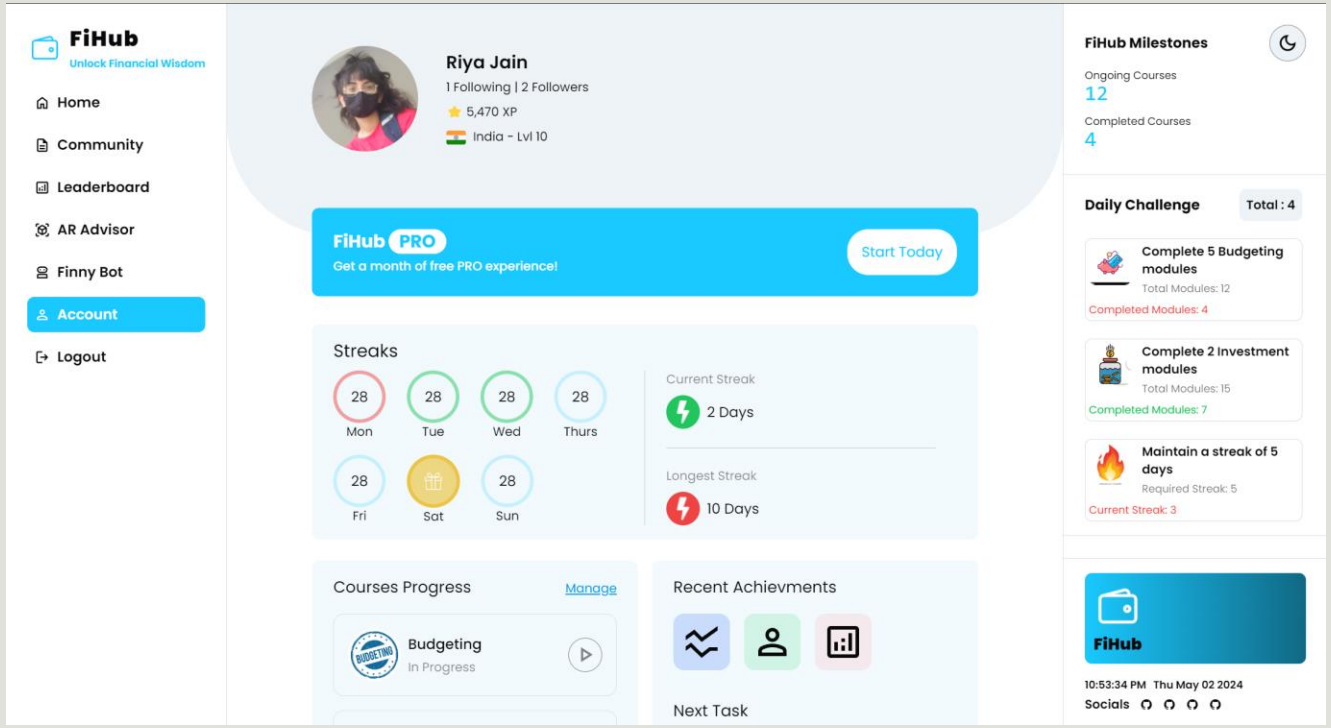
Data Analysis:

- The AR service analyzes scanned financial documents, extracts pertinent data using **OCR** technologies (e.g., Tesseract for text recognition), and sends this data to the Dashboard Service for further financial advice tailoring.

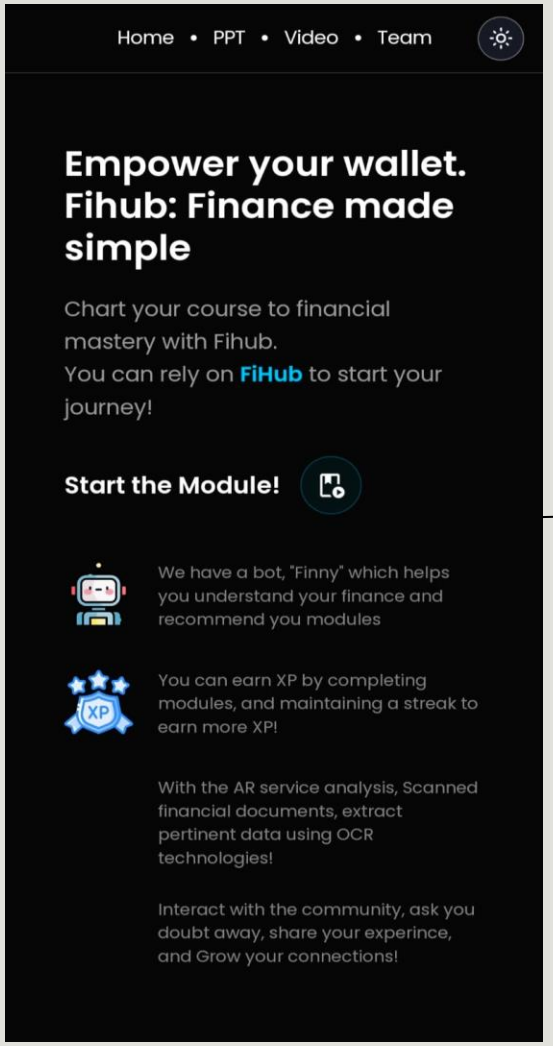


6. Personalized Dashboard(Account)

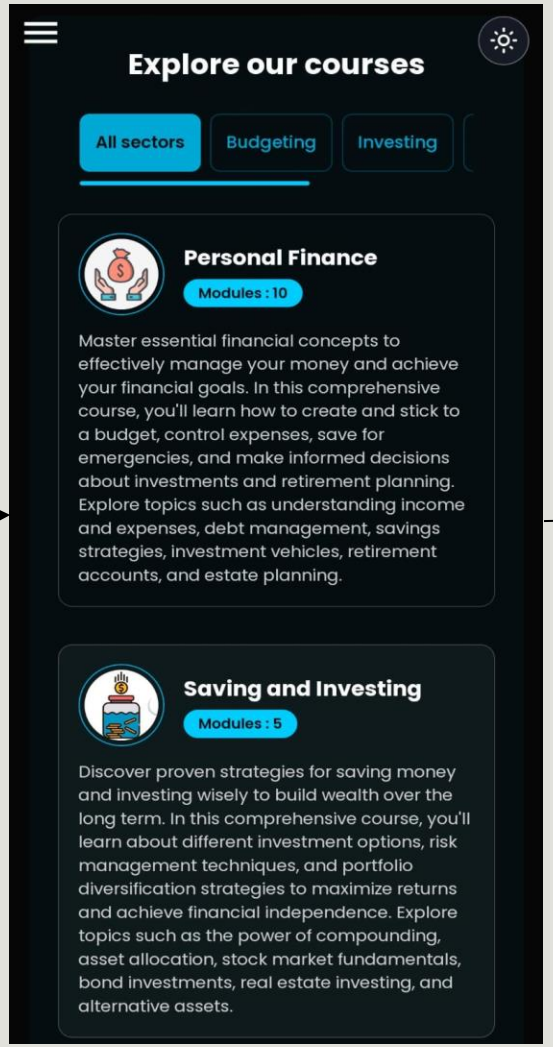
- **Dashboard Service:**
  - Uses machine learning algorithms to analyze user activity and preferences stored in the database.
  - Technologies like **TensorFlow** can be employed to implement recommendation systems that predict user preferences for new modules.
- **Data Handling:**
  - The service fetches user activity data from MongoDB and processes it to tailor module recommendations.



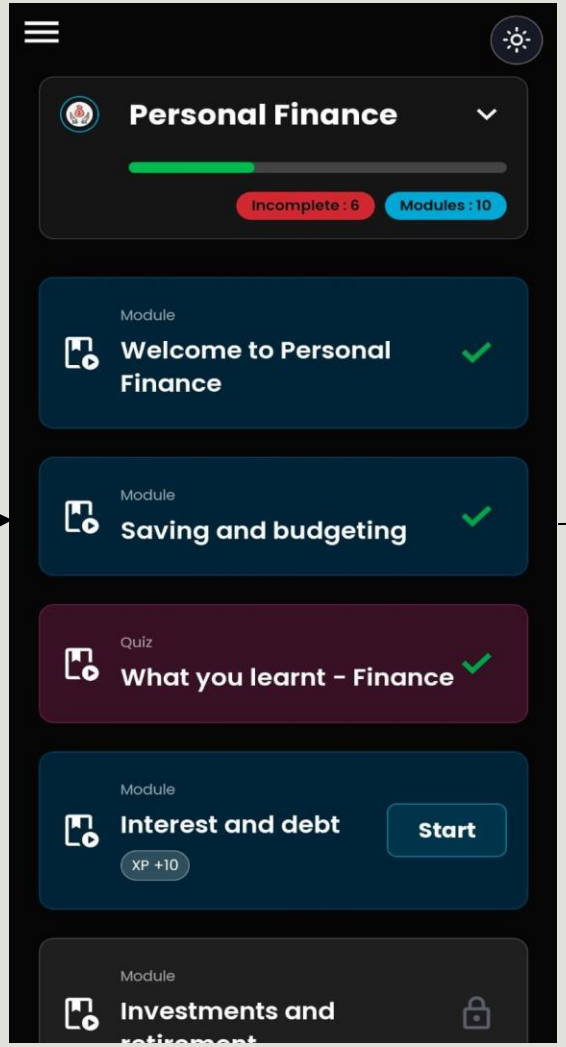
UI-Flow



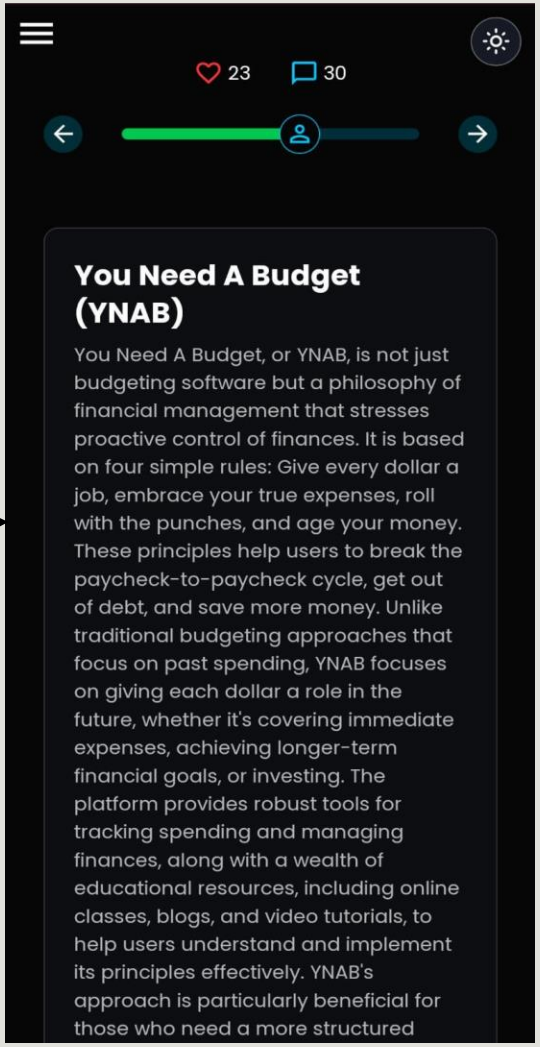
Landing Page



Courses Page



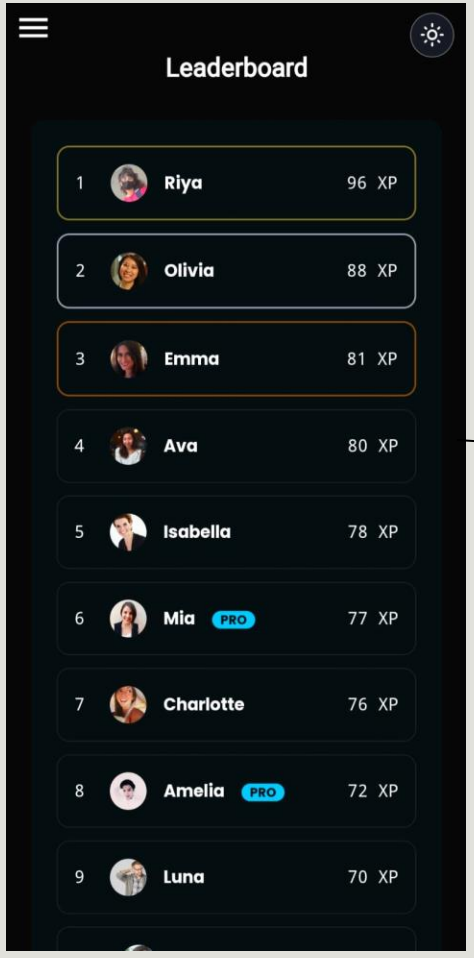
Course Page



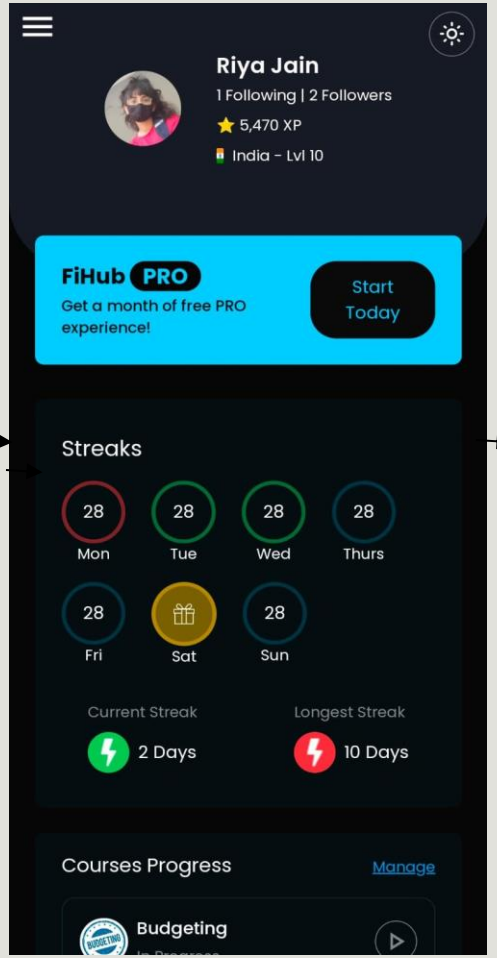
Course Progress Page

Note:This is the Dark mode of our website,It can be change to light mode.

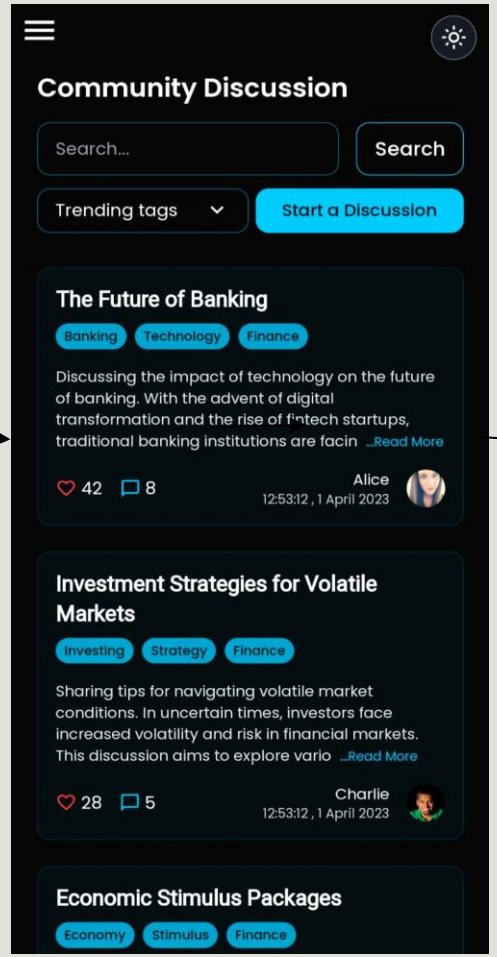
UI-Flow



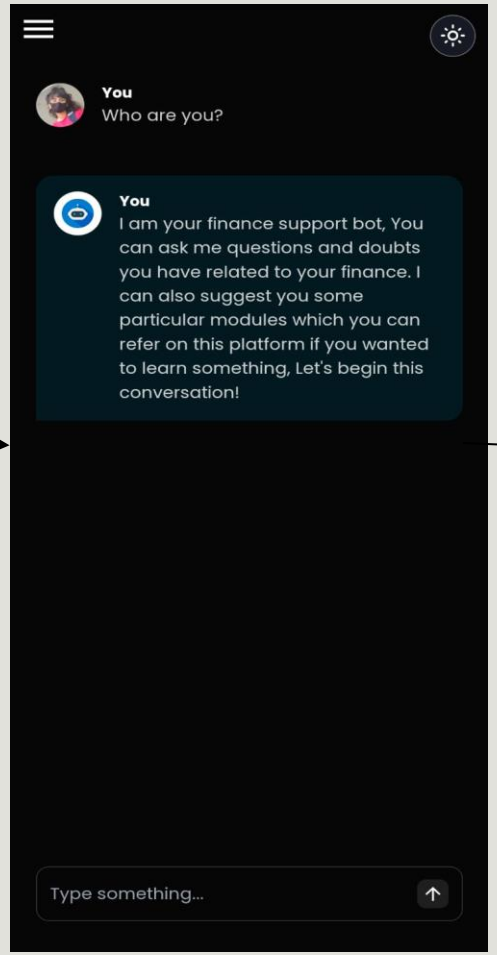
Leaderboard Page



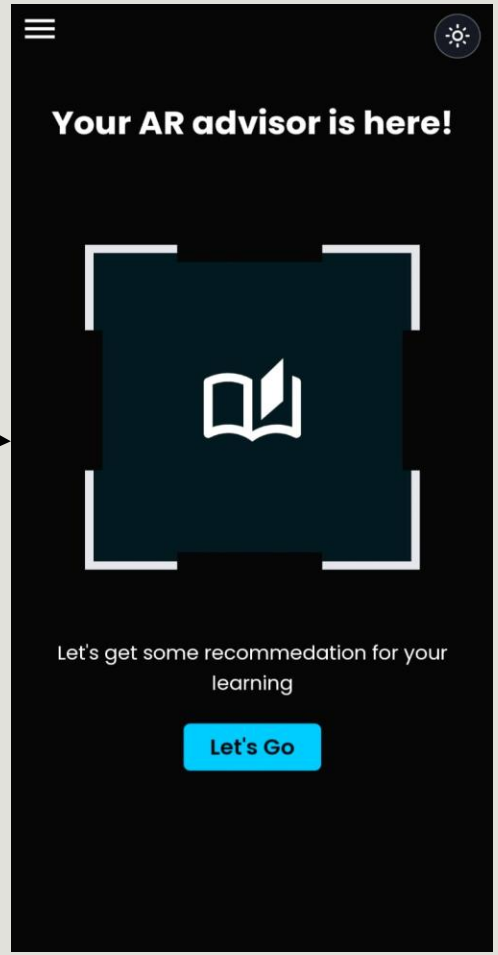
Dashboard Page



Community Page



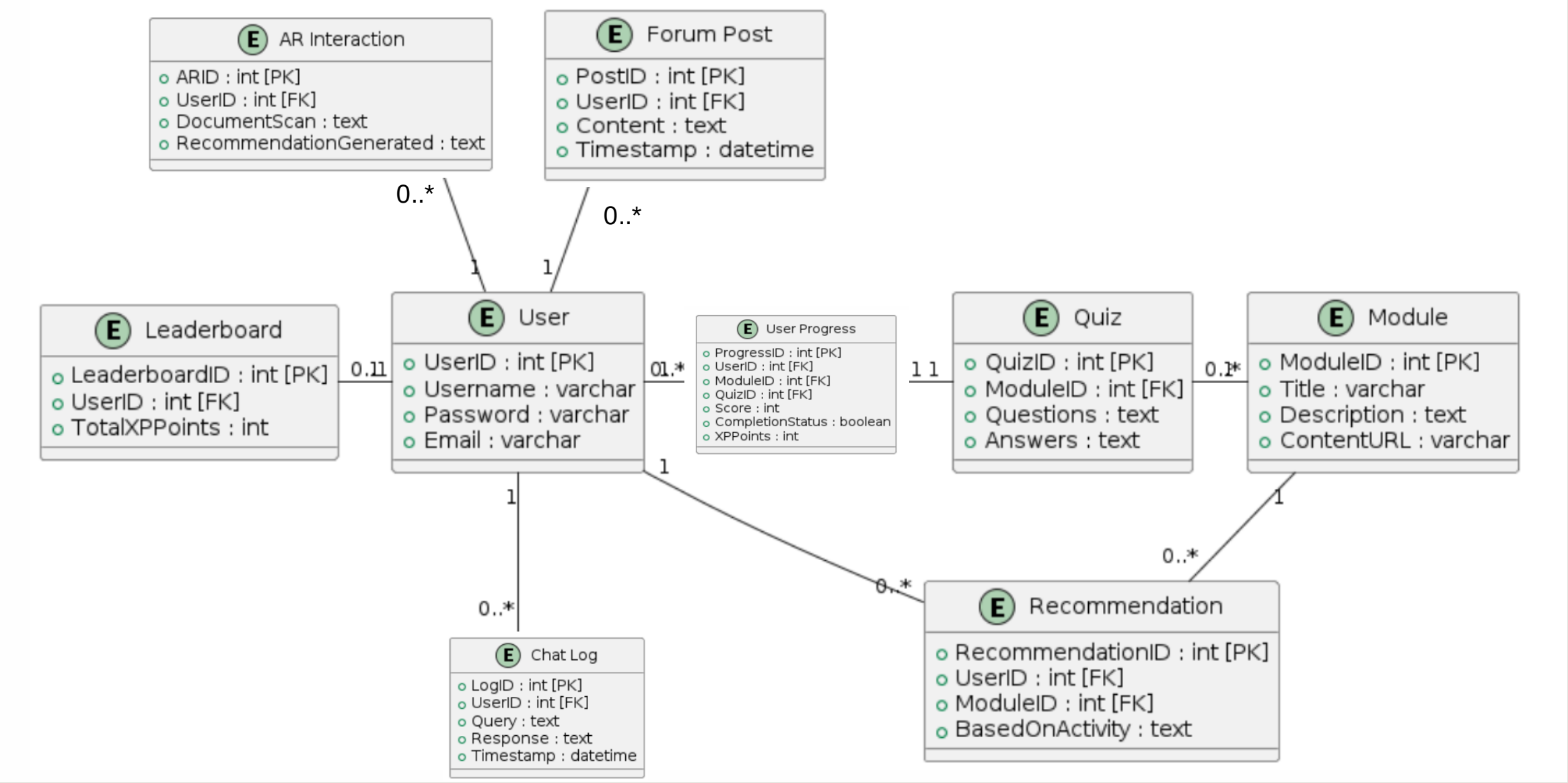
Chatbot



AR Advisor

Note:This is the Dark mode of our website,It can be change to light mode.

ER-Diagram


AR Interaction
ARID : int [PK]
UserID : int [FK]
DocumentScan : text
RecommendationGenerated : text
Forum Post
PostID : int [PK]
UserID : int [FK]
Content : text
Timestamp : datetime
0..*
1
1
0..*
Leaderboard
LeaderboardID : int [PK]
UserID : int [FK]
TotalXPPoints : int
0..1
1
User
UserID : int [PK]
Username : varchar
Password : varchar
Email : varchar
0..*
User Progress
ProgressID : int [PK]
UserID : int [FK]
ModuleID : int [FK]
QuizID : int [FK]
Score : int
CompletionStatus : boolean
XPPoints : int
1
1
Quiz
QuizID : int [PK]
ModuleID : int [FK]
Questions : text
Answers : text
0..*
1
Module
ModuleID : int [PK]
Title : varchar
Description : text
ContentURL : varchar
1
0..*
1
0..*
Chat Log
LogID : int [PK]
UserID : int [FK]
Query : text
Response : text
Timestamp : datetime
0..*
Recommendation
RecommendationID : int [PK]
UserID : int [FK]
ModuleID : int [FK]
BasedOnActivity : text

🎯 Prototype

Based on the above discussion ,we have developed a potential solution prototype(Frontend) ,
Here is the deployed link of **FiHub**:-https://fihub.vercel.app/
Here is the GitHub repository link:-https://github.com/jriyyya/FinanceHub

🎯 Future Scope

Expansion to Different Sectors:

- Beyond personal finance, this technology can be expanded to small businesses, helping owners understand financial statements, tax documents, and more in real-time.
- Educational institutions could use this technology to teach financial literacy in a more interactive way.

Advanced Features Development:

- Incorporate more advanced AI and machine learning algorithms to provide predictive financial advice and deeper insights based on spending habits and financial trends.
- Develop features that allow for virtual financial consultations within the AR environment.

Global Financial Inclusion:

- Adapt the technology for use in developing countries where financial literacy rates are low and access to financial advice is limited.
- Support multiple languages and regional financial systems to increase accessibility.
- Integration with Wearable Technology: Extend AR features to wearable technologies like smart glasses, allowing for more seamless interaction and constant access to financial insights.

🎯 Impact

Enhanced Financial Literacy:
Makes understanding complex financial information more accessible to a broader audience, including those without a formal financial education.
Provides real-time, actionable insights that can help users make informed financial decisions promptly.
Increased Engagement:
By using interactive AR overlays, users are likely to engage more with their financial data, leading to better financial habits and increased awareness of their financial health.
Personalized Financial Advice:
Tailored financial insights based on individual spending patterns and financial goals can help users achieve their financial objectives more effectively.
Reduction in Financial Anxiety:
Simplifies the process of managing finances, which can reduce anxiety and stress associated with financial planning and management.

🎯 Novelty

Real-time Data Interaction:
Unlike traditional financial apps that display static data, the **AR recommender** offers a dynamic interface where users interact with their financial information in real-time through their physical environment.
Contextual and Situational Awareness:
The ability to scan real-world documents and immediately overlay relevant financial advice and insights directly onto them is a novel approach that bridges the gap between digital information and real-world contexts.
User-Centric Design:
Focuses on the user's immediate financial environment and personalizes the experience, making it unique among financial tools which often take a more generic approach.

Thank You