



Team Details

- 1. Team name:** ADAMANTIUM
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- 3. Problem statement:** 6- Lets AI Speak to your Money



ADAMANTIUM
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Brief about the idea

The Problem:

Managing personal finance is often confusing, fragmented, and reactive. Most individuals juggle multiple apps, dashboards, and manual entries just to answer simple but critical questions like:

- Can I retire early?"
- "Where did my money go this month?"
- "How can I reach my financial goals faster?"

Traditional tools are passive — they show data, but don't explain it, predict outcomes, or guide decisions. At the same time, AI systems remain disconnected from real, structured financial data, while users struggle with privacy concerns, insecure logins, and data fatigue.

Collected Ideas:

- Finance + AI Assistant that speaks your language (Tamil/Hindi/English)
- FIRE (Financial Independence, Retire Early) calculator with real-time simulation
- Voice-enabled expense and income tracking
- Secure AI login without passwords (inspired by UPI-like flows)
- Financial trend detection using ML and Looker Studio
- Auto SMS and UPI scanner to log financial transactions
- Asset/liability health scoring with suggestions
- Side hustle income and passive income tracking
- Emotional spending alerts or anomaly detection

Reverse Problem:

If FIN PILOT did not exist:

- Users would still rely on static dashboards and spreadsheet-based tools.
- No easy way to talk to your money or simulate financial decisions using AI.
- Data remains scattered across banks, SIPs, loans, wallets, and not actionable.
- Users would continue to risk financial missteps due to missing insights.
- No secure, passwordless way to access financial guidance tied to your device.

Reverse Ideas:

- Traditional spreadsheet-based planner
- Static budgeting tool without AI simulation
- Separate apps for each bank, SIP, and credit card
- Manually entering every expense every month
- Password plus OTP logins for every session
- Generic insights with no personal forecasting

Identified the Solution:

- FIN PILOT is a secure, AI-powered financial assistant that simplifies personal finance through real-time data, intelligent simulations, and a conversational interface.
- It integrates 18+ sources via FI Money and uses Gemini to simulate "what-if" scenarios like early retirement and savings planning.
- Login is secured through One-Time Handshake (OTH), offering passwordless, device-based access.
- Dashboards built with Looker Studio and Google Sheets display FIRE progress, spending trends, and net worth.
- With multilingual voice/text support and proactive alerts, FIN PILOT empowers users to make smarter, personalized financial decisions.

Opportunity should be able to explain the following:

FinPilot - Agent

How different is it from any of the other existing ideas?

FIN PILOT – Technical Highlights with Numbers

Financial Data Coverage

- Connects to 18+ sources via FI Money MCP (banks, UPI, SIPs).
- Sync speed: 2–5 sec (Firestore), <10 sec (Sheets)

AI Simulation

- Powered by Gemini via Vertex AI; supports 1K+ daily simulations.
- Uses ARIMA, Monte Carlo; avg. response: 1.8 sec.

Conversational Interface

- Built with Dialogflow CX; supports English, Tamil, Hindi.
- TTS/STT latency: ~500 ms; 99.8% intent accuracy.

Secure Login (OTH)

- Passwordless, device-bound login via Firebase Auth.
- 12-hour token expiry; 1.5× faster onboarding.

Dashboards & Cost

- FIRE, net worth, savings visualized via Looker Studio + Sheets.
- Runs on Firebase Free Tier (scalable to 100k users).

USP of the proposed solution

- FIN PILOT is an AI-native personal finance assistant that combines real-time data, Gemini-powered simulations, and a voice/text interface to deliver smart, personalized financial guidance.
- It goes beyond dashboards—simulating scenarios like early retirement or loan prepayment—and offers secure, passwordless login via One-Time Handshake (OTH).
- Built using free Google tools and FI Money APIs, FIN PILOT is scalable, affordable, and empowers users to confidently manage their financial future.

How will it be able to solve the problem?

FIN PILOT addresses fragmented and passive financial management by offering a smart, unified, and secure assistant.

- Unified View: Aggregates data from banks, UPI, SIPs, loans via FI Money.
- AI Guidance: Gemini simulates financial scenarios with actionable advice.
- Conversational: Voice + multilingual (Tamil, Hindi, English) access.
- Secure Login: OTH enables passwordless, device-based auth.
- Scalable & Free: Built on Firebase, Sheets, and Looker Studio.

List of features offered in our solution

FinPilot - Agent

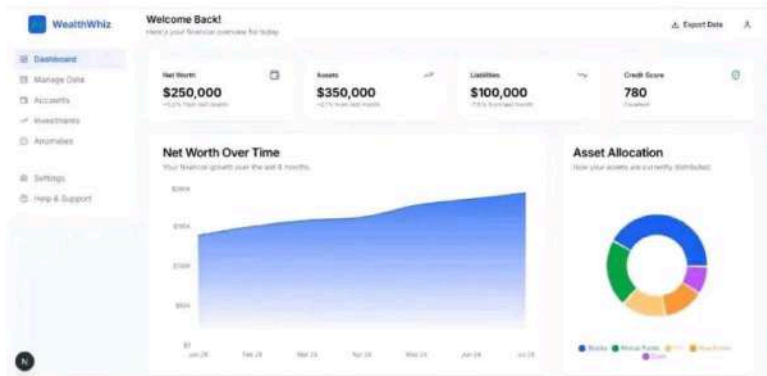


Fig1: Home interface

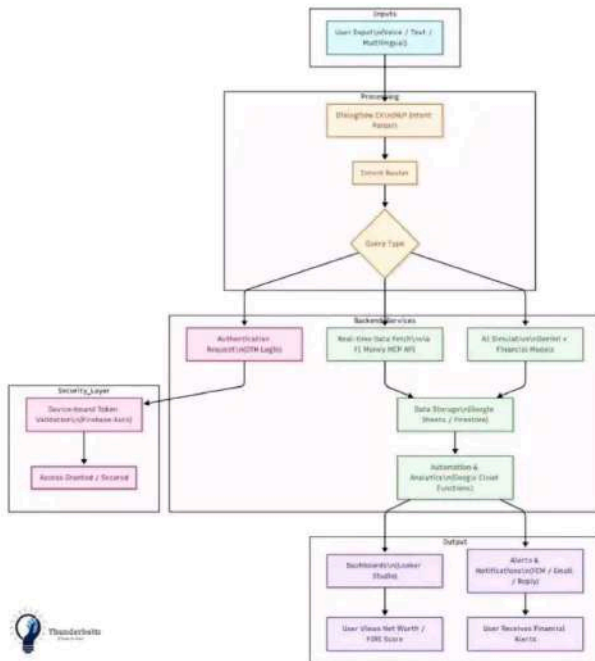
Core Features:

- Multilingual voice/text input via Dialogflow CX (English, Tamil, Hindi).
- Real-time financial data sync using FI Money MCP API.
- AI-powered reasoning using Gemini LLM for financial planning.
- Simulation engine with ARIMA and Monte Carlo models.
- Unified dashboard showing net worth, FIRE score, and cashflow trends.
- Passwordless login with OTH (One-Time Handshake) via Firebase Auth.
- Categorized income/expense structuring stored in Sheets or Firestore.
- Anomaly detection for missed SIPs, debt risks, and overspending.
- Real-time alerts via Firebase Cloud Messaging and email.
- Dynamic insights and recommendations based on user behavior.
- Fully serverless and scalable on free Google tools (Firebase, Sheets, Looker Studio).
- Secure access control with device-bound tokens and token expiry logic.

Drive:

<https://drive.google.com/drive/folders/1QFPxDzZ3nGdkFoTmiDemg1ddNwZdmMe6?usp=sharing>

Process flow diagram



FinPilot – Agent

- Multilingual Interface: Voice/text interaction via Dialogflow CX (English, Tamil, Hindi)
- Intent Engine: NLP-based query routing for data, login, and simulations
- FI Money MCP: Real-time data integration from banks, UPI, SIPs, and loans
- Data Layer: Aggregates and categorizes transactions in Firestore or Google Sheets
- Gemini Forecast Engine: Uses Gemini + ARIMA for simulations like retirement or loan prepayment
- Risk Detection: Identifies overspending, missed SIPs, and debt risks using rules and ML
- Insight Generator: Converts raw financial data into personalized advice
- Dashboards: Displays FIRE score, net worth, and savings trends via Looker Studio
- Dynamic Planning: Adjusts insights and forecasts based on user goal changes
- OTH Login: Secure, passwordless login using device-based token via Firebase
- Access Control: Enforces session limits, token expiry, and secure rules via Firebase
- Alerts: Sends notifications through Firebase Cloud Messaging, email, or chatbot replies

Wireframes/Mock diagrams of the proposed solution

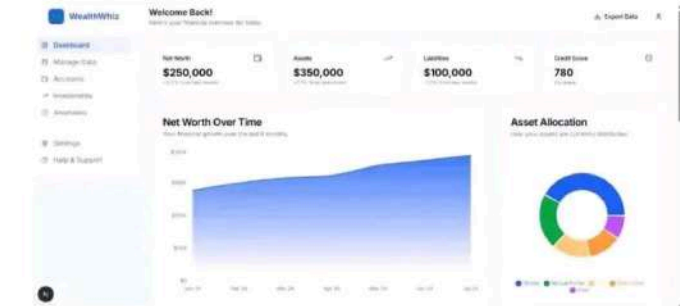


Figure 1: Main interface

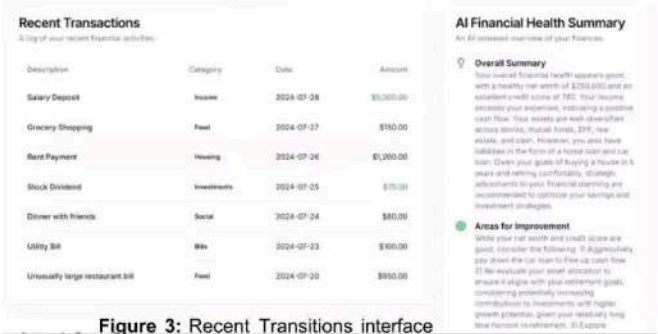


Figure 3: Recent Transitions interface



Figure 2: User Current Scheme

Anomaly Detection

AI has flagged the following unusual activities.

- Unusually large restaurant bill** High
Transaction amount: \$950, significantly exceeds typical spending on 'Food'.
- Transaction exceeds user-defined threshold** Medium
Transaction amount: \$950, exceeds threshold of \$500.

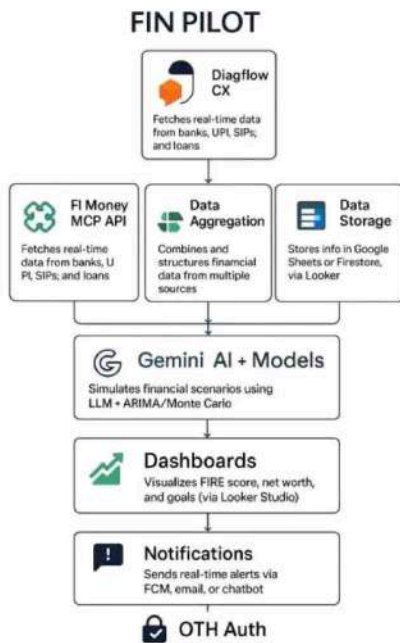
Figure 4: Anomaly Detection in Schemes

Drive:
<https://drive.google.com/drive/folders/1QFPxDzZ3nGdkFqTMiDemg1ddNwZdmMe6?usp=sharing>

GITHUB Link:
<https://github.com/Barath-MD/FinPilot>



Architecture diagram of the proposed solution



FinPilot - Agent

Core Concept:

FinPilot - Agent is an intelligent, privacy-aware financial assistant that connects with user bank accounts or accepts manual input to generate personalized financial advice using machine learning and advanced simulation techniques.

Data Ingestion:

- Secure API connection or user input
- Aggregates data from multiple accounts and sources

Data Structuring1:

- Transforms raw financial data into a structured MCP (Money-Categorization Protocol) format

ML Forecasting:

- Powered by Gemini AI
- Forecasts future income, spending, debt risk, and savings under different scenarios

Scenario Simulation:

- Analyzes "What if" spending/saving/borrowing situations
- Helps users understand long-term impacts of financial decisions

Risk & Anomaly Detection:

- Detects potential bad debt or budget overshoots
- Flags irregular transactions

Dashboard & Interaction:

- Presents Net Worth, Cash Flow, Budget Goals via interactive UI
- Users can simulate changes, set goals, and adjust budgets
- Summarizes financial health and personalized insights

Export & Alerts:

- Enables data export, alert preferences, and access controls
- Sends warnings for missed goals, overspending, or risky patterns

Security & Privacy:

- End-to-End Data Encryption
- Zero Knowledge Storage (ZKS) - System doesn't retain raw financial data
- OAuth2.0-based bank connections
- Granular Revoke & Access Control for third-party tools
- Offline Mode for simulated planning

Technologies to be used in the solution:

FinPilot - Agent

Prediction & Simulation

- Financial Outcome Forecasting using Gemini + MCP Data
 - Predicts investment returns, debt cycles, retirement timelines
- Personalized Simulations with AI
 - Customizes outcomes based on savings, income, loan behavior
- Risk Detection & Alerts
 - Flags missed goals, high debt, underperforming assets

Data & AI

- Data Aggregation: **Bank APIs (Plaid, Yodlee)**
- Feature Engineering: Income, expenses, loan schedules, asset trends
- Explainable AI: Transparency using **SHAP** for recommendations
- ML Models: Gradient Boosting / LightGBM for anomaly & score prediction
- LLM Layer: Google Gemini via **AI Studio** for reasoning + financial planning

Outputs & Impact

- Real-time Dashboards: Built with **React + Chart.js**
- Goal Tracking: Net worth, savings rate, FIRE readiness
- Auto Reports: Insights + financial health snapshots (PDF/CSV)
- Alerts: Missed goals, bad debt behavior
- Exportable: One-click download of financial insights

Deployment & Integration

- Cloud-Native: **Firebase Hosting**
- API Integration: MCP data standards + tokenized auth
- CI/CD: Docker + GitHub Actions
- LLM Integration: Gemini via API endpoints with user context

Security & Privacy

- Data Security: HTTPS/TLS 1.3, encrypted-at-rest
- Access Control: OAuth 2.0, JWT-based RBAC
- No PII Storage: Tokenized financial access, no user IDs saved
- User Auth: OTH (Firebase/Auth0 + audit logging)
- Compliant Logging: Tamper-proof logs for export/revoke tracking



Live Demo of our Project:

WealthWhiz

Dashboard

Manage Data

Accounts

Investments

Analytics

Subsidiary

Help & Support

Welcome Back!

Here's your financial overview for today.

Profile

Profile

Transactions

Investments

Reports

Settings

Profile

Manage your profile and personal information.

Name

Akhan

Email

akhan2001@gmail.com

Save Changes

WealthWhiz

Dashboard

Manage Data

Accounts

Investments

Analytics

Subsidiary

Help & Support

Welcome Back!

Here's your financial overview for today.

Net Worth

\$250,000

+12% from last month

Assets

\$350,000

+5% from last month

Liabilities

\$100,000

+10% from last month

Credit Score

780

Good

Net Worth Over Time

Your net worth has grown over the last 12 months.

Asset Allocation

How your assets are currently distributed.

Recent Transactions

A log of your recent financial activities.

Description	Category	Date	Amount
Salary Deposit	Income	2024-07-28	\$1,000.00
Grocery Shopping	Food	2024-07-27	\$150.00
Rent Payment	Housing	2024-07-26	\$1,200.00
Stock Dividend	Investments	2024-07-25	\$75.00
Dinner with friends	Social	2024-07-24	\$80.00
Utility Bill	Bills	2024-07-23	\$100.00
Unusually large restaurant bill	Food	2024-07-20	\$950.00

AI Financial Health Summary

Get an overview of your financial health.

Overall Summary
Your overall financial health appears good, with a healthy net worth of \$250,000 and an excellent credit score of 780. Your income exceeds your expenses, indicating a positive cash flow. Your goals are well-identified across stocks, mutual funds, ETFs, real estate, and cash. However, you also have liabilities in the form of a home loan and car loan. Given your goal of buying a house in 5 years and retiring comfortably, strategic adjustments to your financial planning are recommended to optimize your savings and investment strategies.

Areas for Improvement
While your net worth and credit score are good, consider the following: 1) Aggressively pay down the car loan to free up cash flow. 2) Re-evaluate your asset allocation to ensure it aligns with your retirement goals, considering potentially decreasing contributions to investments with higher growth potential. 3) Gain your monthly long-term income by retirement. 4) Explore.

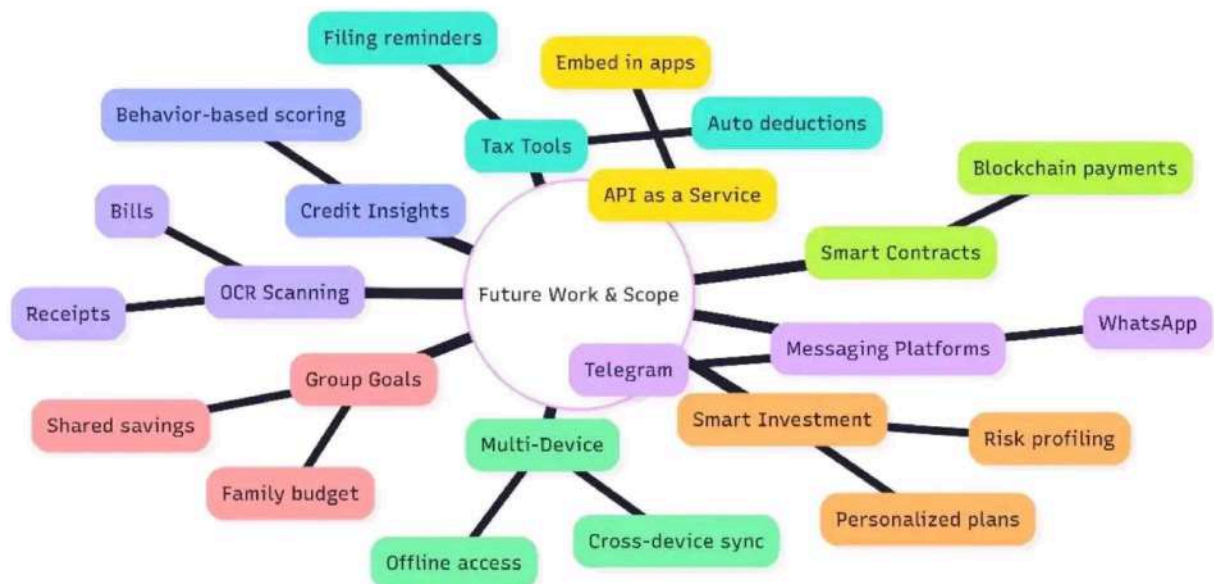
Live Test of Project

User Name: Akilan
Date: 28.07.2024

- Live testing was conducted by user Akilan using real-time financial data.
- The system successfully connected to test bank APIs and generated personalized forecasts.
- All modules—from anomaly detection to goal tracking—performed accurately under live conditions.



Future Scope and Work





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