

AI-Powered Financial Advisor System

A Comprehensive Solution for Financial Planning and Investment Management

Presented by: Your Team Name

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Introduction & Overview

◎ Purpose

To engineer a robust, AI-driven financial advisor system specifically designed for automated portfolio creation, dynamic risk profiling, and advanced investment simulations.

The system aims to democratize financial advice by providing personalized, data-backed insights comparable to human wealth managers.

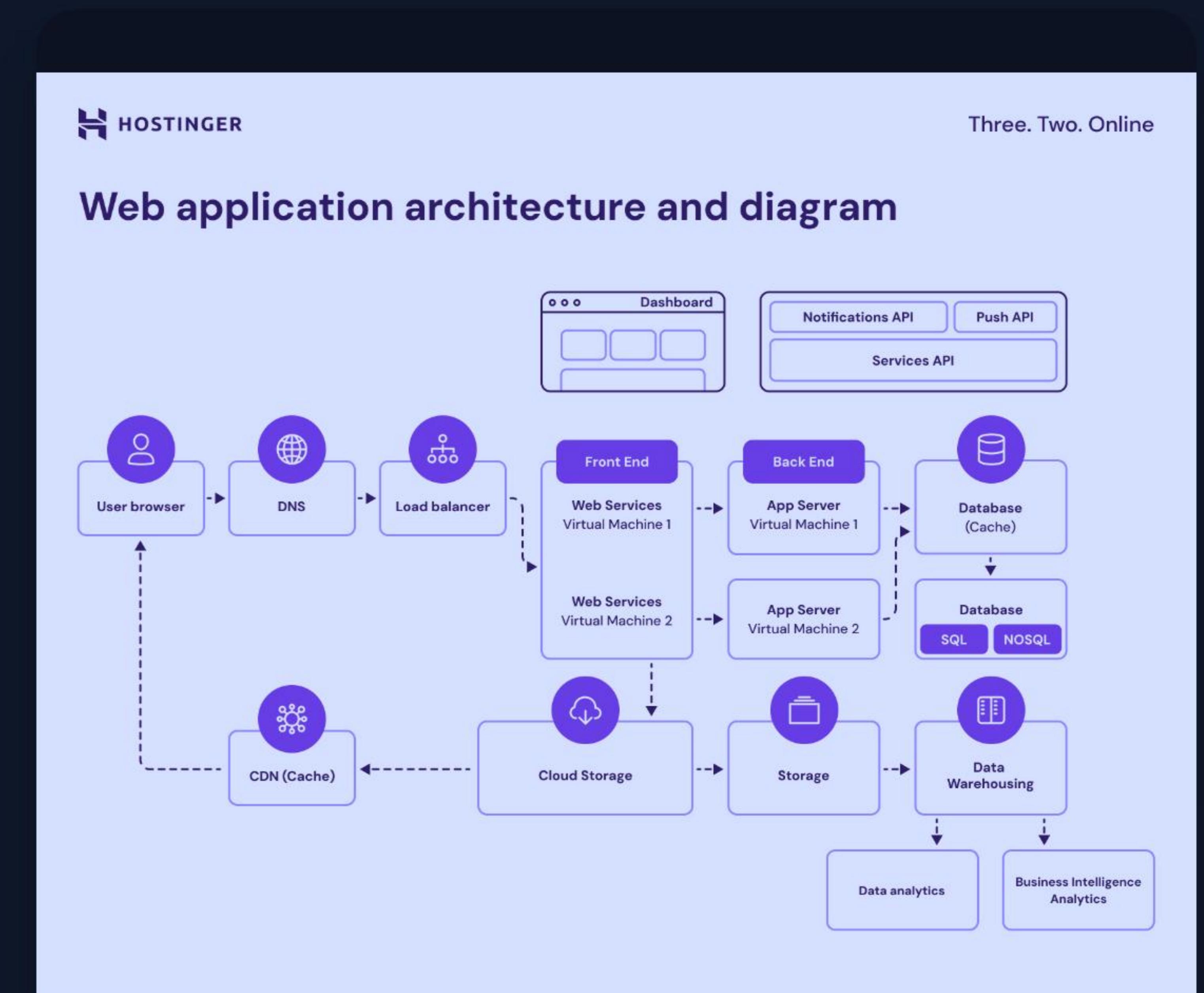
★ Key Features

- Portfolio recommendations tailored to individual risk profiles.
- Real-time Monte Carlo simulations for investment scenarios.
- SEBI-compliant guidance via a RAG subsystem.
- Interactive Chatbot interface for seamless user engagement.

System Architecture

The system is built on a modular architecture to ensure scalability and performance:

- **Frontend:** Streamlit UI for an intuitive user experience.
- **Backend:** FastAPI orchestration layer handling API requests.
- **Core Intelligence:** Azure GPT model managing tool execution.
- **Memory Layer:** Redis and SQLite for state management.
- **Tooling:** Specialized engines for Risk, Portfolio, and RAG.



Technology Stack



Frontend

Streamlit

Interactive Web Interface



Backend

FastAPI

High-performance REST API



Storage

Redis & FAISS

Session & Vector DB



AI Model

Azure OpenAI

GPT-4 Intelligence

RAG (Regulatory Assisted Guidance)

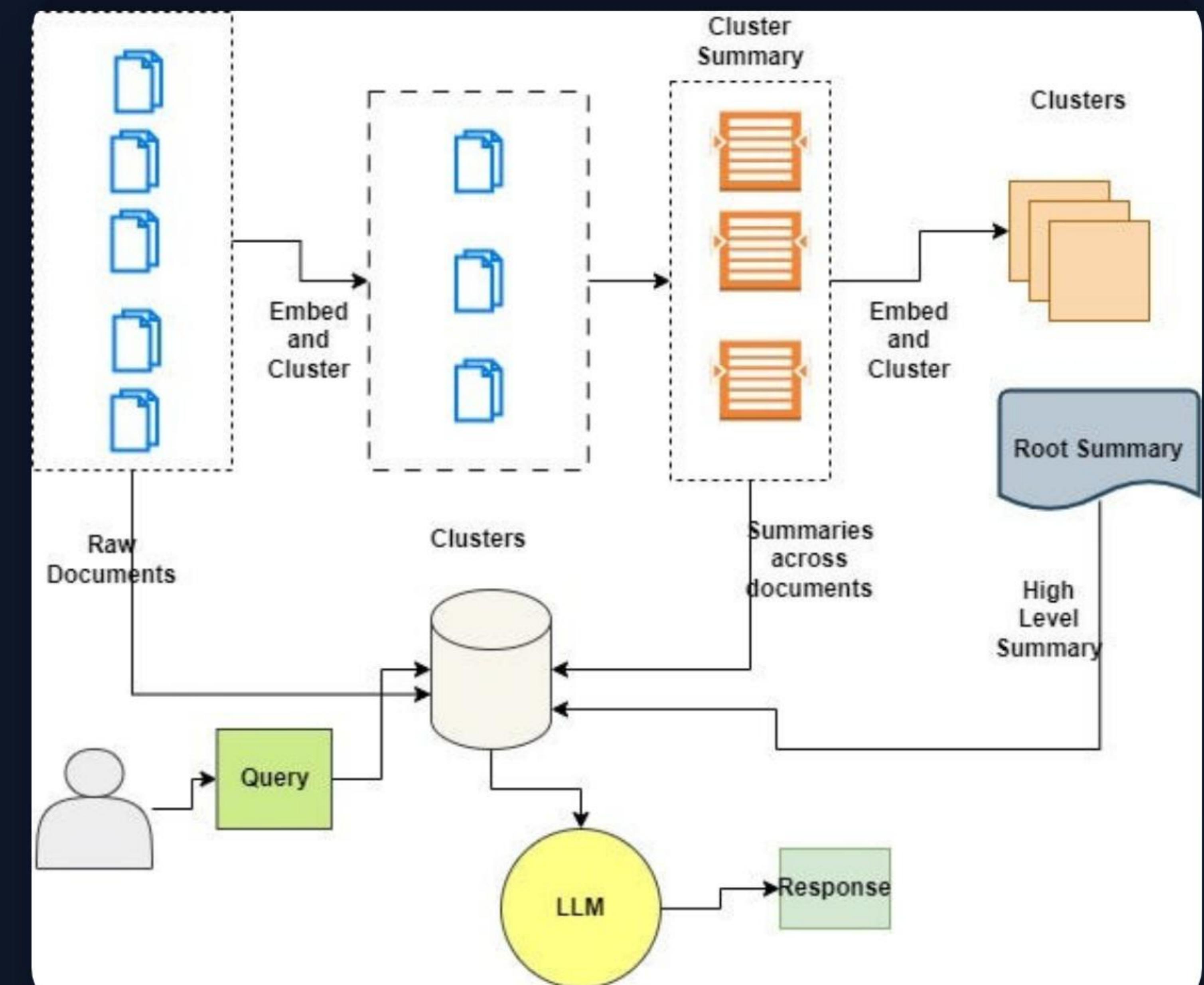
Purpose: Ensures all financial advice is grounded in current SEBI guidelines and regulatory frameworks.

Components

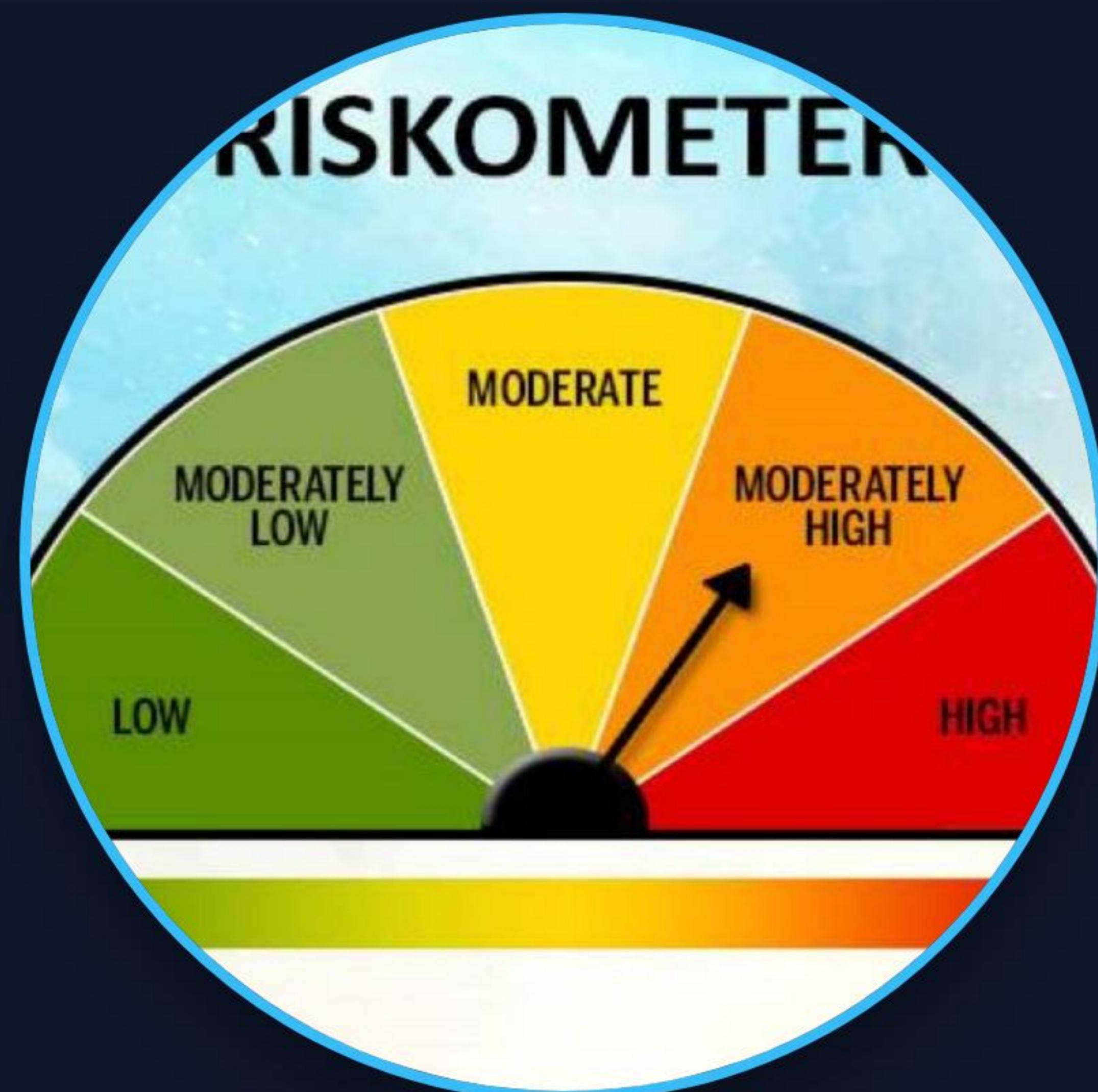
FAISS Indexing: High-speed vector retrieval of regulatory documents.

Smart Chunking: Splitting legal texts into semantic segments for precise context matching.

Optimization: Enhanced semantic search and topic-aware retrieval logic.



Risk Profiling Engine



Assessing Investor Tolerance

The engine acts as the foundational layer for all portfolio recommendations.

- **Inputs:** Analyzes age, income stability, knowledge, and liquidity needs.
- **Process:** Categorizes users into Conservative, Moderate, or Aggressive profiles using Azure GPT.
- **Impact:** Directly dictates the asset allocation strategy (Equity vs. Debt).

Portfolio & Simulation Engine

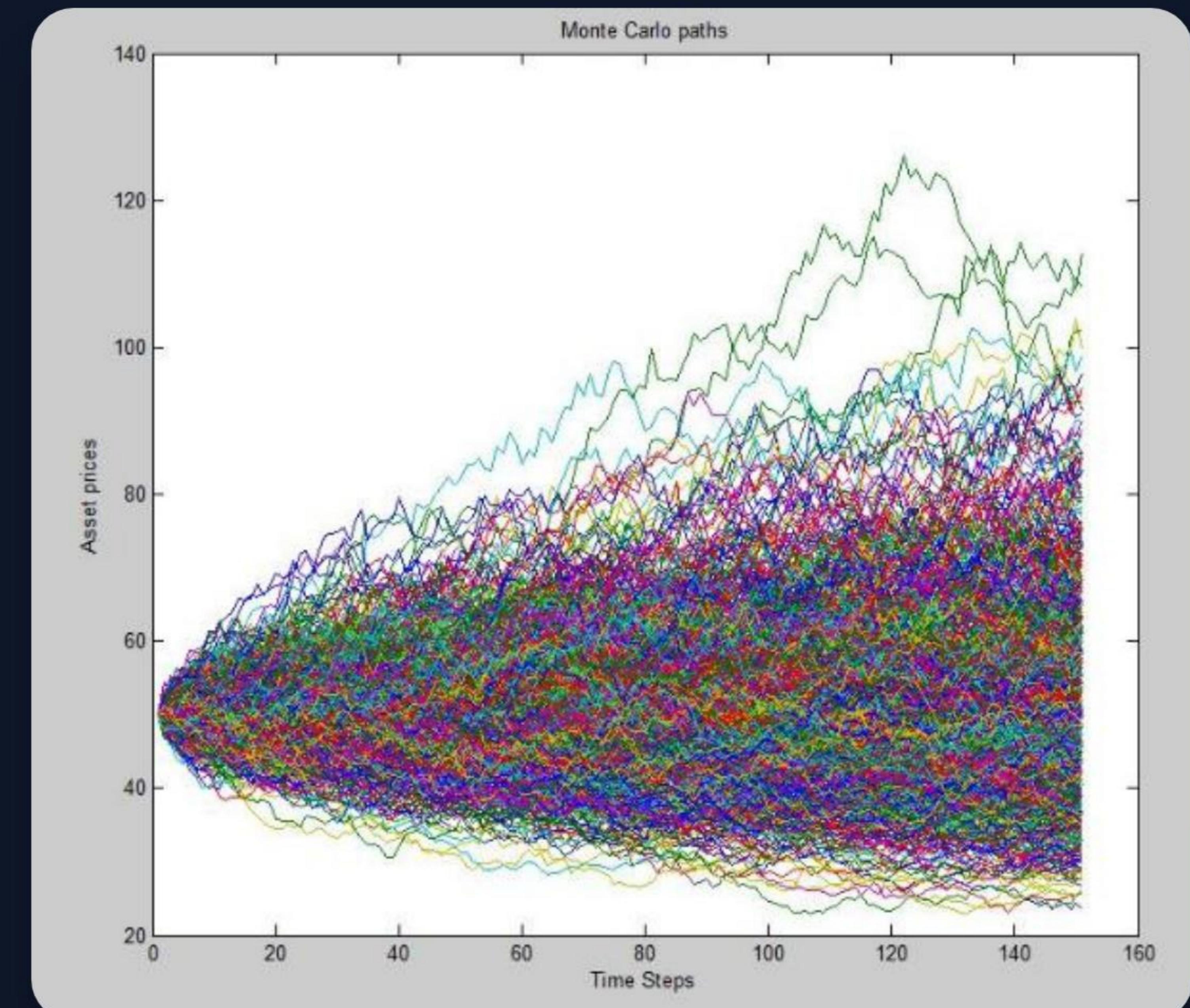
Portfolio Building

Constructs optimized asset allocations (Equity, Debt, Gold) strictly based on the user's risk profile.

Monte Carlo Simulation

Runs thousands of market scenarios to project future wealth.

Outputs: Best/Worst case scenarios, expected returns, and goal achievement probability.



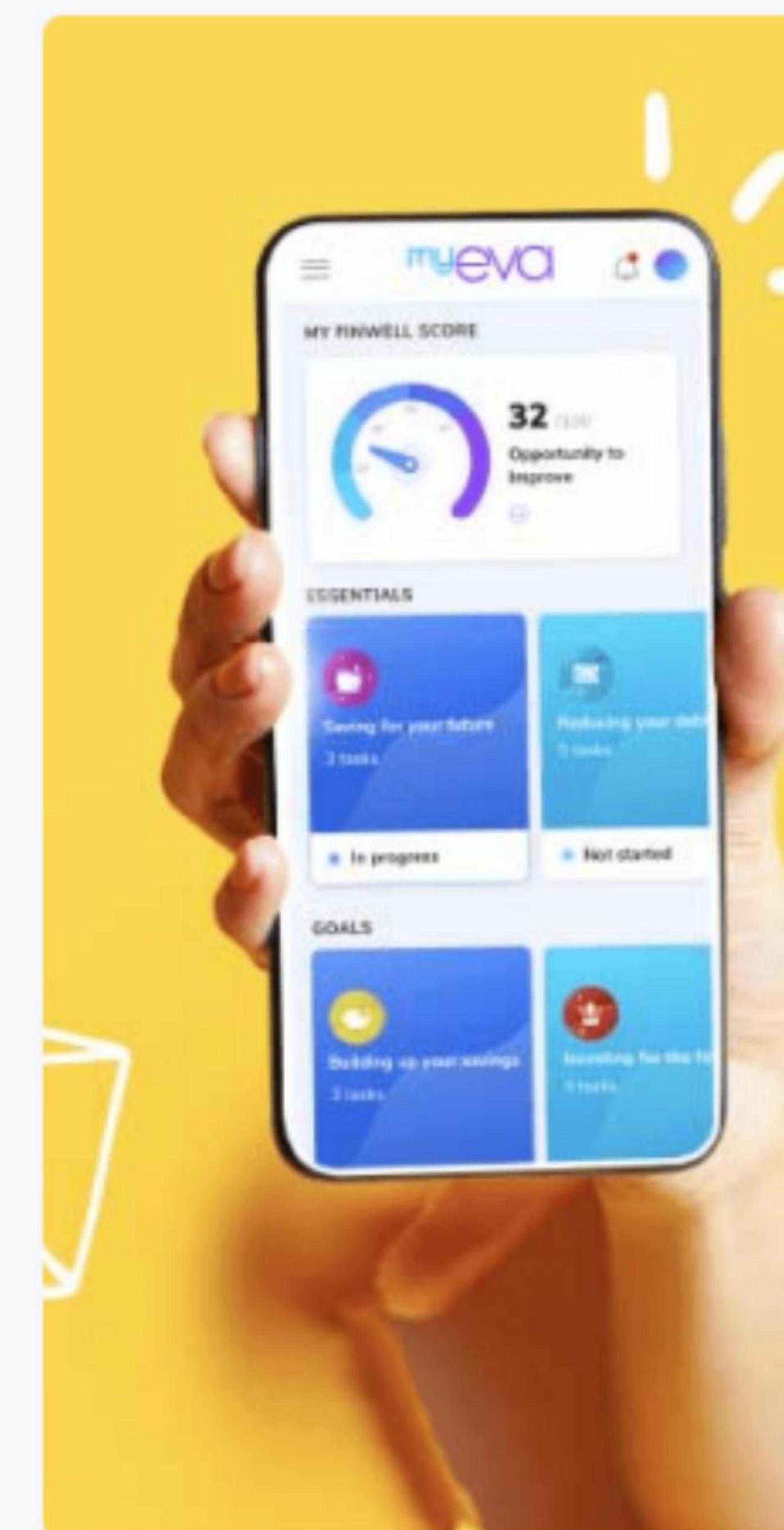
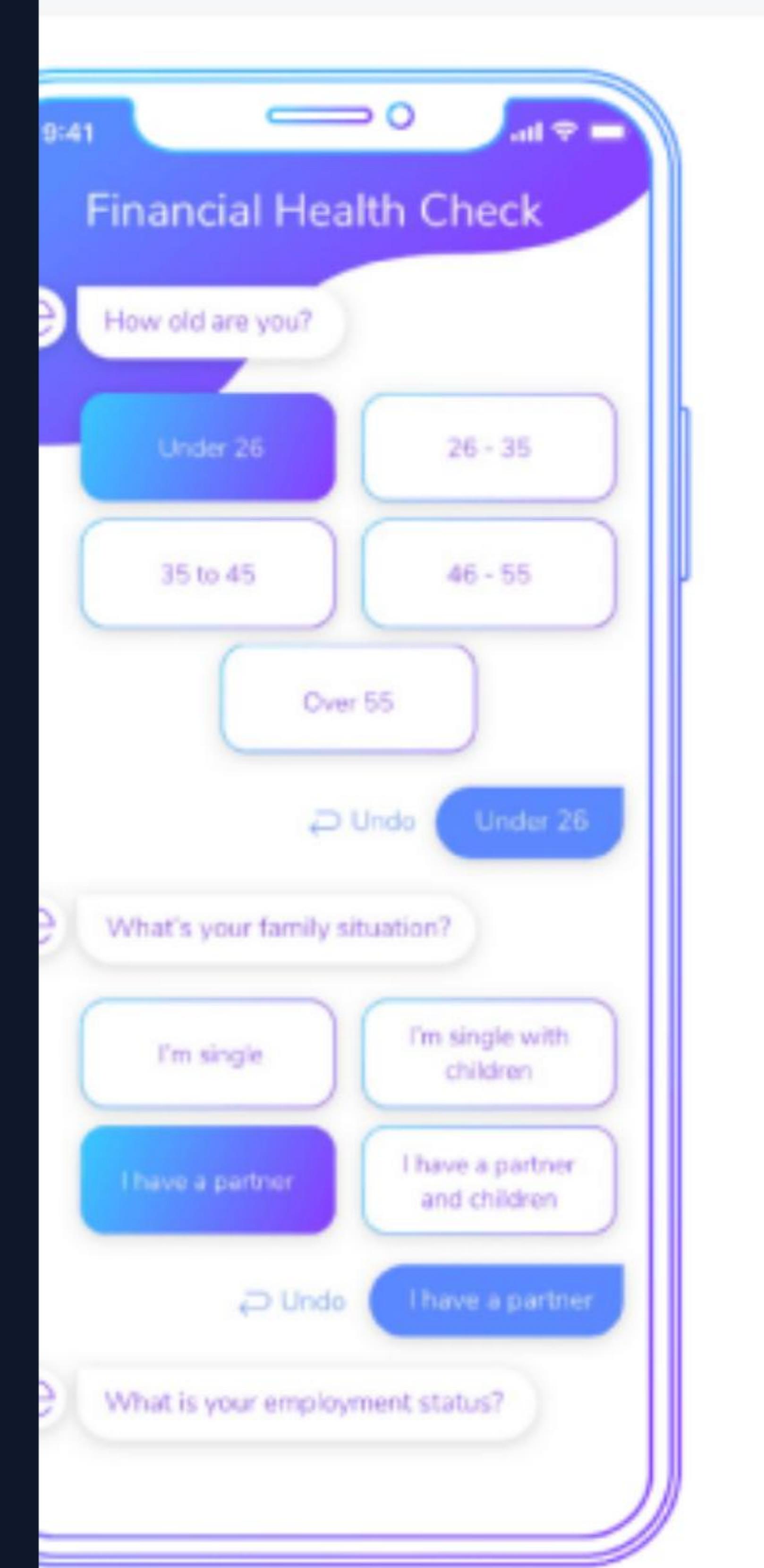
Chatbot Interface

Interactive Guidance: A conversational interface that acts as the primary touchpoint for users.

Workflow:

-  User inputs financial goals and SIP details.
-  Chatbot triggers backend tools for profiling.
-  Delivers structured advice and charts.

Integration: Seamlessly connects to the Risk and Portfolio engines in real-time.



System Evaluation



Latency

Response time measurement to ensure real-time interaction capabilities.



RAG Accuracy

Precision and Recall scores for regulatory document retrieval.



Simulation

Accuracy of Monte Carlo projections against historical data.



Blue-Rouge

Measures semantic alignment of generated advice with expert text.

Challenges & Solutions



Challenge: Incorrect Risk Profiling

Solution: Fine-tuned the profiling logic and implemented strict input validation layers.



Challenge: RAG Retrieval Performance

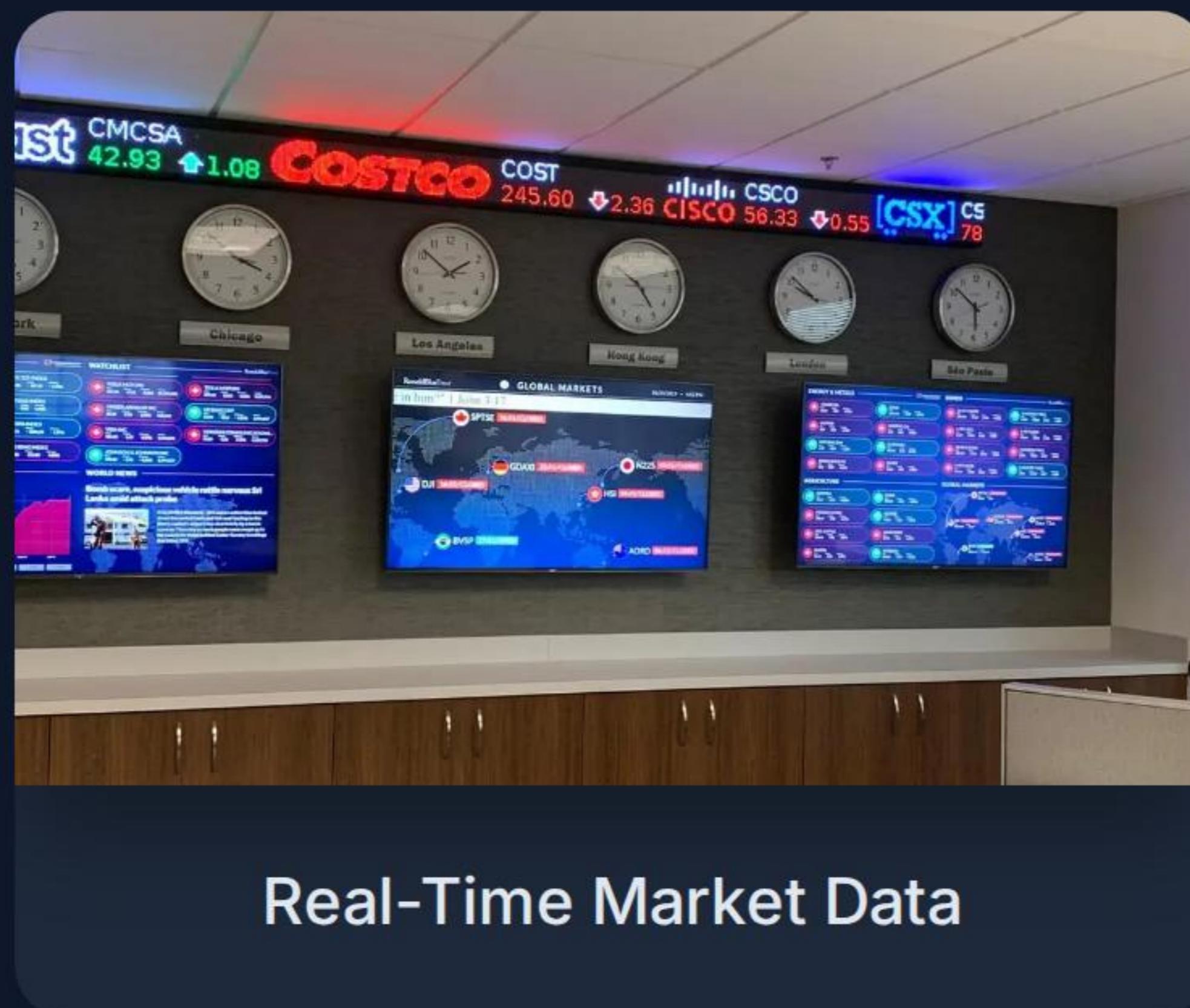
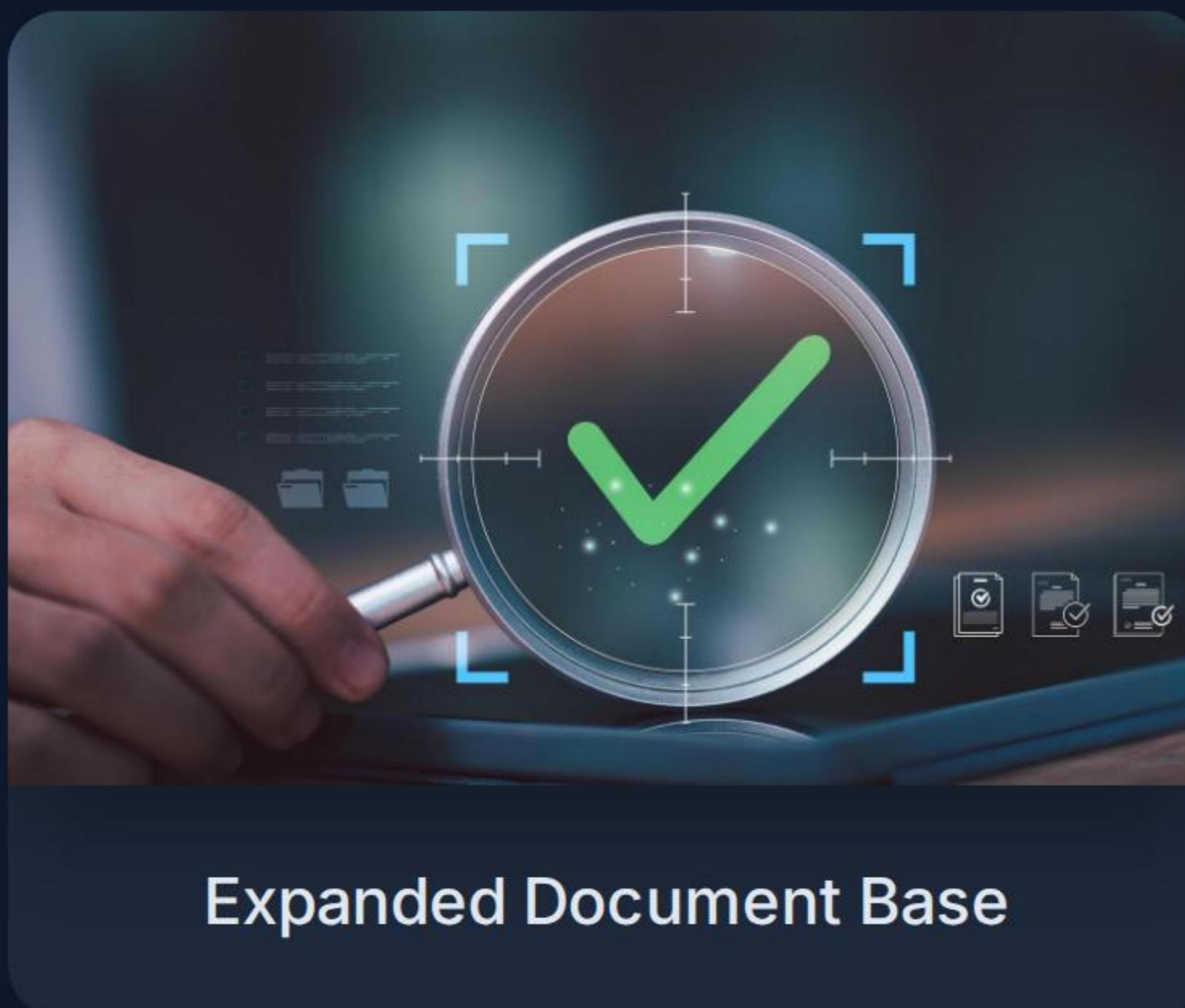
Solution: Enhanced chunking strategies and adopted advanced semantic search embeddings.



Challenge: Chatbot Interaction Flow

Solution: Integrated tool-based decision making for context-aware responses.

Future Roadmap



Conclusion

We have successfully developed an AI-driven financial advisor that empowers users with reliable, automated guidance.

- **✓ Personalized:** Tailored advice via robust profiling.
- **✓ Reliable:** Backend-powered simulations.
- **✓ Seamless:** Intuitive chatbot interface.

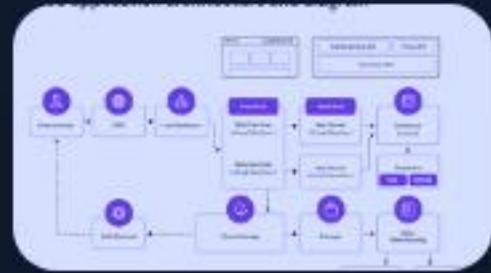
Transforming complex financial planning into an accessible conversation.



Questions?

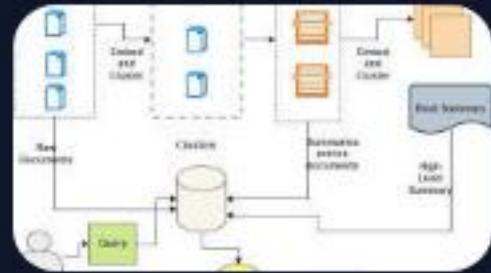
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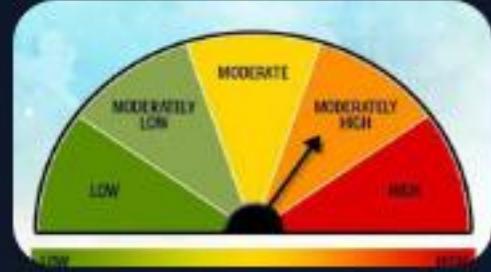
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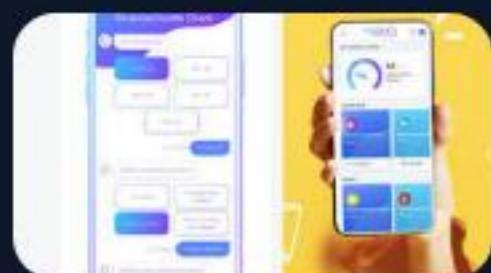
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