



CODECELL-CMPN,VESIT

SYRUS HACKATHON 2025

Category Code: C5

Problem Statement Title: InvestWise AI: Intelligent Wealth Creation Platform (Investment & Stock Market Insights)

Team Name: EPIC BYTES

Institute Name: Vivekanand Education Society's Institute of Technology



Idea / Approach details (& implemented features)

InvestWise AI

Problem Statement

- Young professionals and novice investors face challenges in understanding financial data, market trends, and risk assessments.
- Lack of personalized investment guidance leads to uninformed decisions, potential financial losses, and difficulty in goal-based financial planning.

Solution

- **AI-Powered Investment Assistant:** Provides real-time stock insights, risk assessments, and personalized recommendations using predictive models like XGBoost and LSTMs.
- **Goal-Based Investment Planning:** Helps users set financial goals (e.g., buying a house) and suggests optimized investment strategies.
- **Behavioral Stock Recommendations:** Analyzes user investment patterns and recommends stocks using clustering techniques.
- **Sentiment Analysis & AI Chatbot:** Evaluates financial news to guide investment decisions and provides stock suggestions for beginners.
- **Smart Portfolio Management:** Monitors market trends and suggests portfolio rebalancing based on volatility.

Target Audience - Beginners & Young Investors: Individuals seeking simplified guidance, AI-powered insights, and structured strategies to start investing and achieve financial goals.



Implemented Features

1. Sentiment Analysis

- Uploaded CSV data, created a vector store, and applied RAG for contextual understanding.
- Integrated ChatGPT 3.5 for accurate sentiment analysis.
- Developed an AI agent to deliver sentiment-based insights via a chatbot.

2. AI-Investment Assistant

- Integrated Alpha Vantage API for real-time market data.
- Built a workflow to provide investment insights and market updates.

3. Beginner Financial Support Chatbot

a) Budgeting and Financial Info:

- Collected user inputs on income, expenses, and savings goals.
- Used ChatGPT O1 to provide budgeting tips and financial advice.

b) Personal Financial Advisor:

- Gathered inputs on income, savings, and risk tolerance.
- Suggested personalized investment strategies and financial decisions.

4. Behavioral Analysis

- Used Alpha Vantage API to fetch and analyze behavioral financial data.
- Identified patterns, provided predictive insights, and suggested behavioral adjustments.



Innovation

AI Powered Investment Assistant

Live Data: Fetch real-time stock and market data via Alpha Vantage API.

AI Insights: Predict trends using XGBoost & LSTM models.

Smart Rebalancer

Monitors portfolios and suggests rebalancing based on market volatility.

Behavioral Analysis:

Tracks Patterns: Analyzes past investments to understand user behavior.

Stock Recommendations: Suggests stocks based on user preferences (e.g., growth, tech).

Goal-Based Investment Planning:

Set Financial Goals: Users define goals (e.g., buying a house), and the system calculates how much to invest.

Optimal Strategy: Recommends monthly investments and asset allocation based on user goals and timelines.

Sentiment Analysis:

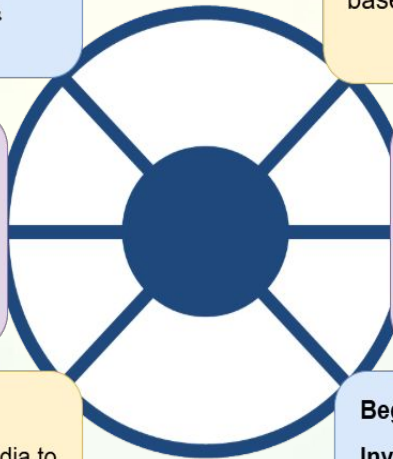
Market Sentiment: Analyzes news and social media to gauge stock mood (e.g., "Positive sentiment for AAPL").

Guided Decisions: Helps users make informed decisions based on sentiment.

Beginner-Friendly Chatbot:

Investment Guidance: Suggests beginner-friendly investments (e.g., ETFs).

Personalized Assistance: Answers investment questions and guides users.



Technology Used in InvestWise AI

LLM



GPT-3.5 Turbo (Azure) and **ChatGPT O1** for AI-driven insights and chatbot interactions.

Platform



UPTIQ AI Workbench for building and deploying AI-powered investment solutions.



Storage



MongoDB with **OpenAI text-embedding-3-large** for vector storage and **NewsDataStore** for processed financial data.

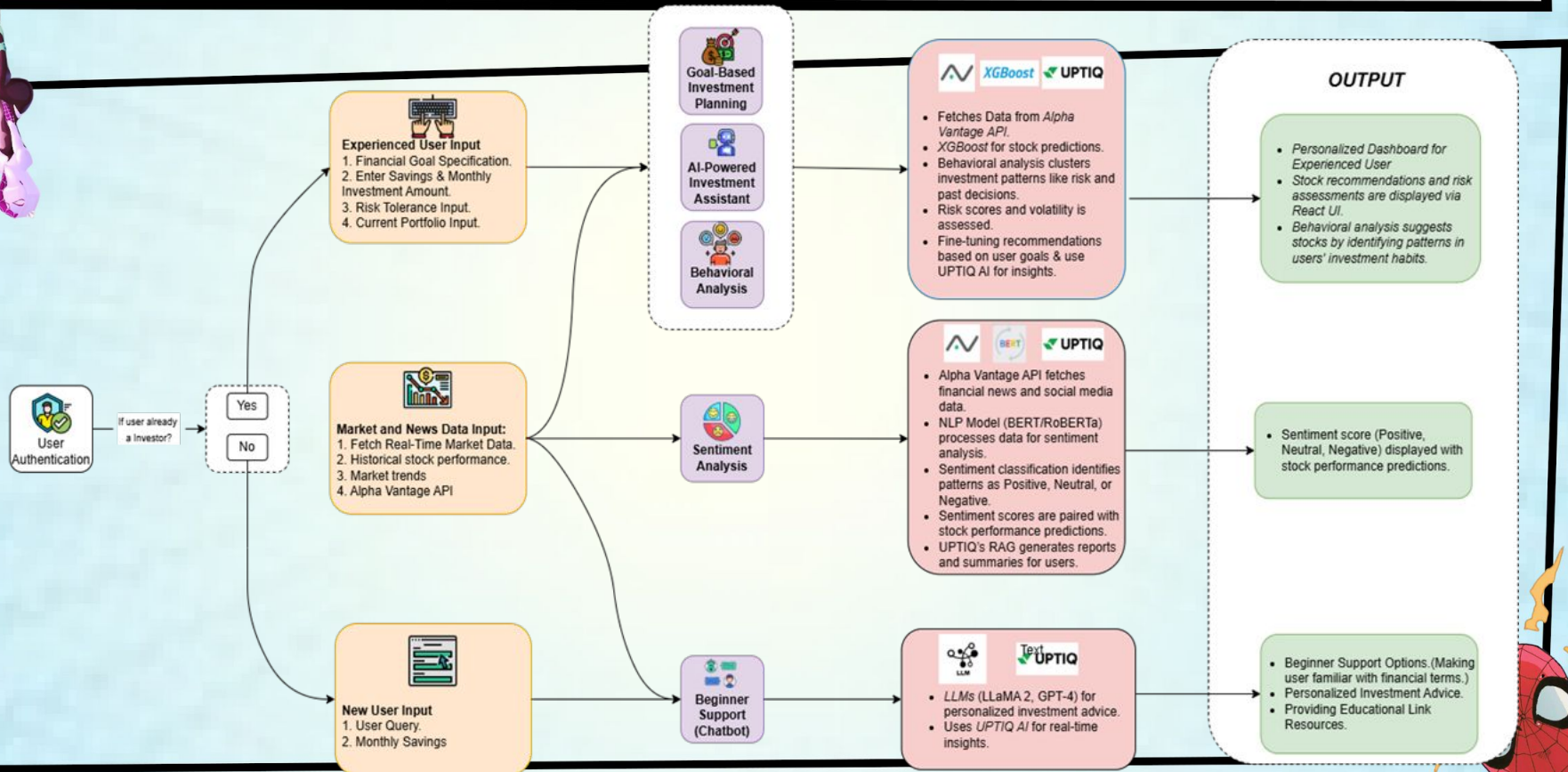
APIs



AlphaVantage and **NewsAPI** for real-time stock market data and financial news analysis

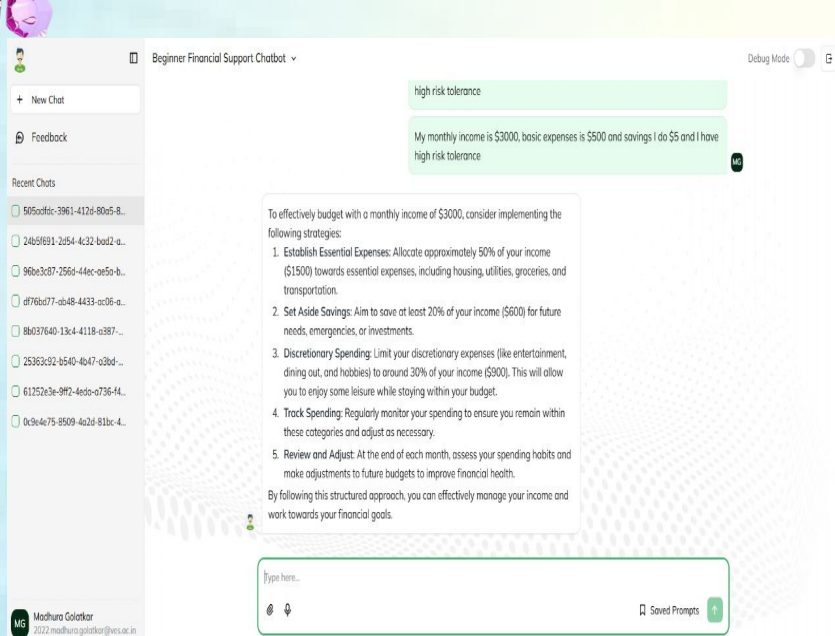


Flowchart / Architecture



Video Link

Link



The screenshot shows a chat window titled "Beginner Financial Support Chatbot". On the left is a sidebar with a "New Chat" button, a "Feedback" button, and a "Recent Chats" list containing several chat IDs. The main chat area shows a conversation where the user has sent "high risk tolerance" and the chatbot has responded with "My monthly income is \$3000, basic expenses is \$500 and savings I do \$5 and I have high risk tolerance". Below this, a text box contains budgeting strategies for a \$3000 monthly income, including essential expenses, savings, discretionary spending, and regular monitoring. The chatbot's name "Madhura Golekar" and email "2022.madhura.golekar@ves.ac.in" are at the bottom left. A "Saved Prompts" button is at the bottom right of the chat area.

Beginner Financial Support Chatbot

Debug Mode

high risk tolerance

My monthly income is \$3000, basic expenses is \$500 and savings I do \$5 and I have high risk tolerance

To effectively budget with a monthly income of \$3000, consider implementing the following strategies:

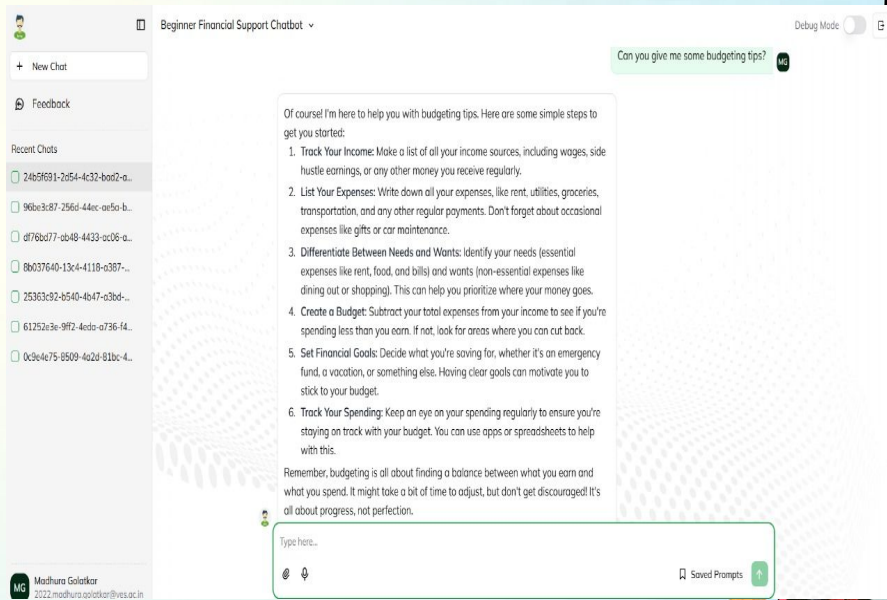
1. Establish Essential Expenses: Allocate approximately 50% of your income (\$1500) towards essential expenses, including housing, utilities, groceries, and transportation.
2. Set Aside Savings: Aim to save at least 20% of your income (\$600) for future needs, emergencies, or investments.
3. Discretionary Spending: Limit your discretionary expenses (like entertainment, dining out, and hobbies) to around 30% of your income (\$900). This will allow you to enjoy some leisure while staying within your budget.
4. Track Spending: Regularly monitor your spending to ensure you remain within these categories and adjust as necessary.
5. Review and Adjust: At the end of each month, assess your spending habits and make adjustments to future budgets to improve financial health.

By following this structured approach, you can effectively manage your income and work towards your financial goals.

Type here...

Madhura Golekar
2022.madhura.golekar@ves.ac.in

Saved Prompts



The screenshot shows the same chat window, but with a different response from the chatbot. The chatbot has sent a list of six budgeting tips. The user's input "Can you give me some budgeting tips?" is visible at the top. The chatbot's name and email are at the bottom left. A "Saved Prompts" button is at the bottom right of the chat area.

Beginner Financial Support Chatbot

Debug Mode

Can you give me some budgeting tips?

Of course! I'm here to help you with budgeting tips. Here are some simple steps to get you started:

1. Track Your Income: Make a list of all your income sources, including wages, side hustle earnings, or any other money you receive regularly.
2. List Your Expenses: Write down all your expenses, like rent, utilities, groceries, transportation, and any other regular payments. Don't forget about occasional expenses like gifts or car maintenance.
3. Differentiate Between Needs and Wants: Identify your needs (essential expenses like rent, food, and bills) and wants (non-essential expenses like dining out or shopping). This can help you prioritize where your money goes.
4. Create a Budget: Subtract your total expenses from your income to see if you're spending less than you earn. If not, look for areas where you can cut back.
5. Set Financial Goals: Decide what you're saving for, whether it's an emergency fund, a vacation, or something else. Having clear goals can motivate you to stick to your budget.
6. Track Your Spending: Keep an eye on your spending regularly to ensure you're staying on track with your budget. You can use apps or spreadsheets to help with this.

Remember, budgeting is all about finding a balance between what you earn and what you spend. It might take a bit of time to adjust, but don't get discouraged! It's all about progress, not perfection.

Type here...

Madhura Golekar
2022.madhura.golekar@ves.ac.in

Saved Prompts

Future Scope

- **Expand Data Sources Globally**

Integrate international market data using APIs like Quandl and FRED for diversified insights.

- **Enhance AI Model Accuracy**

Improve prediction reliability with explainable AI using advanced models like XGBoost and LSTMs.

- **Support Diverse Asset Classes**

Enable investments in cryptocurrencies, REITs, and commodities for comprehensive portfolio management.

- **Hyper-Personalize User Experience**

Offer AI-driven dashboards tailored to individual goals and risk profiles, adding gamified challenges for engagement.

- **Implement Real-Time Stress Testing**

Simulate market shocks and economic scenarios to provide proactive risk management strategies.

- **Introduce AI-Driven Tax Optimization**

Analyze gains using tax data APIs and recommend tax-efficient strategies to maximize user savings.

