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Financial Advice AI Agent

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1 Objective of the Task

This task focuses on building an Agentic AI-based Financial Advisor that analyzes current market conditions and provides short-term and long-term investment recommendations. The solution follows multi-agent architecture, where each agent performs a specialized function such as market analysis or investment advisory, enabling collaborative and informed decision-making.

The system is implemented using the Agno framework to manage agent interactions and ensure structured, validated outputs. The LLM (Large language Model) used is an model from Groq free tier through an API key.

Key Objectives:

- Build an Agentic Ai based Financial Advisor using multi-model approach.
- Integrate an LLM using an API from any provider available.
- Using Agno framework for orchestration and structured output.
- To generate short-term and long-term investment strategies.
- Ensuring that the result is clean, modular and well documented.

2 Agno Framework

Agno is a comprehensive, a lightweight, open-source Python framework designed to build, run, and manage, intelligent, multimodal AI agents and multi-agent systems.

It enables the creation of agents with memory, knowledge, and tools, featuring specialized orchestration for agent teams, such as for research or content generation. Agno is recognized for its high performance, offering significantly lower latency and resource usage compared to alternatives like LangGraph, making it suitable for production-ready secure AI applications.

Key Features and Capabilities

- **Multimodal Agents:** Agents can process varied input types, including text, images, audio, and documents.
- **Multi-Agent Orchestration:** Supports teams of agents, where a "team leader" can break down tasks, assign sub-tasks, and synthesize results.
- **Memory & Knowledge:** Built-in session management and persistent storage, allowing agents to remember interactions and query domain-specific knowledge.
- **Tools & Integrations:** Comes with pre-built, single-line integrations for databases (Pinecone, Weaviate), APIs (Slack, Notion), and web search.
- **Production-Ready:** Provides AgentOS, a FastAPI-based runtime for deploying, monitoring, and managing agent workflows.
- **Private by Design:** Allows data and agents to run within the user's own cloud environment.

Limitations of Agno Framework:

- Agno may have limitations in scalability, especially if your application grows and requires handling a larger number of agents or more complex interactions.
- Depending on the underlying architecture, there might be performance bottlenecks when agents communicate, especially if they rely heavily on synchronous interactions.
- Documentation is helpful, but real-world scenarios often reveal edge cases and bugs that may not be covered, so we need to be prepared for troubleshooting and debugging.

3 Tools and Technologies Used

- Programming Language: Python
- Development Environment: VS Code
- Framework: Agno Framework
- Language Model: llama-3.3-70b-versatile (Through groq Api)
- Libraries Used: dotenv, agno, duckduckgosearch, yfinancetools, team, groq

4 System Design

The system is designed using multiple agents coordinated by a central orchestrator.

4.1 Agent Description

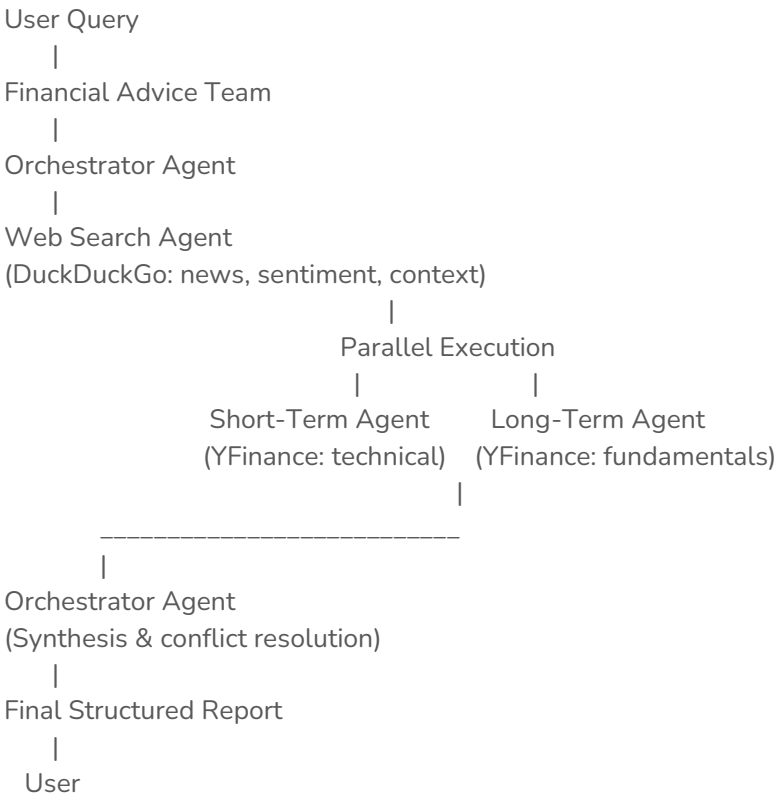
- **News Gathering Agent**: This agent searches for current financial market conditions and analyzes various market trends, and general financial sentiment to provide a clear overview of the current market scenario.
- **Short-Term Investment Agent**: This agent focuses on identifying investment opportunities with a short-term time horizon, typically ranging from a few days to a few months.
- **Long-Term Investment Agent**: This agent focus on long-term investment strategies aimed at sustainable growth and wealth creation. When recommending assets for long-term holding periods, it takes stability, underlying strength, and long-term market forecast into account.

5 Role of an Orchestrator

The Orchestrator serves as the Agentic AI system's main controller. It is in charge of overseeing the entire workflow and coordinating the actions of every agent.
The orchestrator guarantees:

- **Workflow coordinator:** Breaks a financial query into structured steps, delegates tasks to specialized agents (web search, short-term, long-term), and enforces the exact analysis sequence.
- **Information integrator:** Collects and shares the same up-to-date market data across agents, then aggregates their outputs into a single coherent view.
- **Final synthesizer & reporter:** Resolves and highlights time-horizon differences, assesses risks, and delivers a polished, well-structured financial analysis report.

6 Order of Execution



7 Output Response

Team Tool Calls

- delegate_task_to_member(member_id=web-search-agent, task=Gather current news and data on NVIDIA stock, including its current price, trading volume, and any recent developments.)
- delegate_task_to_member(member_id=short-term-financial-advice-agent, task=Provide short-term trading advice for NVIDIA stock based on the current data and news gathered by the Web Search Agent.)
- delegate_task_to_member(member_id=long-term-financial-advice-agent, task=Provide long-term investment strategy for NVIDIA stock based on the current data and news gathered by the Web Search Agent.)
- delegate_task_to_member(member_id=financial-analysis-orchestrator, task=Synthesize the outputs from the Web Search Agent, Short-Term Financial Advice Agent, and Long-Term Financial Advice Agent into a unified report for the user.)

Response (56.1s)

Executive Summary

To provide a comprehensive analysis of NVIDIA stock, we will first gather current news and data using the Web Search Agent. Then, we will delegate tasks to the Short-Term Financial Advice Agent and the Long-Term Financial Advice Agent to analyze the data from different perspectives.

Task Delegation

To begin the analysis, we need to gather current news and data on NVIDIA stock. We will delegate this task to the Web Search Agent.

Executive Summary

The comprehensive financial analysis report provides a unified view of the current market context, short-term and long-term outlooks, and an integrated risk assessment to inform investment decisions. Based on the synthesis of outputs from the Web Search Agent, Short-Term Financial Advice Agent, and Long-Term Financial Advice Agent, the final combined recommendation is to buy NVIDIA stock with a target price of $52.50 in the short-term and $65.00 in the long-term, while regularly reviewing the company's financials and market developments to adjust the investment strategy as needed.

Current Market Context

The current market context is characterized by a bullish outlook for the next quarter, with investor confidence high despite concerns about potential interest rate hikes. The global economic trends are shifting towards a more sustainable and technology-driven economy, with regulatory changes expected to impact the financial sector.

Short-Term Trading Advice

The short-term trading advice is to buy NVIDIA stock with a target price of $52.50 and a stop-loss at $47.50. The technical analysis identifies a strong support level at $45 and a resistance level at $55.

Long-Term Investment Strategy

The long-term investment strategy is to buy-and-hold NVIDIA stock with a target price of $65.00 over the next 12-18 months. The fundamental analysis highlights the company's strong financials, with a debt-to-equity ratio of 0.5 and a return on equity of 15%.

Integrated Risk Assessment

The integrated risk assessment considers both short-term and long-term factors, including market risk, company-specific risk, and risk mitigation strategies. The report recommends diversifying the investment portfolio and regularly reviewing the company's financials and market developments to adjust the investment strategy as needed.

Conclusion

In conclusion, the comprehensive financial analysis report provides a unified view of the current market context, short-term and long-term outlooks, and an integrated risk assessment to inform investment decisions. The final combined recommendation is to buy NVIDIA stock with a target price of $52.50 in the short-term and $65.00 in the long-term, while regularly reviewing the company's financials and market developments to adjust the investment strategy as needed.

Risk Disclosures and Limitations

The report is for informational purposes only and should not be considered as investment advice. The analysis is based on historical data and may not reflect future market conditions. The report is subject to various limitations, including the quality of the data used and the assumptions made. Investors should consult with a financial advisor before making any investment decisions.

Sources

The report is based on data from various sources, including financial statements, market data, and news articles. The sources include:

- NVIDIA's financial statements
- Market data from reputable sources
- News articles from reputable sources

Note: The report is a sample and should not be considered as investment advice. The analysis is based on hypothetical data and may not reflect real market conditions. Investors should consult with a financial advisor before making any investment decisions.

8 Conclusion

This project presents a robust implementation of an **agent-driven financial analysis system built on the Agno framework**, leveraging a coordinated multi-agent architecture to deliver comprehensive investment insights. By clearly separating responsibilities across dedicated agent data collection, short-term market analysis, long-term fundamental evaluation, and orchestration the system achieves both analytical depth and interpretability in its outputs.

9 Code Link (GitHub)

Github Link: https://github.com/Shikhar-mah/Finance-Agentic-Ai