Documentation for Multi-Agent Finance and Web Search System

## Introduction

The Multi-Agent Finance and Web Search System is an AI-powered project that integrates multiple agents to perform specialized tasks. This system uses the `phi` framework to provide insights through web searches and financial data analysis. It is designed to showcase the power of collaborative agents working together for comprehensive and accurate outputs.

## Features

1. **Web Search Agent**:
    a. Searches the web for information related to user queries.
    b. Includes sources in the response for credibility.
2. **Finance Agent**:
    a. Fetches real-time stock prices.
    b. Provides company fundamentals, analyst recommendations, and news.
    c. Uses tables for structured data presentation.
3. **Multi-Agent Collaboration**:
    a. Combines the functionalities of the Web Search Agent and Finance Agent.
    b. Processes complex queries for integrated outputs.

## System Architecture

The system comprises three main components:

1. **Agents**:
    a. `Web Search Agent`: Uses DuckDuckGo for web searches.
    b. `Finance Agent`: Utilizes `YFinanceTools` for financial data retrieval.
2. **Model**:
    a. Powered by the Groq model (`llama3-groq-70b-8192-tool-use-preview`).
3. **Environment**:
    a. Environment variables handle API keys securely using a `.env` file.

## Installation and Setup

### Prerequisites

- Python 3.8 or above.
- Dependencies listed in `requirements.txt`.

### Steps

1. Clone the repository:

```
git clone https://github.com/vaibhavgaikwad2/AI-ProjectVault
```

2. Install dependencies:

```
pip install -r requirements.txt
```

3. Create a `.env` file based on `.env.example`:

```
GROQ_API_KEY = "YOUR_GROQ_API_KEY"
PHI_API_KEY = "YOUR_PHI_API_KEY"
```

4. Run the project:

```
python main.py
```

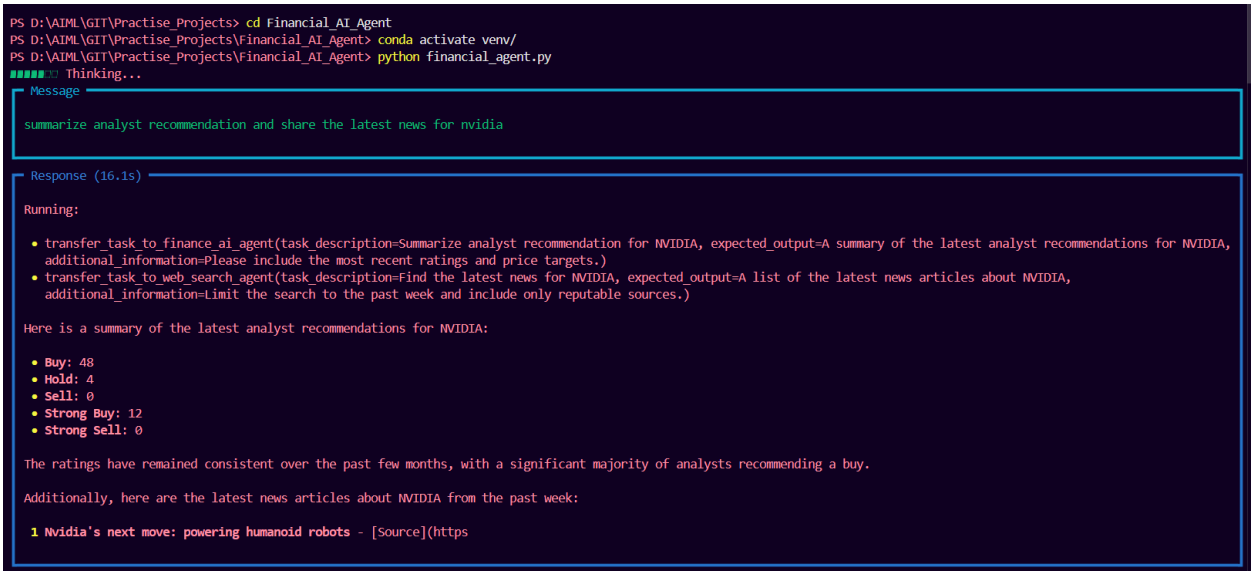
## Usage

1. **Input**: The user enters a company name or a specific query.
2. **Processing**: The system uses the relevant agent(s) to process the query.
3. **Output**: Displays results in Markdown format with structured tables and sources.

Example Query:

```
Summarize analyst recommendations and share the latest news for Tesla
```

Example Output:




## Project Structure

```
Multi-Agent-Finance-and-Web-Search/
├── main.py             # Main script
├── requirements.txt    # Dependencies
├── .env.example        # Environment variable template
└── README.md           # Project overview
```

## Technical Details

### Web Search Agent

- Tool: DuckDuckGo
- Purpose: Searches for user queries and includes credible sources.

### Finance Agent

- Tool: YFinanceTools

- Functionalities:
    - Retrieves stock prices.
    - Summarizes analyst recommendations.
    - Displays company fundamentals and latest news.

### Multi-Agent Collaboration

- Combines agents for complex queries.
- Streamlines responses in Markdown with tables and sources.

## Potential Enhancements

1. Add support for additional tools like Google Search or Alpha Vantage.
2. Introduce a GUI for easier interaction.
3. Expand the financial agent to include cryptocurrency data.
4. Add natural language understanding for better query interpretation.

## Contributors


- **Vaibhav Gaikwad (Project Lead)**
    - GitHub: https://github.com/vaibhavgaikwad2


## Contact Information

For any queries or feedback, please contact:


- Email: vaibhav.gaikwad.emails@gmail.com