Final Team Project Introduction

Multi Agent System

Your task is to read the instructions below for the *AAI-520 Final Team Project—Multi-Agent Financial Analysis System* that you will develop with your assigned group and submit by the end of Module 7.

You do not need to submit anything to this assignment link. By the end of Module 2, read through *Introduction*and locate team members. Refer to the *Project Timeline* below.

Introduction

For the final project, you will work in groups (two or three students) to build a real-world financial analysis system powered by **agentic AI**. Unlike traditional pipelines, agentic systems can **reason, plan, and act**, coordinating multiple specialized LLM agents to handle complex financial tasks end-to-end. Agentic AI moves beyond scripted flows: it routes tasks, critiques itself, and improves iteratively. In the real world, investment firms deploy similar multi-agent stacks to parse news, earnings, and market signals at scale—the same patterns that you will implement using the project requirements below.

**Groupwork Requirements**

The final **teamwork**project is an essential component of our courses in the AAI program. This project is representative of the kind of collaborative project you may work on during your *career and in real-world projects*. A significant portion of your final grade is drawn from your participation in this final group project, so you are strongly encouraged to work within your team and ensure that each team member contributes *equally*to the final project deliverables. Team members should plan to have clear and ongoing communication with other members and engage with the project and its deliverables ***each week***. Lack of participation and engagement with both your team and your final project can result in a *failing*grade for the course. While these are the expectations for the project work, if you do experience difficulty with project advancement or challenges with team dynamics, **contact your instructor** for assistance promptly. If you are unable to perform the project as a team, contact your instructor to explore pursuing the entire final project *independently*.

**\*\*Note:**Team members **may not** get the same grade on the Final Team Project, depending on each team member's level of contribution. You will complete *Peer Evaluations* individually and submit them in a separate assignment link in Module 7.

**Project Timeline**

* By the end of Module 1, complete the **Teammate Survey.** Your course instructor will place you into teams of two to three members.
* By the end of Module 2, locate your assigned **Project Group** and members. Click People on the left navigation and select the Groups tab. Use Canvas, USD Email, or Slack to connect with team members.
* By the end of Module 4, designate a team representative to submit the **Team Assignment**, reflecting your collaborative project progress and using the *Team Project Status Update Form.*
* By the end of Module 7, designate a team representative to submit your final**Code Notebook**as a **PDF** or **HTML** file, demonstrating your working Investment Research **Agent Functions**and the **Three Workflows.**

\*\***No extensions** will be given for any of the final projects' due dates for any reason. Final projects submitted after the final due date will **not be graded.**

**Project Success**

As the final deliverable, your team will prepare and submit a **Code Notebook** to document your development and execution of the project requirements, summarized here:

* + **Agent Functions** (33.8%)
  + **Workflow Patterns** (33.8%)
  + **Code**(32.4%)

Refer to the Final Team Project [scoring rubric](https://sandiego.instructure.com/courses/23238/assignments/320161) in Module 7 for grading details (opens a new tab, and the rubric is at the bottom).

**Project Background**

To develop the project requirements, your team will apply and implement concepts and techniques presented across the span of the course modules. For project background, you are specifically encouraged to view [Presentation 7.1 Agentic AI](https://sandiego.instructure.com/courses/23238/pages/presentation-7-dot-1-agentic-ai) in advance.

Project Requirements

For the final project, you and your teammates will build an agentic AI that researches markets. Your agentic AI should demonstrate the following workflow patterns and autonomous agent functions.

**Agent Functions (33.8%)**

Build an autonomous Investment Research Agent that:

1. **Plans** its research steps for a given stock symbol.
2. **Uses tools** dynamically (APIs, datasets, retrieval).
3. **Self-reflects** to assess the quality of its output.
4. **Learns** across runs (e.g., keeps brief memories or notes to improve future analyses).

**Workflow Patterns (33.8%)**

Implement the following three workflow patterns:

1. **Prompt Chaining**: Ingest News → Preprocess → Classify → Extract → Summarize
2. **Routing**: Direct content to the right specialist (e.g., earnings, news, or market analyzers).
3. **Evaluator–Optimizer:** Generate analysis → evaluate quality → refine using feedback.

Technology Requirements

**Datasets & APIs**

To build your Investment Research Agent, you may utilize various datasets and APIs. It is recommended to s*tart*with Yahoo Finance; you may use the other provided datasets listed below.

* + Yahoo Finance – pip install yfinance (prices, financials)
  + Financial News – Kaggle datasets, NewsAPI.org
  + Economic Data – FRED API (free)
  + Company Filings – SEC EDGAR;
  + Alpha Vantage (free tier)
* Examples: Financial News on Kaggle, Reuters Financial News, Yahoo Finance News API

**GitHub**

It is requiredthat you and your team use GitHub as a code hosting platform to manage version control and *measure*collaboration during this project. Creating and adding a [README](https://sandiego.instructure.com/courses/23238/files/3394497?wrap=1)

 file to your GitHub repository is also necessary. You should follow the [PEP 8Links to an external site.](https://pep8.org/) – Style Guide for your Python code in the final project. Not only does GitHub facilitate group work and streamline assessment, but embracing this approach will also equip you with a vital skill set valued in the tech industry.

Final Deliverable

Your final submission to Canvas will be the following deliverable.

**Code (32.4%)**

* Prepare to submit your final team **Code Notebook**as a document. The submitted Notebook **file** must be in **PDF (preferred)**or HTML format.
* Include the**GitHub Repository** link in your team notebook.
* Include relevant**Comments**in the Notebook to communicate the Project Requirements outlined above, such as:
  + Agent Design and Workflows
  + Agent Functions and Capabilities
  + Evaluation and Iteration
* **(Optional) Supplemental Report:** As an option, in addition to the Code Notebook, your team can prepare a **Supplemental Report**document (PDF) to communicate information that you would otherwise include as notebook Comments.

Submission

Only one team member should submit the deliverables for the team.

If you have followed the above final deliverable guidelines, designate a team representative to submit your final Code Notebook file as a **PDF** (preferred) or HTML file (an additional Supplemental Report should be a PDF or MS Word file, if opted).

**Note:** Team members may not get the same grade on the Final Team Project, depending on each team member's level of contribution. You will each submit a Peer Evaluation form *individually.*

\*\*Plagiarism, or passing another person's code/work/answers off as one's own, either by directly copying or even paraphrasing it without proper citation, is a serious offense and can result in sanctions, including grade reductions, course failures, and even expulsion from the university. For more information, please see the [USD Code of Honor.Links to an external site.](https://www.sandiego.edu/conduct/documents/Honor-Code.pdf)

This assignment has [Turnitin](https://help.turnitin.com/integrity/student/canvas/assignments/submitting-an-assignment.htm) enabled for submissions, which means that your instructor will obtain a Similarity Report that identifies specific parts of your writing that may indicate a high level of matching to external content. You are strongly encouraged to review your work without penalty by activating the [Draft Coach extension in your Google Docs](https://help.turnitin.com/integrity/student/draft-coach/using-draft-coach.htm) prior to submitting your work for final grading.

\*\*\*AI-assisted tools such as ChatGPT, Gemini, and GitHub Copilot should be used to enhance your learning, not replace it. If you use any AI tools in your assignments, you *must*explicitly disclose, cite, and **explain**their contributions (e.g., comments in code, footnotes in reports). Submitting AI-generated code and answers without sufficient understanding, modification, and justification is not acceptable. Proper attribution is essential to maintain academic integrity across all courses and will help position you for future success in this field.

Refer to the Final Team Project [scoring rubric](https://sandiego.instructure.com/courses/23238/assignments/320161) in Module 7 for grading details (opens a new tab, and the rubric is at the bottom).