# **Assignment: Enshrine Global Systems**

## **Documentation**

Ву

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#### Overview

This document provides complete documentation for the Multi-Agent AI System project implemented using FastAPI and Google ADK. The system supports dynamic, multi-step goal execution using chained intelligent agents that fetch and summarize real-world data (e.g., Bitcoin price, SpaceX launches).

### **System Flow**

- 1. User Goal Input
  - The user provides a natural language goal (e.g., "Get Bitcoin price and summarize sentiment").
- 2. Planning Agent
  - Parses the user goal.
  - Generates a sequence of sub-tasks.
  - Selects appropriate agents for each task.
- 3. Chained Agent Execution

Each agent builds on the output of the previous:

- Agent 1: Data Fetcher Calls APIs based on sub-task.
- Agent 2: Validator/Enhancer Checks data validity or adds context (e.g., fetch weather for SpaceX launch site).
- Agent 3: Summarizer Formats or summarizes the results.
- 4. Final Output
  - Summarized, structured response is returned to the user.

#### **Agent Logic**

- 1. Planner Agent
  - Uses keyword detection and rule-based logic to:
    - Parse user input
    - Decide agent call order

- 2. SpaceX Agent
  - Calls SpaceX API for next launch details
- 3. Weather Agent
  - Uses latitude/longitude from SpaceX data to get weather forecast via OpenWeatherMap API
- 4. Bitcoin Agent
  - Calls CoinGecko API to fetch real-time Bitcoin price
  - Optional: Fetch recent news for sentiment analysis using <u>NewsAPI</u>
- 5. Summarizer Agent
  - Generates human-readable summaries from agent outputs.

#### **API Setup & Usage**

FastAPI Server

- Key Endpoint:
  - o POST/evaluate Takes a JSON goal and returns a multi-agent response
  - o GET/evaluations Returns previous evaluations

Access Web UI

}

```
Hosted via Ngrok: Swagger UI: <a href="https://b660-35-233-131-53.ngrok-free.app/docs">https://b660-35-233-131-53.ngrok-free.app/docs</a>
Upload Example:

{

"goal": "Get the current price of Bitcoin and summarize recent sentiment"
```

#### **User Instructions: How to Run (in Google Colab)**

- 1. Open the Notebook in Google Colab.
- 2. Install the required libraries:
- 3. Upload your .env file containing your OpenWeatherMap API key:
- 4. Run all cells to see:

- a. Goal planning via the Planner Agent
- b. Step-by-step agent execution
- c. Final output combining results from SpaceX, Weather, Bitcoin, and News agents
- 5. Try the API Live
- 6. Visit the FastAPI Swagger UI:
- 7. https://b660-35-233-131-53.ngrok-free.app/docs
- 8. Select the /evaluate endpoint
- 9. Click Try it out
- 10. Paste a goal like:
- 11. {
   "goal": "Get the current Bitcoin price in INR"
   }
- 12. Click Execute to view results.