

AI Operations Assistant Solution by Aakash:

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This project is a multi-agent AI system that can plan and execute user tasks involving real-world APIs such as getting weather or the latest news using LLM reasoning, real-time API calls, and structured output verification.

Example prompt:

“What’s the weather in Delhi and the latest tech news?”

Features

- Multi-agent design: Planner → Executor → Verifier loop
- Real API integrations: OpenWeather + NewsAPI
- LLM-based structured planning and verification
- Self-correcting system: detects failures and replans automatically
- Natural language interface with a Streamlit UI

Architecture

User Input

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[Planner Agent] → generates JSON plan using LLM

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[Executor Agent] → runs plan with real API calls

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[Verifier Agent] → checks results via LLM

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Success or Replan if needed

Agents

Agent | Role

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Planner | Converts natural task → JSON step plan (with tools/actions)

Executor | Executes each step using OpenWeather & NewsAPI

Verifier | Validates results and replans if incomplete or incorrect

How to Set Up and Run the Project Locally

1. Install Requirements

Make sure you have Python 3.10+ installed.

Then install dependencies:

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

2. Set Up API Keys

Add key in .env file in the root :

OPENWEATHER_API_KEY=your_openweather_key_here

NEWS_API_KEY=your_newsapi_key_here

OPENROUTER_API_KEY=your_openrouter_key_here

How to Get API Keys:

- OpenWeather: Sign up at <https://openweathermap.org/api>
- NewsAPI: Sign up at <https://newsapi.org/>
- OpenRouter (LLM): Get a free API key at <https://openrouter.ai/keys>

3. Run the Project with Streamlit

From your terminal:

```
streamlit run app.py
```

This will open the UI in your browser at: <http://localhost:8501>

4. Try Sample Prompts

- "What's the weather in New York and show me some sports news?"
- "Get me top headlines from the US and UK"
- "What's the current temperature in Paris and latest tech updates?"
- "today news"

Folder Overview

Path	Purpose
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app.py	Streamlit frontend & agent loop orchestration
agents/	Contains planner, executor, and verifier logic
tools/	Integrations for real-world APIs (OpenWeather, NewsAPI)
llm/	LLMClient interface for OpenRouter (can be adapted)
.env.example	Shows required env variables (no secrets)
README.md	Full setup, architecture, and usage instructions
requirements.txt	List of dependencies for pip install

Pass Criteria Covered

Requirement	Status
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Multi-agent (Planner, Executor, Verifier)	Yes
Uses LLM with structured outputs	Yes
Uses 2+ real APIs	OpenWeather + NewsAPI
No hardcoded responses	Everything uses real tool calls
Runnable with one command	streamlit run app.py
Includes .env.example & README	Confirmed