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AGS: Agentic Frameworks

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News Genie -

An AI-Powered Information and News Assistant

High level components

1. User Interface (Streamlit)

- Users type prompts and choose news categories (Technology, Finance, Sports).
- UI sends the user input to the backend graph and displays responses and news cards.

2. Orchestration Layer (LangGraph)

- Maintains a **state object** (conversation history, query type, news results, final answer).
- Routes each user request through a workflow:

- Classify query (News vs General).
- Route to either a news workflow or a general Q&A workflow.
- Merge results and return a final response to the UI.

3. AI Agent (LLM)

- Powered by an OpenAI chat model through LangChain.
- Responsibilities:
 - Answer **general knowledge** or informational questions.
 - Summarize and explain retrieved news articles.
 - Maintain tone and conversation style.
 - Use conversation history for context.

4. Tools

- **News API tool (`news_api.py`)**
 - Calls a real-time news API using topic/category.
 - Returns structured news items (title, source, url, summary, published_at).
- **Web search tool (`web_search.py`)**
 - Calls a web search API to fetch background info or extra context.
 - Used as a fallback or to enrich answers.

5. Configuration and Error Handling

- `config.py` loads API keys and manages base URLs and timeouts.
- LangGraph includes fallback paths:
 - If news API fails => fall back to web search or a graceful message.
 - If both fail => LLM explains the issue and offers a generic answer.

Conversation and query differentiation

- A classifier (simple rules plus LLM if needed) decides if a query is:
 - "news": e.g. "Show me the latest tech news" or "What is happening in the stock market today?"
 - "general": e.g. "Explain what inflation is in simple terms."
 - (Optional later: "mixed" - ask for explanation + latest news.)
- Conversation design:
 - Maintain a **chat_history** list of turns in state.
 - Use a **system prompt** to enforce:
 - Always verify news from multiple sources when possible.
 - Clearly distinguish between factual news, opinion, and unknown.
 - If you are unsure, say so and suggest external sources.

