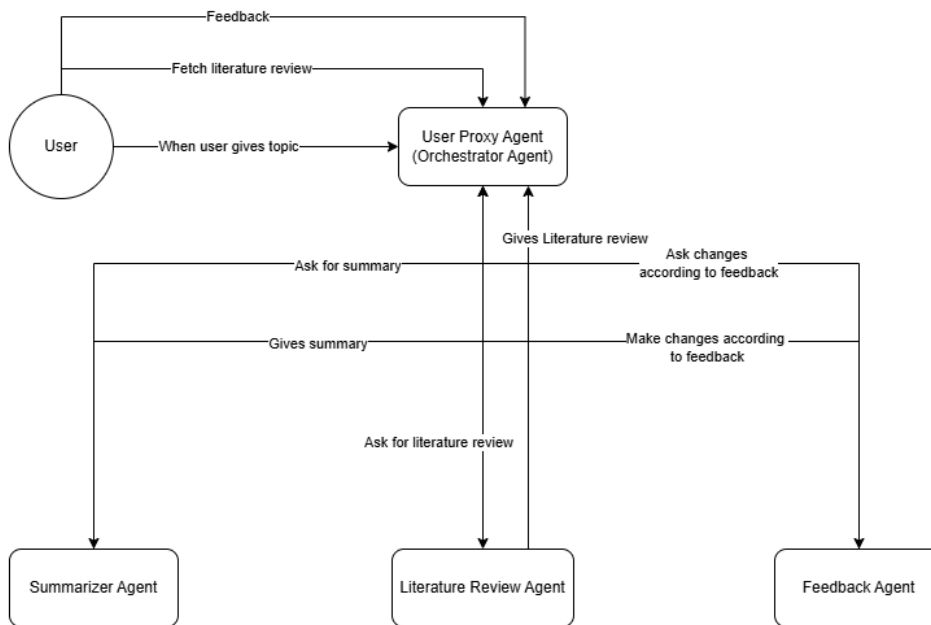
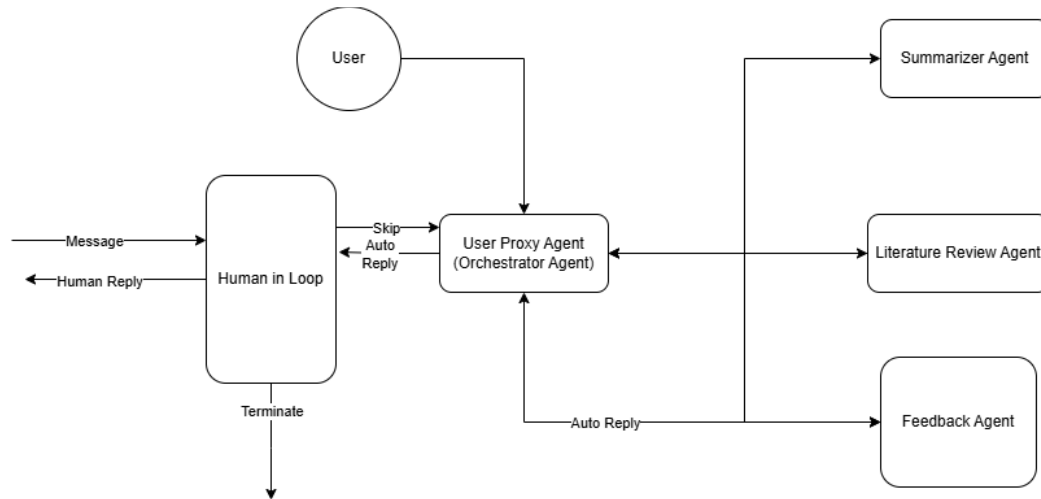


Design Phase

Below is the high-level design of the task.



1. User

- Initiates the interaction by providing a topic or query.
- Provides feedback for refinements.

2. User Proxy Agent (Orchestrator Agent)

- a. Acts as the central orchestrator for all interactions.
- b. Routes user requests to the appropriate agents (Summarizer Agent, Literature Review Agent, Feedback Agent).
- c. Manages human-in-the-loop intervention and automation.

3. Human in Loop

- a. Acts as a manual intervention step where a human can review and modify responses.
- b. Can either provide a reply or allow the system to auto-reply.

4. Summarizer Agent

- a. Generates summaries when requested by the Orchestrator Agent.
- b. Provides concise outputs of literature reviews.

5. Literature Review Agent

- a. Retrieves and processes literature reviews based on the user's topic.
- b. Returns the processed literature review to the Orchestrator Agent.

6. Feedback Agent

- a. Incorporates user feedback into the system.
- b. Suggests modifications to the Literature Review Agent and Summarizer Agent based on user feedback.

Flow of Messages Between Agents:

Top Diagram (General Workflow with Human-in-the-Loop)

1. **User sends a message** → processed by the **Human-in-the-Loop** system.
2. If required, the human provides a response, or the system automatically replies.
3. **User Proxy Agent (Orchestrator Agent)** handles routing:
 - a. If summarization is needed → request goes to **Summarizer Agent**.
 - b. If a literature review is needed → request goes to **Literature Review Agent**.
 - c. If feedback is needed → request goes to **Feedback Agent**.

Bottom Diagram (Detailed Agent Interaction)

1. **User provides a topic** to the **User Proxy Agent**.
2. The Orchestrator Agent **requests a literature review** from the **Literature Review Agent**.
3. Literature Review Agent **returns the review** to the Orchestrator Agent.

4. Orchestrator Agent can request a **summary** from the **Summarizer Agent**.
5. If the user provides **feedback**, it is sent to the **Feedback Agent**.
6. **Feedback Agent does modifications** in the literature review.
7. The system updates the literature review or summary accordingly.
8. The final output is provided to the **User**.