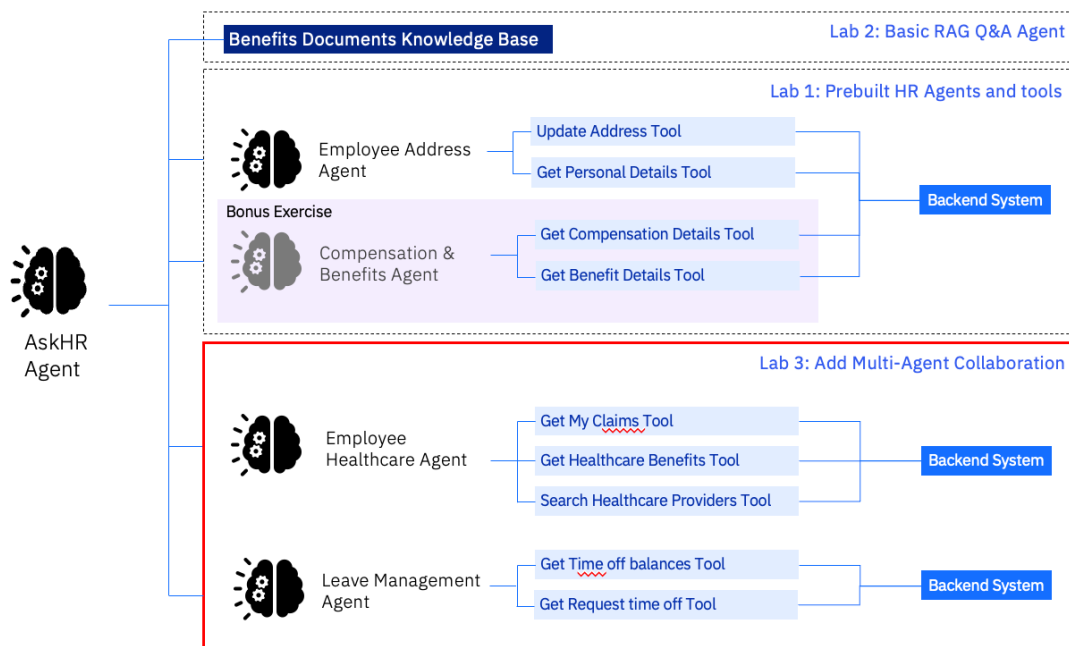


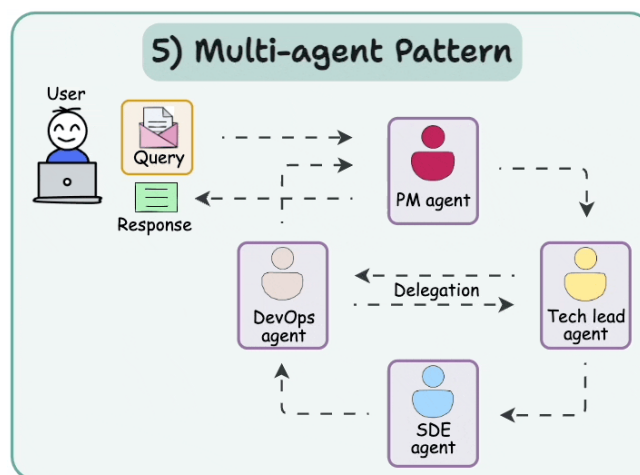
Lab 3: Multi-Agent Collaboration

In this lab, we will be adding a few more agents to complete the whole AskHR Agent.

Lab Architecture




Design Pattern



This lab primarily follows the **Multi-Agent Design Pattern**. This design pattern enables multiple specialized AI agents to work together, each with a clear role or capability, to solve more complex tasks that a single model may not handle as effectively. Instead of one LLM doing everything, different agents are assigned responsibilities—such as one agent focusing on retrieving data, another analyzing it, and another generating the final response. These agents communicate and coordinate with each other, passing information along until the task is completed.

For example, if a user asks *“Can you create a market summary of our competitors for the last quarter?”*, one agent might first gather data from a vector database, another might analyze trends in the data, and a third agent could generate a clear, user-friendly summary. The outcome is a more reliable and structured response, since each agent contributes its expertise.

 **Key idea:** Multi-agent design brings collaboration into AI systems—like a digital team of assistants, each with their own specialty, working together to complete a task.

Benefits of Multi-Agent Design Pattern

Scalable & Modular

Develop, maintain and iterate upon individual agents independently, and reuse them in different multi agent architectures. Easily scalable by adding new agents to a multi-agent system, without making other significant modifications to the other agents

Focused & Specialized

Each agent is focused and specialized on its domain, and expected functionality. Rather than having one “jack of all trades, master of none” agent, we have a combination of distinct, specialized agents that yield higher accuracy overall

Customized & Controlled

Configure the way agents can interact with one another, for example by establishing specific hierarchies of interaction.

Gives greater control over the design of the agentic system