Summary and Highlights

Congratulations! You have completed this module. At this point, you know that:

- Multi-agent systems are fundamentally about organized specialization-assigning the right agent to the right task. These systems consist of multiple autonomous agents interacting within an environment.

- Agent specialization concepts include:

    - Capability boundaries where each agent should have a well-defined and focused scope

    - Expertise depth and breadth to balance highly specialized agents with broad generalist agents

    - Interface standardization to ensure agents communicate through structured inputs and outputs

    - Finally, handoff patterns to ensure agents should gracefully pass tasks to other agents when the task falls outside their specific expertise

- Agents primarily interact in what are known as graph-structured systems, for example:

    - In Pipeline Pattern, agents perform sequential handoffs, passing their output directly as input to the next agent in line.

    - In Hub-and-Spoke Pattern, a central coordinator dispatches tasks to various specialist agents

    - Orchestration frameworks such as LangGraph, CrewAI, AutoGen, and IBM BeeAI Framework are used to manage complex interactions among AI agents

- Model Context Protocol or MCP standardizes how AI models access and share context with external tools and data sources. Agent Communication Protocol or ACP provides a standardized method for AI agents to communicate and collaborate.

- Challenges in building multi-agent systems include coordination complexity, communication overhead, and security concerns.

- Agentic RAG enhances RAG by letting an LLM act as a decision-making agent, not just a responder. The agent selects the most relevant data source based on the query context. It boosts accuracy, adaptability, and real-world applicability across industries.

Mark as completed