Agentic AI Foundations Training

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Duration: **1 Day**

Overview

Agentic AI Foundations is an introductory course designed for professionals who want to build autonomous, goal-driven AI solutions using AWS services. Throughout the programme, participants will explore how Agentic AI differs from traditional generative AI and conversational systems while gaining a solid understanding of the principles behind intelligent agent architectures.

The course introduces key AWS technologies including **Amazon Q Developer**, **Amazon Q Business**, **Kiro**, **Amazon Bedrock Agents**, and **Amazon Bedrock AgentCore**. Participants will learn how these services can be used to design, develop, and deploy autonomous AI solutions capable of solving real-world business challenges.

In addition, the programme explores architectural patterns for production-ready Agentic AI systems, covering topics such as observability, interoperability, agent collaboration, and implementation strategies. By the end of the course, learners will have a strong foundation for designing and evaluating Agentic AI applications within AWS environments.

Prerequisites

Participants are recommended to have:

- Completion of **Generative AI Essentials** or equivalent practical experience
- Basic knowledge of AWS services
- Fundamental software development experience

Who Should Attend

This course is designed for:

- Software developers beginning their journey with Agentic AI.
- Technical professionals interested in understanding the core concepts and capabilities of autonomous AI systems.
- Development teams evaluating Agentic AI solutions and comparing different agent architectures.
- AWS users expanding their knowledge of Amazon Q Developer, Amazon Q Business, or Amazon Bedrock technologies.
- Solution architects and engineering teams building intelligent autonomous applications.

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What You Will Learn

Upon successful completion of this course, participants will be able to:

- Explain the evolution of Agentic AI and identify the characteristics that define autonomous AI systems.
- Describe the core architectural components of Agentic AI solutions.
- Differentiate between workflow-based, autonomous, and hybrid agent models.
- Compare AWS services designed for Agentic AI development.
- Explain the capabilities and common use cases of Amazon Q Developer, Amazon Q Business, and Kiro.
- Describe the core functionality of Amazon Bedrock Agents and Amazon Bedrock AgentCore.
- Identify common implementation patterns for Agentic AI applications.
- Explain observability and interoperability approaches used in production-ready Agentic AI systems.

Outline

Module 1 - From Large Language Models (LLMs) to Agentic AI

- Understanding the fundamentals of Large Language Models (LLMs)
- Key innovations that enabled Agentic AI
- The evolution from LLM-powered systems to autonomous agents
- The progression of Agentic AI technologies

Module 2 - Exploring Agentic AI

- Core concepts of Agentic AI
- Different categories of AI agents
- Common applications of Agentic AI
- Real-world use cases for autonomous intelligent agents

Module 3 - Understanding Agentic AI Workflows

- Workflow patterns used in Agentic AI solutions
- Overview of Amazon Bedrock Flows
- How workflow orchestration supports intelligent decision-making

Module 4 - Introducing Autonomous Agents

- How autonomous agents operate
- Understanding the ReAct framework
- Exploring the ReWoo architecture
- Multi-agent collaboration patterns
- Overview of AWS Agentic AI solutions

Module 5 - Amazon Q and Agentic AI Development Tools

- Amazon Q Developer
- Amazon Q Business
- Using Amazon Q across AWS services
- Kiro and specification-driven AI-assisted development

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Module 6 - Building Agentic AI with AWS

- Amazon Bedrock Agents
- Amazon Bedrock AgentCore
- Hands-on laboratory exercises
- Integrating Amazon Bedrock Knowledge Bases
- Implementing Amazon Bedrock Guardrails

Module 7 - Building Your Own Agentic AI Solutions

- Developing custom Agentic AI solutions
- Observability and monitoring strategies
- Agent interoperability
- Architectural considerations for production-ready deployments

Module 8 - Course Review and Next Steps

- Review of key concepts covered throughout the course
- Recommended next learning steps
- AWS resources and additional learning opportunities