

Deploy multi-agent systems with Agent Development Kit and Agent Runtime

In this course, you'll learn to use the Google Agent Development Kit to build complex, multi-agent systems. You will build agents equipped with tools, and connect them with parent-child relationships and flows to define how they interact. You'll run your agents locally and deploy them to Agent Runtime to run as a managed agentic flow, with infrastructure decisions and resource scaling handled by Agent Runtime.

**DURATION**

1 day

**LEVEL**

300 - Advanced

**FORMAT**

Instructor-led, On-demand

What you'll learn

- Build an agent with tools using the Google Agent Development Kit.
- Establish interaction patterns between multiple agents with parent-child relationships and flows.
- Utilize features such as session memory, artifact storage, and callbacks.
- Deploy a multi-agent app to Agent Runtime.
- Query an agent app running on Agent Runtime.
- Evaluate agents within the Agent Development Kit.

Overview	5 modules · 4 labs · 9 classroom activities
Who this course is for	• Machine learning engineers, Gen AI engineers
Products	• Agent Runtime on Gemini Enterprise Agent Platform • Agent Retrieval on Gemini Enterprise Agent Platform • Agent Gateway • Agent Development Kit
Prerequisites	• Python, gen AI prompt engineering, gen AI tool use
Not covered	• Testing and evaluation of models

Module 01 [Get started with the Agent Development Kit](#)

Topics	• Basics of building an agent in the Agent Development Kit.
Objectives	• Explain how the Agent Development Kit compares to other tools such as the Google Gen AI SDK or LangChain. • Describe the parameters used to build an agent in Agent Development Kit.

Module 02 [Empower Agent Development Kit agents with tools](#)

Topics	• Enhance agents with tools and cover the growing breadth of available tools.
Objectives	• Discuss the importance of structured docstrings and typing when writing tool functions for agents. • Demonstrate the ability to provide tools to an agent. • List common and useful tools available for the Agent Development Kit agents, including LangChain tools.

Module 03

Build multi-agent systems with Agent Development Kit

Topics	• Manage communication and task-sharing between agents through parent-child relationships and flows to enable coordinated responses to queries.
Objectives	• Describe the directory structure and naming conventions encouraged by the Agent Development Kit. • Demonstrate the ability to create multiple agents and relate them to one another with parent-child relationships. • Describe the different flow options and when you might use them. • Get responses that have passed through multiple agents. • Control content at different points with callbacks.

Module 04

Deploy Agent Development Kit agents to Agent Runtime

Topics	• Deploying agent apps to Agent Runtime and querying responses.
Objectives	• Describe the benefits of deploying agents, especially multi-agent systems, to Agent Runtime over self-hosting, such as in Agent Platform online predictions. • Demonstrate deploying to Agent Runtime. • Demonstrate querying a deployed agent app.

Module 05

Evaluate agent systems

Topics	• Evaluate agents within the Agent Development Kit.
Objectives	• Run programmatic evaluation benchmarks on multi-agent workflows using the Agent Development Kit • Inspect and analyze evaluation metrics utilizing the diagnostic web interface