

Training: Google Cloud

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



TRAINING GOALS:

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.

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.

Audience

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

CONSPECT:

- Module 1 - 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 2 - 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 3 - 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 4 - 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 5 - 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.

REQUIREMENTS:

Python, gen AI prompt engineering, gen AI tool use.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Google Cloud (course completion).

TRAINER:

Authorized Google Cloud Trainer