

Quick tip: Review the prerequisites before you run the lab

**End Lab**

01:00:00

Provisioning lab resources  
Estimated time remaining  
4 minutes

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked.  
[Learn more.](#)

# Building a Conversational Search Agent with Reasoning Engine and RAG on AI Applications

Lab 1 hour No cost Intermediate

Rate Lab

This lab may incorporate AI tools to support your learning.

## Lab instructions and tasks

- GENAI064 0/100
- Overview
  - Objective
  - Setup
  - Task 1. Open Python Notebook and Install Packages
  - Task 2. Create a Data Store in AI Applications
  - Task 3. Define and test your agent locally
  - Task 4. Deploy and test your remotely deployed agent
  - Congratulations!

## GENAI064

### Overview

[Reasoning Engine](#) (LangChain on Vertex AI) is a managed service that helps you to build and deploy an agent reasoning framework. It allows you to choose how much reasoning you want to delegate to the LLM and how much you want to handle with customized code. You can define Python functions that get used as tools via [Gemini Function Calling](#). Reasoning Engine integrates closely with the Python SDK for the Gemini model in Vertex AI, and it can manage prompts, agents, and examples in a modular way. Reasoning Engine is compatible with LangChain, LlamaIndex, or other Python frameworks.

### Objective

In this lab, you will build and deploy an agent (model, tools, and reasoning) using the Gen AI SDK for Python.

Your agent will use [LangChain](#) and [AI Applications](#) to retrieve structured data indexed from the Movies Dataset on Kaggle using [retrieval augmented generation \(RAG\)](#).

- Install the Gen AI SDK for Python
- Define a model for your agent
- Define Python functions as tools so that our agent can search and retrieve movie information from AI Applications
- Use the LangChain agent template provided in the Gen AI SDK for Reasoning Engine
- Test your agent locally before deploying
- Deploy and test your agent on Reasoning Engine in Vertex AI

### Setup

#### Before you click the Start Lab button

Read these instructions. Labs are timed and you cannot pause them. The timer, which starts when you click **Start Lab**, shows how long Google Cloud resources will be made available to you.

This Qwiklabs hands-on lab lets you do the lab activities yourself in a real cloud environment, not in a simulation or demo environment. It does so by giving you new, temporary credentials that you use to sign in and access Google Cloud for the duration of the lab.

#### What you need

To complete this lab, you need:

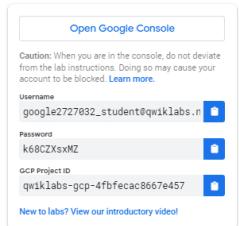
- Access to a standard internet browser (Chrome browser recommended).
- Time to complete the lab.

**Note:** If you already have your own personal Google Cloud account or project, do not use it for this lab.

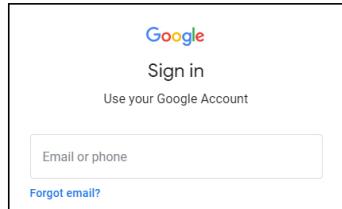
**Note:** If you are using a Pixelbook, open an Incognito window to run this lab.

[How to start your lab and sign in to the Google Cloud Console](#)

1. Click the **Start Lab** button. If you need to pay for the lab, a pop-up opens for you to select your payment method. On the left is a panel populated with the temporary credentials that you must use for this lab.

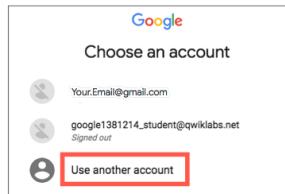


2. Copy the username, and then click **Open Google Console**. The lab spins up resources, and then opens another tab that shows the **Sign in** page.



**Tip:** Open the tabs in separate windows, side-by-side.

If you see the **Choose an account** page, click **Use Another Account**.



3. In the **Sign in** page, paste the username that you copied from the Connection Details panel. Then copy and paste the password.

**Important:** You must use the credentials from the Connection Details panel. Do not use your Qwiklabs credentials. If you have your own Google Cloud account, do not use it for this lab (avoids incurring charges).

4. Click through the subsequent pages:

- Accept the terms and conditions.
- Do not add recovery options or two-factor authentication (because this is a temporary account).
- Do not sign up for free trials.

After a few moments, the Cloud Console opens in this tab.



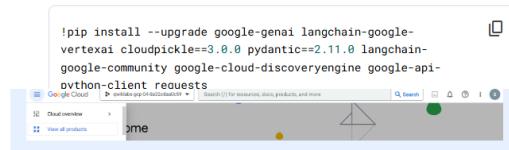
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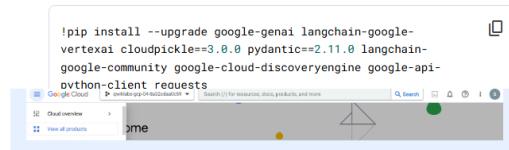
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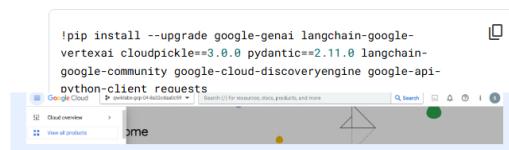
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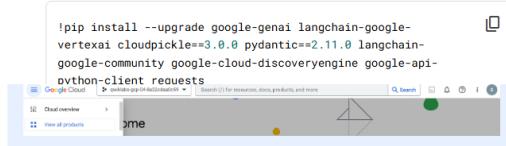
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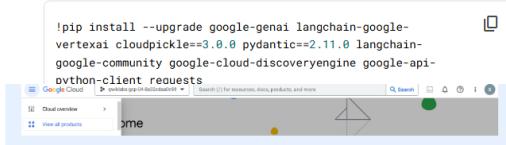


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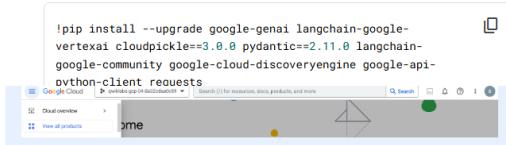
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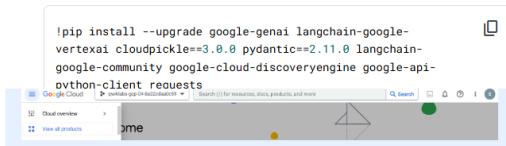
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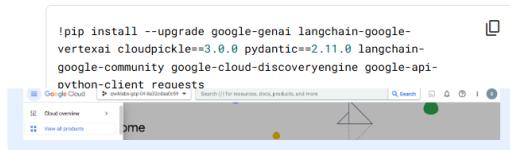
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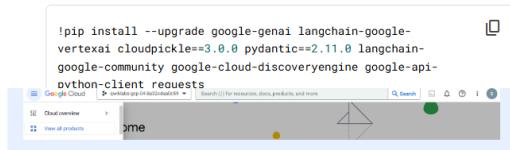
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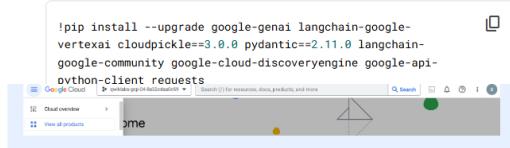
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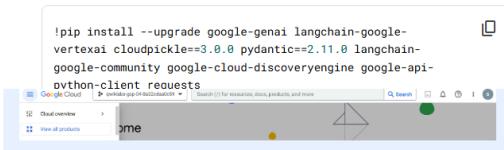
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