

# Generative AI with Vertex AI: Prompt Design

1 hour 30 minutes

1 Credit

**GSP1151**



Google Cloud Self-Paced Labs

## Overview

The Vertex AI PaLM API for text enables you to structure prompts however you like. You can add contextual information, instructions, examples, questions, lists, and any other types of text content that you can think of.

In this lab, you will learn about prompt design and various text generation use cases using the Vertex AI PaLM API.

What you will learn:

How to get started with prompt engineering with the PaLM API:

- Best practices
- Zero-, one- and few-shot prompting

How to explore some text generation use cases with the PaLM API:

- Ideation
- Q&A
- Text classification
- Text extraction
- Text summarization

## Setup and requirements

### 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 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.

To complete this lab, you need:

- Access to a standard internet browser (Chrome browser recommended).

**Note:** Use an Incognito or private browser window to run this lab. This prevents any conflicts between your personal account and the Student account, which may cause extra charges incurred to your personal account.

- Time to complete the lab---remember, once you start, you cannot pause a lab.

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

## 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 the **Lab Details** panel with the following:

- The **Open Google Cloud console** button
- Time remaining
- The temporary credentials that you must use for this lab
- Other information, if needed, to step through this lab

2. Click **Open Google Cloud console** (or right-click and select **Open Link in Incognito Window** if you are running the Chrome browser).

The lab spins up resources, and then opens another tab that shows the **Sign in** page.

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

**Note:** If you see the **Choose an account** dialog, click **Use Another Account**.

3. If necessary, copy the **Username** below and paste it into the **Sign in** dialog.

student-01-40f5f7047d9c@qwiklabs.net

content\_c...

You can also find the **Username** in the **Lab Details** panel.

4. Click **Next**.

5. Copy the **Password** below and paste it into the **Welcome** dialog.

WpE1WHXxLSJ2

content\_co

You can also find the **Password** in the **Lab Details** panel.

6. Click **Next**.

**Important:** You must use the credentials the lab provides you. Do not use your Google Cloud account credentials.

**Note:** Using your own Google Cloud account for this lab may incur extra charges.

7. 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 Google Cloud console opens in this tab.

**Note:** To view a menu with a list of Google Cloud products and services, click the **Navigation menu** at the top-left.

# Notebook Organization

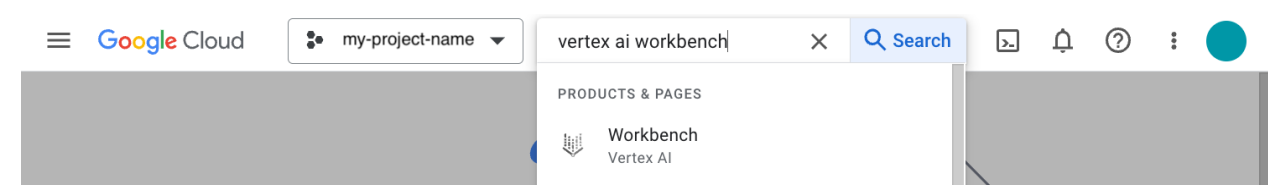
This lab is organized across various Jupyter notebooks:

Notebook	Description
language/prompts/intro_prompt_design.ipynb	Notebook covering best practices for prompt design
language/prompts/examples/ideation.ipynb	Notebook on how to use the PaLM APIs for idea generation, brainstorming, writing
language/prompts/examples/question_answering.ipynb	Notebook on how to use the PaLM APIs for question-answering
language/prompts/examples/text_classification.ipynb	Notebook on how to use the PaLM APIs for classifying text
language/prompts/examples/text_extraction.ipynb	Notebook on how to use the PaLM APIs for extracting information from text
language/prompts/examples/text_summarization.ipynb	Notebook on how to use the PaLM APIs for summarizing text

# Task 1. Vertex AI Workbench

1. In your Google Cloud project, navigate to Vertex AI Workbench. In the top search bar, enter **Vertex AI Workbench** of the Google Cloud console.

2. Go to **User-managed-notebooks**.



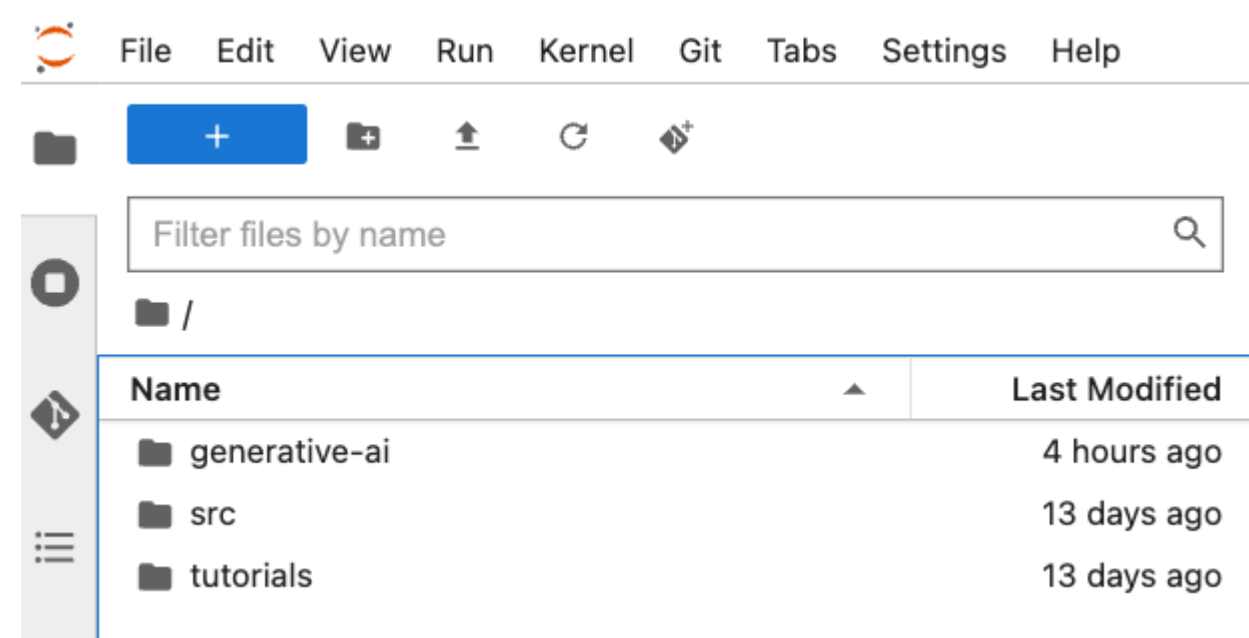
3. Click **Open JupyterLab**.

4. The JupyterLab will run in a new tab.

<input type="checkbox"/>	<input type="radio"/>	Notebook name <input type="text" value="↑"/>	
<input type="checkbox"/>	<input checked="" type="radio"/>	<a href="#">generative-ai-jupyterlab</a>	OPEN JUPYTERLAB

# Task 2. Open generative-ai folder

- 1. Navigate to the `generative-ai` folder on the left hand side of the notebook.
- 2. Navigate to the `/language/prompts` folder.
- 3. Click on the `intro_prompt_design.ipynb` file
- 4. Follow the steps in the notebook and run each cell one at a time.



Click **Check my progress** to verify the objectives.

Be Concise

Check my progress

Assessment Completed!

Be specific, and well-defined

Check my progress

Assessment Completed!

Ask one task at a time

Check my progress

*Assessment Completed!*



Watch out for hallucinations

Check my progress

*Assessment Completed!*



Turn generative tasks into classification tasks to reduce output variability

Check my progress

*Assessment Completed!*



Improve response quality by including examples

Check my progress

*Assessment Completed!*

### Task 3. Explore the notebooks

- 1. In the file directory on the left-hand side, double click to open the folder `language/prompts/examples`.
- 2. Open any of the notebooks in the folder to explore the different use cases where prompt engineering can help generate the results desired from the PaLM API.
- 3. After opening a notebook, run each cell one at a time to view the results of the operations in the notebook.

Click **Check my progress** to verify the objective.



Explore the notebooks

Check my progress

*Assessment Completed!*

# Congratulations!

You have now completed the lab! In this lab, you used various notebooks available from the `generative-ai` GitHub repository to explore the PaLM API in Vertex AI.

## Next steps

- Check out the Generative AI on Vertex AI documentation.
- Learn more about Generative AI on the Google Cloud Tech YouTube channel.

## Google Cloud training and certification

...helps you make the most of Google Cloud technologies. Our classes include technical skills and best practices to help you get up to speed quickly and continue your learning journey. We offer fundamental to advanced level training, with on-demand, live, and virtual options to suit your busy schedule. Certifications help you validate and prove your skill and expertise in Google Cloud technologies.

**Manual Last Updated October 31, 2023**

**Lab Last Tested October 31, 2023**



Copyright 2023 Google LLC All rights reserved. Google and the Google logo are trademarks of Google LLC. All other company and product names may be trademarks of the respective companies with which they are associated.

Ready for more?  
Here's another lab we think you'll like.