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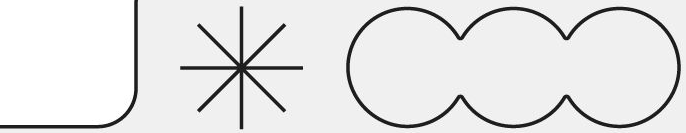
Deploying a FastAPI Gemini Chatbot with Memory to Cloud Run

Ananda Dwi Rahmawati

Google Developer Expert - Cloud



Build with AI

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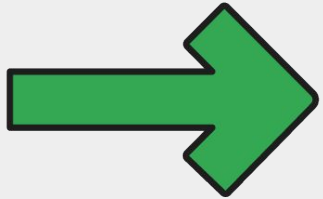
Build with AI

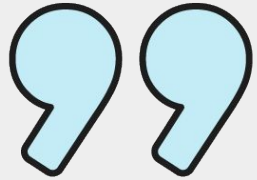
Chapter One

Deploying a FastAPI Gemini Chatbot with Memory to Cloud Run



Overview

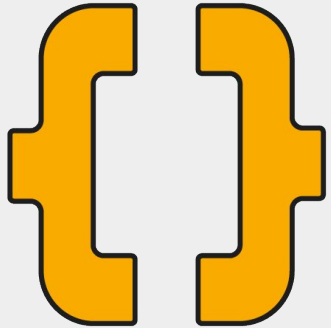
“FastAPI handles your endpoints, Gemini powers your responses, and Cloud Run makes it all effortlessly scalable.”

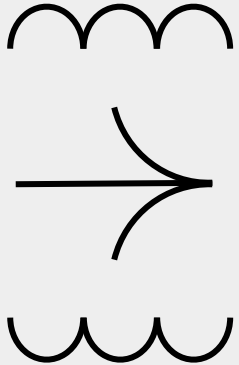


What is FastAPI

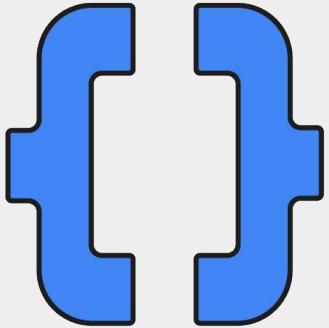
FastAPI is a modern, high-performance web framework for building APIs with Python 3.7+.

- **Fast**: Built on Starlette and Pydantic—optimized for speed.
- **Easy to Use**: Automatic validation, docs generation (Swagger, ReDoc).
- **Asynchronous**: Supports async/await for high concurrency.
- Great for ML/AI services, microservices, and REST APIs.



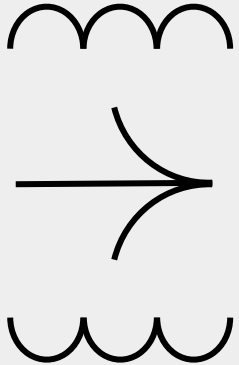


What is Gemini Chatbot?



Gemini is Google's family of advanced generative AI models (like GPT).

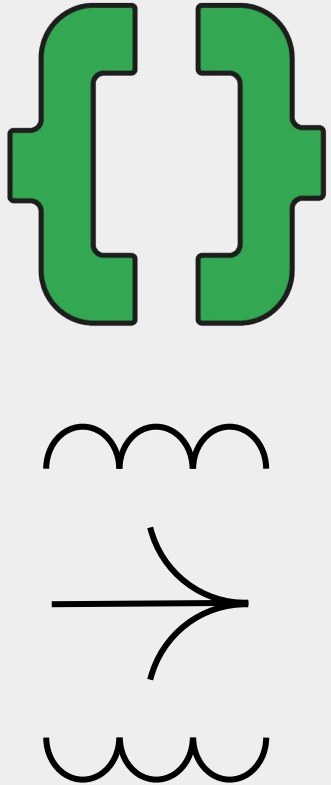
- **Built by Google DeepMind**, integrated into Google Cloud AI products.
- **Gemini Chatbot** uses these models to understand and generate human-like responses.
- **Supports multi-turn conversations**, code understanding, and contextual reasoning.
- Access via Google's Generative AI SDK or Vertex AI API.



What is Cloud Run?

Cloud Run is a fully managed compute platform by Google Cloud for running containerized apps.

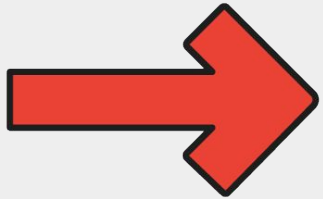
- **Deploy any Docker container**—no server management needed.
- **Scales automatically:** from zero to thousands of instances.
- Pay only when in use.
- **Ideal for microservices**, APIs, or event-driven apps.

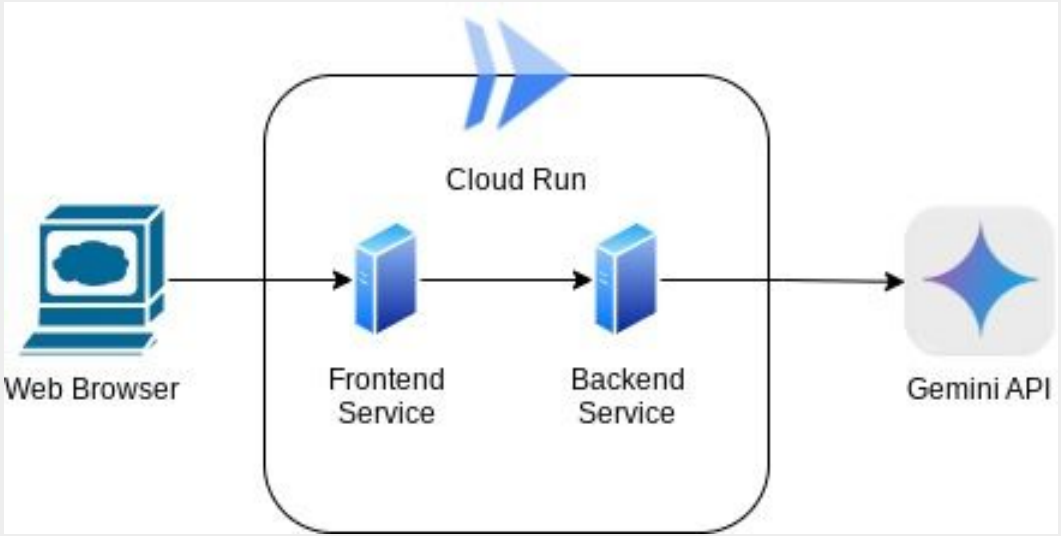


Chapter Two

Let’s Demo!

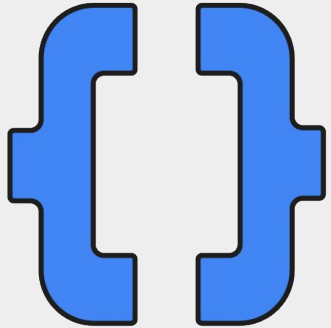
Are you ready?

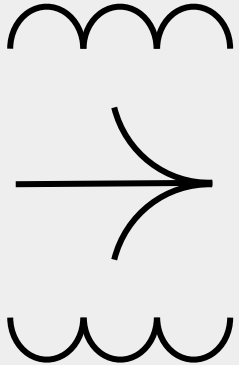



Cloud Run
Web Browser
Frontend Service
Backend Service
Gemini API

Prerequisites

- A basic understanding of Generative AI, Gemini on Google Cloud
- A basic understanding of Cloud Run and Vertex AI Concepts

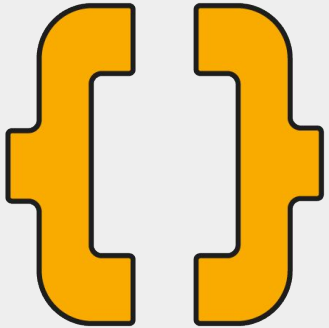


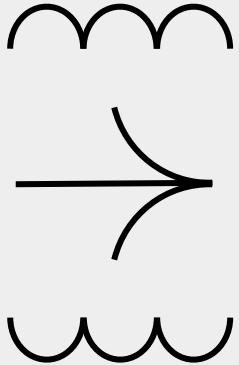


What you will learn

In this lab, you'll learn:

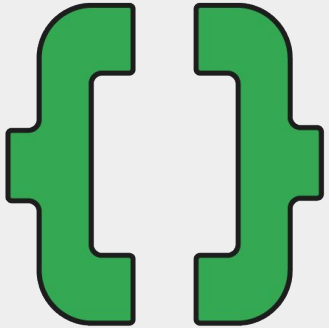
- How to deploy FastAPI to Cloud Run
- Prompt Gemini from Cloud Run in python using a Google client library

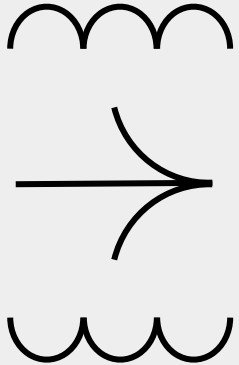


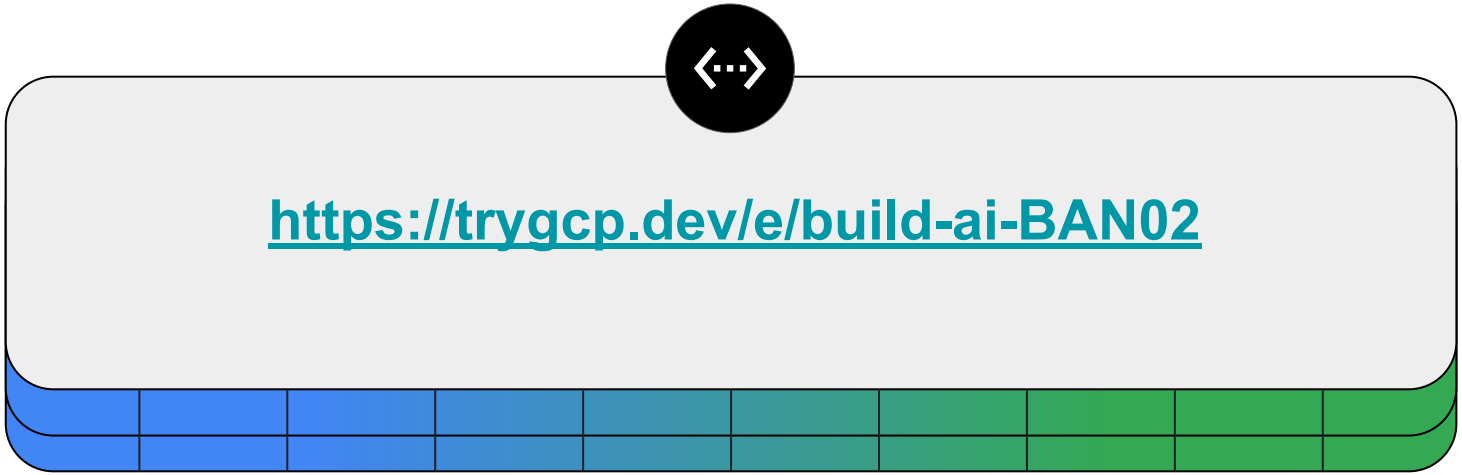


What you will need

- A curious mind
- A working computer and reliable wifi
- A Google Cloud project with billing attached.

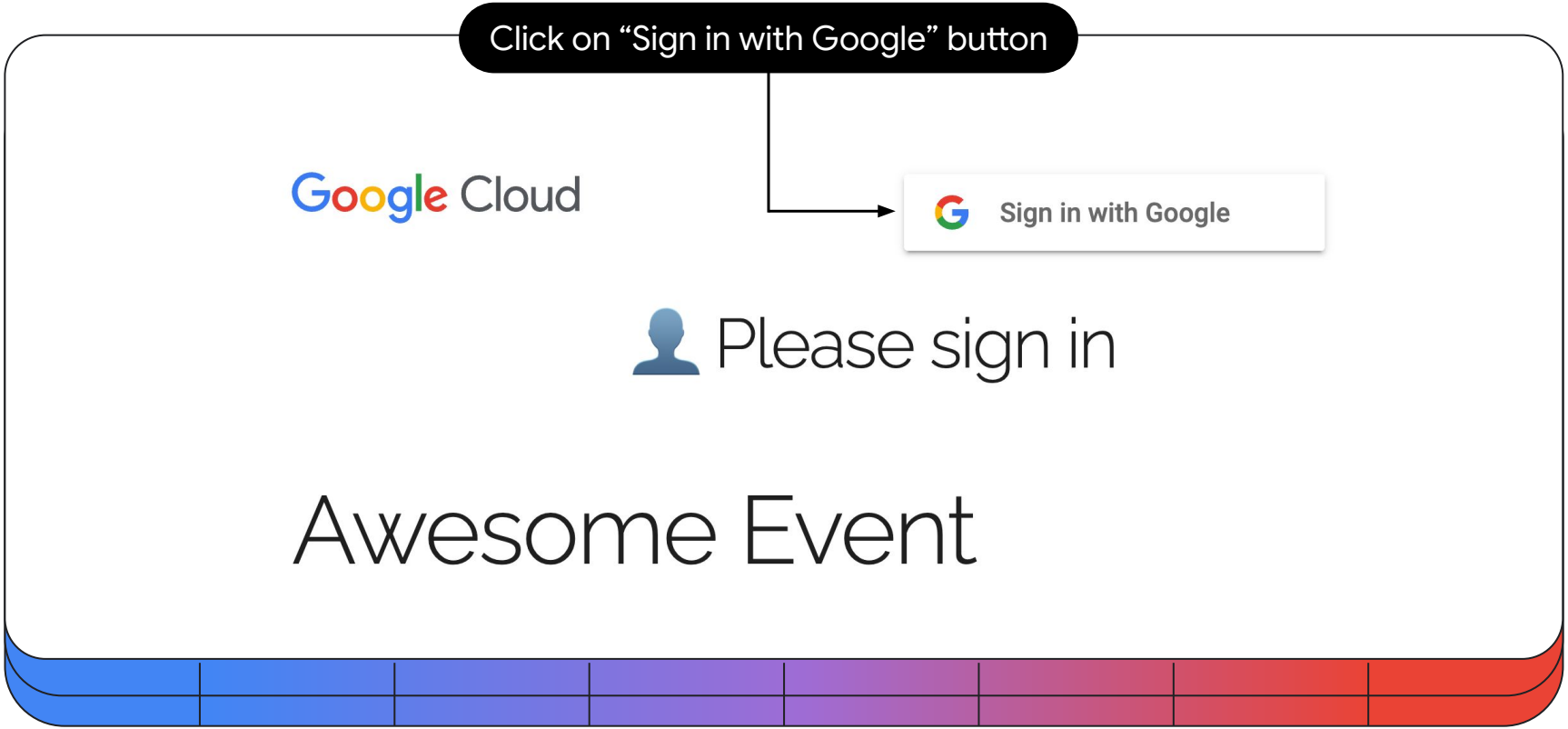






Open this URL

You will need to be signed in



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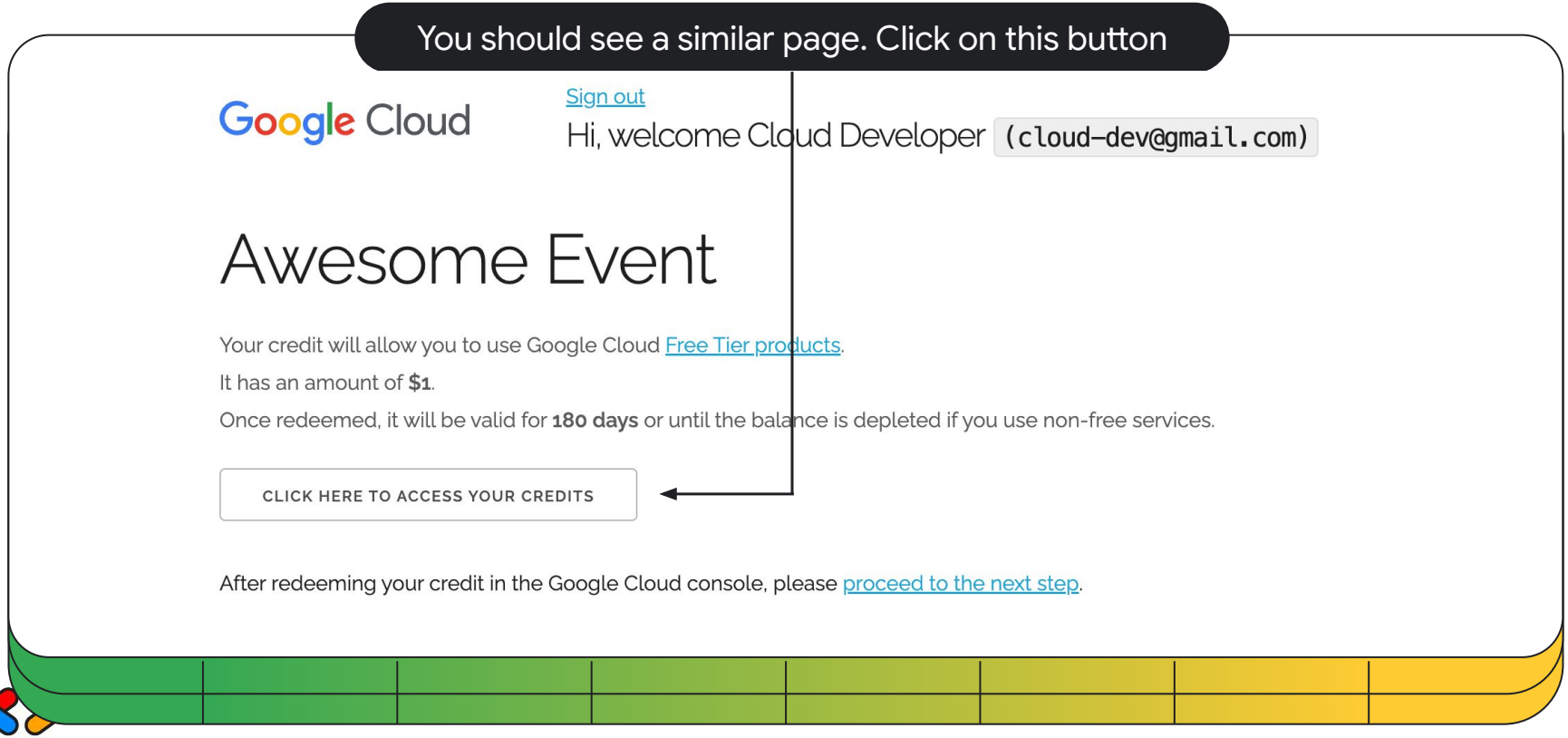
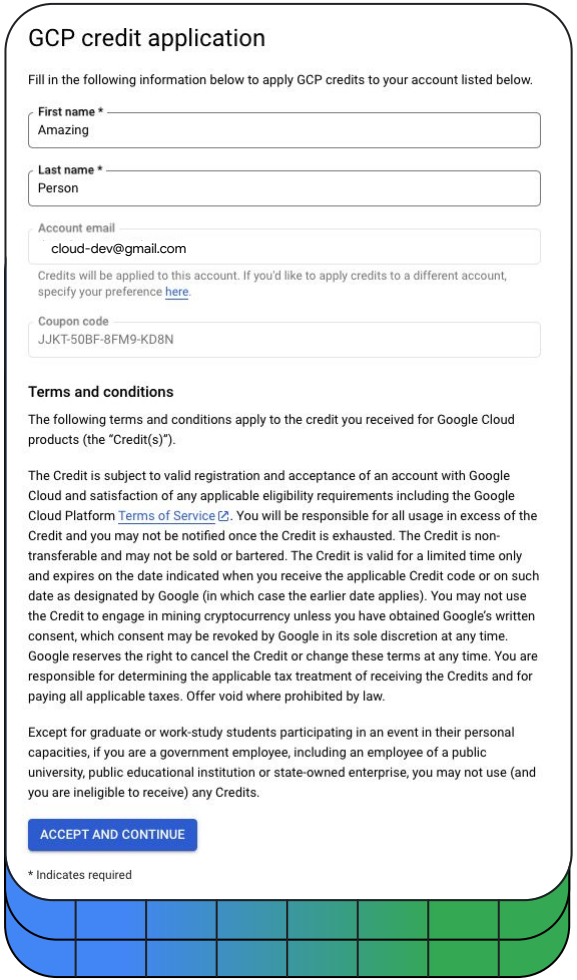


Make sure that you are applying for the correct account

Click on “Accept and Continue” to proceed



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Step 1

Claim credits

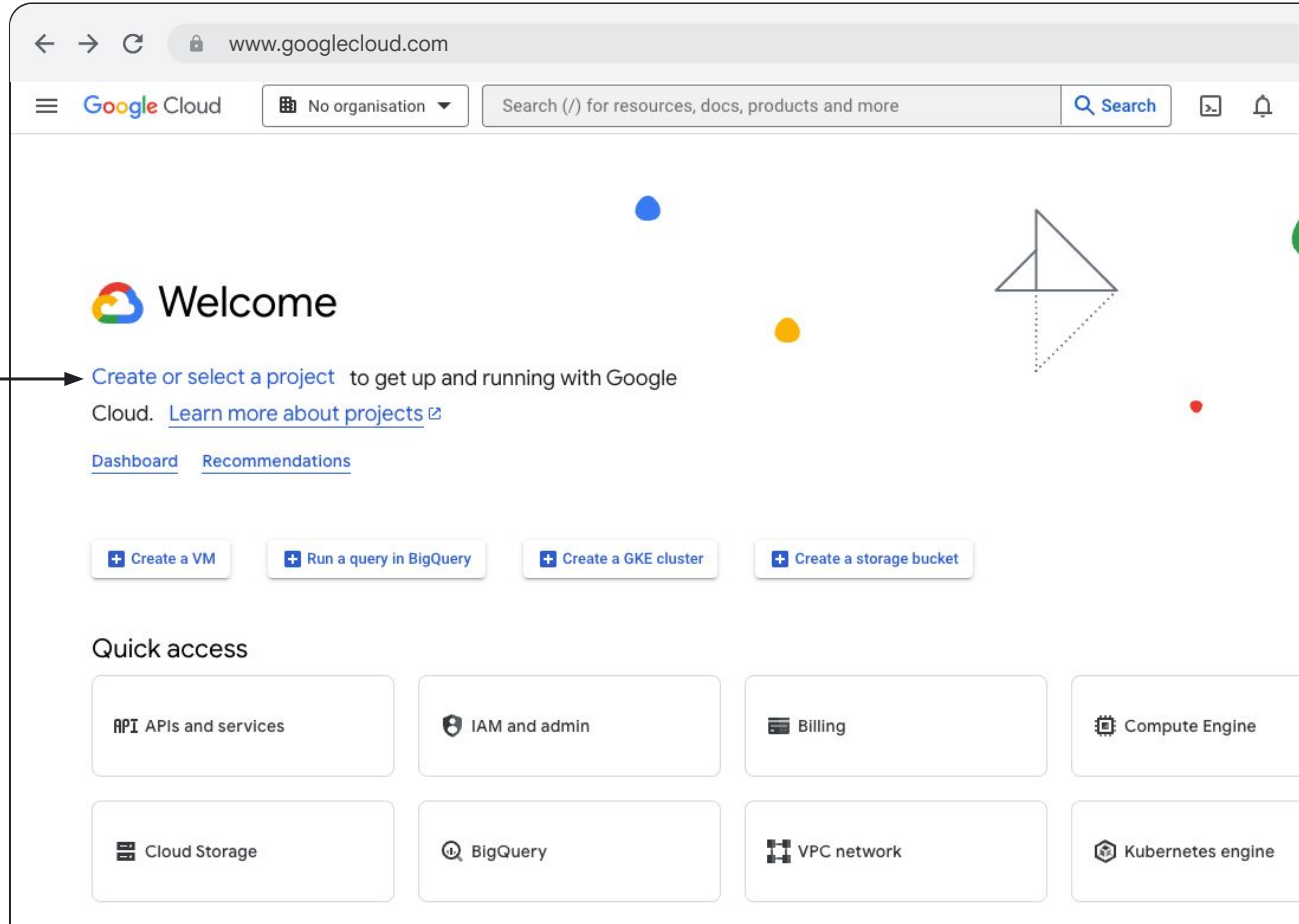
Step2

Create a Google Cloud project

Go to:

console.cloud.google.com

Click on “Create or select a project”



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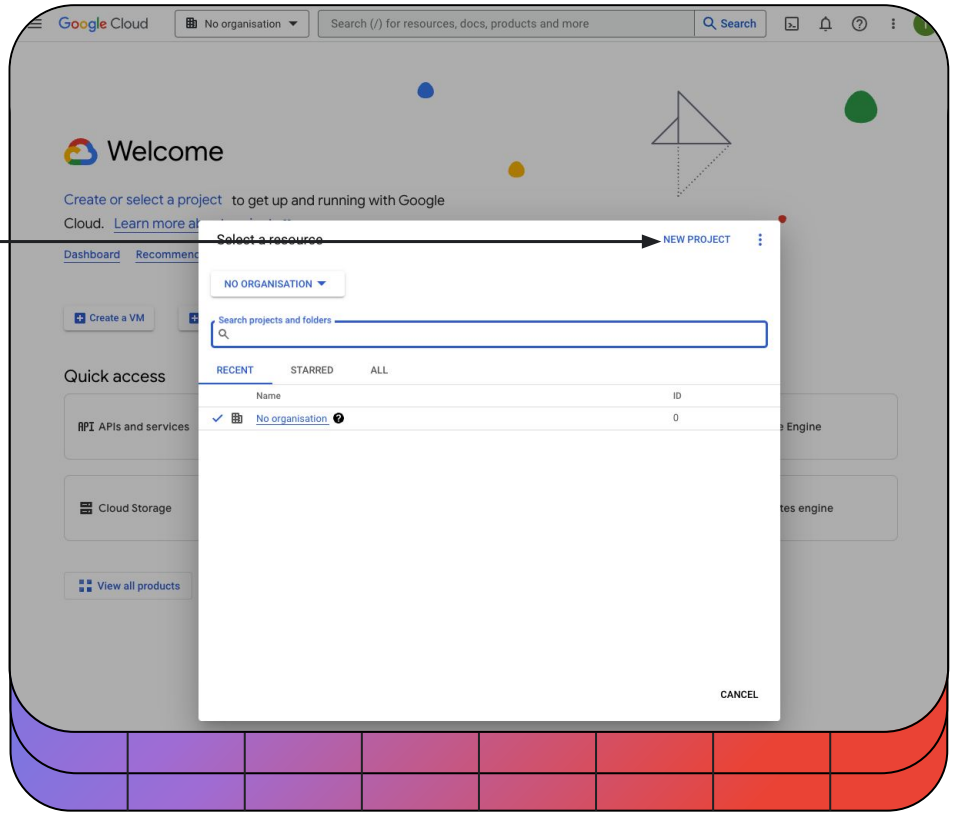
Creating a new project

Click on “New Project”



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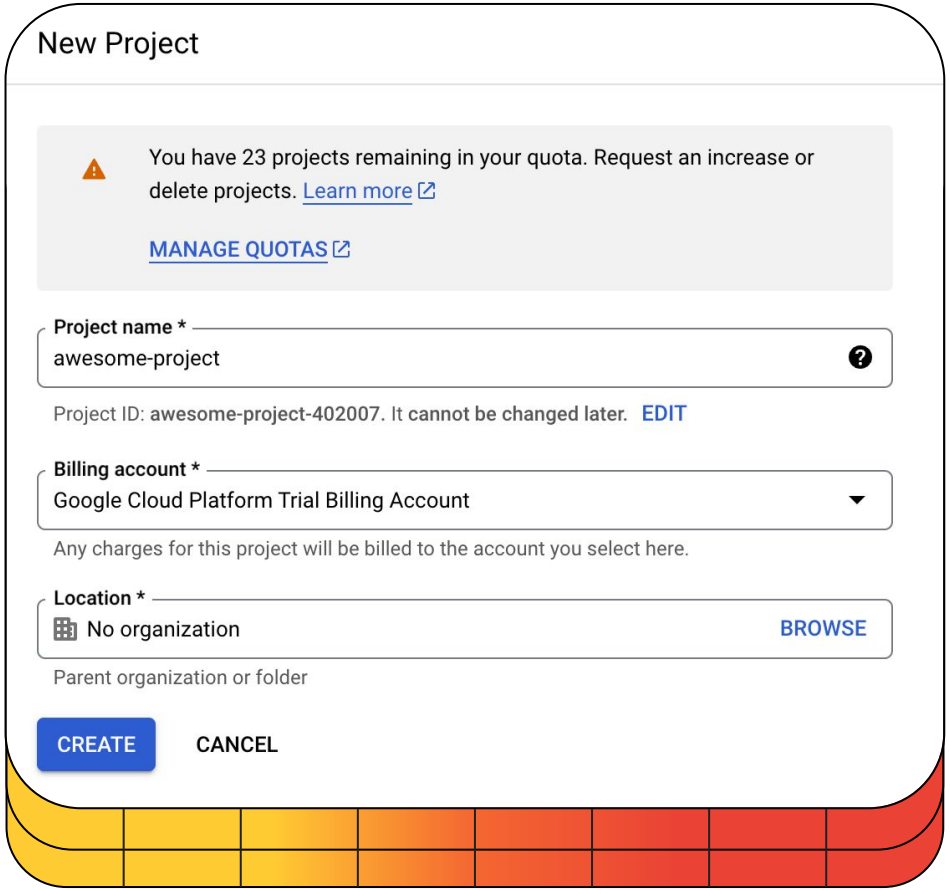
Creating a new project

Name your project

IF you see a billing account, make sure to select the “Trial Billing Account”. If NOT, still create the project and go to next slide

Click “CREATE”



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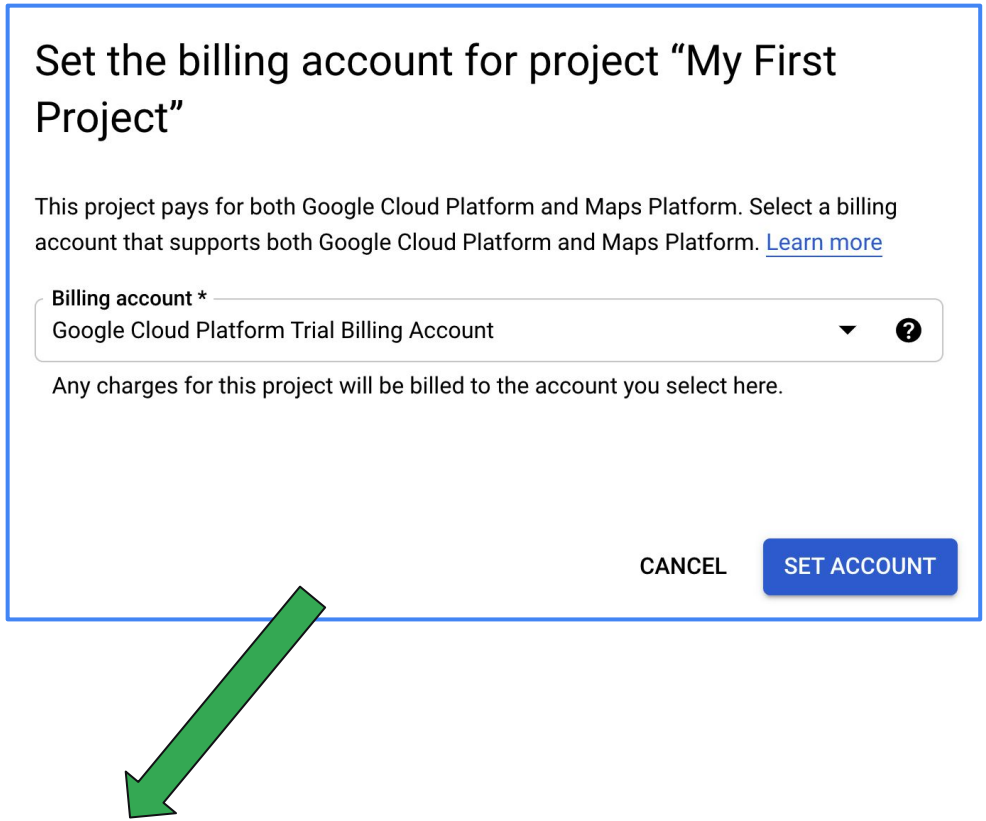
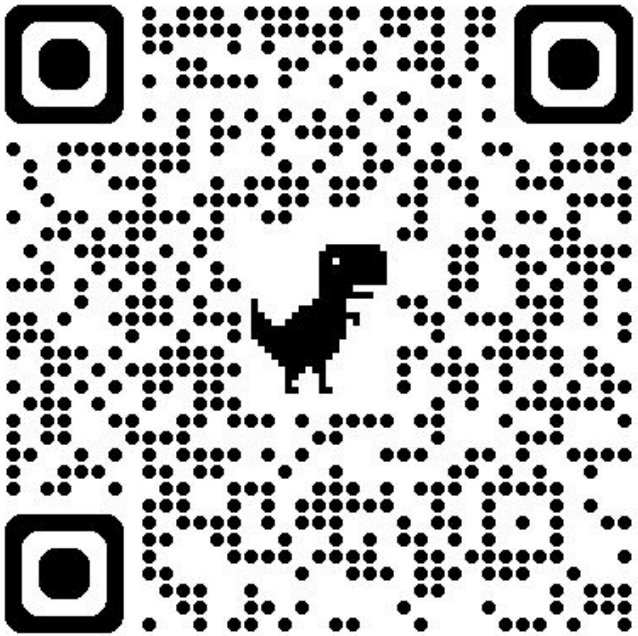
If you don't see a billing account in the previous step:

1) Go to Billing from Google Cloud Console and

2) Set your project's billing account to **Google Cloud Platform Trial Billing Account**



Learn more about **Google Cloud** at goo.gle/clouddevs



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