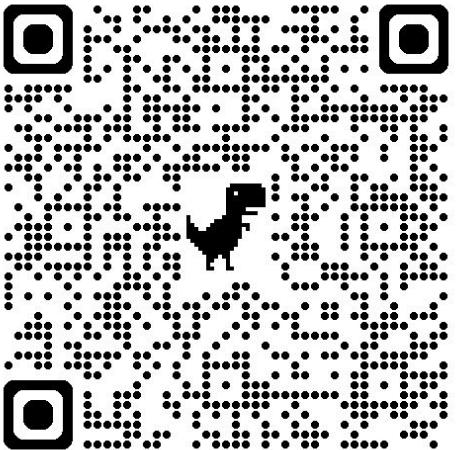


Reclaim your credits



goo.gle/php-ws-ai



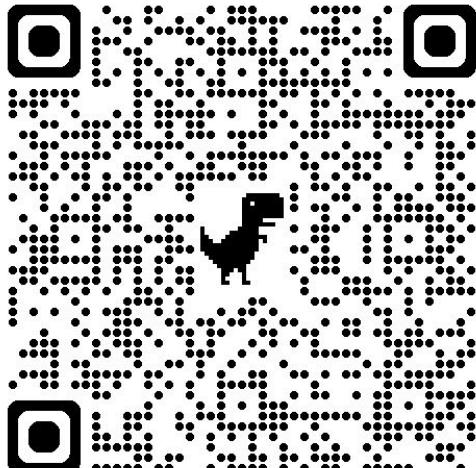
A number of developers are really excited for a hands-on workshop with their laptops. They're smiling and come from diverse background.

Table of Contents

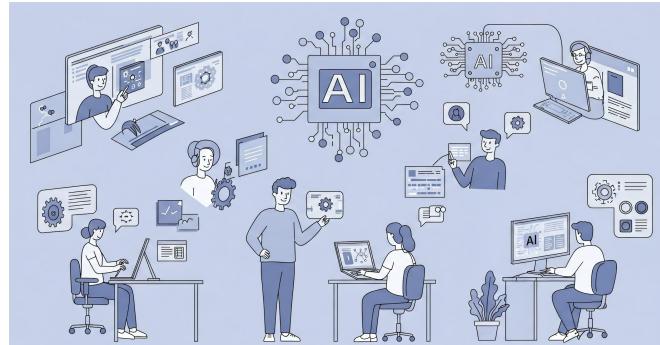
02 Reclaim credits

20 AppMod Codelab Explained

56 Goodies (Gemini API Key from AI studio, ..)



Welcome to
today's **hands-on**
workshop!



By following these steps, you can gradually modernize your PHP application, improving its scalability, security, and deployment flexibility. Moreover, moving to Google Cloud allows you to leverage its powerful infrastructure and services to ensure your application runs smoothly in a cloud-native environment.

We believe that what you will learn following these simple steps can be applied for your own application and organization with different language-stack and different use cases.

About the App

The application ([code](#), under [MIT license](#)) that you will fork is a basic PHP 5.7 application with MySQL authentication. The main idea of the App is to provide a platform where users can upload photos, and administrators have the ability to tag inappropriate images. The application has two fields:

- **Users.** Comes prepopulated with admins. New people can register.
- **Images.** Comes with a few sample images. Logged in users can upload new pictures. We will add some magic here.

Your Goal

We want to modernize the old application in order to have it in Google Cloud. We will leverage its tools and services to improve scalability, enhance security, automate infrastructure management, and integrate advanced features like image processing, monitoring, and data storage using services such as Cloud SQL, Cloud Run, Cloud Build, Secret Manager and more.

More importantly we need to do it when the user is not aware. Learn what's the thought process behind every step, and...

Breathing new life into a legacy application

Take an old app from github

- Fork it
- Dockerize it
- Push to Cloud Run + Cloud SQL
- Create CI/CD
- Move **cleartext passwords** to Secret Manager
- Create Cloud Function to call Gemini
- Set up SLOs
- Security
- ...



<https://codelabs.developers.google.com/codelabs/app-mod-workshop>

You will use:

01

A personal
Gmail account

School and business accounts
cannot use today's workshop free
credits.

02

A personal **laptop**

Ideally without restrictions on
network access.

03



The **Chrome browser**

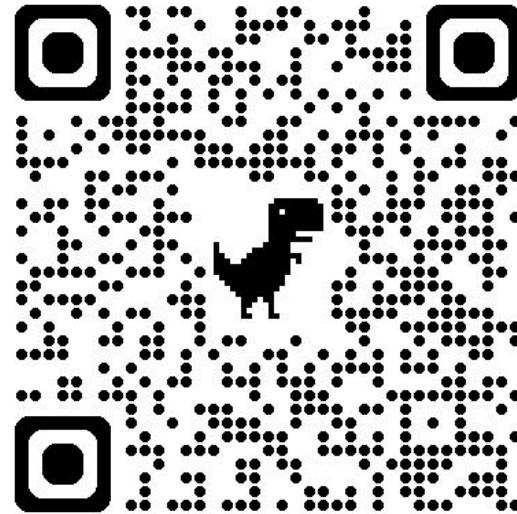
Other browsers are supported,
but with a large group we want
to minimize variations.



Open this URL:



Proprietary + Confidential



<https://trygcp.dev/e/wearedevs-2025-php-workshop>

You will need to be signed in



Sign in with Google



Please sign in

Google /dev/cloud day Zurich



Click on “Sign in with Google” button

Google /dev/cloud day Zurich

Your credit will allow you to use Google Cloud [Free Tier products](#).

It has an amount of \$.

Once redeemed, it will be valid for **180 days** or until the balance is depleted if you use non-free services.

[CLICK HERE TO ACCESS YOUR CREDITS](#)

After redeeming your credit in the Google Cloud console, please [proceed to the next step](#).

You should see a similar page. Click on this button.

GCP credit application

Fill in the following information below to apply GCP credits to your account listed below.

First name * —
Amazing

Last name * —
Person

Account email
cloud-dev@gmail.com

Credits will be applied to this account. If you'd like to apply credits to a different account, specify your preference [here](#).

Coupon code

Terms and conditions

The following terms and conditions apply to the credit you received for Google Cloud products (the "Credit(s)").

The Credit is subject to valid registration and acceptance of an account with Google Cloud and satisfaction of any applicable eligibility requirements including the Google Cloud Platform [Terms of Service](#). You will be responsible for all usage in excess of the Credit and you may not be notified once the Credit is exhausted. The Credit is non-transferable and may not be sold or bartered. The Credit is valid for a limited time only and expires on the date indicated when you receive the applicable Credit code or on such date as designated by Google (in which case the earlier date applies). You may not use the Credit to engage in mining cryptocurrency unless you have obtained Google's written consent, which consent may be revoked by Google in its sole discretion at any time. Google reserves the right to cancel the Credit or change these terms at any time. You are responsible for determining the applicable tax treatment of receiving the Credits and for paying all applicable taxes. Offer void where prohibited by law.

Except for graduate or work-study students participating in an event in their personal capacities, if you are a government employee, including an employee of a public university, public educational institution or state-owned enterprise, you may not use (and you are ineligible to receive) any Credits.

ACCEPT AND CONTINUE

* Indicates required

Make sure that you are applying for the correct account

Click on "Accept and Continue" to proceed

Google Cloud

Search (/) for resources, docs, products and more

Search



Overview

Paid account

Manage billing account

Learn

Billing account overview

Your total cost (1–7 September 2024)



Cost

\$0.00

Last 7 days

Current month

Credits used

\$0.00

[View details](#)

If you see a Billing page, click on top left “Google Cloud” until you see a Project selector on top left

Total cost

\$0.00

Forecasted total cost

Available once there is enough usage

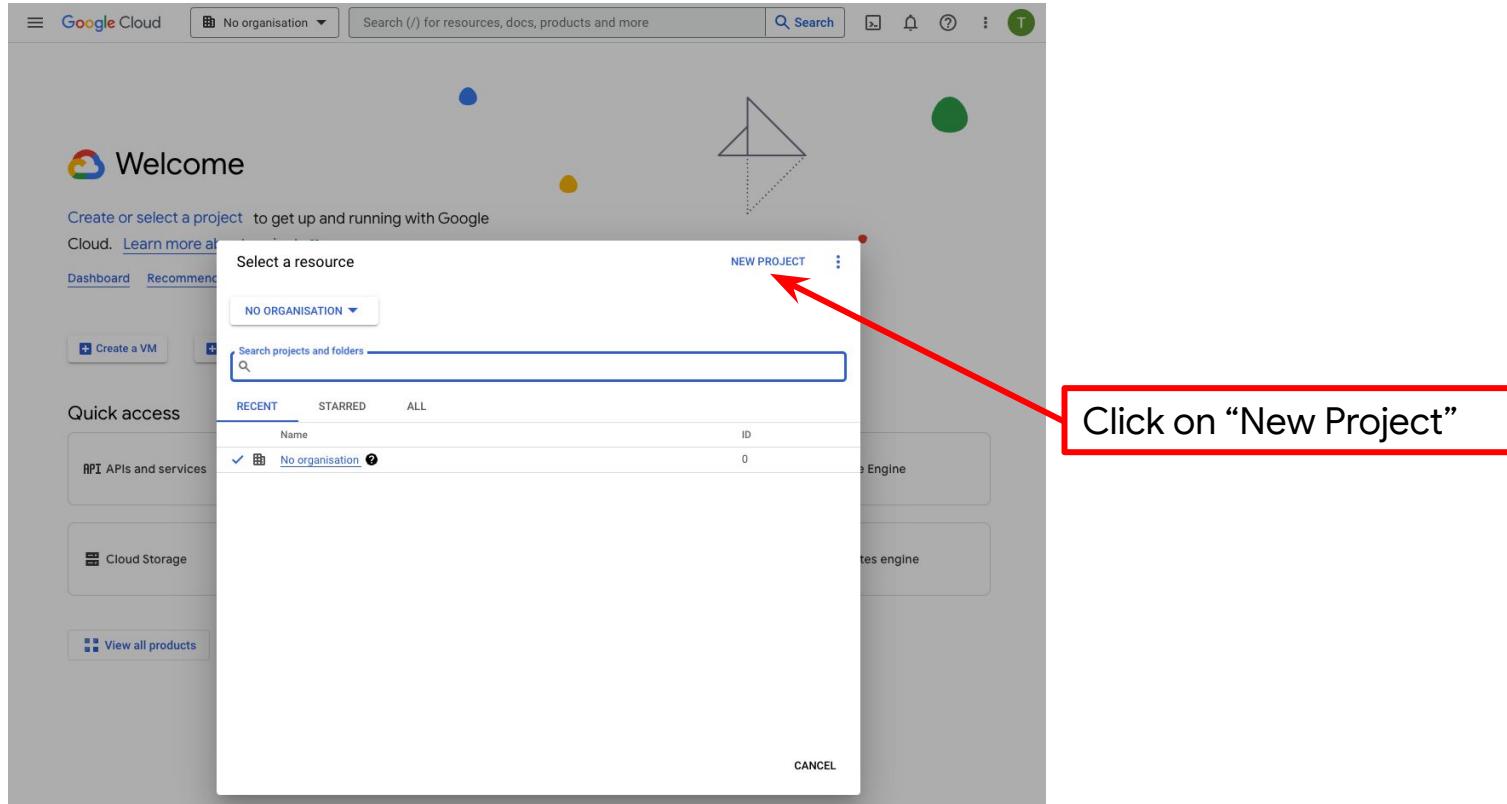
Go to console.cloud.google.com

The screenshot shows the Google Cloud Console homepage. At the top, there is a navigation bar with the Google Cloud logo, a dropdown menu labeled "No organisation", a search bar, and various icons. Below the navigation bar, the word "Welcome" is displayed with a colorful logo. A message encourages users to "Create or select a project" to get up and running with Google Cloud, with a link to "Learn more about projects". There are two buttons: "Dashboard" and "Recommendations". Below this, there is a "Quick access" section containing eight cards: "API APIs and services", "Cloud Storage", "View all products" (button), "Run a query in BigQuery", "BigQuery", "IAM and admin", "VPC network", "Billing", "Compute Engine", "Kubernetes engine", and "Create a storage bucket", "Create a GKE cluster", and "Create a VM". Two red arrows point from text boxes to specific elements: one arrow points from the text "Click on this dropdown menu" to the "No organisation" dropdown in the top navigation bar; another arrow points from the text "!! If you can't see this dropdown, click first on the colorful logo" to the "Welcome" logo.

Click on this dropdown menu

!! If you can't see this dropdown, click first on the colorful logo

Create a new project (skip if you already created one)



Creating a new project (skip if you already created one)

New Project

⚠ You have 23 projects remaining in your quota. Request an increase or delete projects. [Learn more ↗](#)

[MANAGE QUOTAS ↗](#)

Project name * ?

Project ID: awesome-project-402007. It cannot be changed later. [EDIT](#)

Billing account * ▼

Any charges for this project will be billed to the account you select here.

Location * BROWSE

Parent organization or folder

CREATE

CANCEL

Name your project, eg
“Google Hackathon”

 Select “trial billing account” (if it shows up*)



(*) This is **important**, as it connects your project to your new 5 \$ wallet

Select “No Organization”
(if Location field shows up)

Click “CREATE”

Creating a new project (Skip if you already have one)

New Project

⚠ You have 23 projects remaining in your quota. Request an increase or delete projects. [Learn more ↗](#)

[MANAGE QUOTAS ↗](#)

Project name * ?

Project ID: awesome-project-402007. It cannot be changed later. [EDIT](#)

Billing account * ▼

Any charges for this project will be billed to the account you select here.

Location * No organization Browse

Parent organization or folder

CREATE CANCEL

If you can't choose "No organization", you might be in trouble.
One person from **unimo.it** was.



Check that your project is billed correctly

1. Search for **Billing** or go to <https://console.cloud.google.com/billing>
2. Click on **My projects** tab
3. Make sure your project is associated with the **Google Cloud Platform Trial Billing Account**

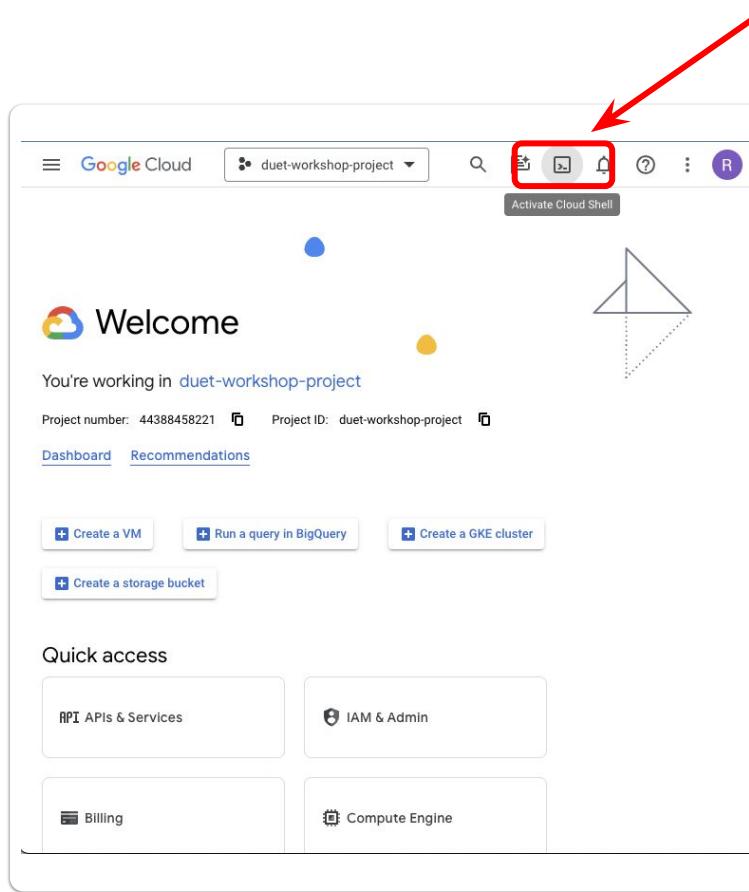
Billing

My billing accounts [My projects](#)

Filter Enter property name or value

Name	ID	Billing account ↑
•	sustained-column-2f3h4	Gemini Code Assist
• Tango Zurich Project	tango-zurich-project	Google Cloud Platform Trial Billing Account

Open Cloud Shell



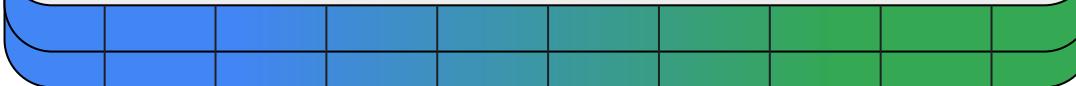
Note: It may take a minute or two to start your VM

If you don't have a
project set up yet, raise
your hand for a TA to help
you. 🤓 🤓





Let's get to work



Thank you



Riccardo Carlesso
Developer Advocate

Google Cloud

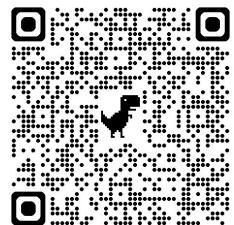
Google Workspace



Riccardo Carlesso
Developer Advocate

PHP Amarcord workshop

November 2024





Find this URL:

<https://codelabs.developers.google.com/codelabs/app-mod-workshop>

Or simply:

Google “App Mod Workshop”



A screenshot of a search results page from a web browser. The search bar at the top contains the query "app mod workshop". Below the search bar, there is a navigation bar with links for "All", "Videos", "Images", "Forums", "News", "Web", "Books", and "More". Underneath the navigation bar, there are several search results. The first result is a link to "Google Codelabs" with the URL "https://codelabs.developers.google.com/codelabs/app-mod-workshop". The result title is "App Mod Workshop" and the snippet text reads: "1 Nov 2024 — In this codelab, you will modernize an old PHP application to Google Cloud, containerize it, deploy to Cloud Run and connect it to Cloud SQL ...". To the right of the search results, there is a small thumbnail image showing a screenshot of a software interface with various tables and data.

01

Does anyone remember LAMP stacks?

LAMP:



Google Workspace

🇮🇹 “PHP 5? Grande Giove!”

Hai una vecchia applicazione ferma al 2010, con Java8, Rails, PHP o, peggio ancora, ColdFusion?

Password in chiaro ovunque, codice che fa arrossire... e l'idea di mostrarla a un collega ti terrorizza?

Grande Giove! 🚀 È il momento di trasformarla in una macchina degna del **futuro**!



12

24

🏴 “PHP 5? Great Scott!”

*"Quick Marty, we must go to the future immediately! Jennifer's boss from 2015 wants to modernize a **PHP** application left to us in 1885 and we need you!"*

*There are **clear-text passwords** injected on Github by a great-uncle of Biff, and the 2015's Marty risks being fired!*

Don't worry, our friends from Google Cloud will be there to help us, but the Tannen are always lurking!"



12

24



PHP 5.6 is 🪢 dead ?

An old app, in an unsupported language, the last dev has left, CTO wants you to add new features. Ever been there? You company cares about an app, but nobody knows how to put their hands on it?

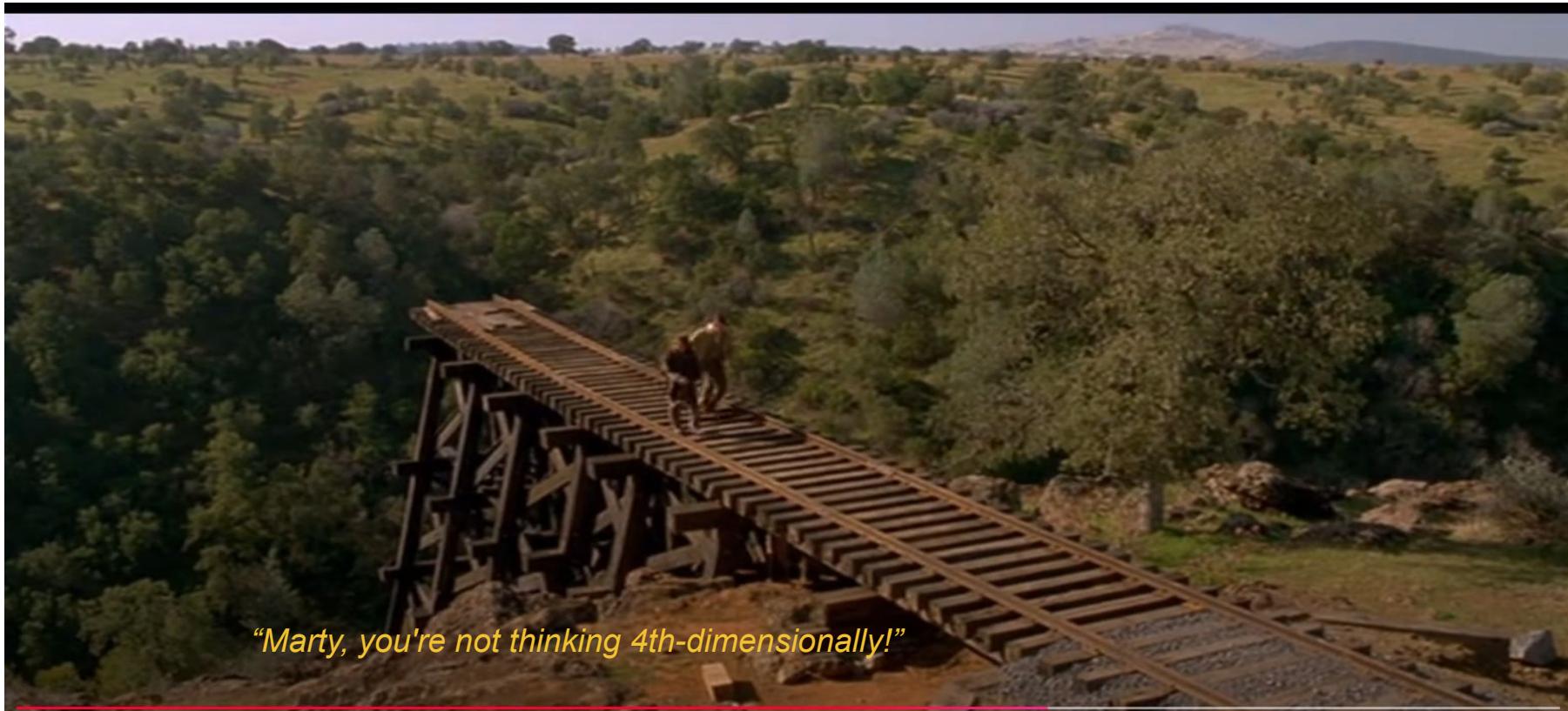
How about we spend a few hours modernizing it and bringing into the 21st century?

✍: 5.6.0 Aug 2014

⚰: 5.6 Dec 2018

Hey, I don't want to learn PHP in 2025!

=> no: PHP 5.6 is **perfect!**



“Marty, you’re not thinking 4th-dimensionally!”



gdgpescara / app-mod-workshop

Proprietary + Confidential

gdgpescara / app-mod-workshop

Type to search

<> **Code** Issues Pull requests Actions Projects Security Insights

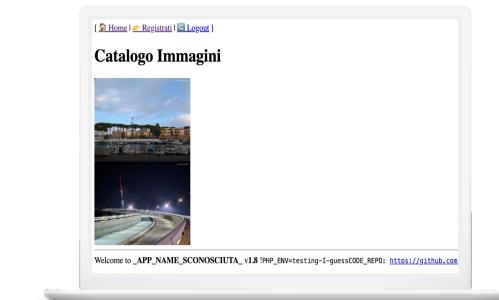
 **app-mod-workshop** Public

Edit Pins Watch 1

main ▾ 2 Branches Tags Go to file Add file <> Code

gregoriopalama fixes password checks (#3) f12383a · last month 6 Commits

File	Commit Message	Time
db	fixes password checks (#3)	last month
uploads	added starting images	2 months ago
LICENSE	Initial commit	2 months ago
README.md	a bit of documentation on basic configurations and db init	2 months ago
config.php	initial app, no doc	2 months ago
inappropriate.php	initial app, no doc	2 months ago
index.php	initial app, no doc	2 months ago
login.php	initial app, no doc	2 months ago
logout.php	initial app, no doc	2 months ago
register.php	initial app, no doc	2 months ago
upload.php	initial app, no doc	2 months ago



Google Cloud



Scary things!

I see **cleartext passwords..**

Code Blame 16 lines (14 loc) · 404 Bytes

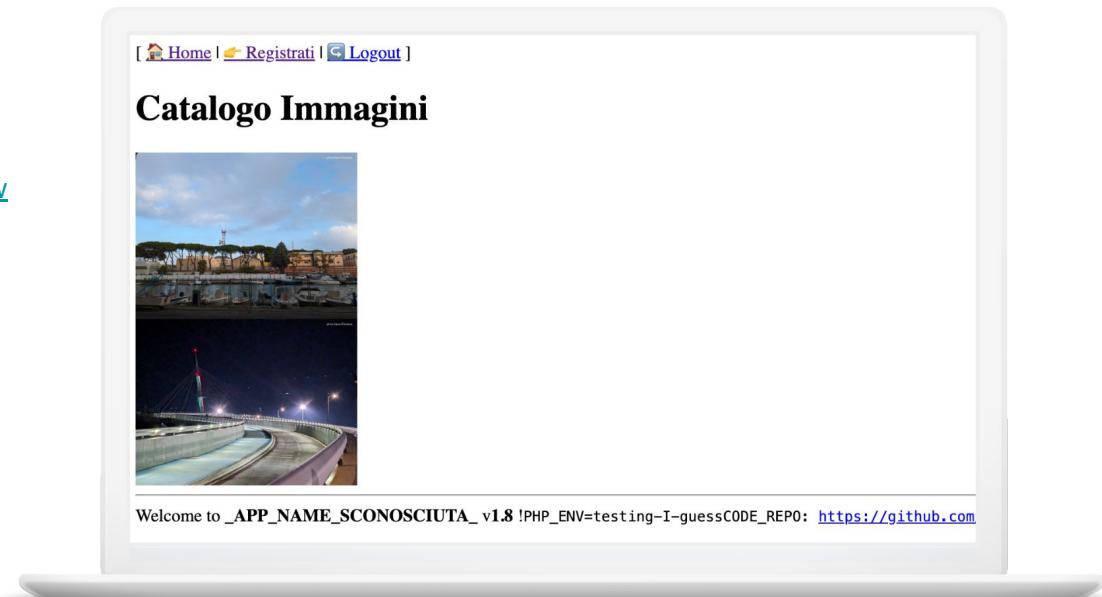
```
1  <?php
2  // Configurazione del database
3  $db_host = 'localhost';
4  $db_name = 'image_catalog';
5  $db_user = 'root';
6  $db_pass = 'veryverystrongpassword';
7
8  try {
9      $pdo = new PDO("mysql:host=$db_host;dbname=$db_name"
10      $pdo->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_E
11  } catch (PDOException $e) {
12      die("Errore di connessione: " . $e->getMessage());
13  }
14
15 session_start();
16 ?>
```

[Lab] PHP Amarcord

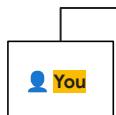
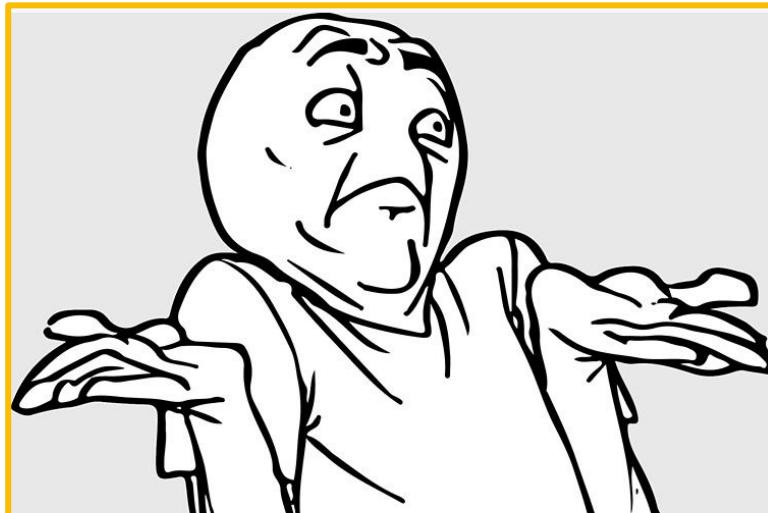
💡 In this Lab,...

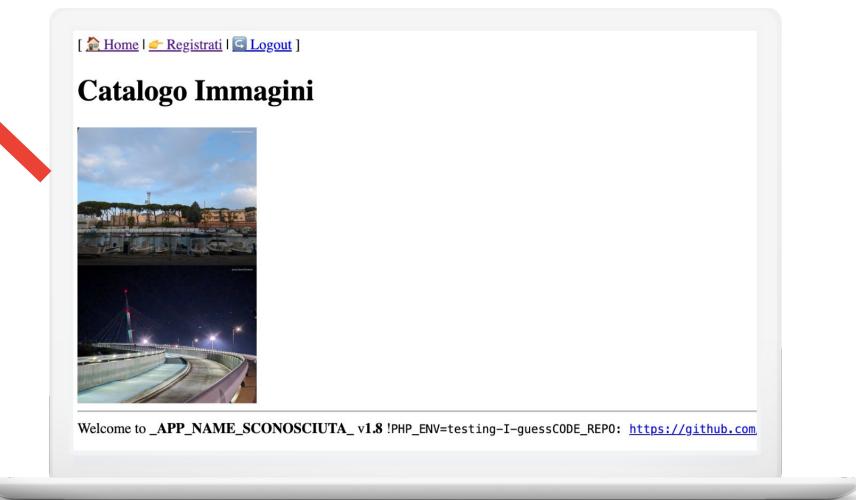
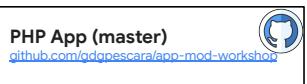
- Follow Ricc's
<https://github.com/palladius/app-mod-workshop-set-by-step/> README

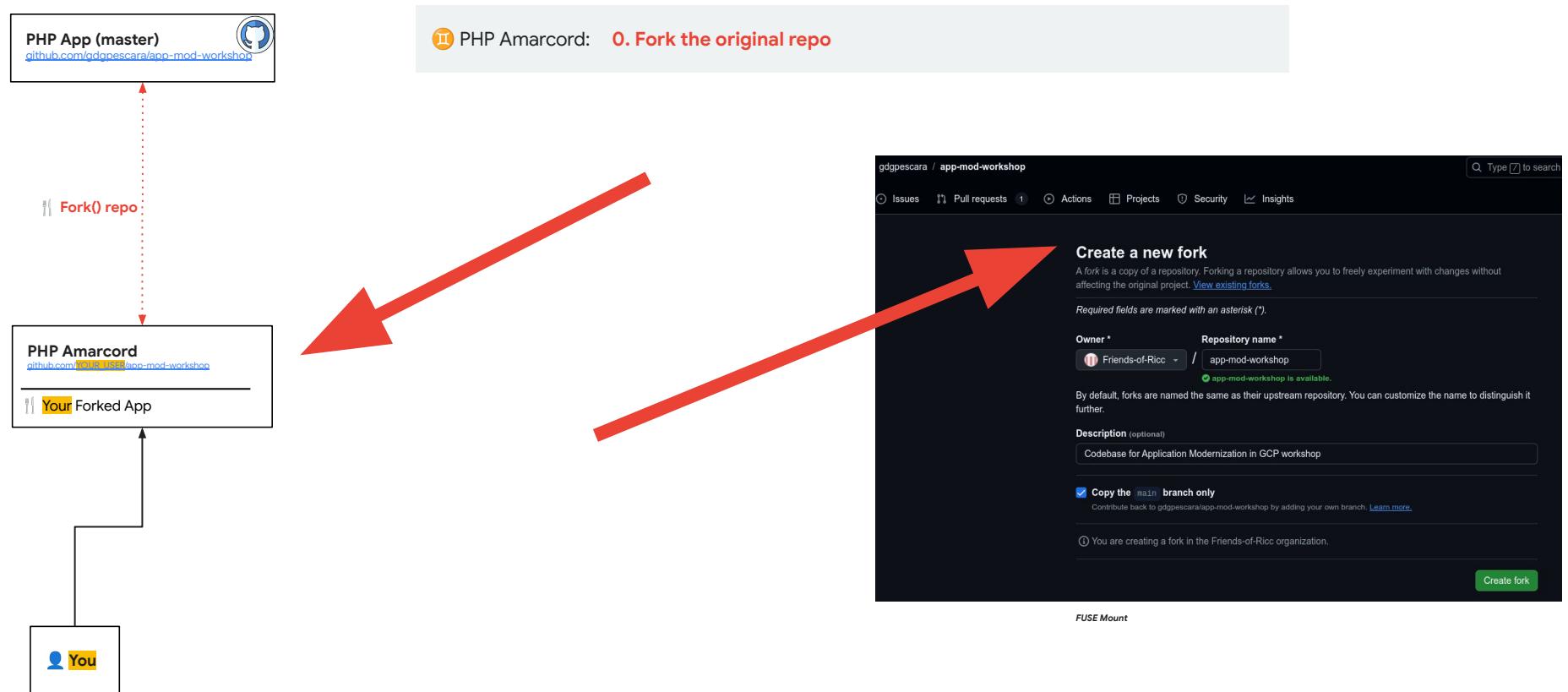
⌚ Time to complete: ~2-4h

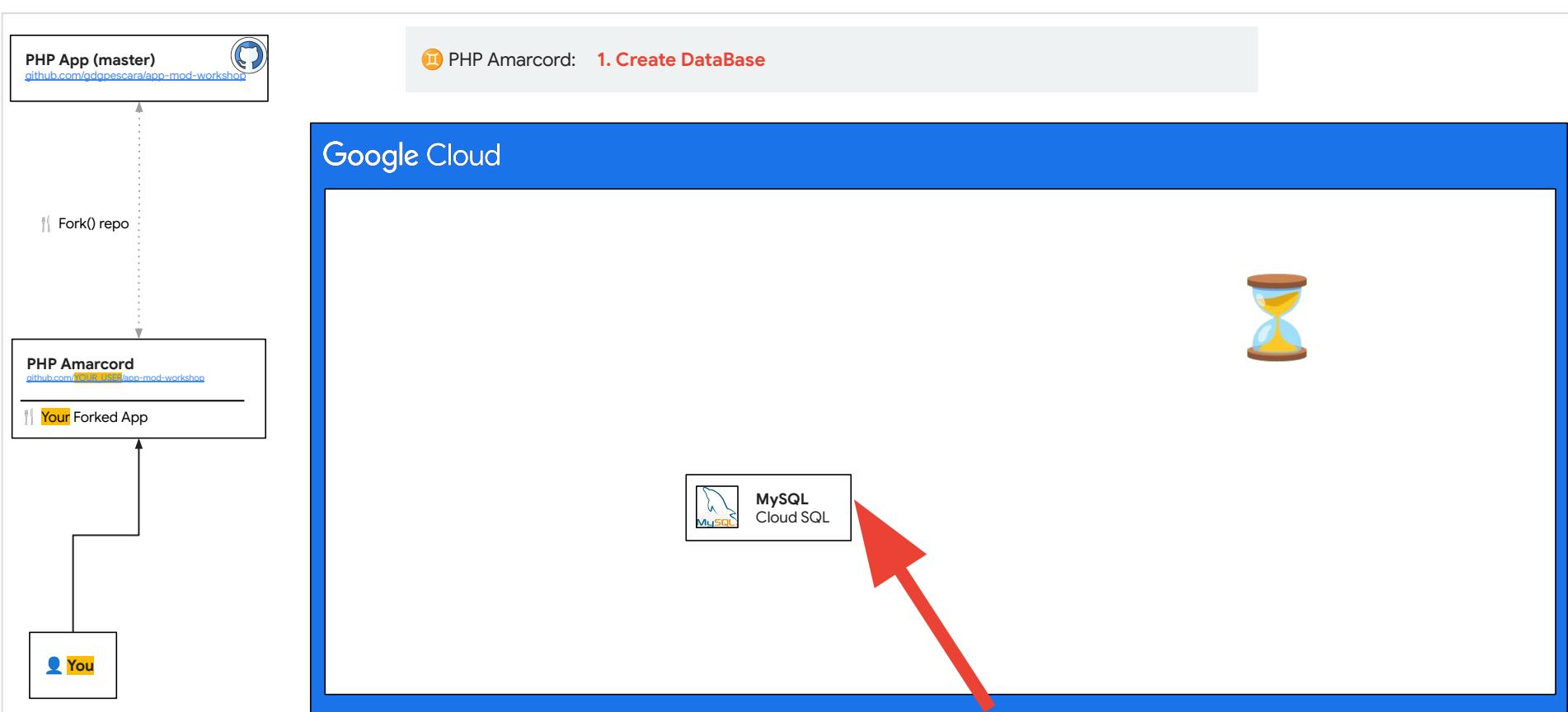


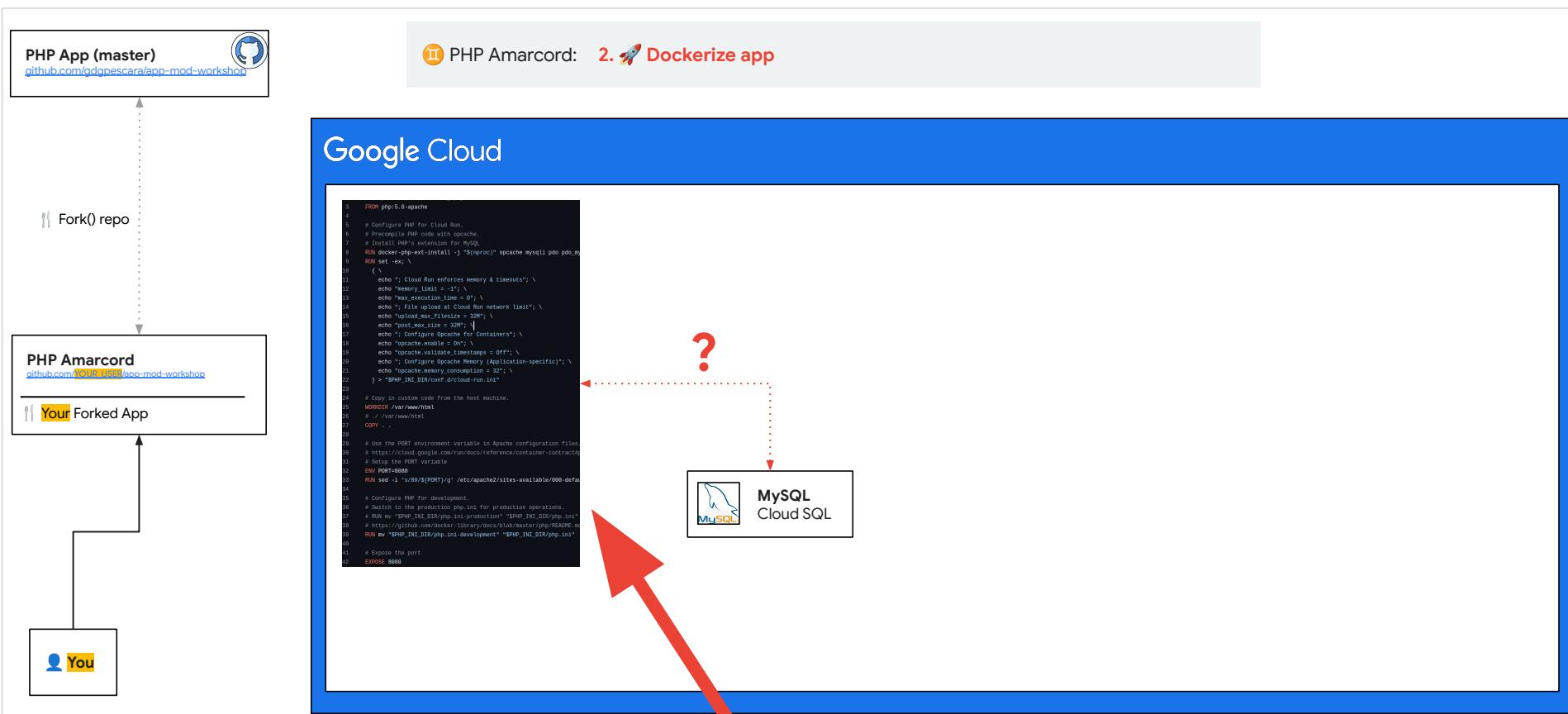
II PHP Amarcord: What are we doing today?

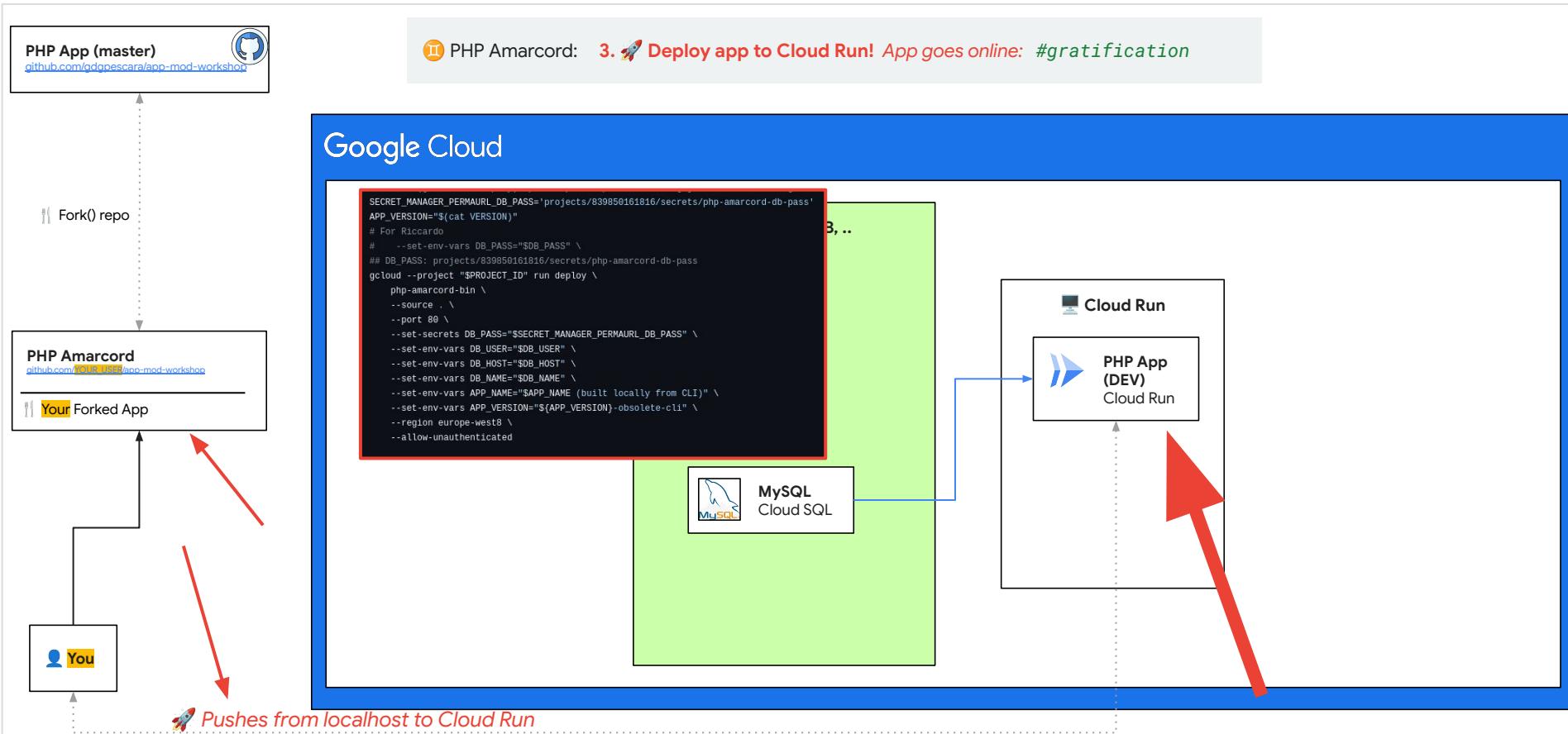


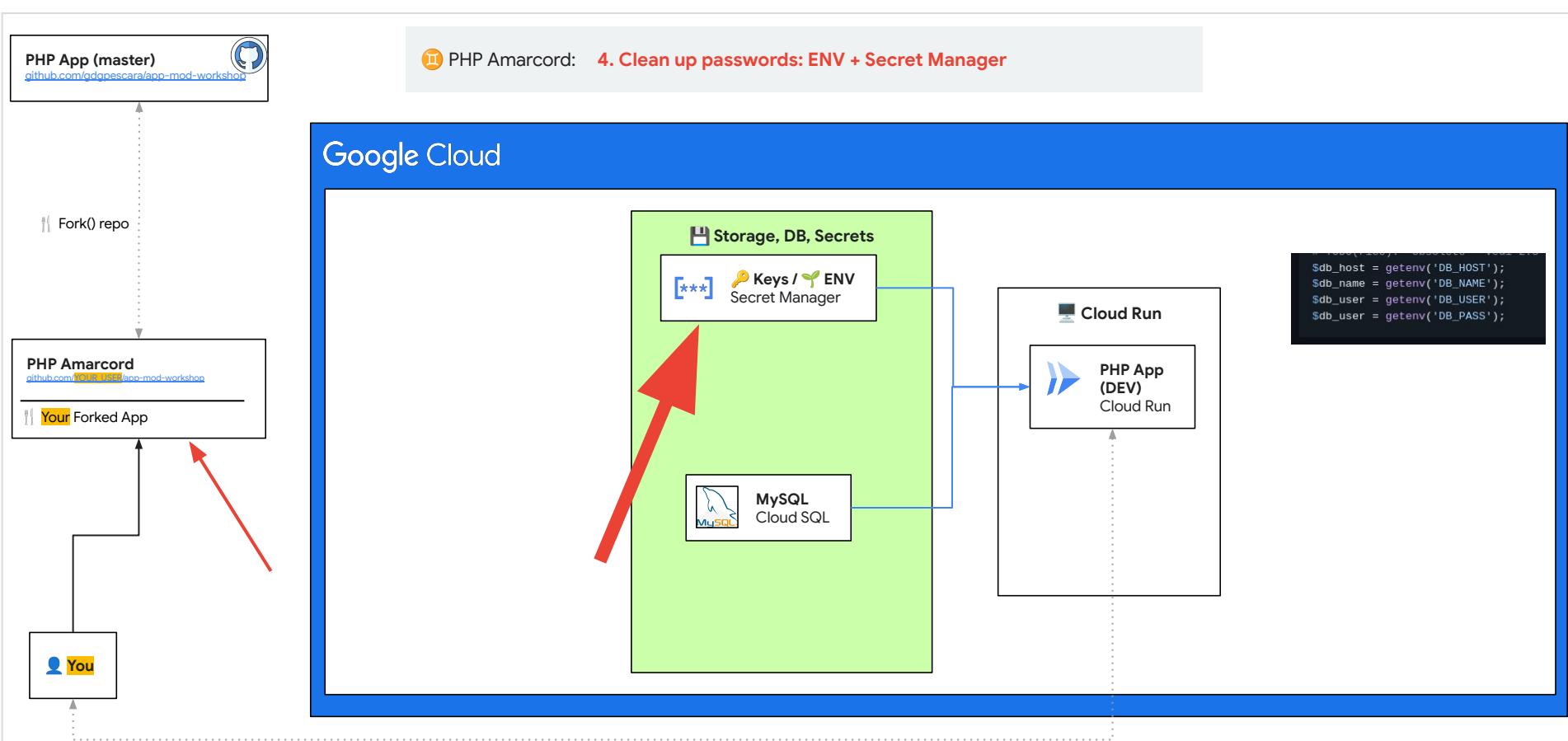


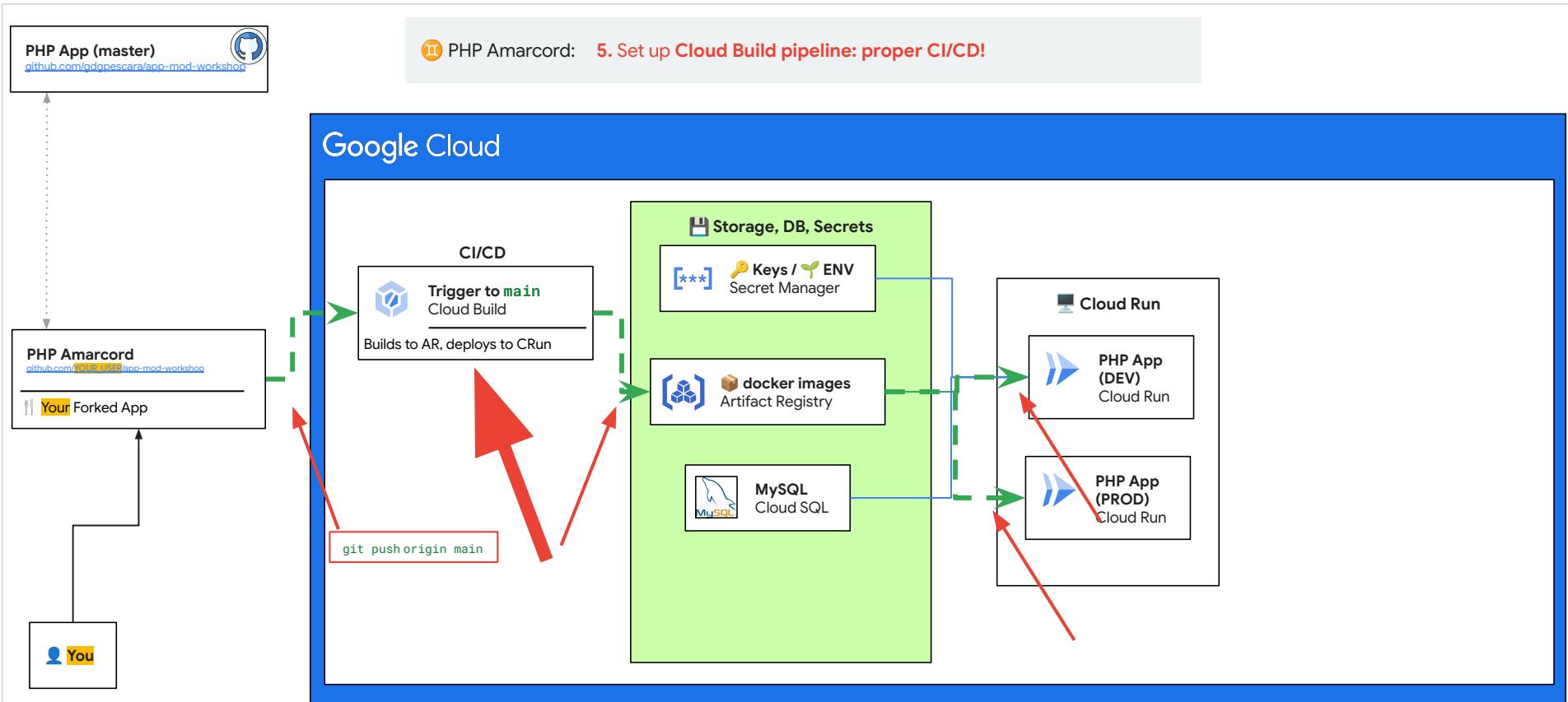


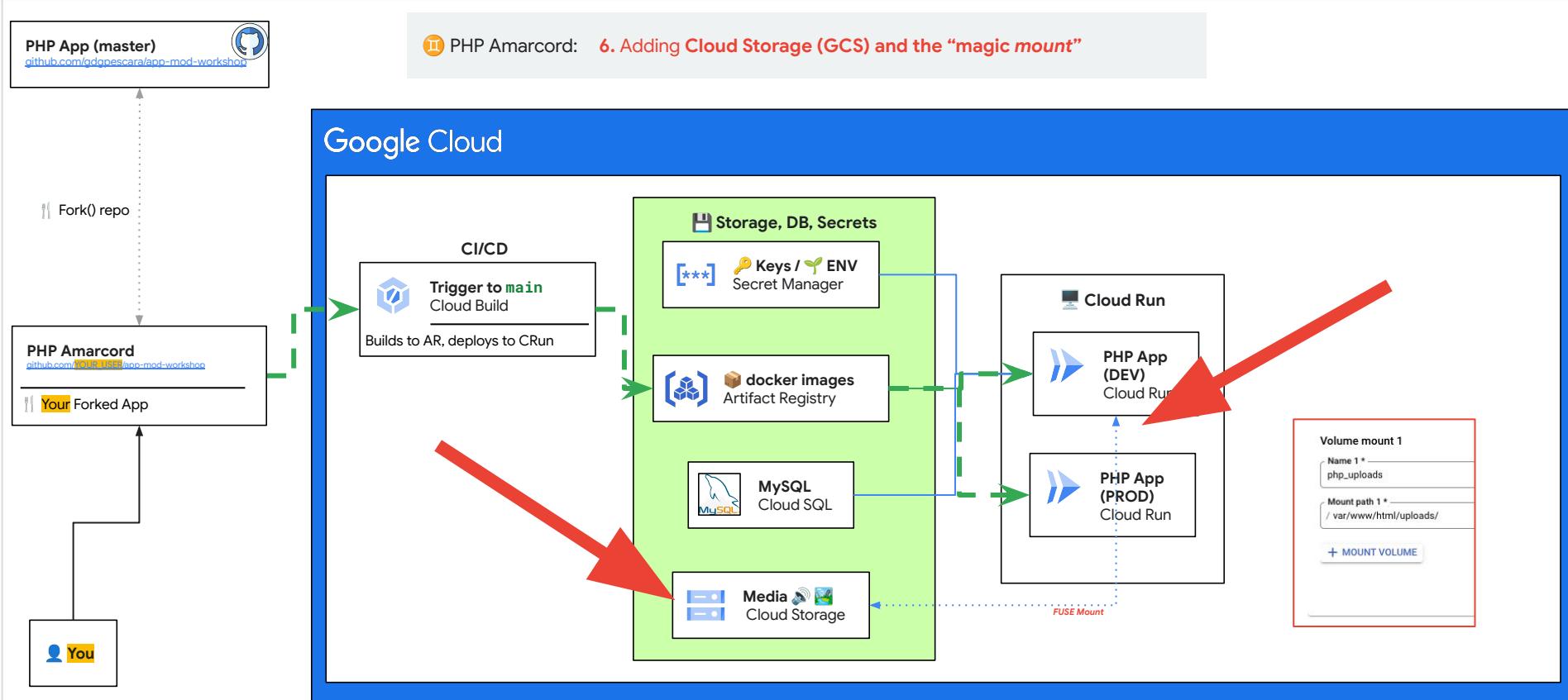


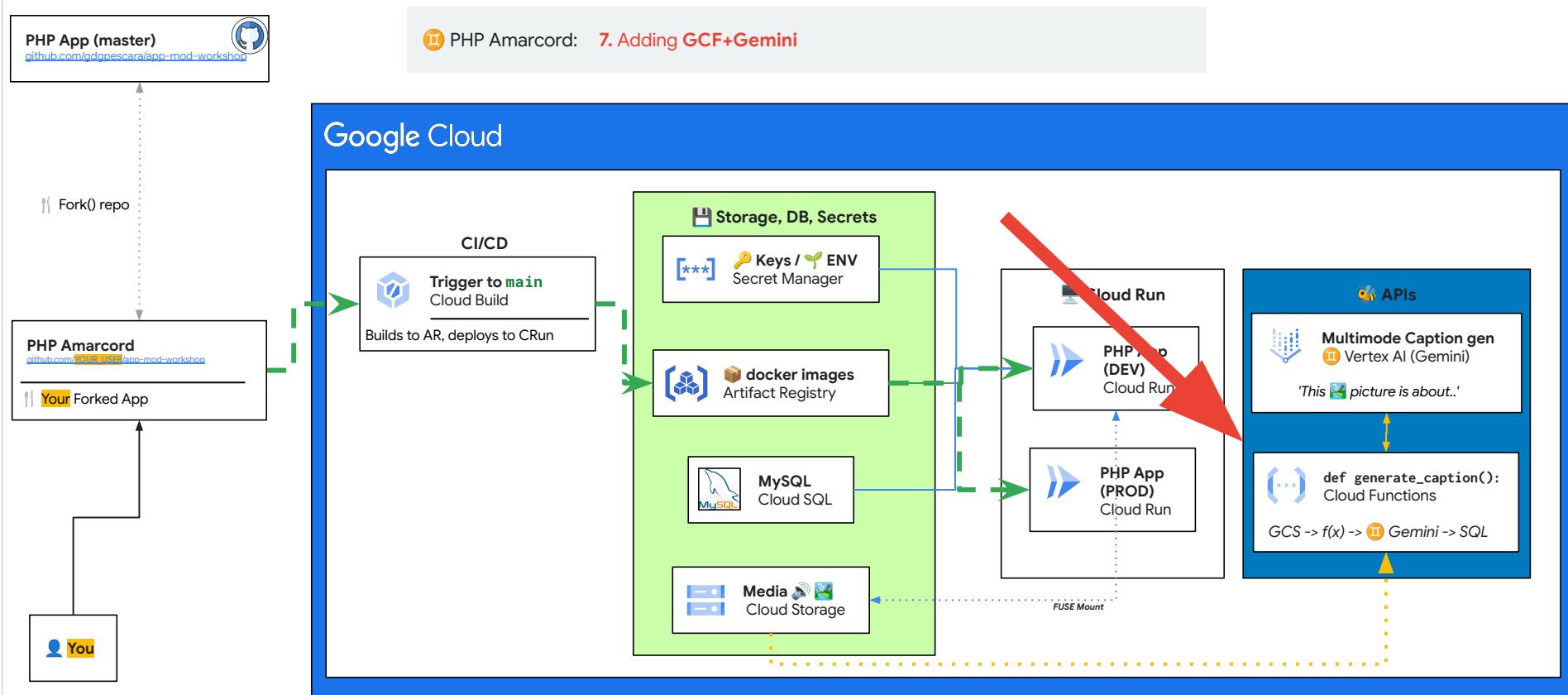


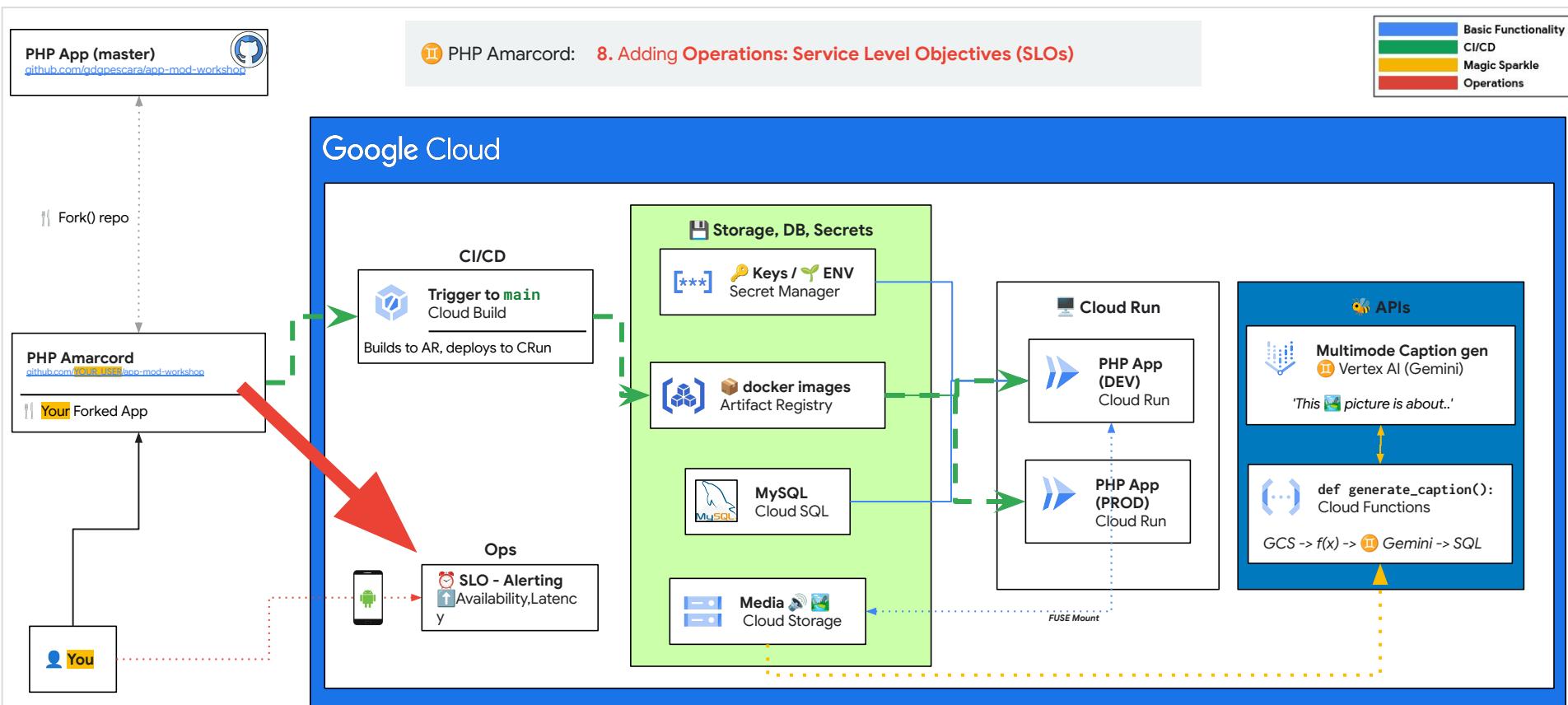


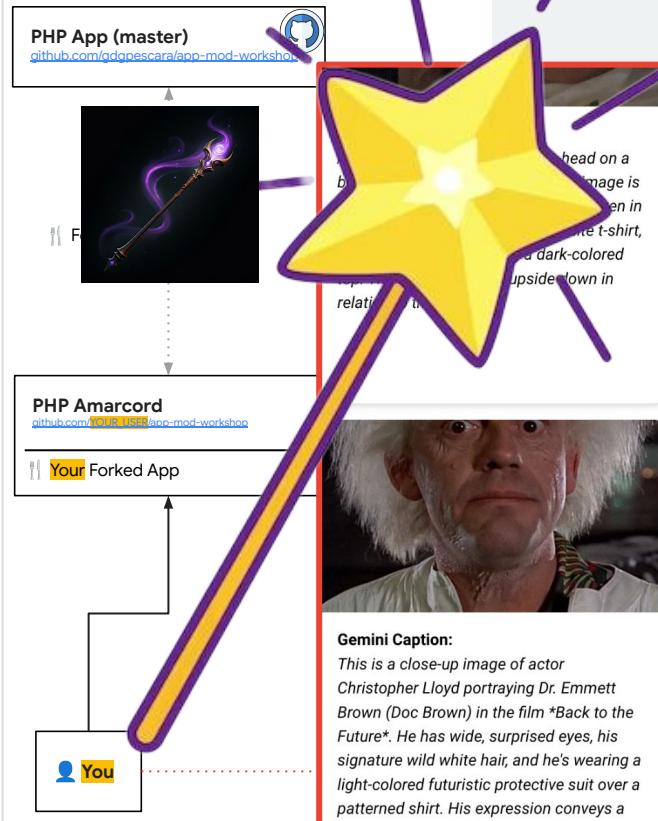












II PHP Amarcord v1.3

Gemini Caption:

This image is the logo for PHP, a popular server-side scripting language primarily used for web development. The logo consists of the letters "php" in bold, black lowercase, with a thin white outline, placed centrally on a stylized oval shape. The oval has a gradient fill, giving it a slightly three-dimensional appearance. The color of the oval is a muted purplish-blue.

Gemini Caption:

A man wearing a blue t-shirt with "Larry & Sergey's Protobuf Moving Co. est. 1998" logo stands on a dark stage. He is holding a small black device in his left hand and gesturing with his right hand while speaking. He appears to be giving a presentation. A lavalier microphone is visible near his chin. The background is completely black, likely indicating a darkened auditorium or conference hall.

Gemini Caption:

A man with a wild white wig and a white lab coat holds a revolver in his right hand and has his left hand up in a gesture of surprise or explanation. He appears to be in some kind of garage or industrial setting. He looks directly at the camera with a wide-eyed expression. A small, orange and white Rotten Tomatoes logo is in the bottom-left corner.



Gemini Caption:

This is a close-up image of actor Christopher Lloyd portraying Dr. Emmett Brown (Doc Brown) in the film *Back to the Future*. He has wide, surprised eyes, his signature wild white hair, and he's wearing a light-colored futuristic protective suit over a patterned shirt. His expression conveys a



Gemini Caption:

A close-up of a young man, likely a teenager, with a slightly concerned expression. He has light brown hair and is wearing a reddish-orange puffy vest over a dark denim or gray jacket and a collared shirt. The focus is on his face, and the background is slightly blurred, suggesting an indoor setting. The



Gemini Caption:

This is a close-up image of Casey Siemaszko as 3-D in the movie *Back to the Future*. He is wearing a light gray jacket over a dark shirt and a geometric patterned light gray tie. He has a short haircut and is speaking, his expression angry or aggressive.



Gemini Caption:

Four young men, dressed in 1950s/early 1960s style clothing, exit a building with futuristic-looking revolving doors. The man in the center, wearing a bright red short-sleeved shirt and jeans, has his arms outstretched, holding the doors open for his friends. The man to his left wears a yellow



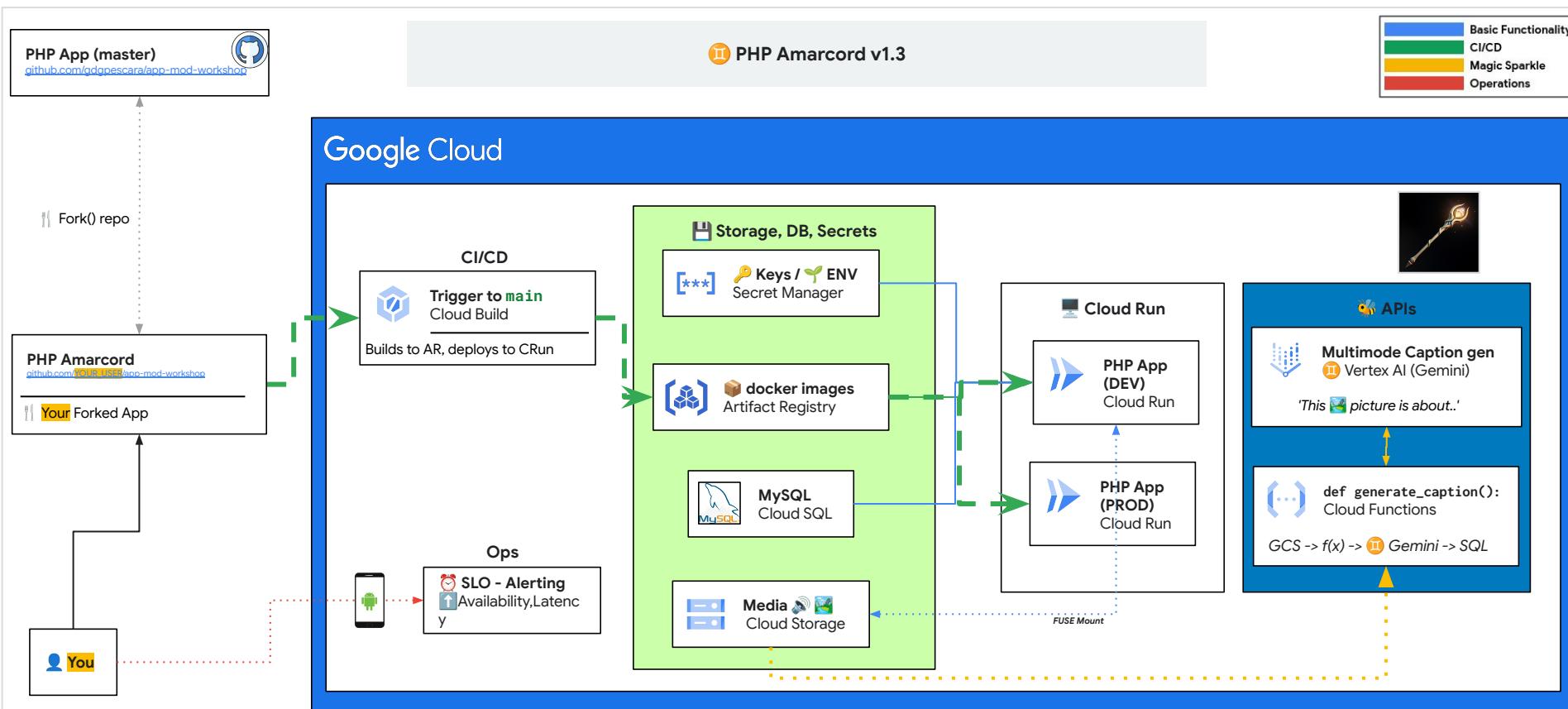
option gen
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-> SQL

Google Workspace

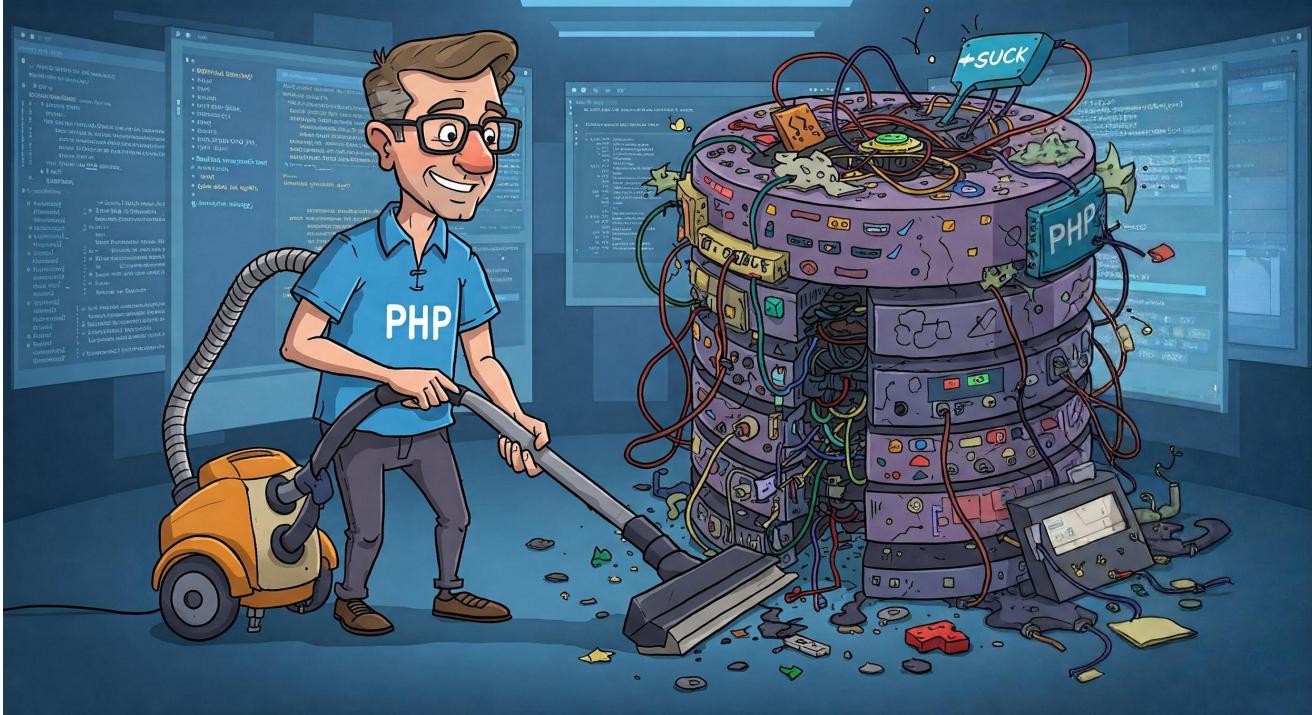


Leaderboard

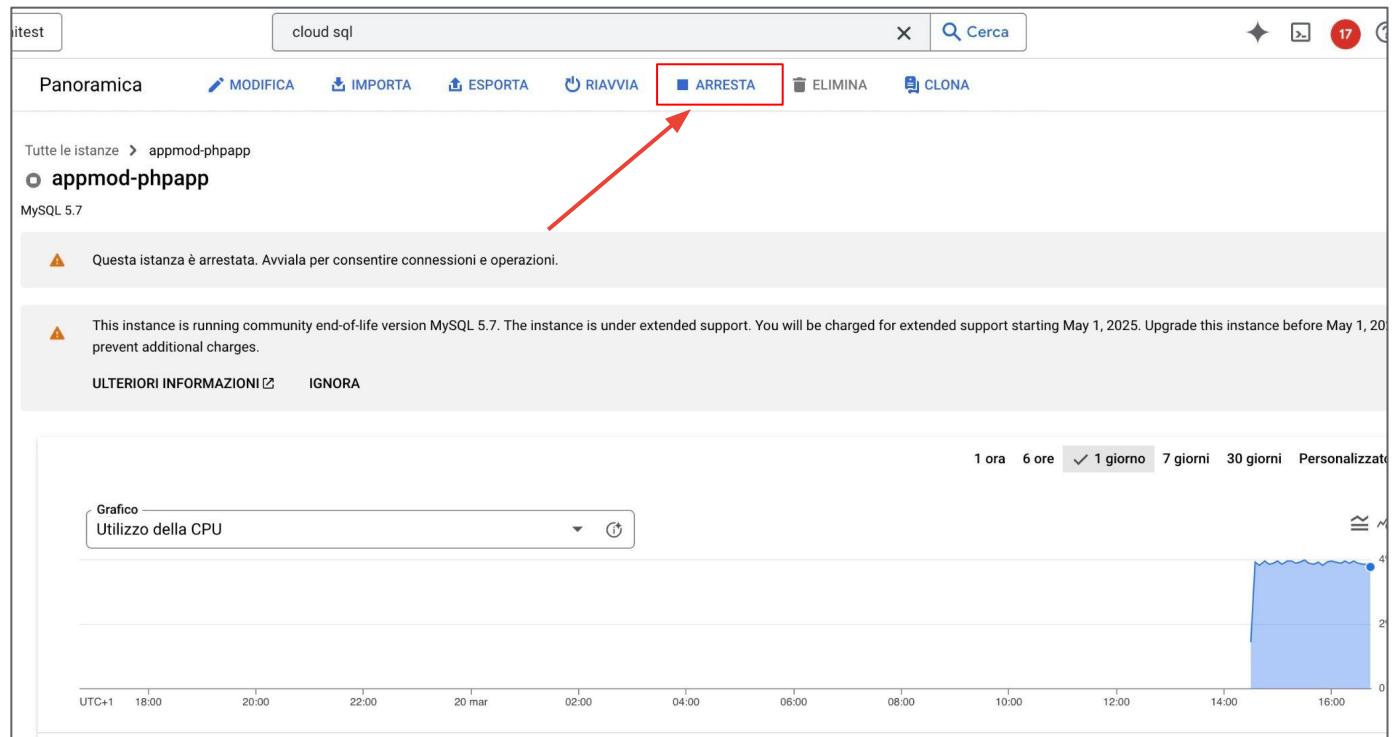
🏆 If you want to win a prize check this
[Workshop Leaderboard \[optional\]](#)



Clean up



1. Stop your instance



2. Delete your instance [optional]

While this is not strictly necessary (a stopped instance will consume very little), you might want to delete an instance. If you have created an instance with “protection from deletion”, stopping it makes it actually *harder* to delete. If the deletion button won’t work for you, follow the steps in following slides, which can be summarized this way:

1. Restart the instance [if needed]
2. Remove the delete protection [if in place]
3. Stop
4. Click delete

2. Delete your instance (1/3)

1. Click "modify".

The screenshot shows a web-based interface for managing database instances. At the top, there is a search bar labeled 'Cerca (/) risorse, documenti, prodotti e altro' and a 'Cerca' button. Below the search bar is a navigation bar with several buttons: 'MODIFICA' (circled in red), 'IMPORTA', 'ESPORTA', 'RIAVVIA', 'ARRESTA', 'ELIMINA', and 'CLONA'. A notification badge with the number '17' is visible in the top right corner.

The main content area displays the instance details for 'appmod-phpapp'. It shows the MySQL version as 'MySQL 5.7'. There is a warning message: '⚠ This instance is running community end-of-life version MySQL 5.7. The instance is under extended support. You will be charged for extended support starting May 1, 2025. Upgrade this instance before May 1, 2025 to prevent additional charges.' Below the warning are two buttons: 'ULTERIORI INFORMAZIONI' and 'IGNORA'.

At the bottom, there is a performance monitoring section titled 'Grafico Utilizzo della CPU'. It includes a dropdown menu set to 'Utilizzo della CPU', a time range selector with options '1 ora', '6 ore', '1 giorno' (which is selected and highlighted in grey), '7 giorni', '30 giorni', and 'Personalizzato', and a date range from 'UTC+1 18:00' to '16:00'. The graph shows CPU usage over time, with a significant spike occurring between 14:00 and 16:00, reaching up to 4% usage.

2. Delete your instance (2/3)

2. Remove protection:

annitest

Cerca (/) risorse, documenti, prodotti e altro
 Cerca

[Modifica appmod-phpapp](#)

Connessioni
IP pubblico abilitato

Protezione dei dati

Backup automatici e recupero point-in-time
Proteggi i tuoi dati dalle perdite con un costo minimo. Assicurati che il tuo spazio di archiviazione possa supportare i backup automatici e i giorni dei log che intendi conservare. [Scopri di più](#)

Backup giornalieri automatici
I backup giornalieri vengono acquisiti nell'intervallo di tempo selezionato. L'operazione potrebbe continuare al di fuori dell'intervallo di tempo fino al completamento.

Numero di giorni *
Finestra di backup

7

-

11:00 – 15:00

Tempo indicato nel fuso orario locale (CET)

OPZIONI AVANZATE

Abilita recupero point-in-time
Ti permette di recuperare i dati da un momento specifico, fino a una frazione di secondo. Abilita log binari (richiesti per la replica).

Giorni di log *

7

1 - 7 per la versione Enterprise

Protezione da eliminazione delle istanze
Proteggiti da ~~eliminazioni accidentali e perdite di dati~~. [Scopri di più](#)

Attiva la protezione da eliminazione
Se abilitata, l'istanza non potrà essere eliminata finché questa funzionalità non verrà disabilitata

Riepilogo

Regione	europe-west8 (Milano)
Versione DB	MySQL 5.7.44
vCPU	4 vCPU
RAM	16 GB
Cache di dati	Disabilitata
Archiviazione	100 GB
Connessioni	IP pubblico
Backup	Automatico
Disponibilità	Zona singola
Recupero point-in-time	Abilitato
Velocità effettiva rete (MB/s)	1.000 di 1.000
IOPS	Lettura: 3.000 di 15.000 Scrittura: 3.000 di 15.000
Velocità effettiva disco (MB/s)	Lettura: 48,0 di 240,0 Scrittura: 48,0 di 240,0

2. Delete your instance (3/3)

3. Confirm.

The screenshot shows a confirmation dialog box titled "Eliminare l'istanza appmod-phpapp?". The dialog contains the following text:
⚠ Questa operazione non può essere annullata.
L'eliminazione di un'istanza rimuove definitivamente l'istanza e tutti i suoi dati.
L'operazione influisce su tutte le applicazioni che si connettono all'istanza.
Conferma l'eliminazione digitando l'ID istanza di seguito: **appmod-phpapp**
ID istanza *
 Esegui un backup finale (consigliato) ?
Il periodo di conservazione predefinito è di 30 giorni, ma può essere esteso a 365 giorni.

additional charges.

ORI INFORMAZIONI

10

uso della CPU

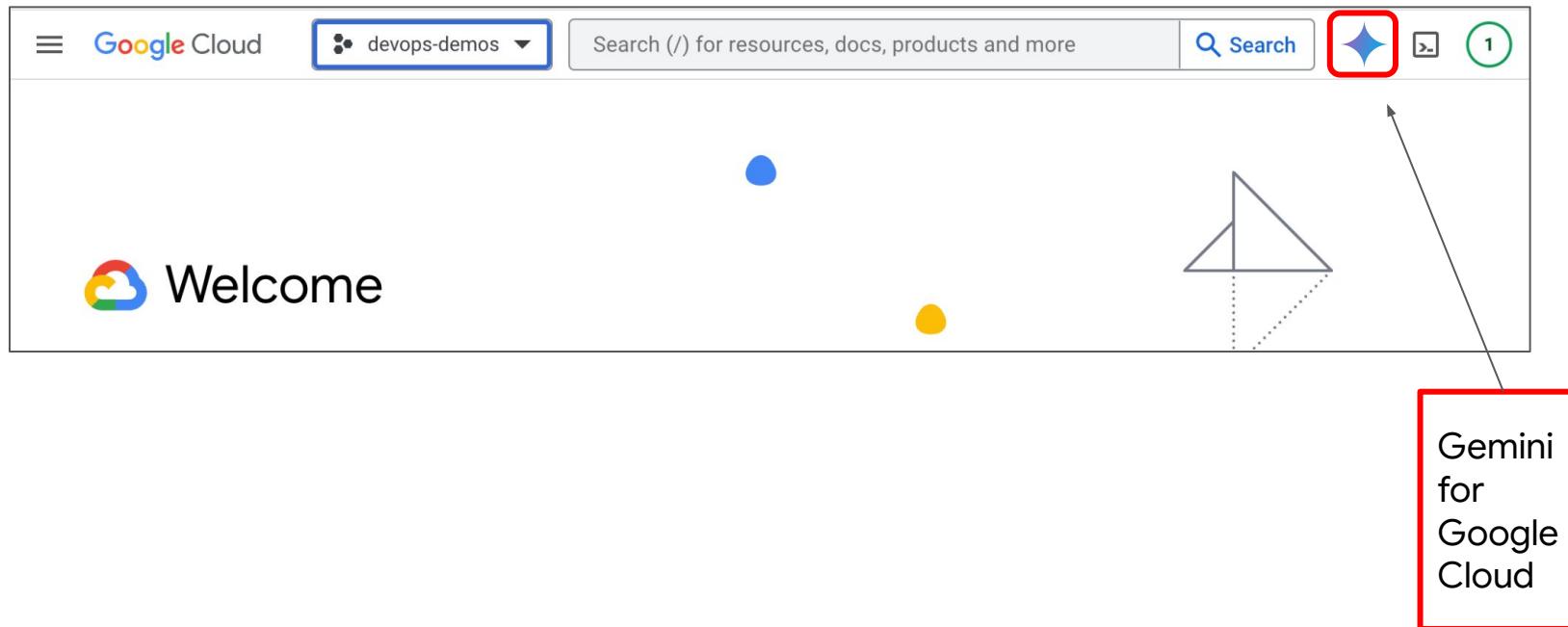
3:00 20:00

The background of the slide is a dark, atmospheric cemetery scene. Several AI robots of different models and sizes are scattered throughout the graveyard. Some are standing near headstones, while others are on the ground or perched on structures. A small quadcopter drone is flying in the upper left corner. The cemetery is filled with tall, weeping willow trees whose branches hang over the graves. In the center, there's a large, multi-tiered structure that looks like a server rack or a futuristic storage unit with glowing blue lights. The overall mood is somber and mysterious.

Optional:

1. enable “Gemini for Google Cloud”
2. retrieve Gemini API Key from AI Studio.

[optional] Open Gemini AI side panel





[optional] In the right panel, click on Enable



Welcome to Gemini

Get help where you need it with a conversational assistant that answers your questions about Google Cloud, reviews code snippets, and troubleshoots issues quickly.

Gemini is a work in progress and may display inaccurate information. Your prompts aren't used to train the model. [Learn more](#)

Required API

To use conversational assistance and other Gemini features, enable the Cloud AI Companion API in this project qwiklabs-gcp-04-64336095db66 [Learn more](#)

[Gemini for Google Cloud API](#)

Not enabled

ENABLE

SEND FEEDBACK

Use of the Cloud AI Companion API is subject to the [Google Cloud Terms of Service](#) terms of service and [Service Specific Terms](#) applicable to Generative AI Services.

Start chatting

[Learn more](#)

Click here to Enable
**Gemini for Google
Cloud API** and start
asking questions



Test Gemini for Google Cloud in console

The diagram illustrates the interaction flow between the AI interface and the Gemini interface. It starts with a large white box containing the AI interface. A red box highlights the input field "Enter a prompt here" and the "Send" button. An arrow labeled "1" points from the AI interface to the Gemini interface. The Gemini interface shows a query "What is Cloud Run?" with a detailed response about Cloud Run being a managed compute platform. A red box highlights the response area. An arrow labeled "2" points from the Gemini interface back to the AI interface, indicating the flow of information.

is an AI-powered collaborator to help you get more done faster. Get answers to your questions about how to get started with a Cloud solution, strategies for optimizing resources, or using the gcloud CLI to manage Google Cloud.

In addition to general knowledge about Google Cloud, it also has some awareness of your context, like your project and console page.

What can I use Eventarc for?

What is Secret Manager?

How can I identify unattended projects?

Enter a prompt here ➤

Ask a question, e.g. “What is Cloud Run?” or choose from the sample queries shown. Submit your prompt (arrow on the right)

Gemini for Google Cloud will answer your query and display the response.

A screenshot of the Gemini interface. At the top, there's a search bar with the query "What is Cloud Run?". Below the search bar, the response is displayed in a card format. The card includes a summary of what Cloud Run is (a managed compute platform) and a list of benefits (stateless containers, programming language flexibility, automatic scaling, cost efficiency). It also lists applications like microservices, event handlers, webhooks, APIs, and background tasks. At the bottom of the card, there are links to "Cloud Run documentation" and "Rate this answer" buttons.

solution, strategies for optimizing resources, or using the gcloud CLI to manage Google Cloud.

In addition to general knowledge about Google Cloud, it also has some awareness of your context, like your project and console page.

What is Cloud Run?

Cloud Run is a fully managed compute platform that enables you to run your code directly on top of Google's scalable infrastructure. Cloud Run is simple, automated, and designed to make you more productive.

With Cloud Run, you can:

- Run stateless containers that are invocable via HTTP requests.
- Use any programming language or framework.
- Scale your services automatically based on demand.
- Pay only for the resources you use.

Cloud Run is a great choice for running stateless, event-driven applications such as:

- Microservices
- Event handlers
- Webhooks
- APIs
- Background tasks

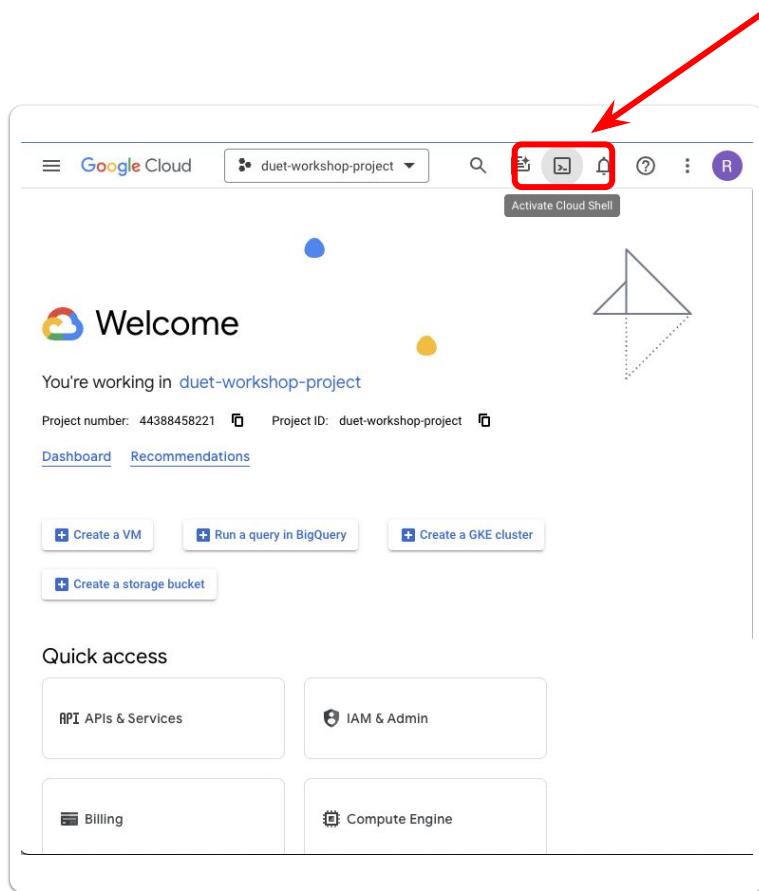
To learn more about Cloud Run, visit the [Cloud Run documentation](#).

Rate this answer: ⌂ ⌃

▼ Show related content

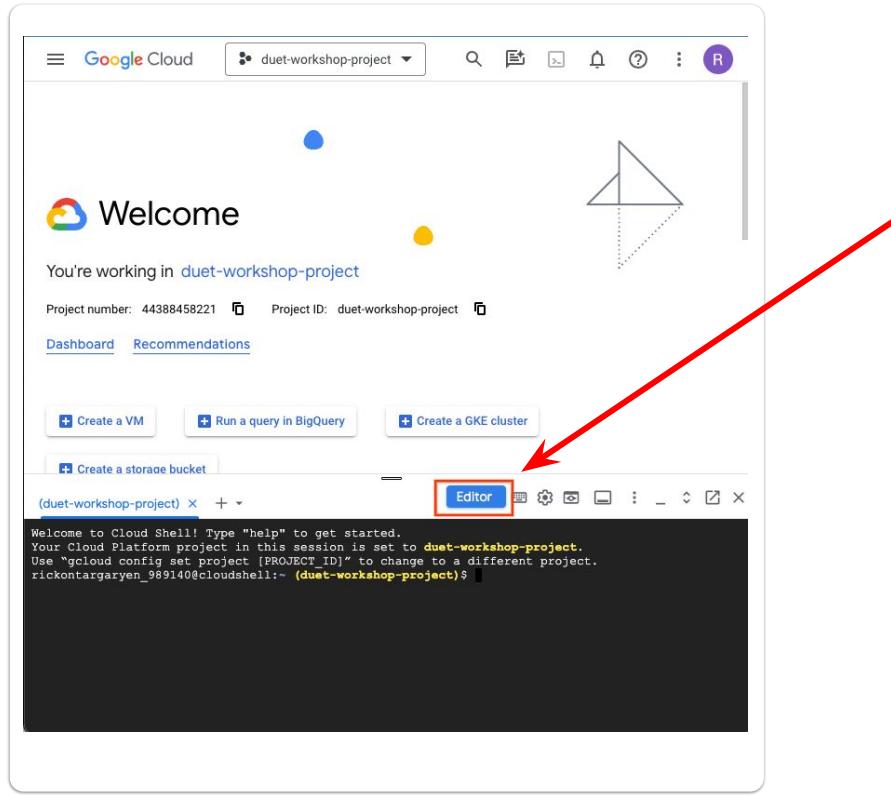
Enter a prompt here ➤

Open the Cloud Shell



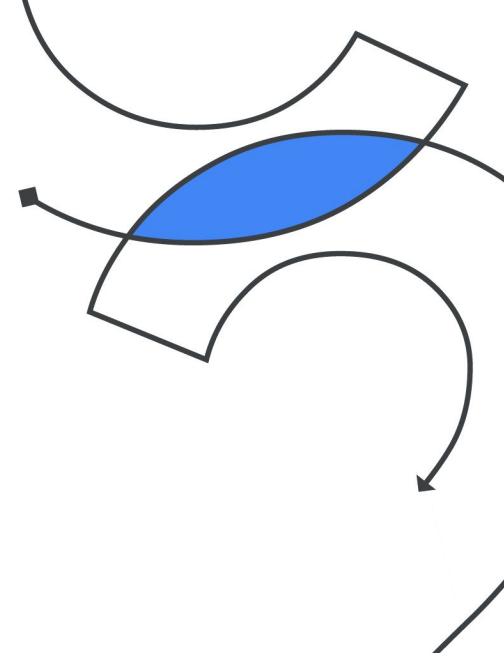
Note: It may take a minute or two to start your VM

Hack around...





Gemini API KEY Setup (optional)



 Filter

Overview

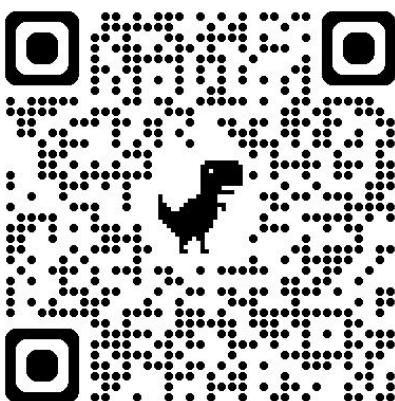
Get started

API keys

Quickstart

Libraries

Release notes



Gemini 1.5 Flash price drop, fine-tuning access for all developers, and more!

[Learn more](#)[Home](#) > [Gemini API](#) > [Docs](#)

Get an API key

[Send feedback](#)

To use the Gemini API, you need an API key. You can create a key with one click in Google AI Studio.

[Get an API key](#)

★ **Important:** Remember to use your API keys securely. Review [Keep your API key secure](#) and then check out the [API quickstarts](#) to learn language-specific best practices for securing your API key.

<https://ai.google.dev/gemini-api/docs/api-key>

Google AI Studio

⟳ Get API key

⊕ Create new prompt

☒ New tuned model

⤷ My library

⤸ Allow Drive access

□ Prompt Gallery

🔍 Documentation

☁️ API Reference

⤷ Gemini cookbook

⤷ Discourse forum

Get API key

API keys

You can create a new project if you don't have one already or add API keys to an existing project. All projects are subject to the [Google Cloud Platform Terms of Service](#), which you agree to when creating a new project, while use of the Gemini API and Google AI Studio is subject to the [Gemini API Terms of Service](#).

Use your API keys securely. Do not share them or embed them in code the public can view.

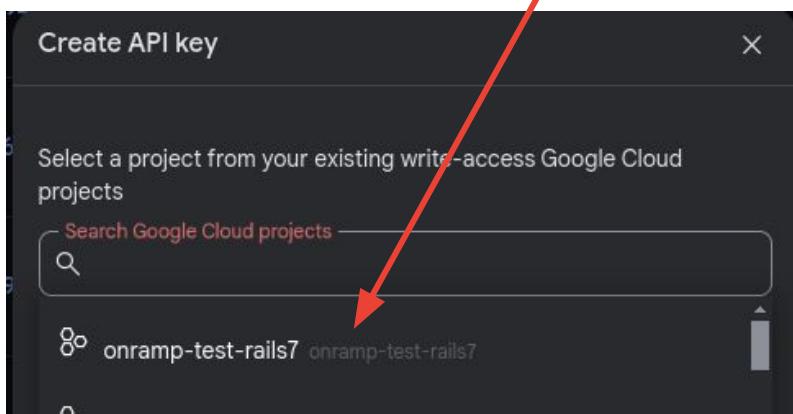
If you use Gemini API from a project that has billing enabled, your use will be subject to [pay-as-you-go pricing](#).

⟳ Create API key

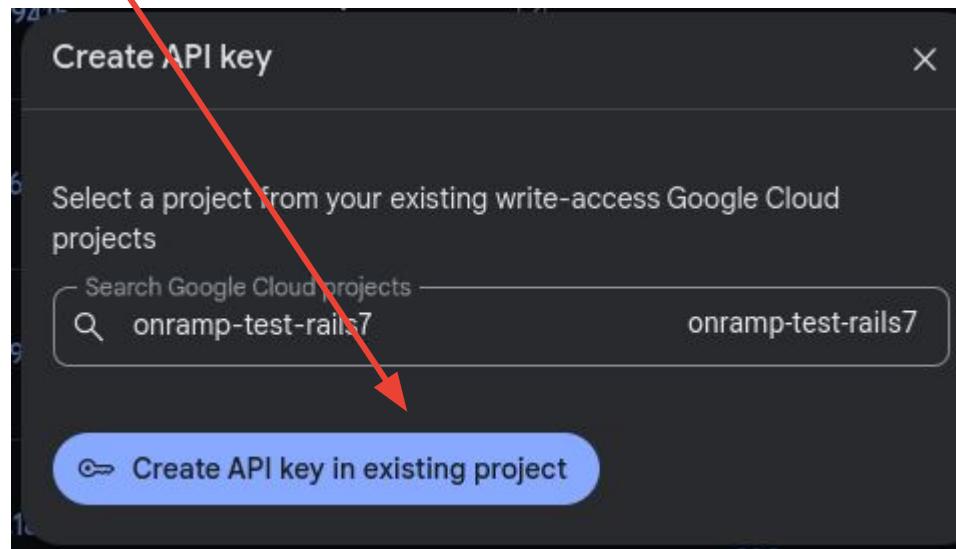
Your API keys are listed below. You can also view and manage your project and API keys in Google Cloud.

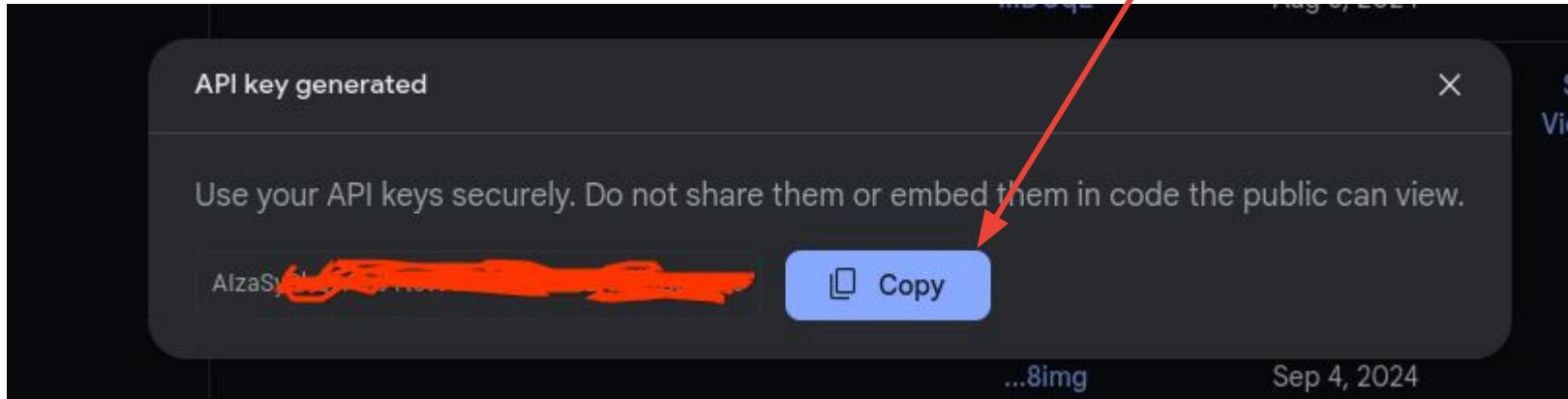
Project number	Project ID	API key	Created	Plan

1. Select project



2. Click to create key within that project





Tip: Usually it starts with “Alza”

```
$ .envrc /Users/ricc/git/gic/.envrc
22     export GOOGLE_GENAI_KEY='AIzaSyA'
```

Congratulations !

You are all set to start developing with Google Cloud
and invoking Gemini!





Find this URL:

<https://codelabs.developers.google.com/codelabs/app-mod-workshop>

Or simply:

Google “App Mod Workshop”

A screenshot of a search results page from a web browser. The search bar at the top contains the query "app mod workshop". Below the search bar, there is a navigation bar with links for "All", "Videos", "Images", "Forums", "News", "Web", "Books", and "More". Underneath the navigation bar, there are several buttons for "Download", "Android", "Steam mobile", and "iOS". The main content area displays a search result for "Google Codelabs" with a link to "https://codelabs.developers.google.com/codelabs/app-mod-workshop". A snippet of the page content below the link reads: "App Mod Workshop 1 Nov 2024 — In this codelab, you will modernize an old PHP application to Google Cloud, containerize it, deploy to Cloud Run and connect it to Cloud SQL ...". To the right of the search result, there is a small thumbnail image showing a screenshot of a software interface with various tables and data.

Feedback



<https://goo.gle/wad-ws-feedback>