

notebook-template

August 5, 2025

```
[1]: # Copyright 2023 Google LLC
#
# Apache 2.0 ( " ")
#
#
#
#
# https://www.apache.org/licenses/LICENSE-2.0
#
#
# ,
#
# " (AS IS)"
#
#
#
```

1 [TODO] – . –

- – : Generative AI with Gemini
- : () .
- Python version = 3.10.13 -
- , 3.10.13 , 3.10.x

1.1 (Overview)

{TODO: , , .}

[web-doc-title](#) . {TODO: , / .}

1.2 (Objective)

- {TODO: ()} . (: , ,)}
 - Google Cloud ML .
 - {TODO: /} . (: Vertex AI Training)}
 - .
 - {TODO: .}
-

1.3 (Dataset)

{TODO: .}

{TODO: . Googlers: public samples bucket .}

1.3.1 (Costs)

- {TODO: .}
- Google Cloud () .:
- Vertex AI
 - {TODO: BigQuery}
 - Cloud Storage
- {TODO: . : BigQuery Dataflow ,} .}
- - Vertex AI
 - { TODO: BigQuery , }
 - Cloud Storage pricing .
-

1.4 (Installation)

- () .
- {TODO: GA(General Availability) --upgrade .}
- (Jupyter Notebook) (Colab) Vertex AI
- ```
! pip3 install --upgrade --quiet google-cloud-aiplatform
```
- ! = (OS)
  - pip3 install: 3
  - --upgrade:
  - --quiet: ,

– google-cloud-aiplatform: AI/ML Vertex AI

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## 1.5

### 1.5.1 Google Cloud

1. [Google Cloud](#) .. / \$300 .
  2. ..
  3. [Vertex AI API](#) .. {TODO: API . API , API ID . :  
container.googleapis.com,cloudbuild.googleapis.com}
  4. , [Cloud SDK](#) .
- 

**ID** **ID** . :

- gcloud config list .
- gcloud projects list .
- : [ID](#) [Locate the project ID](#)
- Google Cloud ID

```
PROJECT_ID = "[your-project-id]" # Google Cloud ID

ID gcloud
#

! gcloud config set project {PROJECT_ID}
• !

–
– gcloud → !
  ```<python>

  PROJECT_ID = "your-project-id"

  gcloud config set project your-project-id #

  ```
```

---

## (Region)

Vertex AI `REGION` .

[Vertex AI regions](#) .

- Google Cloud (Region)

```
REGION = "us-central1" # Region
- # @param {type: "string"} = (Colab) UI
- Vertex AI (,) us-central1
```

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## 1.5.2 Google Cloud

ID SDK, .

- SDK :

- gcloud CLI

```
! gcloud auth login
```

```
- : , → gcloud CLI
```

- :

- PC `google-cloud` API

```
! gcloud auth application-default
```

```
- application-default =
```

```
- →
```

```
* PC Cloud SDK
```

- \* Cloud Storage <https://cloud.google.com/storage/docs/gsutil/commands/iam#ch-examples> .

## 1.5.3 Cloud Storage

.

- { : `ID` , `-unique` . }

- Google Cloud Storage (GCS) `URI` > > > >

```
BUCKET_URI = f"gs://your-bucket-name-{PROJECT_ID}-unique" # = str
- f-string = { } =
```

```

- gs:// = Google Cloud Storage URI
- your-bucket-name =
 * : my-images-bucket
- {PROJECT_ID} = ID
- -unique
 *
 *
 :
 .

```

- Google Cloud Storage(GCS)

```

! gsutil mb -l {REGION} -p {PROJECT_ID} {BUCKET_URI}

- gsutil mb
 * mb = make bucket
 * GCS
 * gsutil Colab Google Cloud SDK

- -l {REGION}
 * (region)
 *
 * : us-central1, asia-northeast3, europe-west1
 * : -l us-central1

- -p {PROJECT_ID}: Google Cloud
- {PROJECT_ID} = ID
- {BUCKET_URI} = URI
 * : gs://my-bucket-project123-unique
 * =

```

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#### 1.5.4

- google.cloud aiplatform

```

from google.cloud import aiplatform

- aiplatform = Vertex AI

```

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#### 1.5.5 Vertex AI SDK for Python

Vertex AI SDK for Python

- - → →

```

- , , → aiplatform
- Vertex AI

 aiplatform.init(project=PROJECT_ID, location=REGION, staging_bucket=BUCKET_URI)
- project=PROJECT_ID
 * ID' .
 * SDK
- location=REGION
 *
 *
- staging_bucket=BUCKET_URI
 * Cloud Storage URI
 * , ,

```

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## 1.6 (Cleaning up)

Google Cloud , [Google Cloud](#) .

, :

```
{TODO: .}
```

- 

```

import os # os

#

Delete endpoint resource

Delete model resource

delete_bucket = False =
delete_bucket = False

=
if delete_bucket or os.getenv("IS_TESTING"): # = "IS_TESTING" →
 ! gsutil -m rm -r $BUCKET_URI #

```

- = delete\_bucket

```

- Delete endpoint resource
 * Vertex AI
 * : endpoint.delete()

```

```

- Delete model resource

*
* : model.delete()

- delete_bucket = False =

- :

* if delete_bucket or os.getenv("IS_TESTING") = True
 · "IS_TESTING" (:)
* ! gsutil -m rm -r $BUCKET_URI = True
 · -m : → ()
 · rm = delete
 · -r = = ,
 · $BUCKET_URI = GCS or

- X but, , → O

```

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