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Batch Code: LISUM30

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Submitted to: <https://github.com/MuhammadNurilHuda/Deployment>

Heart Attack Prediction Deployment – GCP

The used model is [here](#) (same as previous model), and the model training details are provided [here](#). I used Google App Engine (GAE). I utilized Google App Engine (GAE). Prior to that, I attempted to deploy it on Vercel; however, an error occurred during deployment due to the project's size exceeding the acceptable limit on Vercel.

SERVERLESS

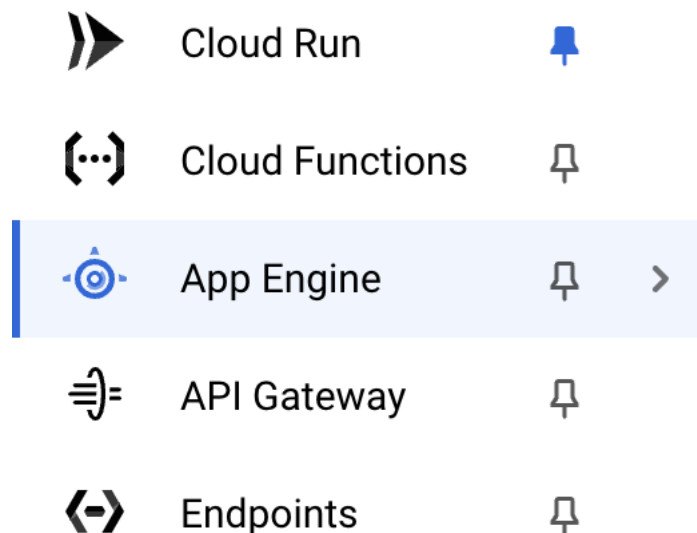


Figure 1 App Engine

I assume the GCP version is fully activated and a project has been created.

UGM.AC.ID ▼

Search projects and folders

RECENT STARRED ALL

	Name	ID
✓ ☆	deploy-test ?	deploy-test-415803
☆	DWIB ?	dwib-411802
	ugm.ac.id ?	664835948314
☆	My First Project ?	serene-notch-415715

Figure 2. Projects in GCP

1. Download and Install Google Cloud SDK

You can view the full documentation of Google Cloud SDK intallation [here](#). After that, navigate to the directory of the files you want to deploy and run `gcloud init` in terminal.

```
Welcome! This command will take you through the configuration of gcloud.

Settings from your current configuration [default] are:
core:
  account: muhammadnurilhuda@mail.ugm.ac.id
  disable_usage_reporting: 'True'
  project: heartattackdeploy

Pick configuration to use:
[1] Re-initialize this configuration [default] with new settings
[2] Create a new configuration
Please enter your numeric choice: 2
```

Figure 3 Configuration

Choose the option you want, here i choose 2.

```
Choose the account you would like to use to perform operations for this configuration:
[1] muhammadnurilhuda@mail.ugm.ac.id
[2] Log in with a new account
Please enter your numeric choice: 1

You are logged in as: [muhammadnurilhuda@mail.ugm.ac.id].
```

Figure 4 Account

Choose the account.

```
Pick cloud project to use:
[1] deploy-test-415803
[2] dwib-411802
[3] serene-notch-415715
[4] Enter a project ID
[5] Create a new project
Please enter numeric choice or text value (must exactly match list item): 1
```

Figure 5 Cloud project

Pick your cloud project

```
https://console.developers.google.com/apts page.
Your Google Cloud SDK is configured and ready to use!
* Commands that require authentication will use muhamma
```

Figure 6 SDK ready to use

If it is successful, there will be a notification as shown above.

2. Configure

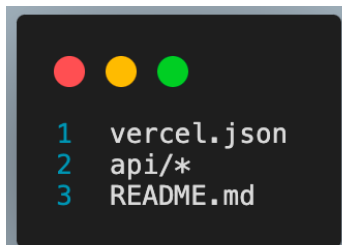
Create the `app.yaml` to make configuration file.

A screenshot of a code editor with a dark background. At the top, there are three colored circles: red, yellow, and green. Below them, the text "1 runtime: python39" is displayed in a light blue font.

```
1 runtime: python39
```

Figure 7 app.yaml

You can also add `.gcloudignore` to exclude the files.

A screenshot of a code editor with a dark background. At the top, there are three colored circles: red, yellow, and green. Below them, the text "1 vercel.json", "2 api/*", and "3 README.md" is displayed in a light blue font, each on a new line.

```
1 vercel.json
2 api/*
3 README.md
```

Figure 8 .gcloudignore

3. Deploy

Deploy your project using this command:

```
gcloud app deploy app.yaml --project project_name
```

Here i used my project in Figure 5 Cloud project

```
gcloud app deploy app.yaml --project deploy-test-415803
```

Make sure it works locally first because you can't redeploy it unless you create a new project.

```
You are creating an app for project [deploy-test-415803].  
WARNING: Creating an App Engine application for a project is irreversible and the region  
cannot be changed. More information about regions is at  
<https://cloud.google.com/appengine/docs/locations>.
```

Figure 9 Warning in GAE deployment

Choose the region

```
Please choose the region where you want your App Engine application located:  
  
[1] asia-east1      (supports standard and flexible)  
[2] asia-east2      (supports standard and flexible and search_api)  
[3] asia-northeast1 (supports standard and flexible and search_api)  
[4] asia-northeast2 (supports standard and flexible and search_api)  
[5] asia-northeast3 (supports standard and flexible and search_api)  
[6] asia-south1     (supports standard and flexible and search_api)  
[7] asia-southeast1 (supports standard and flexible)  
[8] asia-southeast2 (supports standard and flexible and search_api)  
[9] australia-southeast1 (supports standard and flexible and search_api)  
[10] europe-central2 (supports standard and flexible)  
[11] europe-west     (supports standard and flexible and search_api)  
[12] europe-west2    (supports standard and flexible and search_api)  
[13] europe-west3    (supports standard and flexible and search_api)  
[14] europe-west6    (supports standard and flexible and search_api)  
[15] northamerica-northeast1 (supports standard and flexible and search_api)  
[16] southamerica-east1 (supports standard and flexible and search_api)  
[17] us-central      (supports standard and flexible and search_api)  
[18] us-east1        (supports standard and flexible and search_api)  
[19] us-east4        (supports standard and flexible and search_api)  
[20] us-west1        (supports standard and flexible)  
[21] us-west2        (supports standard and flexible and search_api)  
[22] us-west3        (supports standard and flexible and search_api)  
[23] us-west4        (supports standard and flexible and search_api)  
[24] cancel  
Please enter your numeric choice: 17
```

Figure 10 Region

Finally, if the deployment is successful, you will receive a notification. You can click the link to access your web application.

```

Creating App Engine application in project [deploy-test-415803] and region [us-central]...done.
Services to deploy:

descriptor:      [/Users/muhammadnurilhuda/Documents/Documents - MacBook Pro Muhammad/Work/Intern - Data Glaci
er/Deployment/Deploy/app.yaml]
source:          [/Users/muhammadnurilhuda/Documents/Documents - MacBook Pro Muhammad/Work/Intern - Data Glaci
er/Deployment/Deploy]
target project:  [deploy-test-415803]
target service:  [default]
target version:  [20240229t101145]
target url:      [https://deploy-test-415803.uc.r.appspot.com]
target service account: [deploy-test-415803@appspot.gserviceaccount.com]

Do you want to continue (Y/n)? Y

Beginning deployment of service [default]...

= Uploading 57 files to Google Cloud Storage =

File upload done.
Updating service [default]...done.
Setting traffic split for service [default]...done.
Deployed service [default] to [https://deploy-test-415803.uc.r.appspot.com]

```

Figure 11 Successfull deployment

Here is my deployed web app.

Input Data:

Age:

Gender:
☐ Male ☐ Female

Chest Pain Type (cp):
☐ Typical Angina ☐ Atypical Angina
☐ Non-Anginal ☐ Asymptomatic

Resting Blood Pressure (trtbps):

Serum Cholesterol (chol):

Fasting Blood Sugar (fbs) > 120 mg/dl: ☐ Yes ☐ No

Resting Electrocardiographic Results (rest_ecg):
☐ Normal ☐ Having ST-T Wave Abnormality ☐ Hypertrophy

Maximum Heart Rate Achieved (thalach):

Exercise Induced Angina (exng): ☐ Yes ☐ No

Oldpeak:

Slope of the Peak Exercise ST Segment (slp) :
☐ Upsloping ☐ Flat ☐ Downsloping

Number of Major Vessels Colored by Fluoroscopy (caa) 0-3:

Thall:
☐ Normal ☐ Fixed Defect ☐ Reversible Defect

Figure 12 Home

← → ↻ deploy-test-415803.uc.r.appspot.com/predict

☆ 🔍 📄 📱 📧 Finish update

Input Data:

Age:

Gender:
☐ Male ☐ Female

Chest Pain Type (cp):
☐ Typical Angina ☐ Atypical Angina
☐ Non-Anginal ☐ Asymptomatic

Resting Blood Pressure (trtbps):

Serum Cholesterol (chol):

Fasting Blood Sugar (fbs) > 120 mg/dl: ☐ Yes ☐ No

Resting Electrocardiographic Results (rest_ecg):
☐ Normal ☐ Having ST-T Wave Abnormality ☐ Hypertrophy

Maximum Heart Rate Achieved (thalach):

Exercise Induced Angina (exng): ☐ Yes ☐ No

Oldpeak:

Slope of the Peak Exercise ST Segment (slp):
☐ Upsloping ☐ Flat ☐ Downsloping

Number of Major Vessels Colored by Fluoroscopy (caa) 0-3:

Thal:
☐ Normal ☐ Fixed Defect ☐ Reversible Defect

You have more chance of heart attack

Figure 13 Predict

Check your App Engine, disable your web to avoid billing.

