

Advanced Programming with Python

Deploying Python apps

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Deployment

When we talk about deployment, we mean running our application somewhere in the internet.

In this case we will run it on **Google App Engine**.

Google App Engine (**GAE**) is a PaaS Platform by Google Cloud. We can host applications written in a range of different programming languages, but we'll focus on Python ourselves. It's similar to other services such as **Heroku**, **Elastic Beanstalk**, **Engineyard**.



App Engine

Figure 1: GAE logo

We will interact with Google Cloud using the `gcloud` sdk. It's a command line interface that provides access to all features in Google Cloud.

<https://cloud.google.com/sdk/gcloud>

Practice

In this practice we will create a toy Flask application and deploy it to Google App Engine.

steps

- Authenticate with `gcloud`
- Create a project in `gcloud`
- Create a simple flask application
- Create needed files
- Deploying the app in Google App Engine

steps

Authenticate with gcloud

Create a project in gcloud

Create a simple flask application

Create needed files

Deploying the app in Google App Engine

Practice

```
$ gcloud auth login
```


steps

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Practice. Create project

We can have more than one project under the same Google account running on Google Cloud. We tell them appart using projects.

Practice. Create project

```
$ gcloud projects create mcsbt-app-session-13-pepegar
```

Practice. Create project

```
$ gcloud projects create mcsbt-app-session-13-pepegar
```

Attention

the id we give to the project must be unique

Practice. Create project

```
$ gcloud projects list
```

PROJECT_ID	NAME	PROJECT_NUMBER
mcsbt-app-session-13-pepegar	mcsbt-flask-example-1	4217

Practice. Create project

We'll also configure the project as the current one:

```
$ gcloud config set project mcsbt-app-session-13-pepegar
```

Checkpoint

At this point we should have:

```
$ gcloud projects list
```

PROJECT_ID	NAME	PROJECT_NUMBER
mcsbt-app-session-13-pepegar	mcsbt-flask-example-1	4217

```
$ gcloud config get-value project
```

```
mcsbt-flask-example-1
```

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Practice. Flask application

Now, let's create a **very simple** Flask app (`main.py`):

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```
from flask import Flask

app = Flask(__name__)

@app.route("/")
def index():
    return "Hello, Appengine!"

# app.run()
```

Practice. Flask application

Now, let's create a **very simple** Flask app (`main.py`):

```
from flask import Flask

app = Flask(__name__)

@app.route("/")
def index():
    return "Hello, Appengine!"

# app.run()
```

Attention

appengine will look for a variable named `app` and run it, we must not do it manually.

Checkpoint

Now there should be a `main.py` file in our folder, **without the `app.run()`**. Remember that **GAE** is gonna look for the variable called `app` for us, and run it. We won't need to run it manually.

```
$ ls  
main.py
```

steps

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Practice. Creating the needed files

There are two files we will need to create in our project in order to make it run on **GAE**:

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```
requirements.txt  
app.yaml
```

Practice. Creating the needed files

`requirements.txt` describes the dependencies of our application and their versions. In our case, it's only going to be Flask.

```
Flask==1.1.2
```


Practice. Creating the needed files

`app.yaml` declares information needed for Google App Engine. In our case, we'll just specify the version of python we need.

```
runtime: python39
```

Checkpoint

```
$ ls
```

```
app.yaml
```

```
main.py
```

```
requirements.txt
```

steps

Authenticate with `gcloud`

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Practice. Deploying our app to GAE

```
$ gcloud app create
```

```
...
```

```
Please enter your numeric choice: 8
```

```
Creating App Engine application in project [pepegar-test-  
Success! The app is now created. Please use `gcloud app d
```

Practice. Deploying our app to GAE

```
$ gcloud app deploy
```

```
...
```

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

```
Beginning deployment of service [default]...
```

```
    Uploading 3 files to Google Cloud Storage
```

```
File upload done.
```

```
Updating service [default]...done.
```

```
Setting traffic split for service [default]...done.
```

```
Deployed service [default] to [https://pepegar-test-1.ew.
```

You can stream logs from the command line by running:

Practice. Deploying our app to GAE

Attention

With a real GCP account, last command may fail because of Google Cloud Build, you'll need to activate it.