



AI BUZZ NOTEBOOK

Deployment of Machine Learning Model to Google Cloud Platform

Pre-requisites:

- Basic knowledge of flask framework.
- Any Python IDE installed(we are using PyCharm).
- A Google Cloud Platform account.
- Basic understanding of HTML.

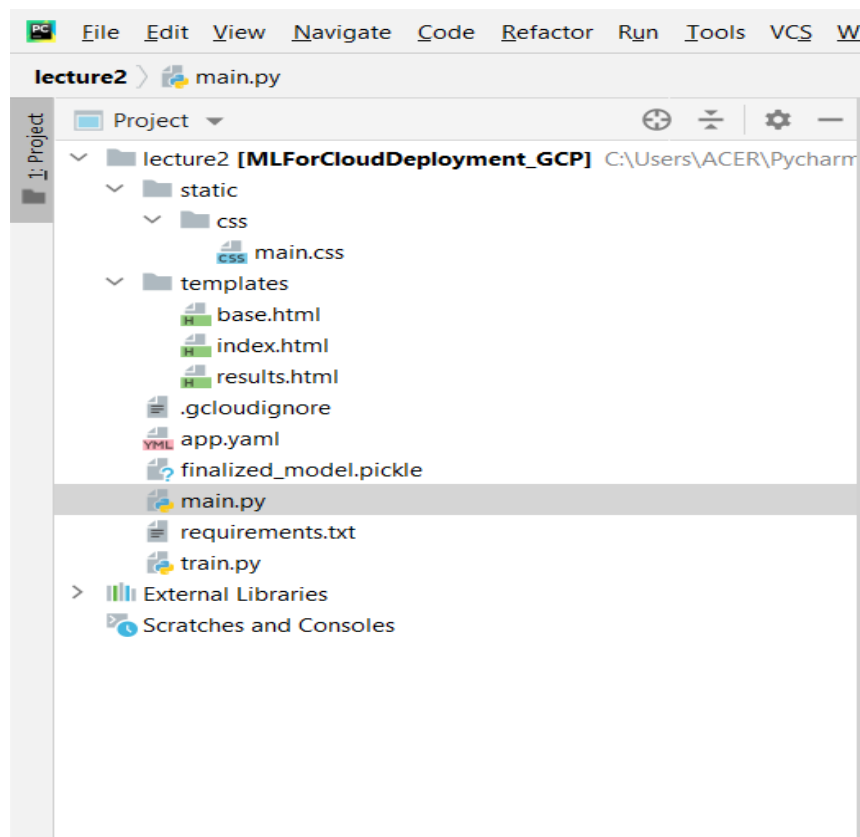
Flask App:

As we'll expose the created model as a web API to be consumed by the client/client APIs, we'd do it using the flask framework.

The flow of our flask app will be



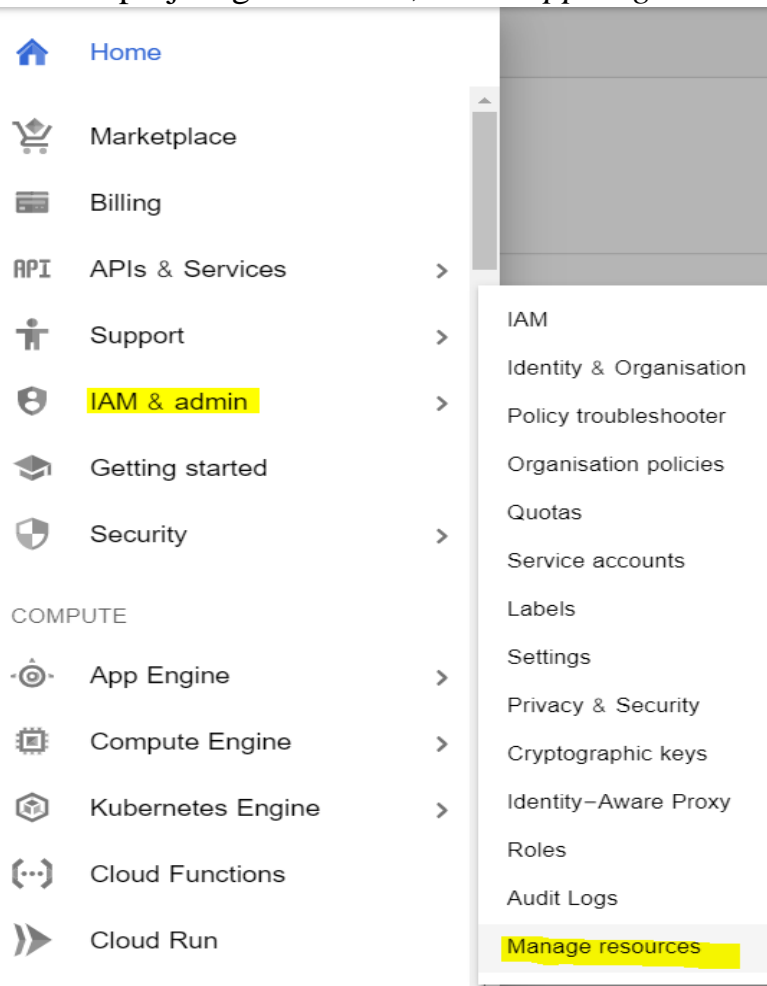
Create the project structure, as shown below:

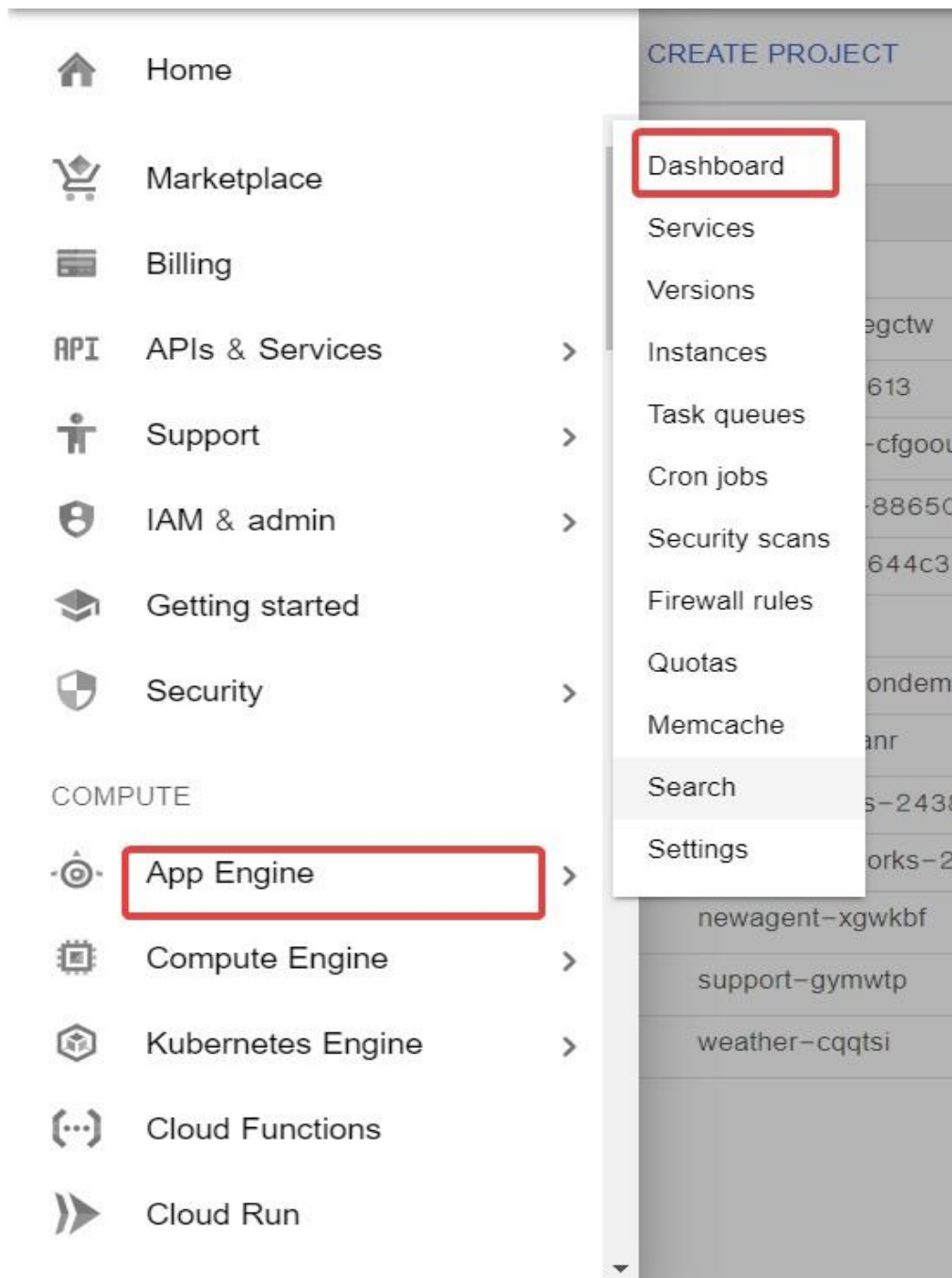


Deployment to G-cloud:

- Go to <https://cloud.google.com/> and create an account if already haven't created one.
- Then go to the console of your account.
- Go to IAM and admin(highlighted) and click *manage resources*.

- Click *CREATE PROJECT* to create a new project for deployment.
- Once the project gets created, select *App Engine* and select *Dashboard*.





- Go to <https://dl.google.com/dl/cloudsdk/channels/rapid/GoogleCloudSDKInstaller.exe> to download the google cloud SDK to your machine.
- Click *Start Tutorial* on the screen and select Python app and click start.

Hello World

New to App Engine? Start with a simple 'Hello World' app to learn the essentials.

Time: 10 minutes

START TUTORIAL

Node.js

PHP

Python

Go

Java™

Ruby

.NET

Deploy via command line

With the Google Cloud SDK, you can use the CLI to easily create and deploy your app:

```
$ gcloud app deploy
```

DOWNLOAD THE SDK

App Engine quickstart

Introduction

This tutorial shows you how to deploy a sample [Python](#) application to App Engine using the `gcloud` command.

Here are the steps that you will be taking:

- **Create a project**
Projects bundle code, VMs and other resources together for easier development and monitoring.
- **Build and run your 'Hello World!' app**
You will learn how to run your app using Cloud Shell, directly in your browser. At the end, you'll deploy your app to the web using the `gcloud` command.
- **After the tutorial...**
Your app will be real and you'll be able to experiment with it after you deploy, or you can remove it and start afresh.

'Python' and the Python logos are trademarks or registered trademarks of the Python Software Foundation.

Start

- Check whether the correct project name is displayed and then click next.

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⋮

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Project setup

GCP organises resources into projects, which collect all of the related resources for a single application in one place.

Begin by creating a new project or selecting an existing project for this tutorial.

Select a project, or [create a new one](#)

⚙

LinearRegressionDemo

▼

For details, see [Creating a project](#).

Previous

Step 1 of 8

Next

- Create a file 'app.yaml' and put 'runtime: python37' in that file.

- Create a 'requirements.txt' file by opening the command prompt/anaconda prompt, navigate to the project folder and enter the command 'pip freeze > requirements.txt'. It is recommended to use separate environments for different projects.
- Your python application file should be called 'main.py'. It is a GCP specific requirement.
- Open command prompt window, navigate to the project folder and enter the command `gcloud init` to initialise the gcloud context.
- It asks you to select from the list of available projects.

```
You are logged in as: [viratsagar26@gmail.com].

Pick cloud project to use:
[1] clgdfdemo-segctw
[2] cloudml-246613
[3] collegedemo-cfgoou
[4] exemplary-works-246613
[5] faq-goilum
[6] fir-functions-88650
[7] health-care-644c3
[8] linearregressiondemo
[9] lowesbot-krjain
[10] newagent-xgwkbk
[11] support-gymwtp
[12] teak-environs-243805
[13] weather-cqqtst
[14] Create a new project

Please enter numeric choice or text value (must exactly match list item):
```

- Once the project name is selected, enter the command `gcloud app deploy app.yaml --project <project name>`.
- After executing the above command, GCP will ask you to enter the region for your application. Choose the appropriate one.

```
l:\datascience\iNeuron\LinearRegressionTillCloud>gcloud app deploy app.yaml --project linearregressiondemo
You are creating an app for project [linearregressiondemo].
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>.

Please choose the region where you want your App Engine application
located:

[1] asia-east2 (supports standard and flexible)
[2] asia-northeast1 (supports standard and flexible)
[3] asia-northeast2 (supports standard and flexible)
[4] asia-south1 (supports standard and flexible)
[5] australia-southeast1 (supports standard and flexible)
[6] europe-west (supports standard and flexible)
[7] europe-west2 (supports standard and flexible)
[8] europe-west3 (supports standard and flexible)
[9] europe-west6 (supports standard and flexible)
[10] northamerica-northeast1 (supports standard and flexible)
[11] southamerica-east1 (supports standard and flexible)
[12] us-central (supports standard and flexible)
[13] us-east1 (supports standard and flexible)
[14] us-east4 (supports standard and flexible)
[15] us-west2 (supports standard and flexible)
[16] cancel

Please enter your numeric choice: 4

Creating App Engine application in project [linearregressiondemo] and region [asia-south1]....done.
```

- GCP will ask for the services to be deployed. Enter 'y' to deploy the services.

- *And then it will give you the link for your app, and the deployed app looks like:*

The screenshot shows a web browser at the URL `linearregressiondemo-262216.appspot.com`. The page has a light blue background and a title "Predict Your chances for Admission". Below the title is a form with three input fields containing the values 330, 120, and 5. Below these fields are two more input fields containing 5 and 9.9, followed by a "Yes" dropdown menu. A "Predict" button is located below the form.

- *To save money, go to settings and disable your app.*

The screenshot shows the Google Cloud Platform console for the project "LinearRegressionDemo". The left sidebar shows the "App Engine" section with various options like Dashboard, Services, Versions, Instances, Task queues, Cron jobs, Security scans, Firewall rules, Quotas, Memcache, and Settings. The "Settings" option is highlighted with a red box. The main content area shows the "Settings" page for the application. The "Application settings" tab is selected. The "Edit" button is visible. The "Daily spending limit" is set to "Unlimited". The "Google login cookie expiration" is set to "Default (1 day)". The "Referrers" are set to "Google Accounts API". The "Disable application" button is highlighted with a red box. Below the button, a message states: "An application update operation is currently in progress...". The "Default Cloud Storage Bucket" section is also visible, stating "Up to 5GB of Cloud Storage may be used with App Engine applications without enabling billing. Learn more".

Thank You!