

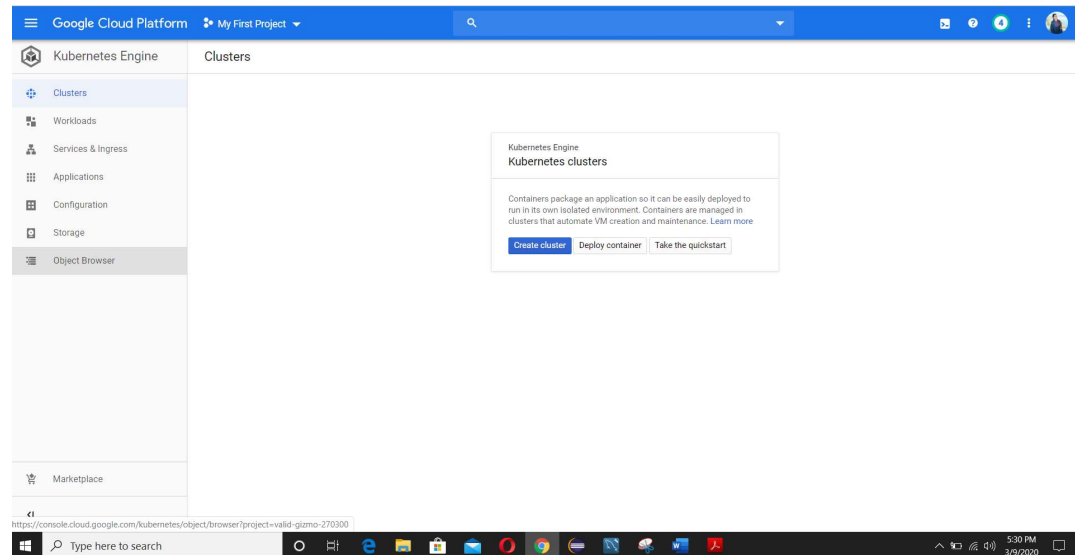
## Google Cloud Platform

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(19526)

### Midterm -Exam

#### Login to GCP and create a new project.



#### Create New Project

Google Cloud Platform

New Project

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

[MANAGE QUOTAS](#)

Project name \*

bookshelf19526

Project ID \*

bookshelf19526

Project ID can have lowercase letters, digits, or hyphens. It must start with a lowercase letter and end with a letter or number.

Location \*

No organization

BROWSE

Parent organization or folder

CREATE

CANCEL

Google Cloud Platform bookshelf19526

Navigation menu: Home, Marketplace, Billing, APIs & Services, Support, IAM & Admin, Getting started, Security, COMPUTE, App Engine, Compute Engine, Kubernetes Engine, Cloud Functions, Cloud Run.

**DASHBOARD** ACTIVITY

**Project info**

- Project name: bookshelf19526
- Project ID: bookshelf19526
- Project number: 464500485250

[ADD PEOPLE TO THIS PROJECT](#)

[Go to project settings](#)

**Resources**

This project has no resources

**Trace**

No trace data from the past 7 days

**API APIs**

Requests (requests/sec)

No data is available for the selected time frame.

[Go to APIs overview](#)

**Google Cloud Platform status**

All services normal

[Go to Cloud status dashboard](#)

**Billing**

Estimated charges: USD \$0.00  
For the billing period Mar 1 – 9, 2020

[View detailed charges](#)

**Error Reporting**

No sign of any errors. Have you set up Error Reporting?

[Learn how to set up Error Reporting](#)

**News**

**Enable all required APIs: Cloud Data storage API, Cloud Pub/Sub API, Kubernetes Engine API, Cloud Storage API.**

Google Cloud Platform

bookshelf19526

APIs & Services

ENABLE APIS AND SERVICES

Dashboard

Library

Credentials

OAuth consent screen

Domain verification

Page usage agreements

## Open Cloud Shell:

```

Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to bookshelf19526.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
shahm888@cloudshell:~ (bookshelf19526)$
```

## Create cluster:

```

shahm888@cloudshell:~ (bookshelf19526)$ gcloud container clusters create bookshelf \
> --scopes "cloud-platform" \
> --num-nodes 2 \
> --enable-ip-alias
WARNING: Newly created clusters and node-pools will have node auto-upgrade enabled by default. This can be disabled using the '--no-enable-autoupgrade' flag
WARNING: Starting with version 1.18, clusters will have shielded GKE nodes by default.
WARNING: The Pod address range limits the maximum size of the cluster. Please refer to https://cloud.google.com/kubernetes-engine/docs/how-to/flexible-pod-c
s allocation.
This will enable the autorepair feature for nodes. Please see https://cloud.google.com/kubernetes-engine/docs/node-auto-repair for more information on node
Creating cluster bookshelf in us-west1-b... Cluster is being health-checked (master is healthy)...done.
Created [https://container.googleapis.com/v1/projects/bookshelf19526/zones/us-west1-b/clusters/bookshelf].
To inspect the contents of your cluster, go to: https://console.cloud.google.com/kubernetes/workload/_gcloud/us-west1-b/bookshelf?project=bookshelf19526
kubeconfig entry generated for bookshelf.
NAME      LOCATION  MASTER VERSION  MASTER IP      MACHINE TYPE  NODE VERSION  NUM_NODES  STATUS
bookshelf  us-west1-b  1.14.10-gke.17  34.83.108.126  nl-standard-1  1.14.10-gke.17  2          RUNNING
shahm888@cloudshell:~ (bookshelf19526)$
```

## Git Clone Getting-Started-Python:

```

shahm888@cloudshell:~ (bookshelf19526)$ git clone https://github.com/GoogleCloudPlatform/getting-started-python.git
Cloning into 'getting-started-python'...
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 2324 (delta 3), reused 8 (delta 3), pack-reused 2315
Receiving objects: 100% (2324/2324), 757.79 KiB | 0 bytes/s, done.
Resolving deltas: 100% (1618/1618), done.
shahm888@cloudshell:~ (bookshelf19526)$
```

## Data Store: Select Datastore Mode and select region us-west2(Los Angeles)

Get started

- 1 Select a Cloud Firestore mode
- 2 Choose where to store your data

Cloud Firestore is the next generation of Cloud Datastore. You can use Cloud Firestore in either Native mode or Datastore mode, each with distinct system behavior optimized for different types of projects. [Pricing](#) for both modes is based on location, stored data, operations, and network egress with a daily free quota for each. [Learn more about choosing a mode](#)

The mode you select here will be permanent for this project

	Native mode	Datastore mode
	Enable all of Cloud Firestore's features, with offline support and real-time synchronization.	Leverage Cloud Datastore's system behavior on top of Cloud Firestore's powerful storage layer.
	<a href="#">SELECT NATIVE MODE</a>	<a href="#">SELECT DATASTORE MODE</a>
API	Firestore	Datastore
Scalability	Automatically scales to millions of concurrent clients	Automatically scales to millions of writes per second
App engine support	Not supported in the App Engine standard Python 2.7 and PHP 5.5 runtimes	All runtimes
Max writes per second	10,000	No limit
Real-time updates	✓	✗
Mobile/web client libraries with offline data persistence	✓	✗

Google Cloud Platform

bookshelf19526

Navigation menu

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Get started

✓

Select a Cloud Firestore mode

2

Choose where to store your data

You selected Cloud Firestore in Datastore mode. Now choose a database location.

The location of your database affects its cost, availability, and durability. Choose a regional location (lower write later or a multi-region location (higher availability, higher cost). [Learn more](#)

⚠

Choose carefully: your location selection is permanent and will also apply to this project's App Engine app

Select a location

us-west2 (Los Angeles)

To improve performance, store your data close to the users and services that need it

CREATE DATABASE

BACK

Google Cloud Platform

bookshelf19526

Datastore

Entities

CREATE ENTITY

IMPORT

EXPORT

Entities

QUERY BY KIND

QUERY BY GQL

Since your database is empty, you can still switch to Cloud Firestore in Native mode to get more features.

### Create cloud storage bucket:

```

shahm888@cloudshell:~ (bookshelf19526) $ gsutil mb gs://bookshelf19526
Creating gs://bookshelf19526/...
shahm888@cloudshell:~ (bookshelf19526) $ gsutil defacl set public-read gs://bookshelf19526
Setting default object ACL on gs://bookshelf19526/...
shahm888@cloudshell:~ (bookshelf19526) $

```

Configure the app:

Set PROJECT\_ID to “Bookshelf-19526” and Cloud\_Storage\_bucket = “bookshelf\_19526\_mansi”

```
(bookshelf19526)$ vim config.py
(bookshelf19526)$
```

```
# Google Cloud Project ID. This can be found on the 'Overview' page at
# https://console.developers.google.com
PROJECT_ID = 'bookshelf19526'
```

```
# larger or more varied file types if desired.
CLOUD_STORAGE_BUCKET = 'bookshelf19526'
MAX_CONTENT_LENGTH = 8 * 1024 * 1024
ALLOWED_EXTENSIONS = set(['png', 'jpg', 'jpeg', 'gif'])
```

Creating Container for the app:

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ docker build -t gcr.io/bookshelf19526/bookshelf .
Sending build context to Docker daemon 87.55kB
Step 1/8 : FROM gcr.io/google-appengine/python
--> 9351462e1805
Step 2/8 : RUN virtualenv -p python3.4 /env
--> Using cache
--> a9bffa786bd
Step 3/8 : ENV VIRTUAL_ENV /env
--> Using cache
--> 492ac874a78f
Step 4/8 : ENV PATH /env/bin:$PATH
--> Using cache
--> 4dc7c90a049f
Step 5/8 : ADD requirements.txt /app/requirements.txt
--> Using cache
--> 967e36d10b4b
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ gcloud docker -- push gcr.io/bookshelf19526/bookshelf
WARNING: 'gcloud docker' will not be supported for Docker client versions above 18.03.

As an alternative, use 'gcloud auth configure-docker' to configure 'docker' to
use 'gcloud' as a credential helper, then use 'docker' as you would for non-GCR
registries, e.g. 'docker pull gcr.io/project-id/my-image'. Add
'--verbosity=error' to silence this warning: 'gcloud docker
--verbosity=error -- pull gcr.io/project-id/my-image'.

See: https://cloud.google.com/container-registry/docs/support/deprecation-notice#gcloud-docker

The push refers to repository [gcr.io/bookshelf19526/bookshelf]
9afb19291f6: Pushed
2e0ee08e49ca: Pushing [=====>] 76.06MB/145.1MB
430b4174a5ec: Pushed
a936ef393e69: Pushed
5c8cbd60bd9f: Pushed
82b8790e44a6: Pushed
573c00f61295: Mounted from google-appengine/python
e4a75575724c: Pushed
0e4218cf02f2: Mounted from google-appengine/python
399bd9f2e9a8: Mounted from google-appengine/python
595e88d5c74c: Pushed
0da7244fff37: Pushed
84ff92691f90: Pushed
```



## Configure & Deploy Bookshelf Frontend:

### Update bookshelf-frontend. yaml with your project-id (bookshelf19526)

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf-19526)$ vim bookshelf-frontend.yaml
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf-19526)$

spec:
  containers:
  - name: bookshelf-app
    # Replace [GCPLOUD_PROJECT] with your project ID or use `make template`.
    image: gcr.io/bookshelf19526/bookshelf
    # This setting makes nodes pull the docker image every time before
    # starting the pod. This is useful when debugging, but should be turned
    # off in production.
    imagePullPolicy: Always
    # The PROCESSES environment variable is used by Honcho in the
    # Dockerfile's CMD to control which processes are started. In this
    # case, only the bookshelf process is needed.
```

## Deploy bookshelf frontend:

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ kubectl create -f bookshelf-frontend.yaml
deployment.extensions/bookshelf-frontend created

shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
bookshelf-frontend-5ffd6b59bd-fqkwj	1/1	Running	0	48s
bookshelf-frontend-5ffd6b59bd-vhb4h	1/1	Running	0	48s
bookshelf-frontend-5ffd6b59bd-vpn48	1/1	Running	0	48s

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$
```

## Configure & Deploy Bookshelf-Backend:

### In “bookshelf-worker.yaml”: Update “GCPLOUD\_PROJECT” with your project-id “bookshelf-19526”

```
spec:
  containers:
  - name: bookshelf-app
    # Replace [GCPLOUD_PROJECT] with your project ID or use `make template`.
    image: gcr.io/bookshelf19526/bookshelf
    # This setting makes nodes pull the docker image every time before
    # starting the pod. This is useful when debugging, but should be turned
    # off in production.
    imagePullPolicy: Always
```

## Deploy Bookshelf-backend:

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ vim bookshelf-worker.yaml
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ kubectl create -f bookshelf-worker.yaml
deployment.extensions/bookshelf-worker created
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
bookshelf-frontend-5ffd6b59bd-fqkwj	1/1	Running	0	3m55s
bookshelf-frontend-5ffd6b59bd-vhb4h	1/1	Running	0	3m55s
bookshelf-frontend-5ffd6b59bd-vpn48	1/1	Running	0	3m55s
bookshelf-worker-64c84cdd-9jm5w	1/1	Running	0	94s
bookshelf-worker-64c84cdd-x8r2q	1/1	Running	0	94s

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$
```

## Creating & Deploying Bookshelf service:

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ kubectl create -f bookshelf-service.yaml
service/bookshelf-frontend created
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ kubectl get service -o wide
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT (S)	AGE	SELECTOR
bookshelf-frontend	LoadBalancer	10.40.8.106	<pending>	80:32743/TCP	21s	app=bookshelf,tier=frontend
kubernetes	ClusterIP	10.40.0.1	<none>	443/TCP	34m	<none>

## Get external IP:

```
shahm888@cloudshell:~/getting-started-python/optional-kubernetes-engine (bookshelf19526)$ kubectl get service -o wide
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT (S)	AGE	SELECTOR
bookshelf-frontend	LoadBalancer	10.40.8.106	35.230.55.66	80:32743/TCP	107s	app=bookshelf,tier=frontend
kubernetes	ClusterIP	10.40.0.1	<none>	443/TCP	36m	<none>

## Result:



**Add book**

Title

Author

Date Published

Description

Cover Image  
 No file chosen

