

Week5

Lab5

Armant Touche

**Class/Instructor:** CS430P/ Dr. Wu-Chang  
**Date:** 10/31/22

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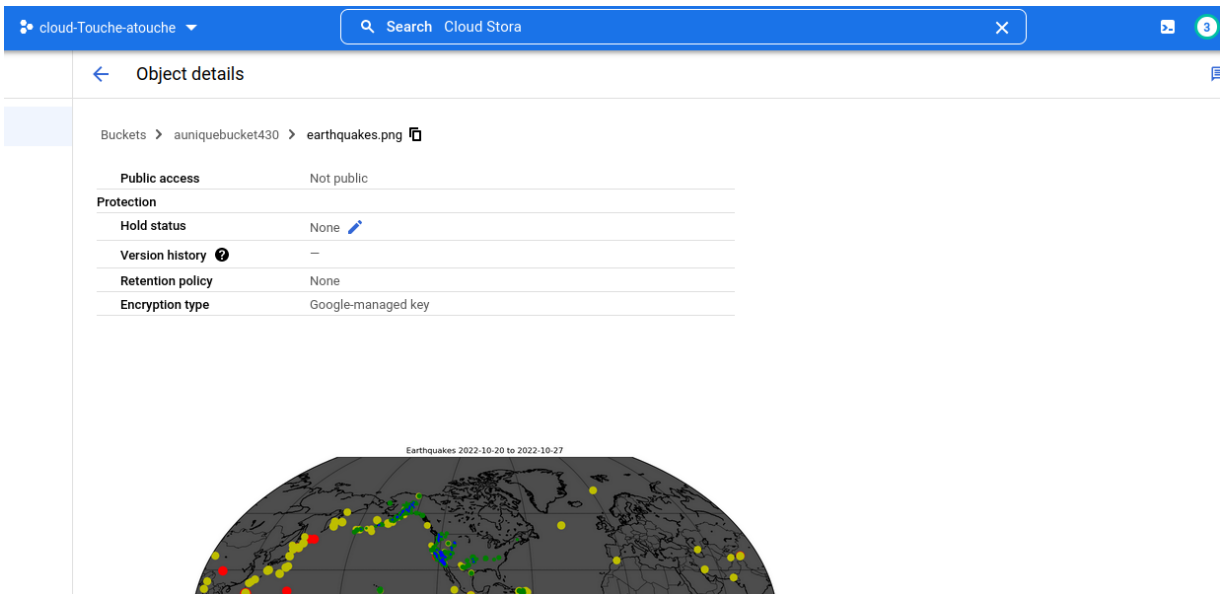
1.3. Cloud Datastore Guestbook

## Storage, IAM ([Link](#))

- ☐ GCP Cloud Storage
- ☐ GCP Cloud Storage #1 (USGS)
  - ☐ Create instance
    - ☐ us-west1-b
    - ☐ f1-micro
    - ☐ Bring up IAM for proj.
      - ☐ **What roles are attached to the Compute Engine default service account?**
        - Compute Engine default service account (Editor)
        - Google APIs Service Agent (Editor)
        - Armant Touche (Owner)
      - ☐ **Would they be sufficient for the VM to perform its functions?**
        - Maybe if the VM w/in a project contains an instance or many as to where functions were to be executed. Of course, functions and VM's made by OWNER and/or Editor.
  - ☐ Hover on Identity and API access
    - ☐ **What permissions are given by the default access scope to Cloud Storage?**
      - Default: read-only access to Storage and Service Management, write access to Stackdriver Logging and Monitoring, read/write access to Service Control.
    - ☐ **Would they be sufficient for the VM to perform its functions?**
      - If Cloud APIs were being used by this VM instance, then maybe no. If functions relating to a Python flask app were contained in a single instance where Model, View, and Presenter are implemented, then yes. It depends on if functions are internal or are contiguous APIs facilitated by outside instance(s). Overly restrictive vs the IAM roles for projects.
- ☐ Cloud Storage access scope
  - ☐ Configure and create VM via gcloud shell

```
$ gcloud compute instances create usgs \  
--machine-type f1-micro --zone us-west1-b \  
--image-project ubuntu-os-cloud --image-family ubuntu-2004-lts \  
--scopes storage-full
```

- ☐ USGS data and setup
  - ☐ ssh
  - ☐ git clone
  - ☐ Examine
    - ☐ **What time did the latest earthquake happen?**
      - 2022-10-27T23:25:44
    - ☐ **What was the magnitude (mag)?**
      - 1.70000005
    - ☐ **Where was the place where it happened?**
      - "5 km WSW of Pāhala, Hawaii"
  - ☐ Install matplotlib, numpy, and requests
- ☐ Python plotting code
- ☐ Create and distribute earthquake image
  - ☐ Run and gen image
  - ☐ Make bucket
    - ☐ Name: earthBucket
  - ☐ cp to bucket
  - ☐ png



- ☐ **GCP CCloud Storage #2 (IAM roles)**
- ☐ Create service account
- ☐ Create Compute Engine VM

☐ Service account roles (Compute)

☐ Attempt cmd

☐ **Exact error message**

- Since gcs-labs was given Viewer permissions to Storage Object Viewer, the permissions set does allow gcs-lab service account access to compute.instances.list for instance.

```
atouche@gcs-lab-vm:~$ sudo gcloud compute instances list
ERROR: (gcloud.compute.instances.list) Some requests did not succeed:
- Required 'compute.instances.list' permission for 'projects/cloud-touche-atouche'
```

☐ Add role

☐ **Successful list cmd screenshot**

```
atouche@gcs-lab-vm:~$ gcloud compute instances list
NAME          ZONE          MACHINE_TYPE  PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
gcs-lab-vm    us-west1-b    f1-micro      ☐             10.138.0.15  34.105.37.163  RUNNING
```

☐ **What role needs to be added to the service account's permissions for the VM to have access to list the project's Compute Engine instances?**

- Needed read access to compute.instances.list so adding the role **Compute Instance Admin (v1)** solved it but giving admin permissions maybe overkill.

☐ Service account roles (Storage)

☐ Copy, rename, and repaste to bucket

☐ **Error msg**

- AccessDeniedException: 403  
gcs-labs@cloud-touche-atouche.iam.gserviceaccount.com does not have storage.objects.create access to the Google Cloud Storage object.
- Same as Compute step, need write permissions

☐ **Solution**

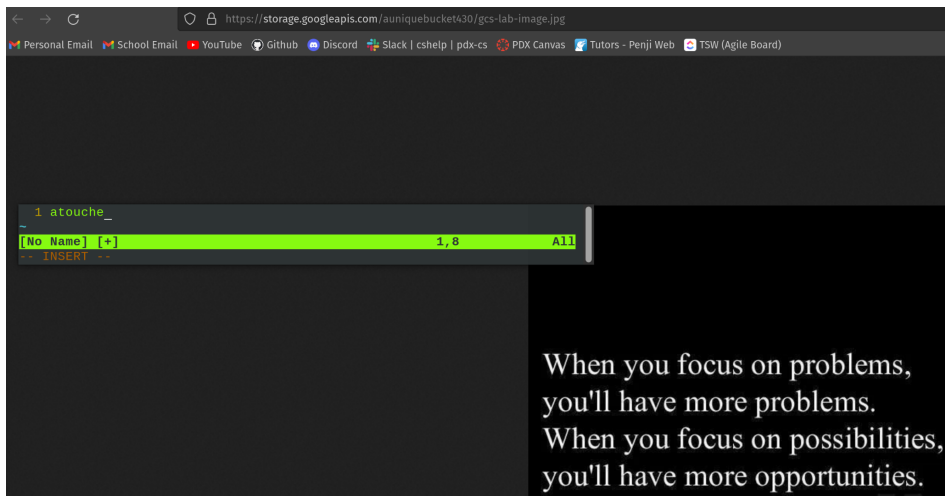
- ☐ Gave storage.object.create privileges via adding Storage Object Creator role

☐ GCP Cloud Storage #3 (Python)

☐ Python storage code

☐ View object

☐ **Screenshot**



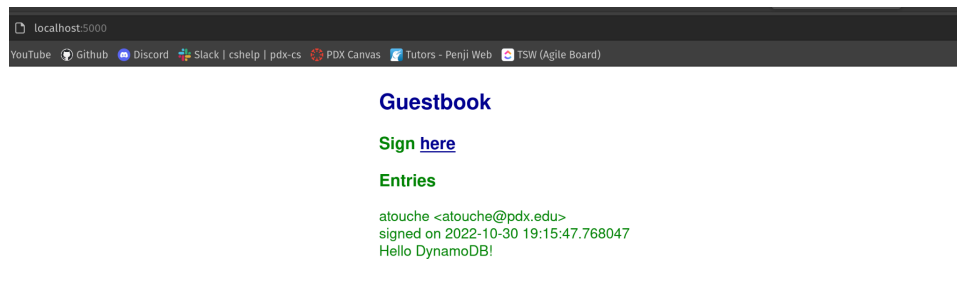
☐ IAM and least privileges #4

☐

☐ Clean up

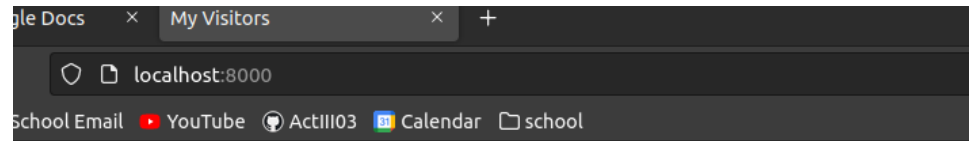
# DynamoDB Guestbook ([Link](#))

- ☐ DynamoDB
- ☐ model\_dynamodb
- ☐ Version 1: Ubuntu VM Python
- ☐ Obtain AWS credentials
- ☐ Run the application
  - ☐ **localhost**



- ☐ Version 2: Ubuntu VM Docker
- ☐ Run the application
- ☐ Build
- ☐ Run
  - ☐ `docker run --env AWS_ACCESS_KEY_ID=ASIAZ3FQXQJMYAO2NBI7 --env AWS_SECRET_ACCESS_KEY=0GKzfKMG+LcTjz3hOROuZn2Bdev2m/ZmDa1Fxl2e --env AWS_DEFAULT_REGION=us-east-1 --env AWS_SESSION_TOKEN=FwoGZXlvYXdzEKX////////wEaDKdG1yEDjLjv73l76CLAAeopx9xc+Knc7w92Nrefr+yLUi6lJRcCGh4ViLiFbftO0dargmBYdsRJGluCRhj6FLq4P4nXxtcGm9xMZE0ULWF0LdKS6cda1yu/8qWE1BL3Jsffg33piR5mISka8rTEYYEfTzAGetSra074XxSo0HWKiuTgxHD+/71QVCVEhJNUUZxYvvi9NfloSxXCxGBCF14UjTuS0UUqK4tp9Q74i1AZAtI9tsPA8/alkjwSSQEq7Wwg8nF4xT7iFJNgUFSHSi2xYCbBjltzNjLK6VvhkkiYm00ScKDZQ/nTPul2mNIHFDd56JhZuVsR9hYCQBwa1nRw4un== --env PORT=80 -p 8000:80 aws_gb`

☐ **Output**



## Guestbook

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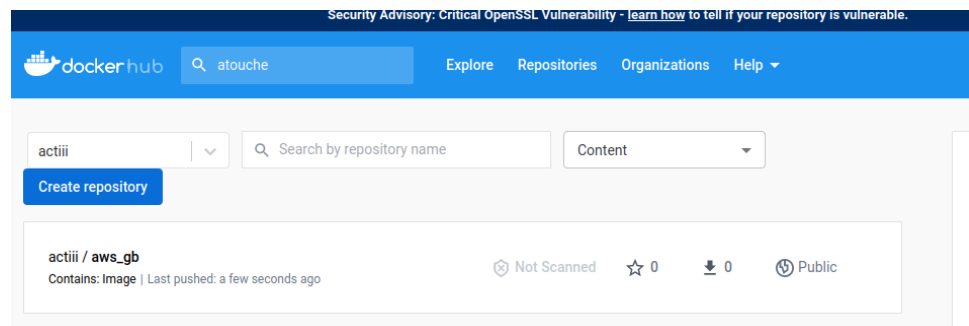
### Entries

atouche <atouche@pdx.edu>  
signed on 2022-10-31 19:39:04.175025  
Hello Docker DynamoDB!

---

☐ Push the container image

☐ **Hub pic**



☐ Version 3: AWS Cloud9 IDE

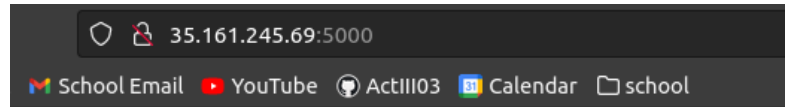
☐ Create env

☐ Configure the Security Group

☐ Ip: 35.161.245.69



- ☐ Run the application
  - ☐ **Run**



## Guestbook

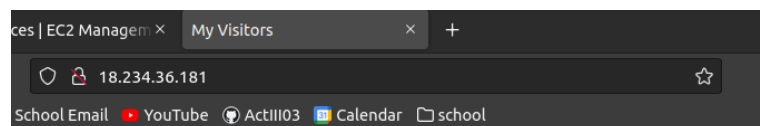
[Sign here](#)

### Entries

atouche <atouche@pdx.edu>  
signed on 2022-10-31 20:04:45.874773  
Hello Cloud9!

---

- ☐ Version 4: AWS EC2
- ☐ Launch instance
- ☐ Set up the instance
  - ☐ ssh w/ .pem
- ☐ Visit the application
  - ☐ **view**



## Guestbook

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### Entries

atouche <atouche@pdx.edu>  
signed on 2022-10-31 19:39:04.175025  
Hello Docker DynamoDB!

---

atouche <atouche@pdx.edu>  
signed on 2022-10-31 23:35:19.375622  
Hello EC2!

---

☐ View the database

☐ Screenshot (NOTE: I deleted the guestbook table before the subsequent 2 which is why you only see 2 entries vs 3 like the lab)

guestbook

AutopreviewView table details

▼ Scan/Query items

Scan/Query a table or index

ScanQuery

guestbook

► Filters

Run

Reset

Completed

Read capacity units consumed: 0.5

Items returned (2)

RefreshActions▼Create item

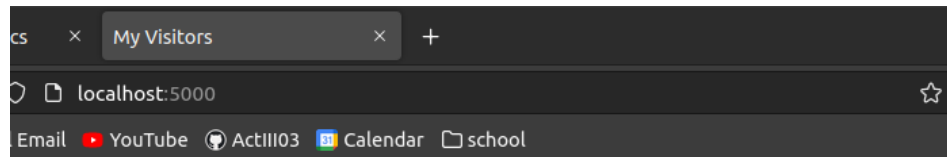
<1>⌕⌕

	email	date	message	name
<input type="checkbox"/>	atouche@pdx.edu	2022-10-31 19:39:04.175025	Hello Docke...	atouche
<input type="checkbox"/>	atouche@pdx.edu	2022-10-31 23:35:19.375622	Hello EC2!	atouche

☐ Clean-up

Cloud Datastore Guestbook ([Link](#)) ← sections were not formatted like usual so I hope I get all steps done

- ☐ Cloud Datastore
- ☐ Version 1: Ubuntu VM Python
- ☐ Obtain GCP credentials
- ☐ Run the application
  - ☐ Create service account w/ *Cloud Datastore User* priv
  - ☐ **Localhost screenshot**



## Guestbook

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### Entries

atouche <atouche@pdx.edu>  
signed on 2022-10-31 16:55:03.933373+00:00  
Hello Datastore!

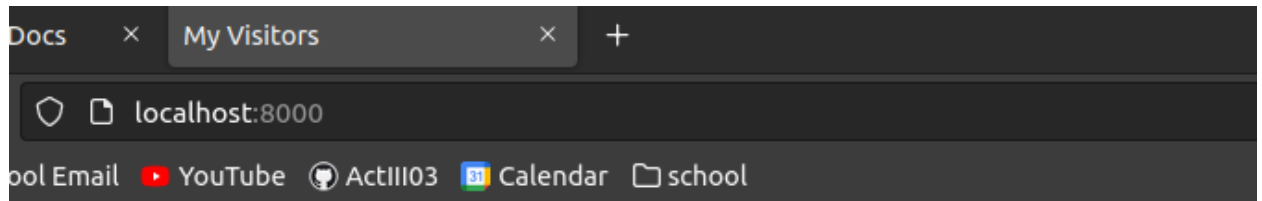
---

### ☐ entities

Query results					
<input type="checkbox"/>	Name/ID ↑	date	email	message	name
<input type="checkbox"/>	<a href="#">id=5634161670881280</a>	October 31, 2022 at 9:55:03 AM UTC-7	atouche@pdx.edu	Hello Datastore!	atouche

- ☐ Version 2: Ubuntu VM Docker
- ☐ Run the application

- ☐ safe cmd:
  - ☐ \$ docker run -v  
\$GOOGLE\_APPLICATION\_CREDENTIALS:/tmp/keys/cloud-touche-atou  
che-8e1695051a6c.json:ro --env  
GOOGLE\_APPLICATION\_CREDENTIALS=/tmp/keys/cloud-touche-atouc  
he-8e1695051a6c.json -p 8000:8000 --env PORT=8000 --rm gcp\_gb
- ☐ localhost screenshot:



## Guestbook

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### Entries

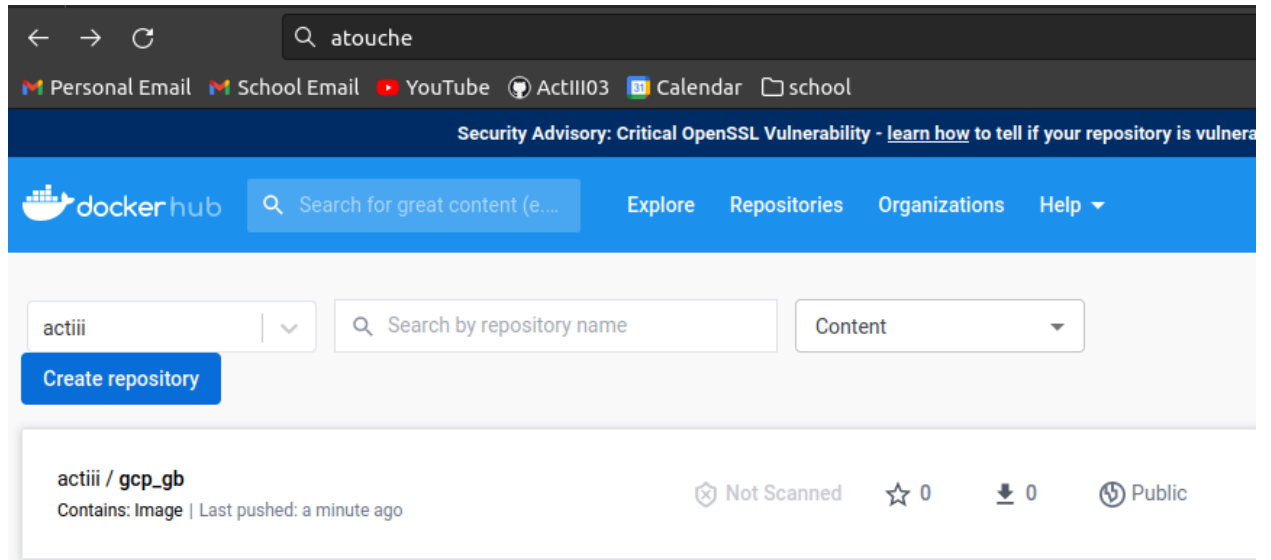
atouche <atouche@pdx.edu>  
signed on 2022-11-01 00:14:18.191435+00:00  
Hell Docker Datastore!

- ☐ entities:

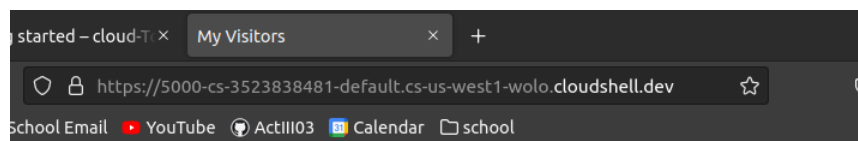
Query results

<input type="checkbox"/> Name/ID ↑	date	email	message	name
<input type="checkbox"/> <a href="#">id=5644004762845184</a>	October 31, 2022 at 5:14:18 PM UTC-7	atouche@pdx.edu	Hell Docker Datastore!	atouche

- ☐ Push the container image
  - ☐ Hub pic:



- ☐ Version 3: GCP Cloud Shell
- ☐ Run the application
  - ☐ **localhost pic:**



## Guestbook

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### Entries

atouche <atouche@pdx.edu>  
signed on 2022-11-01 00:23:36.961581+00:00  
Hell Cloud Shell!

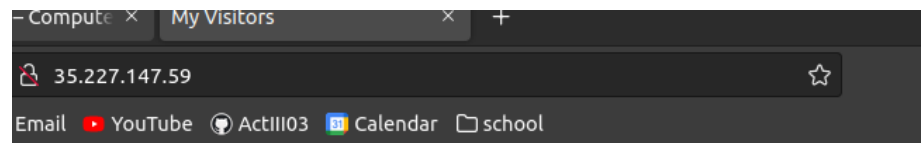
---

atouche <atouche@pdx.edu>  
signed on 2022-11-01 00:14:18.191435+00:00  
Hell Docker Datastore!

---

- ☐ **entities:**

- ☐ Version 4: GCP Compute Engine
- ☐ Configure service account
- ☐ Set up the instance
  - ☐ Install docker
- ☐ Visit the application
  - ☐ Run application
  - ☐ **localhost pic:**



## Guestbook

Sign [here](#)

### Entries

atouche <atouche@pdx.edu>  
signed on 2022-11-01 00:23:36.961581+00:00  
Hell Cloud Shell!

atouche <atouche@pdx.edu>  
signed on 2022-11-01 00:46:55.560094+00:00  
Hello Compute Engine!

☐ **entities:**

- ☐ View the database
  - ☐ \*For screenshots of entries, refer to the previous **entities** pic
- ☐ Clean up