

# **Lab notebook Week 5**

**Submitted by: Vishrut Sharma (OdinID: vishrut)**

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## **05.1g: Storage, IAM**

### **2. GCP Cloud Storage #1 (USGS)**

- **What roles are attached to the Compute Engine default service account?**

Answer: Editor

- **Would they be sufficient for the VM to perform its functions (i.e. creating buckets and reading/writing objects in them)?**

Answer: Yes, it would be sufficient.

- **What permissions are given by the default access scope to Cloud Storage?**

Answer: 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 (i.e. creating buckets and reading/writing objects in them)?**

Answer: No, it would be sufficient.

- **What settings are possible for setting the VM's access to the Storage API?**

Answer: None, Read Only, Write Only, Read Write, Full

### **4. USGS data and setup**

- **What time did the latest earthquake happen?**

Answer: 2023-05-02T00:33:20.710Z

- **What was the magnitude (mag)?**

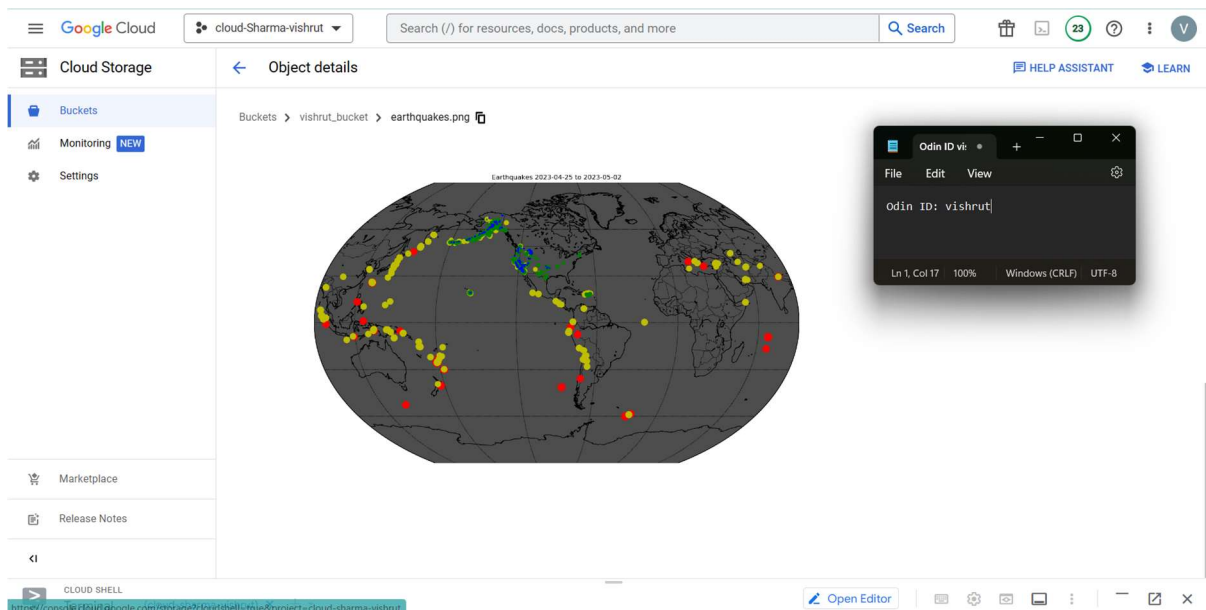
Answer: 0.92

- **Where was the place it happened?**

Answer: 3km WSW of Cobb, CA

## 5. Python plotting code

- Take a screenshot of the image that has been created for your lab notebook.



## 9. Service account roles (Compute)

- What is the exact error message that is returned?

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

- 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?

Answer: Compute Viewer role needs to be added.

- Take a screenshot of the output for your notebook.

```
vishrut@gcs-lab-vm:~$ gcloud compute instances list
NAME          ZONE          MACHINE_TYPE  PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
gcs-lab-vm    us-west1-b    e2-medium     false        10.138.0.11  35.247.54.133  RUNNING
usgs          us-west1-b    e2-medium     false        10.138.0.10  35.233.208.34  RUNNING
```

## 10. Service account roles (Storage)

- What is the exact error message that is returned?

Answer: AccessDeniedException: 403 gcs-lab@cloud-sharma-vishrut.iam.gserviceaccount.com does not have storage.objects.create access to the Google Cloud Storage object. Permission 'storage.objects.create' denied on resource (or it may not exist).

- What role needs to be added to the service account's permissions for the VM to have access to add an object to a storage bucket?

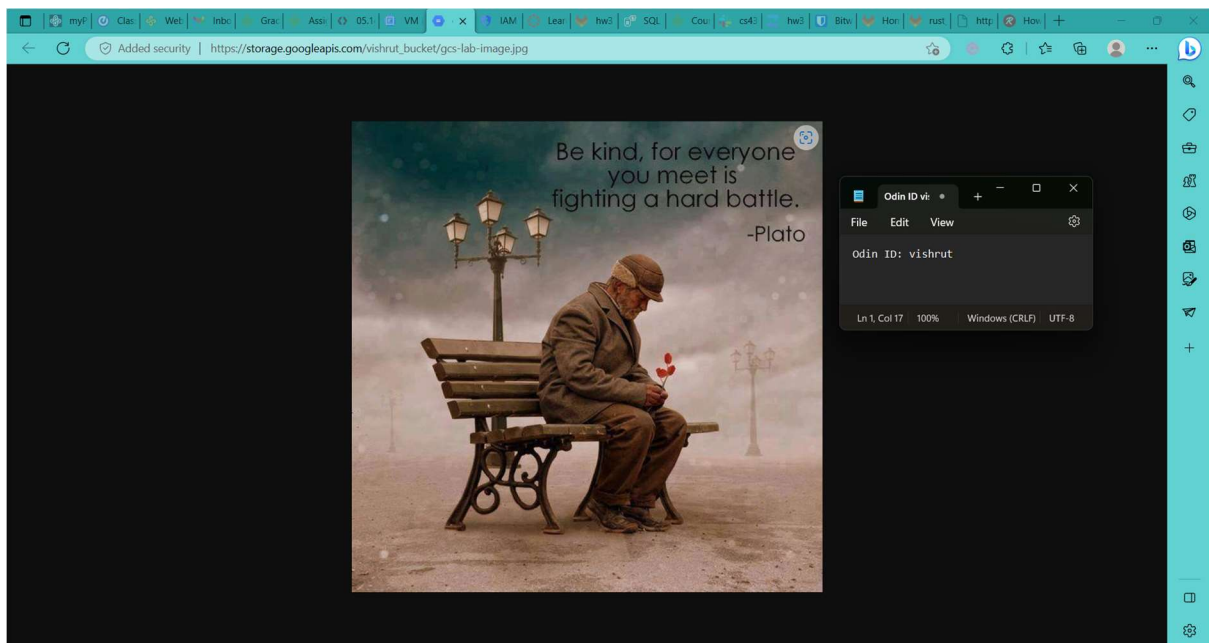
Answer: The storage Object Creator role needs to be added.

- Take a screenshot of the output for your notebook.

```
vishrut@gcs-lab-vm:~$ gsutil cp moonquakes.png gs://vishrut_bucket/  
Copying file:///moonquakes.png [Content-Type=image/png]...  
/ [1 files][316.0 KiB/316.0 KiB]  
Operation completed over 1 objects/316.0 KiB.
```

### 13. View object

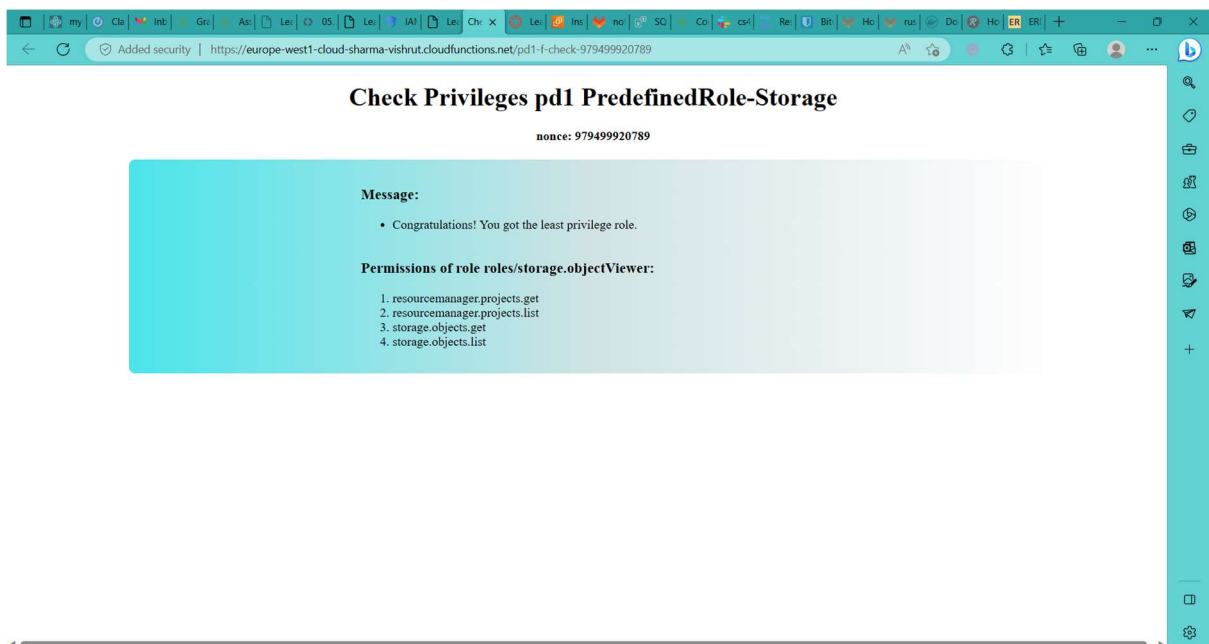
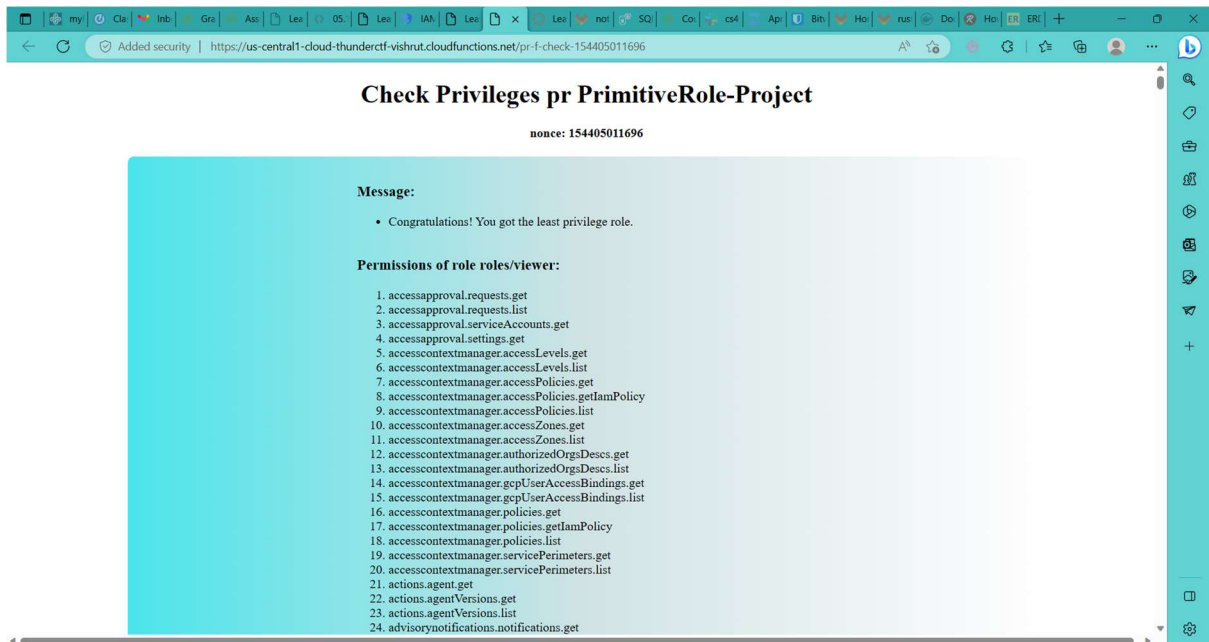
- Take a screenshot the shows the entire URL and the image that has been retrieved:



## 15. IAM and least privileges #4

- Take a screenshot that includes your project name in it.

Odin ID and the project name are visible in the URL



my Clu Int Gr As Le OS Le IA Le Co Ch X Le no SO Co cs Ap Bn Hc ru De Hc ER +

Added security | https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/pd2-f-check-265748472615

## Check Privileges pd2 PredefinedRole-Compute

nonce: 265748472615

**Message:**

- Congratulations! You got the least privilege role.

**Permissions of role roles/compute.viewer:**

1. compute.acceleratorTypes.get
2. compute.acceleratorTypes.list
3. compute.addresses.get
4. compute.addresses.list
5. compute.autoscalers.get
6. compute.autoscalers.list
7. compute.backendBuckets.get
8. compute.backendBuckets.getIamPolicy
9. compute.backendBuckets.list
10. compute.backendServices.get
11. compute.backendServices.getIamPolicy
12. compute.backendServices.list
13. compute.commitments.get
14. compute.commitments.list
15. compute.diskTypes.get
16. compute.diskTypes.list
17. compute.disks.get
18. compute.disks.getIamPolicy
19. compute.disks.list
20. compute.disks.listEffectiveTags
21. compute.disks.listTagBindings
22. compute.externalVpnGateways.get
23. compute.externalVpnGateways.list
24. compute.firewallPolicies.get

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Added security | https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/pd3-f-check-838051721792

## Check Privileges pd3 PredefinedRole-Logging

nonce: 838051721792

**Message:**

- Congratulations! You got the least privilege role.

**Permissions of role roles/logging.viewer:**

1. logging.buckets.get
2. logging.buckets.list
3. logging.exclusions.get
4. logging.exclusions.list
5. logging.links.get
6. logging.links.list
7. logging.locations.get
8. logging.locations.list
9. logging.logEntries.get
10. logging.logMetrics.get
11. logging.logMetrics.list
12. logging.logServiceIndexes.list
13. logging.logServices.list
14. logging.logs.list
15. logging.operations.get
16. logging.operations.list
17. logging.queries.create
18. logging.queries.delete
19. logging.queries.get
20. logging.queries.list
21. logging.queries.listShared
22. logging.queries.update
23. logging.sinks.get
24. logging.sinks.list

my Clu Int Gr As Le OS Le IA Le Co Ch X Le no SO Co cs Ap Bn Hc ru De Hc ER +

Added security | https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/pd4-f-check-815587409230

## Check Privileges pd4 PredefinedRole-Datastore

nonce: 815587409230

**Message:**

- Congratulations! You got the least privilege role.

**Permissions of role roles/datastore.viewer:**

1. appengine.applications.get
2. datastore.databases.get
3. datastore.databases.getMetadata
4. datastore.databases.list
5. datastore.entities.get
6. datastore.entities.list
7. datastore.indexes.get
8. datastore.indexes.list
9. datastore.namespaces.get
10. datastore.namespaces.list
11. datastore.statistics.get
12. datastore.statistics.list
13. resourceManager.projects.get
14. resourceManager.projects.list

myr | Cla | Gra | HW | Port | Lea | Int | IAM | Lea | x | Lea | not | SQL | Cou | cs | hw2 | Bth | Hor | Rut | vish | Hor | +

Added security | https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/pd5-f-check-233547341718

## Check Privileges pd5 PredefinedRole-Vision

nonce: 233547341718

**Message:**

- Congratulations! You got the least privilege role.

**Permissions of role roles/datastore.user:**

1. appengine.applications.get
2. datastore.databases.get
3. datastore.databases.getMetadata
4. datastore.databases.list
5. datastore.entities.allocateIds
6. datastore.entities.create
7. datastore.entities.delete
8. datastore.entities.get
9. datastore.entities.list
10. datastore.entities.update
11. datastore.indexes.list
12. datastore.namespaces.get
13. datastore.namespaces.list
14. datastore.statistics.get
15. datastore.statistics.list
16. resourcemanager.projects.get
17. resourcemanager.projects.list

**Permissions of role roles/storage.admin:**

1. firebase.projects.get
2. orgpolicy.policy.get
3. recommender.iamPolicyInsights.get

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File Edit View

Odin ID: vishrut

Ln 1, Col 17 100% Windows (CRLF) UTF-8

myr | Cla | Int | Gra | Asa | Lea | OS | Lea | IAM | Lea | x | Lea | not | SQL | Tor | Sla | Ap | Bth | Hor | Rut | Do | Ho | ER | +

Added security | https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/ct1-f-check-354548260940

## Check Privileges ct1 CustomRole-Project

nonce: 354548260940

**Message:**

- Congratulations! You get the least privileges.

**Permissions of custom role projects/cloud-thunderctf-vishrut/roles/ct1\_access\_role\_354548260940:**

1. compute.instances.list
2. storage.buckets.list

myr | Cla | Int | Gra | Asa | Lea | OS | Lea | IAM | Lea | x | Lea | not | SQL | Tor | Sla | Ap | Bth | Hor | Rut | Do | Ho | ER | +

Added security | https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/ct2-f-check-424103715722

## Check Privileges ct2 CustomRole-Storage

nonce: 424103715722

**Message:**

- Congratulations! You get the least privileges.

**Permissions of custom role projects/cloud-thunderctf-vishrut/roles/ct2\_access\_role\_424103715722:**

1. storage.objects.list

my | Cla | Int | Gra | Asi | Lea | OS | Lea | IAM | Lea | X | Lea | noi | SQ | Top | Sla | Ap | Bit | Ho | Ru | Do | Ho | ER | ERI | +

Added security | <https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/ct3-f-check-543609928429>

## Check Privileges ct3 CustomRole-Compute

nonce: 543609928429

**Message:**

- Congratulations! You get the least privileges.

**Permissions of custom role projects/cloud-thunderctf-vishrut/roles/ct3\_access\_role\_543609928429:**

1. compute.instances.list

my | Cla | Int | Gra | Asi | Lea | OS | Lea | IAM | Lea | X | Lea | noi | SQ | Top | Sla | Ap | Bit | Ho | Ru | Do | Ho | ER | ERI | +

Added security | <https://us-central1-cloud-thunderctf-vishrut.cloudfunctions.net/ct4-f-check-300311609775>

## Check Privileges ct4 CustomRole-Logging

nonce: 300311609775

**Message:**

- Congratulations! You get the least privileges.

**Permissions of custom role projects/cloud-thunderctf-vishrut/roles/ct4\_access\_role\_300311609775:**

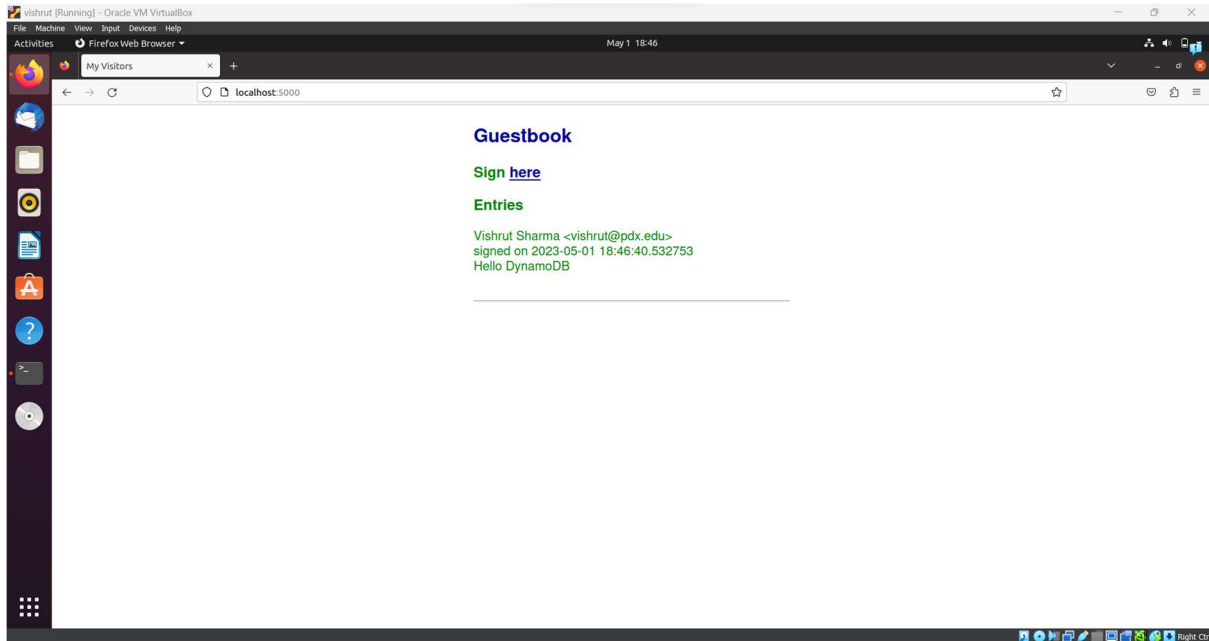
1. logging.logEntries.list



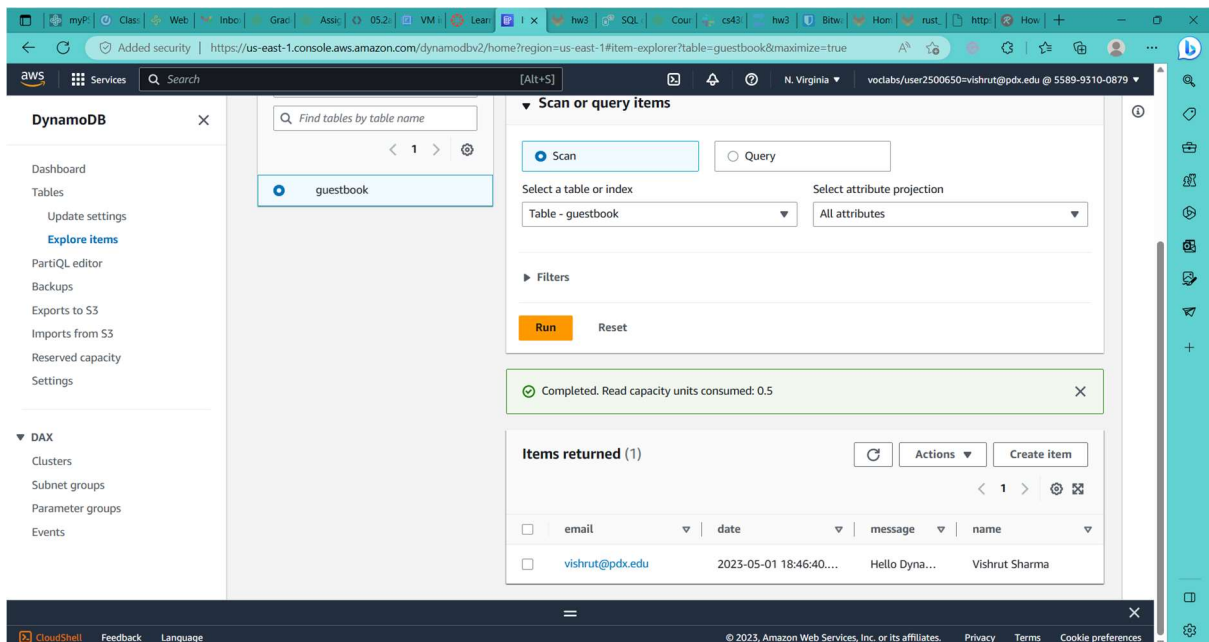
## 05.2a: DynamoDB Guestbook

### 5. Run the application

- Take a screenshot of the output for your lab notebook.

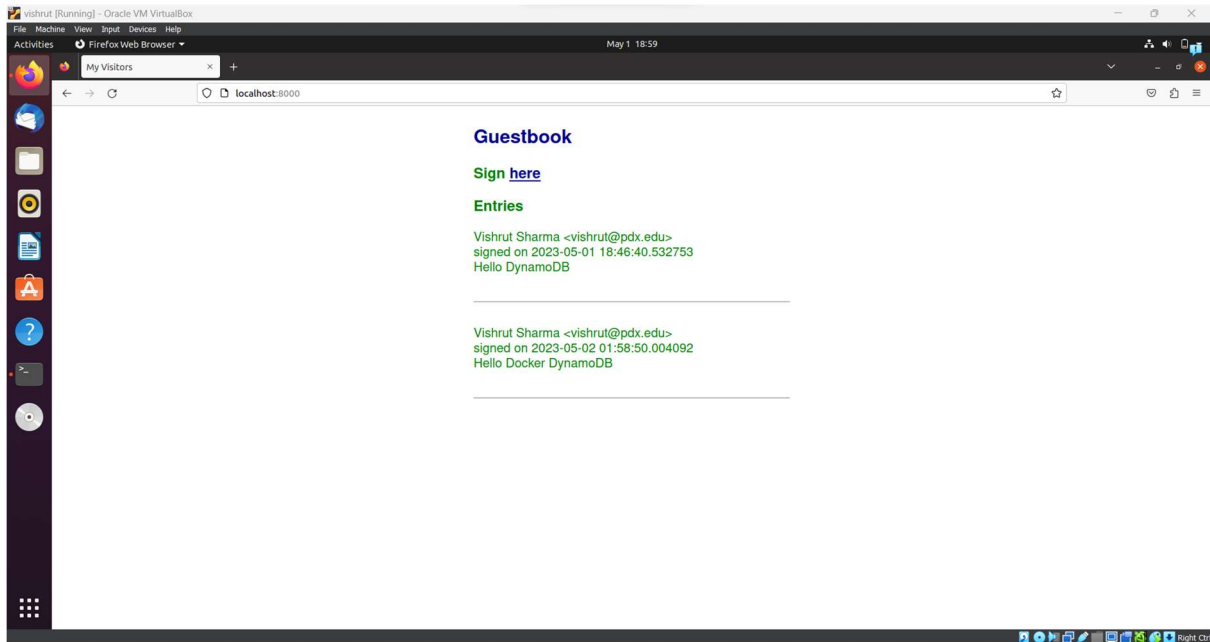


Click on the "Items" tab and view the entry you have just added to your DynamoDB table.

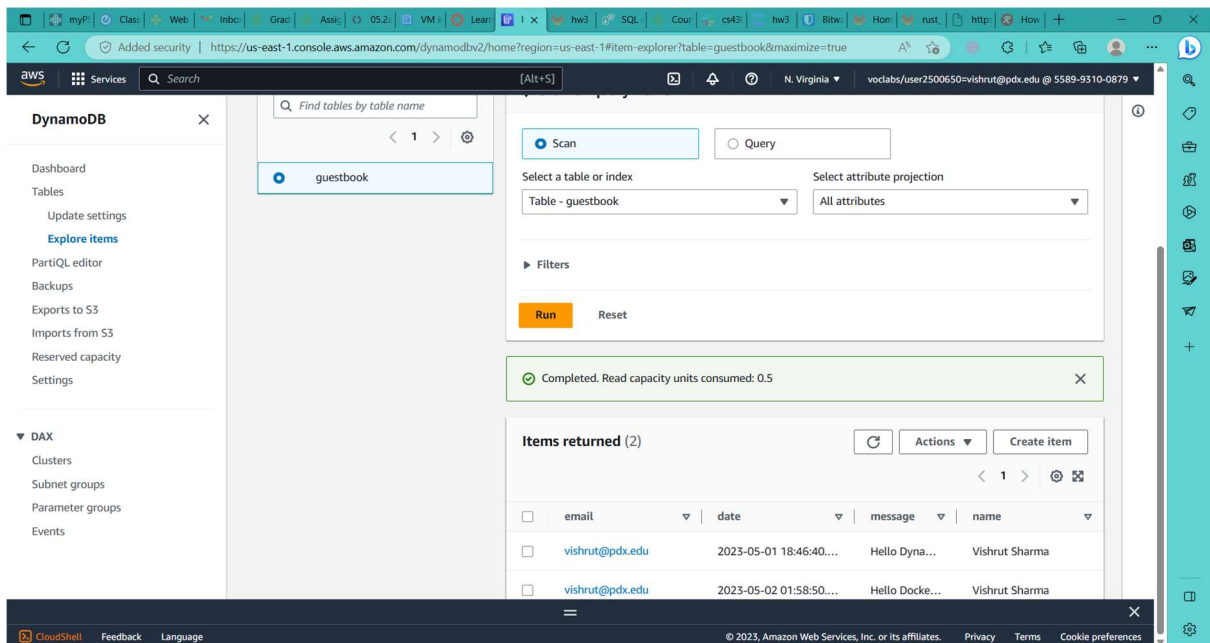


## 7. Run the application

- Take a screenshot of the output for your lab notebook.

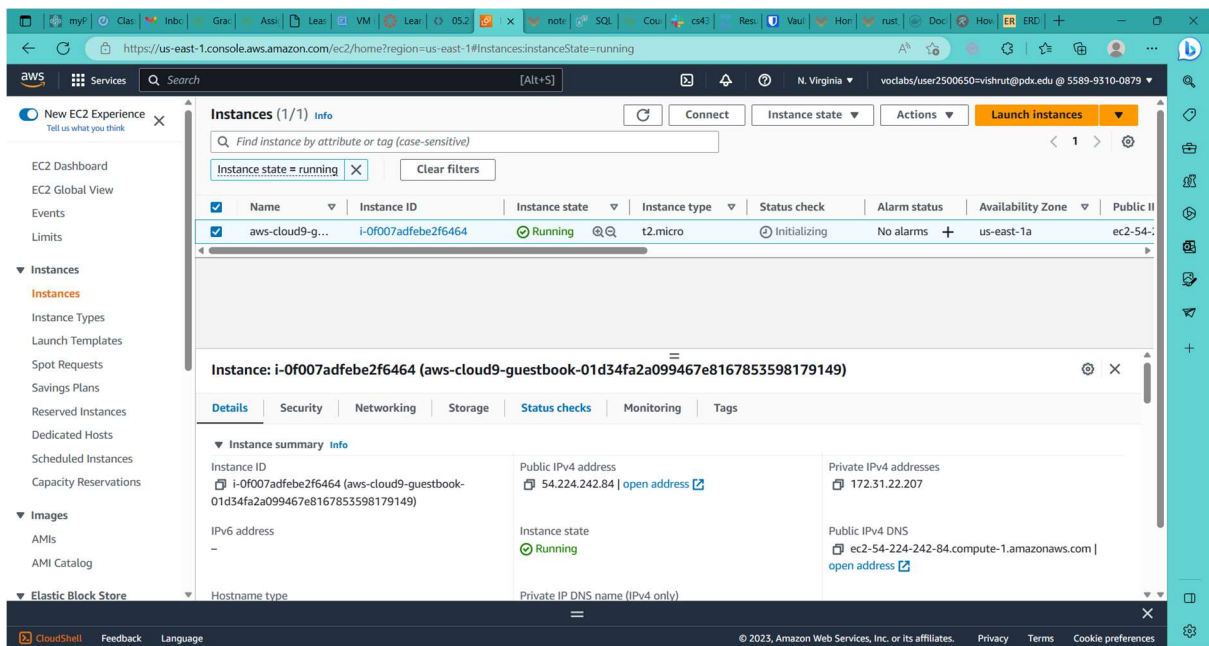
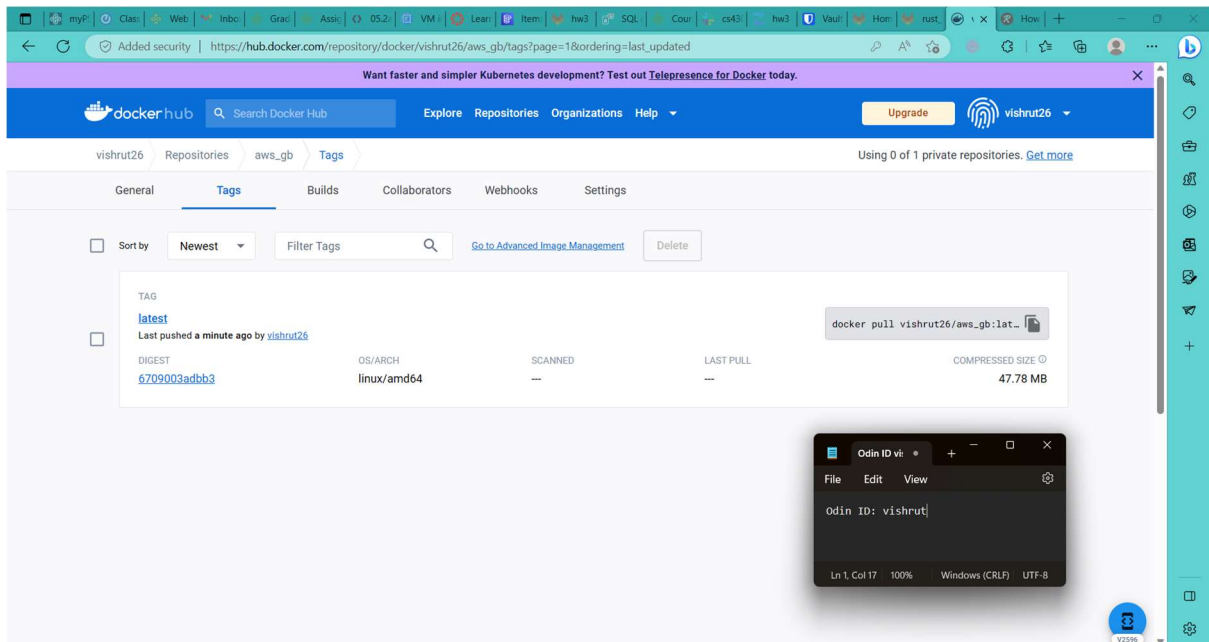


Go back to the AWS DynamoDB console and see that a second item has been added to the table.



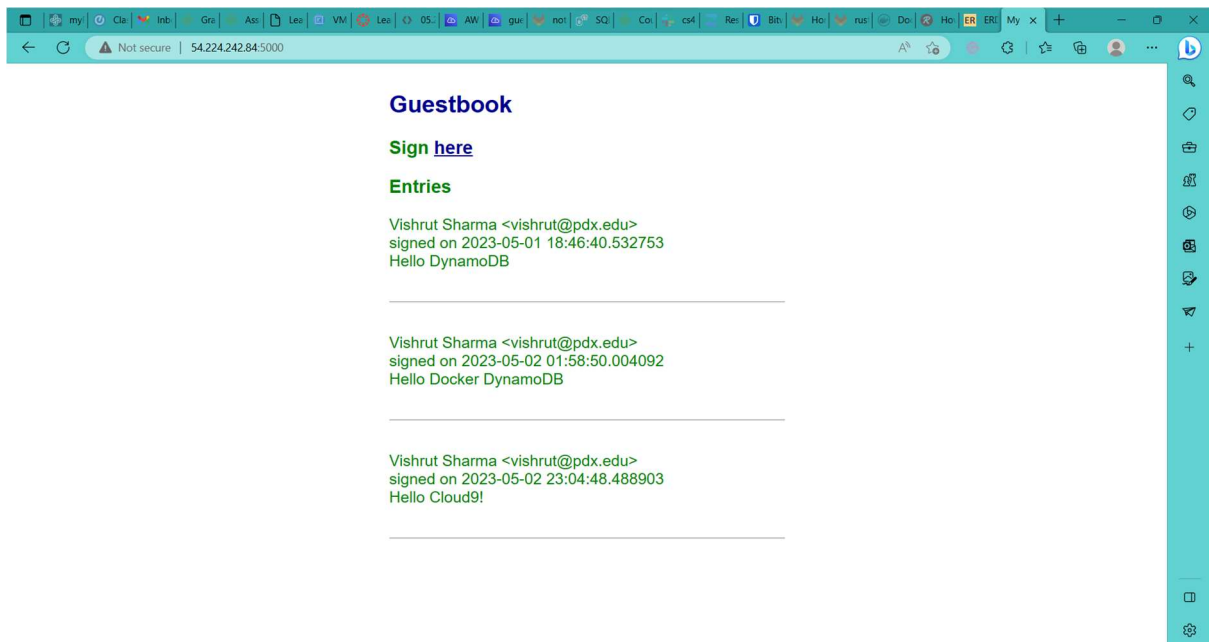
## 8. Push the container image

- Take a screenshot of the container image on DockerHub.



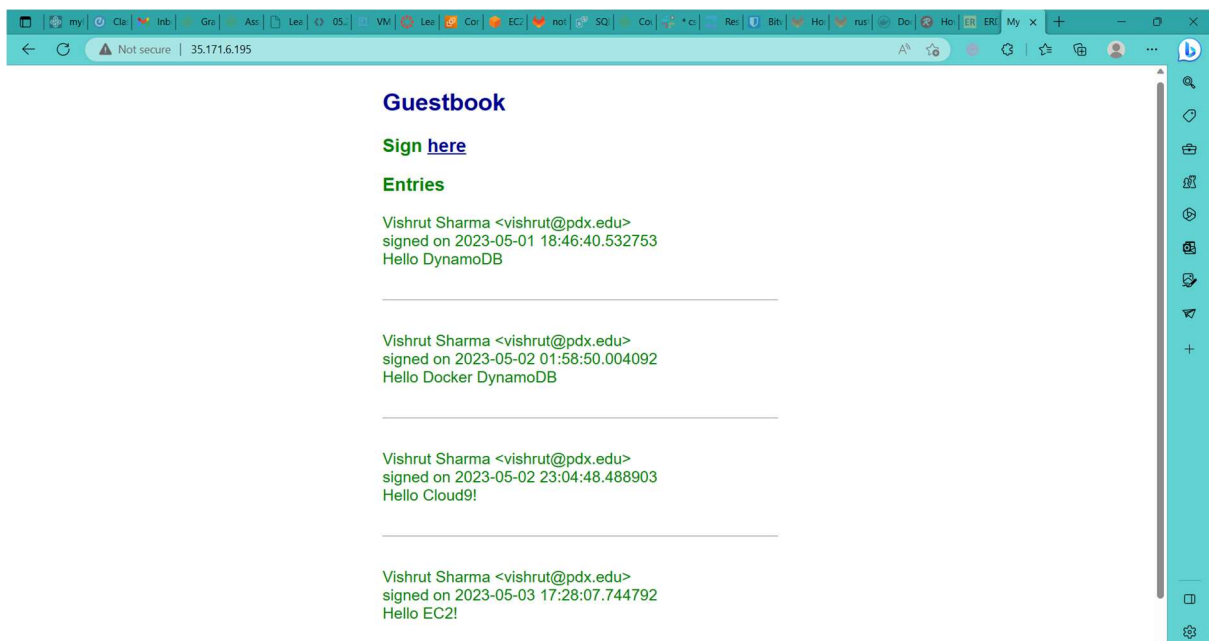
## 11. Run the application

- Take a screenshot as before that shows your entry and the IP address in the URL bar.



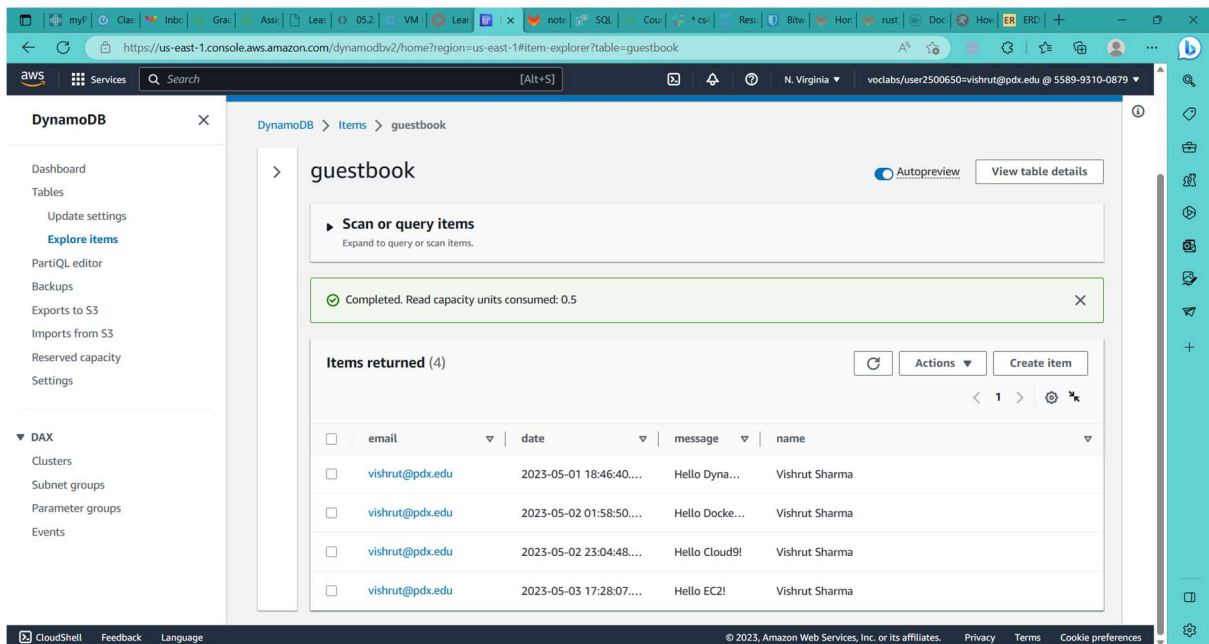
## 15. Visit the application

- Take a screenshot as before that shows your entry and the IP address in the URL bar.



## 16. View the database

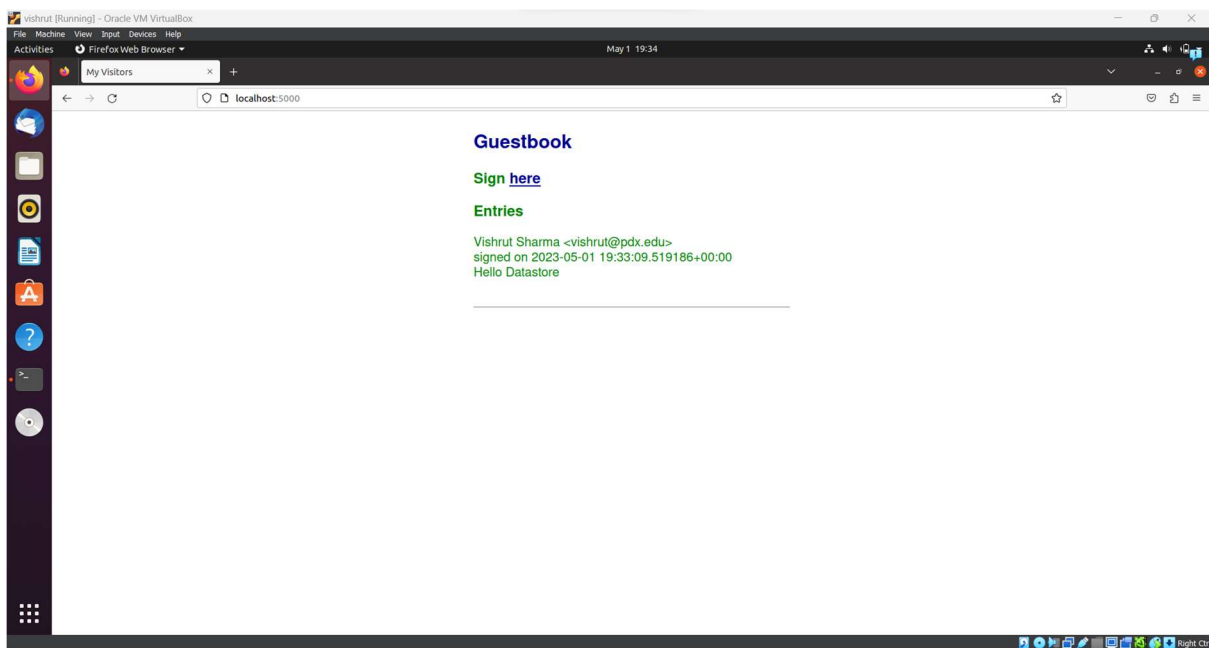
- Take a screenshot that shows all of the guestbook entries that you added to the DynamoDB table including their timestamps.



## 05.2g: Cloud Datastore Guestbook

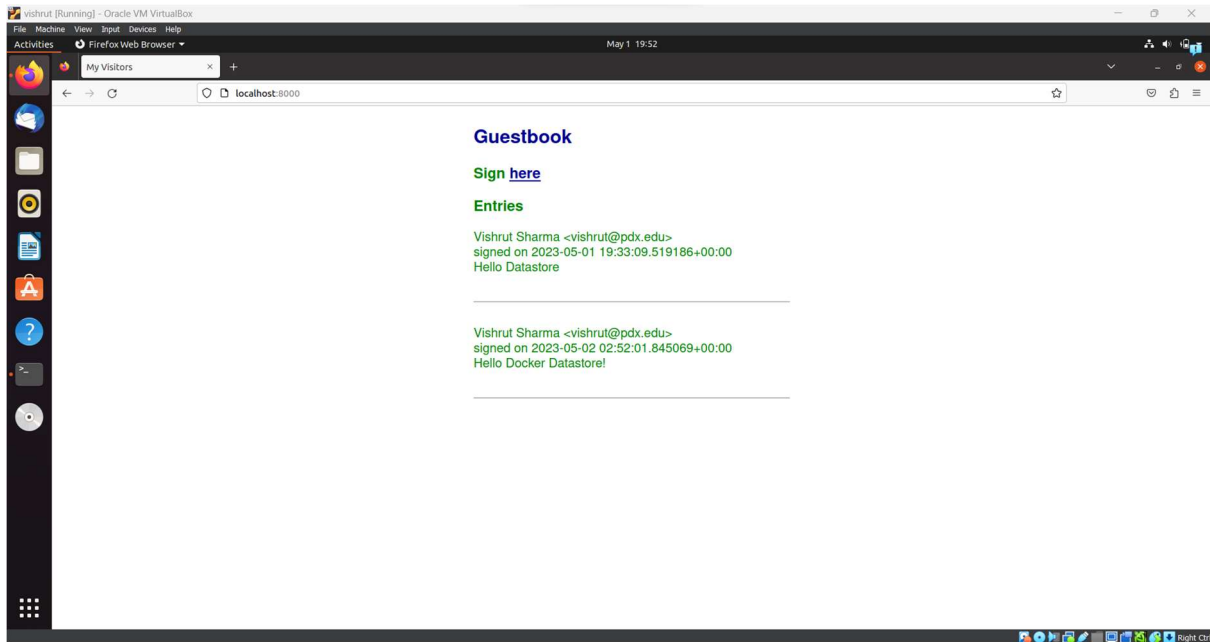
### 7. Run the application

- Take a screenshot of the output for your lab notebook.



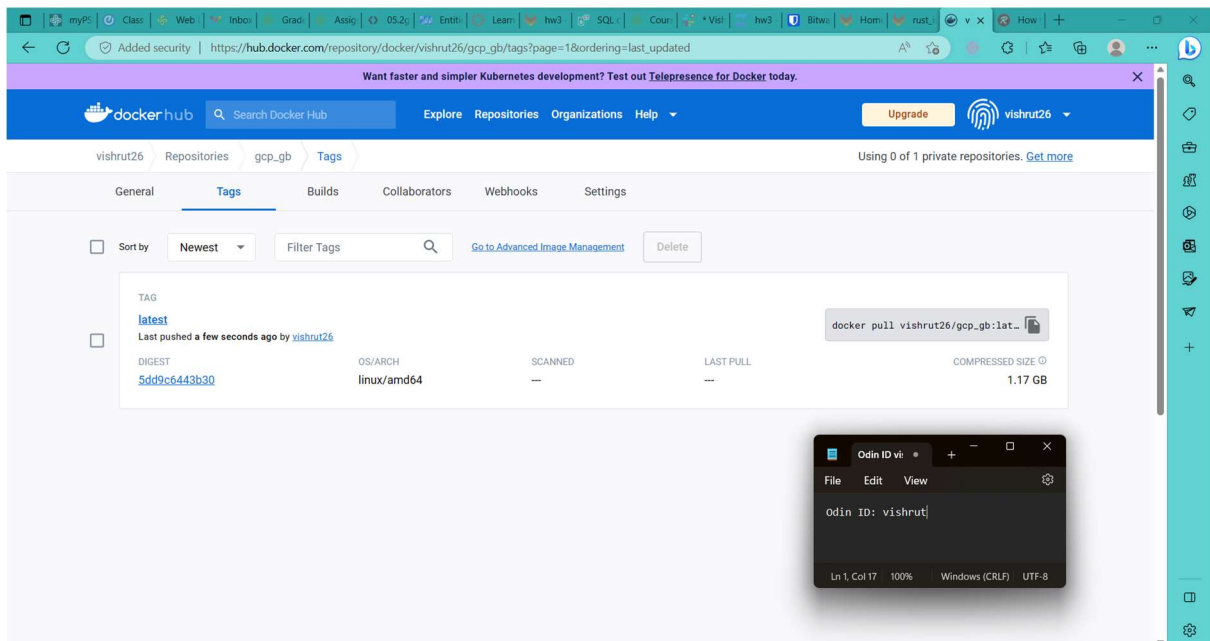
## 9. Run the application

- Take a screenshot of the output for your lab notebook.



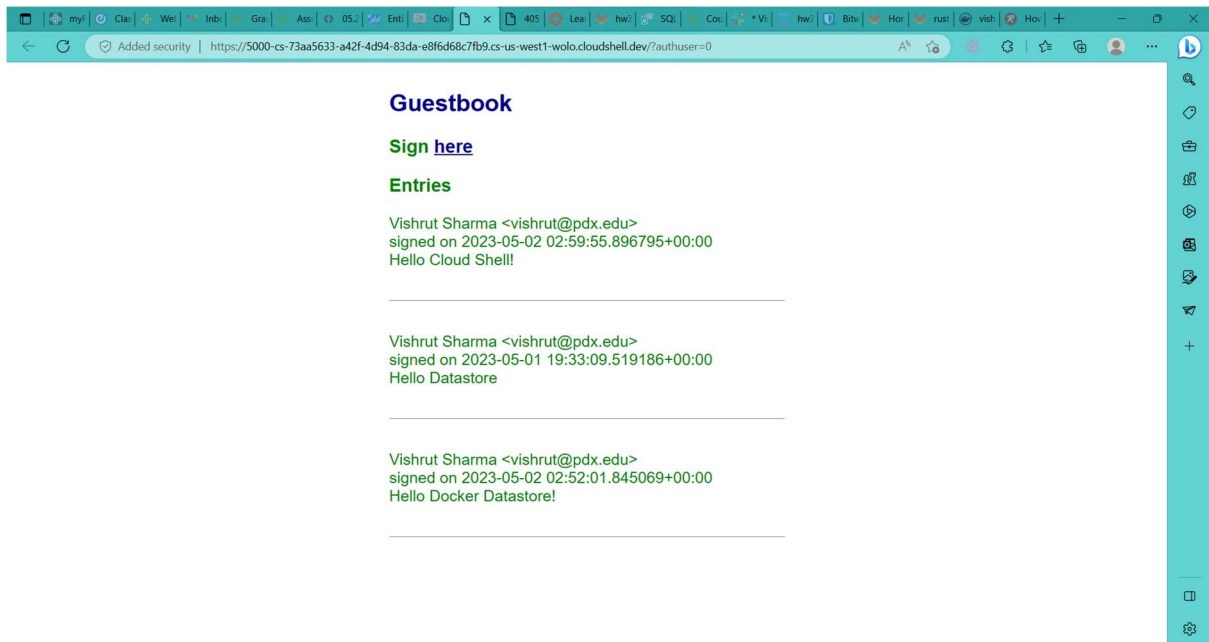
## 10. Push the container image

View the container image on DockerHub.



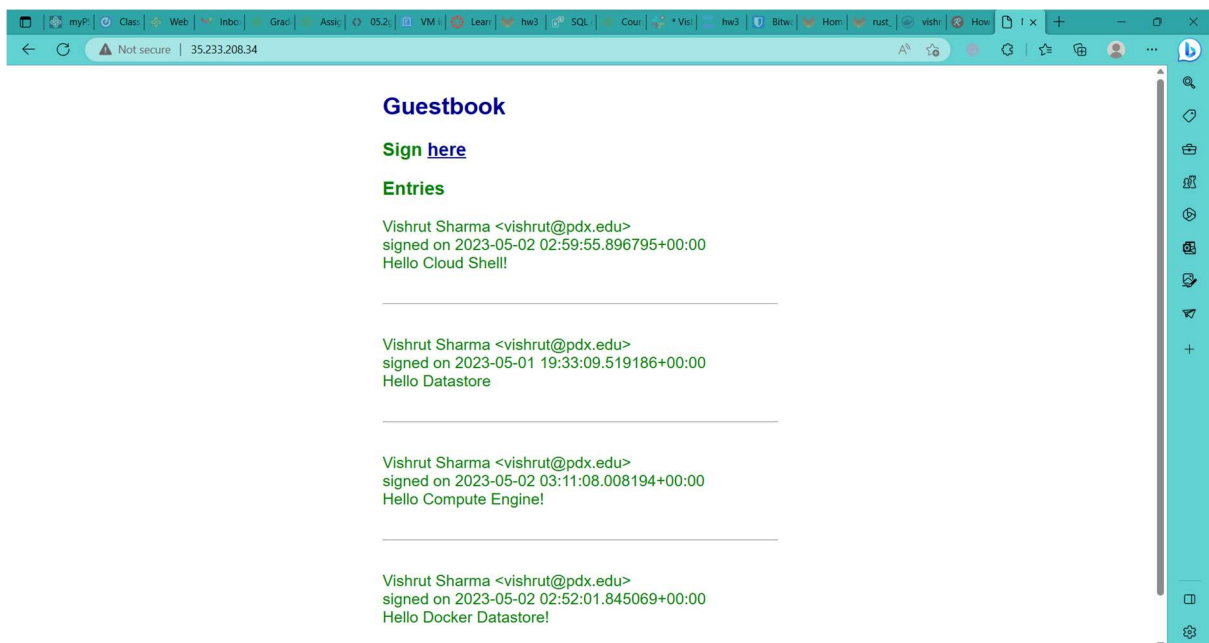
## 12. Run the application

- Take a screenshot as before that shows your entry and the URL bar.



## 15. Visit the application

- Take a screenshot as before that shows your entry and the IP address in the URL bar.



## 16. View the database

- Take a screenshot of all of the entries that have been added including their timestamps for your lab notebook.

The screenshot shows the Google Cloud Datastore console interface. The left sidebar contains navigation options: Database, Entities, Indexes, Import/Export, Time-to-live (TTL), Admin, Insights, Dashboard, and Key Visualizer. The main panel is titled 'Entities' and shows a query result for 'Review' entities. The query is 'Kind: Review' and the results are displayed in a table with columns: Name/ID, date, email, message, and name. The results show four entries, each with a unique ID, a timestamp, an email address, a message, and the name 'Vishrut Sharma'.

Name/ID	date	email	message	name
<a href="#">id=5632499082330112</a>	May 1, 2023 at 7:59:55.896 PM UTC-7	vishrut@pdx.edu	Hello Cloud Shell!	Vishrut Sharma
<a href="#">id=5634161670881280</a>	May 1, 2023 at 12:33:09.519 PM UTC-7	vishrut@pdx.edu	Hello Datastore	Vishrut Sharma
<a href="#">id=5642368648740864</a>	May 1, 2023 at 8:11:08.008 PM UTC-7	vishrut@pdx.edu	Hello Compute Engine!	Vishrut Sharma
<a href="#">id=5644004762845184</a>	May 1, 2023 at 7:52:01.845 PM UTC-7	vishrut@pdx.edu	Hello Docker Datastore!	Vishrut Sharma