Week7

Lab7

Armant Touche

Class/Instructor: CS430P/ Dr. Wu-Chang
Date: 11/14/22

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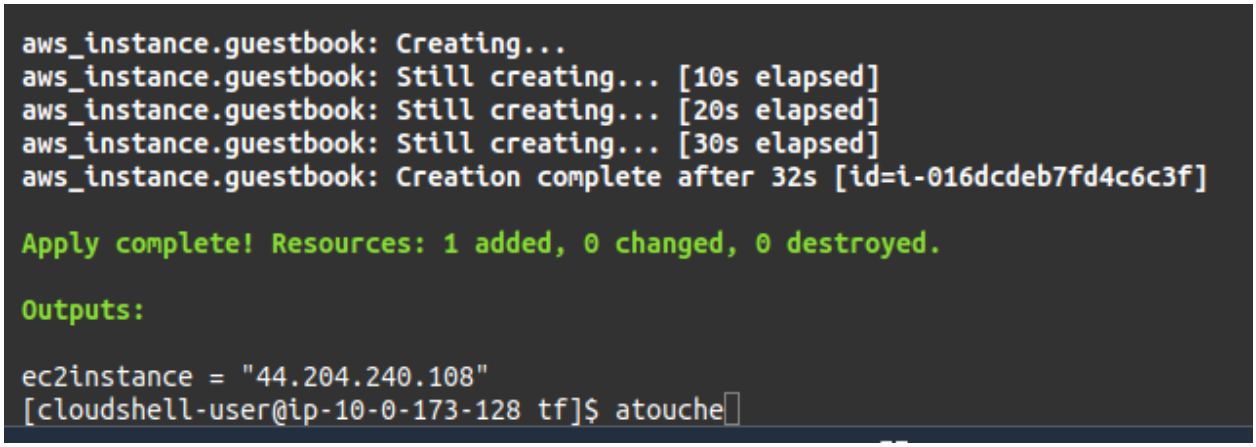
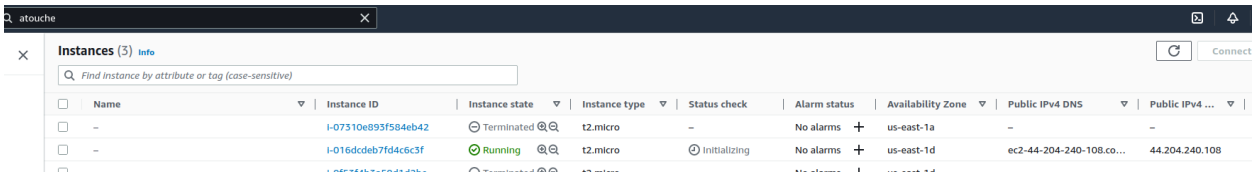
Terraform AWS Guestbook (Link)

- [ ] Terraform
- [ ] Setup
- [ ] Initial configuration
- [ ] Launching configuration
    - [ ] **Take a screenshot showing the completion of the command including its output**

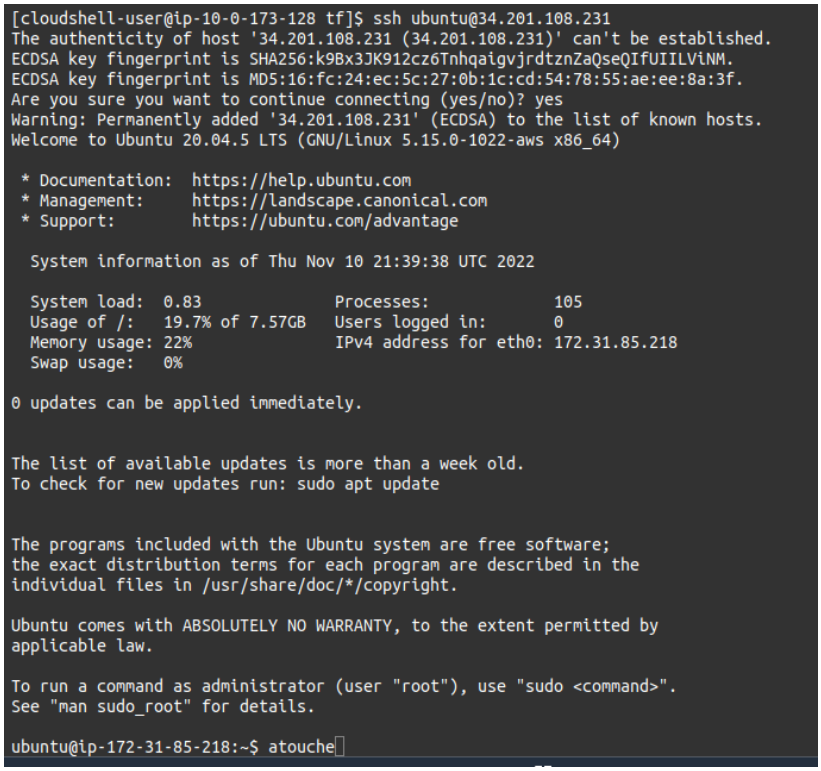


    - [ ] **Take a screenshot that includes the VM's IP addresses**

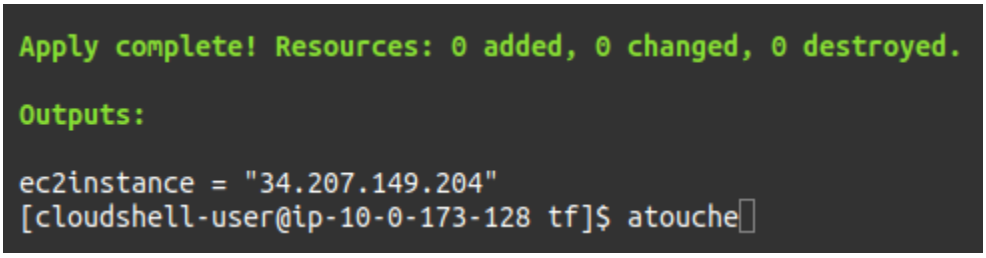


- [ ] Adding network access

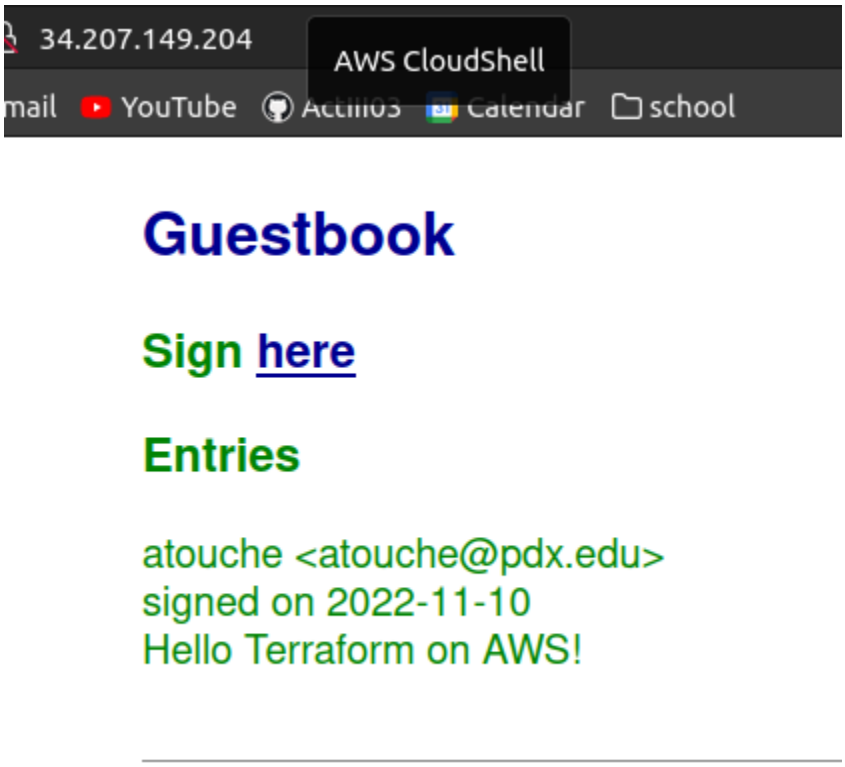
- [ ] Adding ssh access
  - [ ] **Take a screenshot of the successful ssh login from Cloud Shell.**



- [ ] Adding the Guestbook application
  - [ ] **Take a screenshot of the output of the command that includes the IP address of the instance**



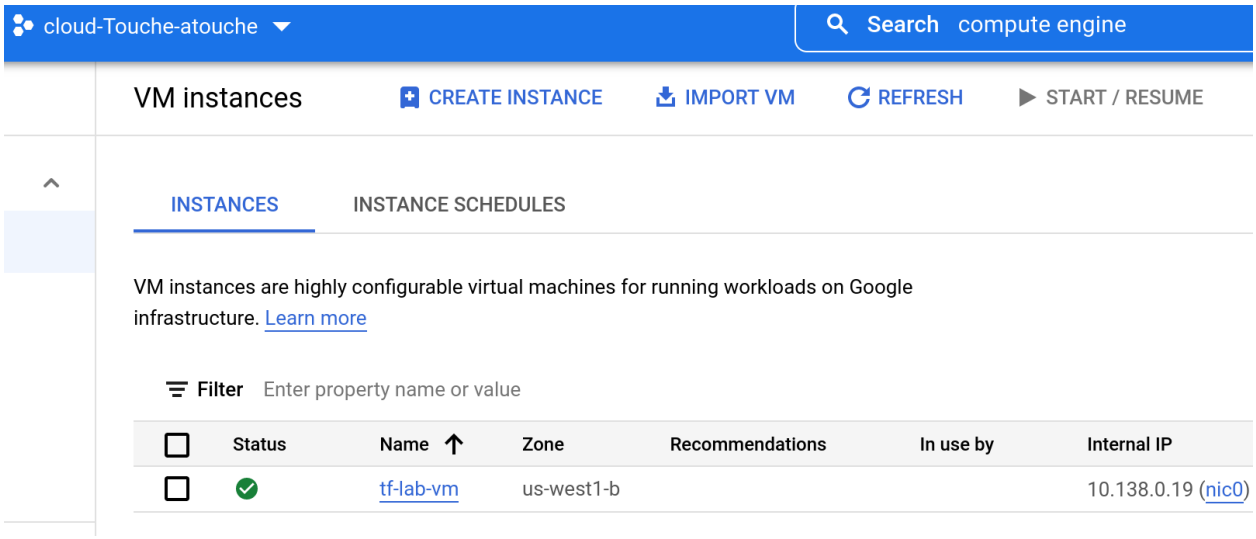
- [ ] View the Guestbook
    - [ ] **Take a screenshot of the Guestbook including the URL with the entry in it.**



- [ ] Clean Up

Terraform GCP Guestbook (Link)

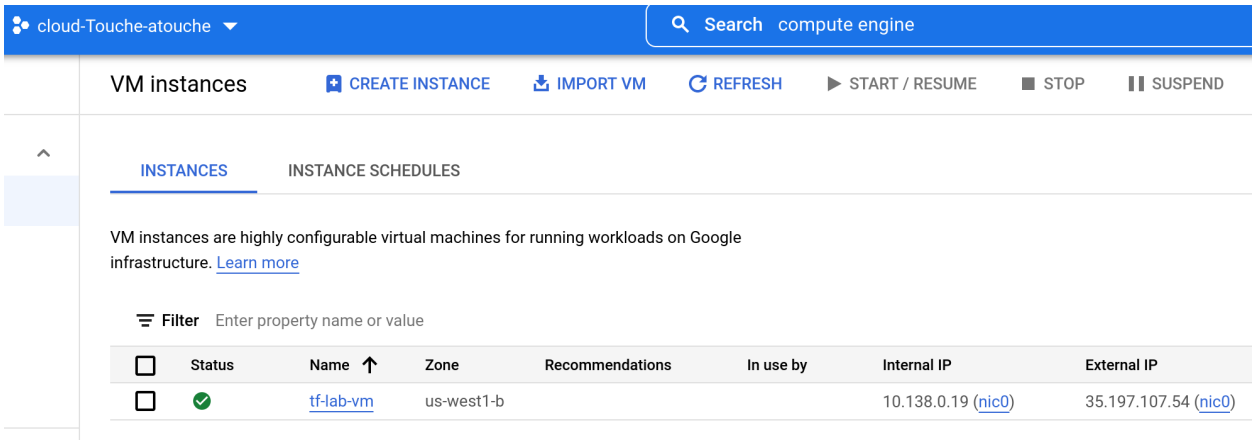
- [ ] Terraform
- [ ] Setup
- [ ] Initial configuration
- [ ] Launching configuration
    - [ ] **VM IP**



- [ ] Adding an external IP address
    - [ ] **Applied plan**

```
ip = "35.197.107.54"
atouche@cloudshell:~/tf (cloud-touche-atouche)
```

- [ ] **VM's external IP**



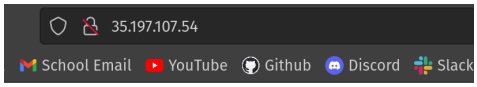
- [ ] Adding ssh access
  - [ ] **Successful connect**

```
ip = "35.197.107.54"
atouche@cloudshell:~/tf (cloud-touche-atouche)$ ssh 35.197.107.54
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.15.0-1021-gcp x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage
```

- [ ] Adding the Guestbook
  - [ ] **What resources are being added, changed, or destroyed?**
    - Changing metadata resource for google_compute_instance, changing external IP to a static address. Adding an install script.
  - [ ] **What part of the configuration forces a replacement to occur?**
    - The addition of the install script.

- [ ] View the Guestbook
    - [ ] Guestbook



Guestbook

Sign here

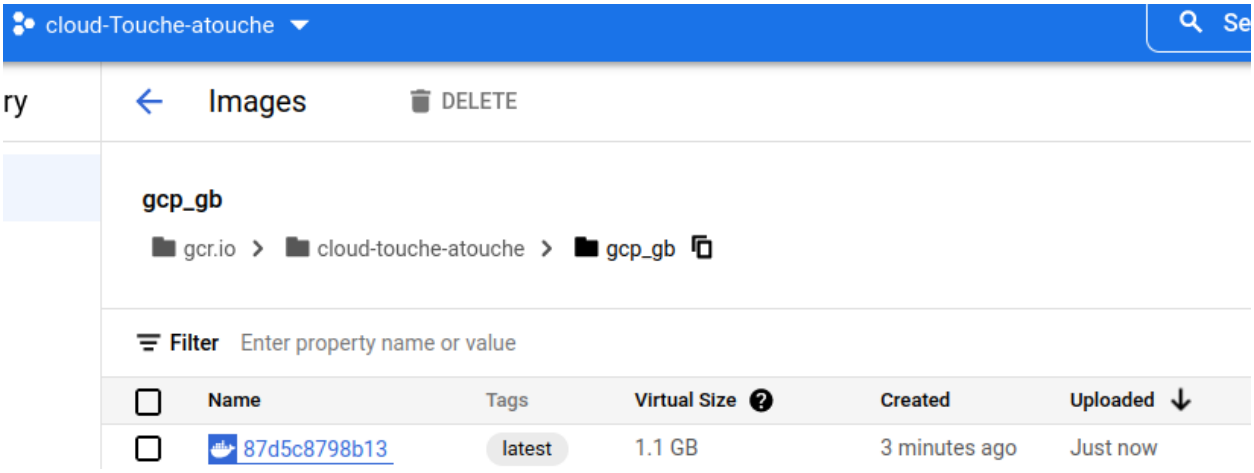
Entries

atouche <atouche@pdx.edu>
signed on 2022-11-11
Hello Terraform on GCP!

- [ ] Clean Up

Kubernetes Guestbook (Link)

- [ ] Kubernetes
- [ ] Setup
- [ ] Assigning privileges
- [ ] Create Kubernetes cluster
    - [ ] **What is the name of the Instance Template dynamically generated to create the two nodes (VMs)?**
        - [ ] gke-gusetbook-default-pool-32f75df2
    - [ ] **What is the name of the Instance Group dynamically generated that the two nodes belong to?**
        - [ ] gke-gusetbook-default-pool-32f75df2
    - [ ] **What are the names of the two nodes?**
        - gke-gusetbook-default-pool-32f75df2-krgn
        - gke-gusetbook-default-pool-32f75df2-z13w
- [ ] Prepare a container image
    - [ ] **Take a screenshot of the container image created**



- [ ] kubernetes.yaml

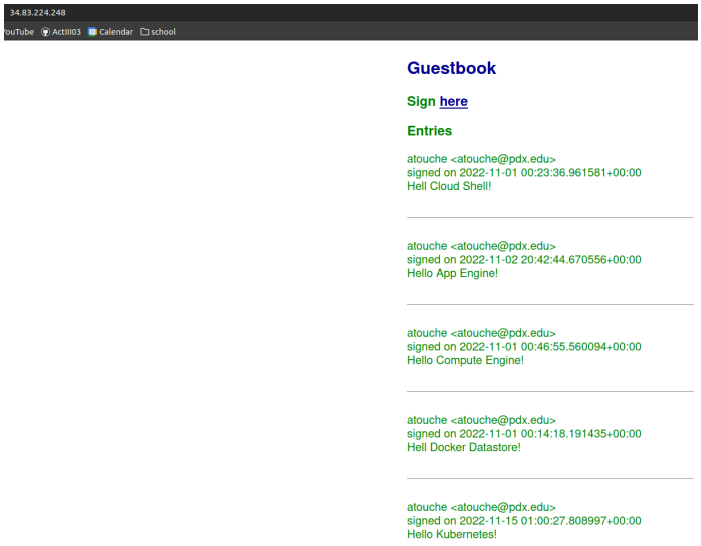
- [ ] Deploy the configuration
  - [ ] **Take a screenshot of the output of the following command when all 3 replicas reach a "Running" state.**

```
guestbook-replicas-mp97f   1/1     Running   0          83s
guestbook-replicas-q4h52   1/1     Running   0          83s
guestbook-replicas-zndxx   1/1     Running   0          83s
atouche@cloudshell:~/.../cs430-src/05_gcp_datastore (cloud-touche-atouche)$
```

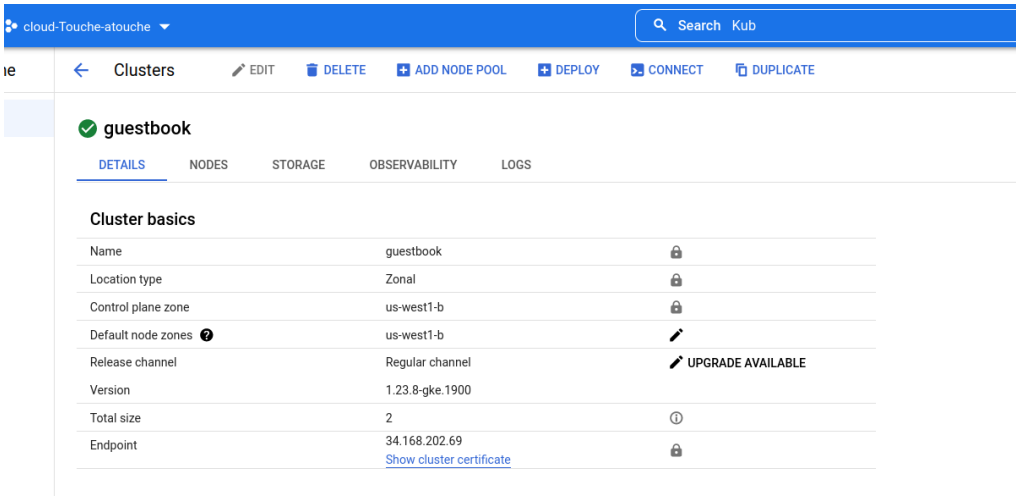
  - [ ] **Take a screenshot of listing services with LoadBalancer indicating an external IP address that is ready for access.**

```
atouche@cloudshell:~/.../cs430-src/05_gcp_datastore (cloud-touche-atouche)$ kubectl get services
NAME           TYPE           CLUSTER-IP    EXTERNAL-IP     PORT(S)        AGE
guestbook-lb   LoadBalancer   10.20.15.68   34.83.224.248   80:30758/TCP   2m24s
kubernetes     ClusterIP      10.20.0.1     <none>          443/TCP        39m
atouche@cloudshell:~/.../cs430-src/05_gcp_datastore (cloud-touche-atouche)$
```

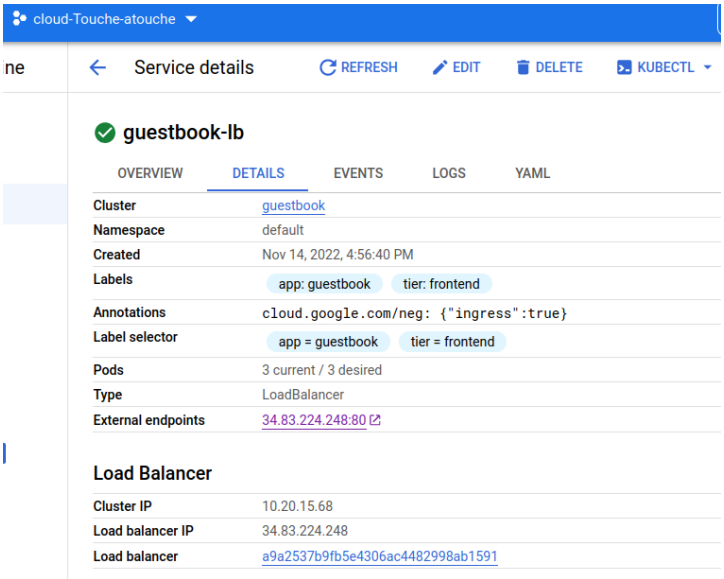
- [ ] View the Guestbook
  - [ ] **Take a screenshot of the Guestbook including the URL with the entry in it.**



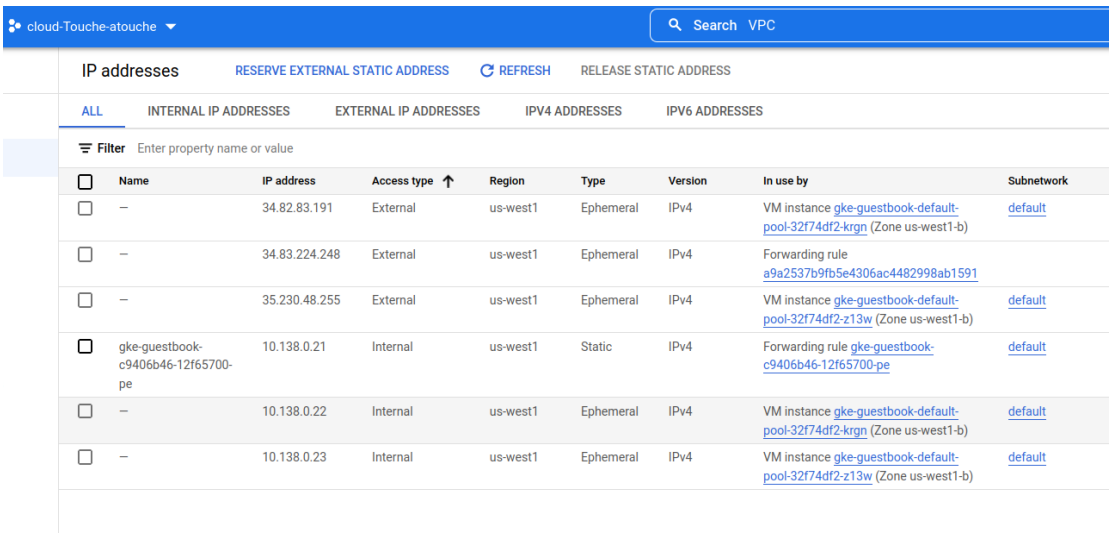
- [ ] **Take a screenshot of the managed guestbook pods and the service being exposed.**



- [ ] **Take a screenshot of the load balancer and its details**



- [ ] **Take a screenshot of the addresses allocated and indicate the ones associated with nodes versus the one associated with the load balancer.**

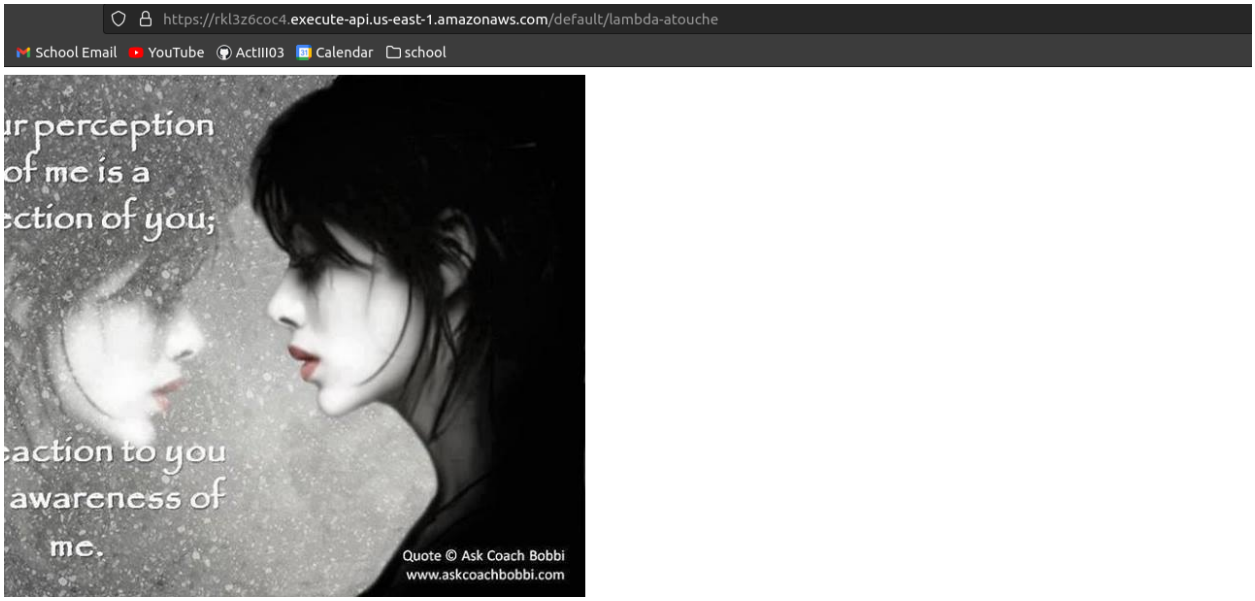


- 34.83.224.248 = LoadBalancer
- 34.82.83.191/35.230.48.255 = replicas of nodes

- [ ] Clean Up

APIs (Link)

- [ ] MoTD Function
- [ ] API integration
- [ ] Lambda code
- [ ] Test code
    - [ ] **Take a screenshot of the resulting page including the URL bar.**



- [ ] **Click "Reload" in the browser and take another screenshot showing the**

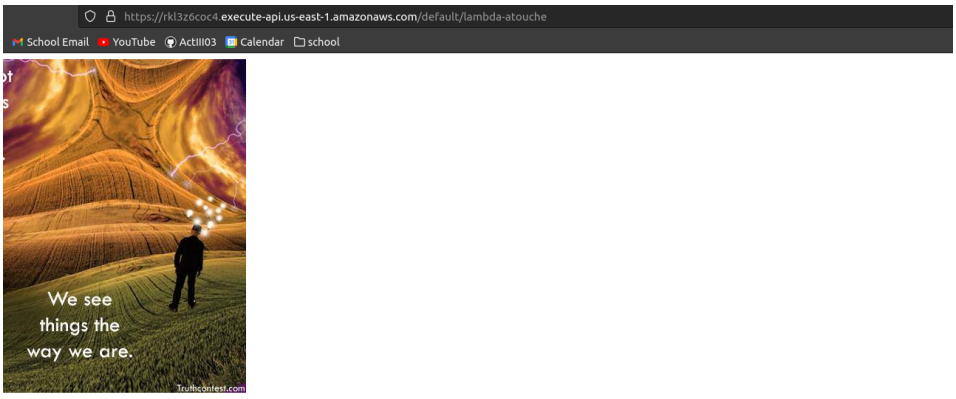
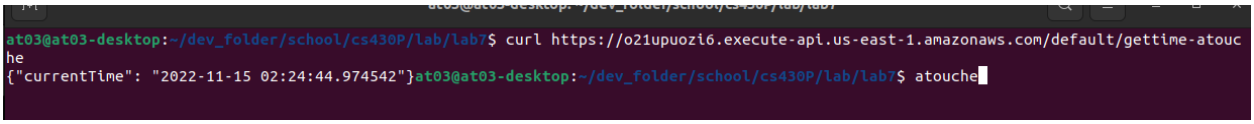


image has changed:

- [ ] Clean up
- [ ] gettime API
- [ ] Implement code
- [ ] Test code
    - [ ] curl

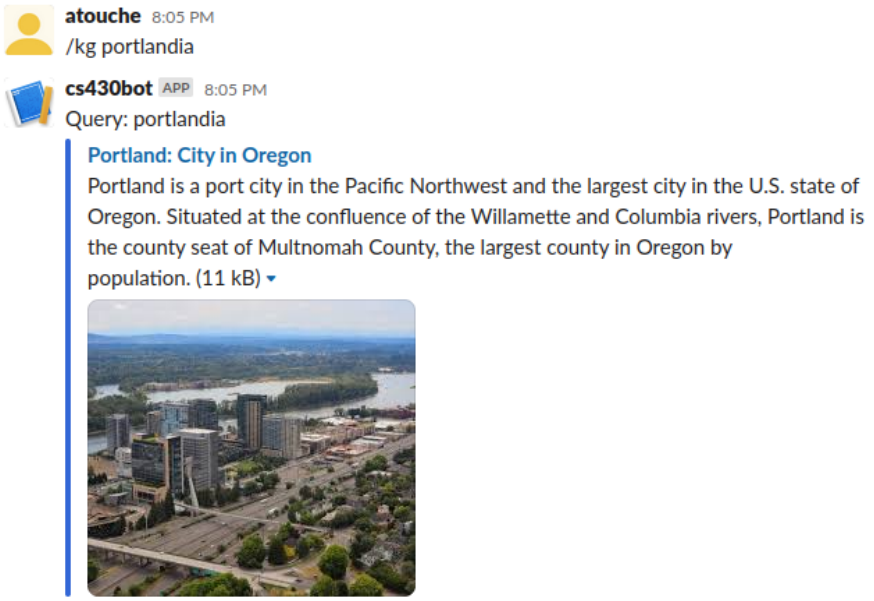


- [ ] Clean up

APIs (Slack, Knowledge Graph) (Link)

- [ ] Slack and Knowledge Graph integration
- [ ] Code
  - [ ] **Could we have used the API Discovery package to interact with the Vision API?**
    - Yes
  - [ ] **Does Google provide a Python package specifically for accessing the Knowledge Graph API?**
    - No
- [ ] Code
  - [ ] **Visit the file and perform the following for your lab notebook:**
    - **Show the source line that constructs the query we wish to send to the Knowledge Graph API.**
      - main.py:86
      - query= request.form['text']
    - **Show the source line that then executes the query and saves the response. What is the name of the method that sends the query to the Knowledge Graph API?**
      - main.py:87 # executes
      - main.py:88 # Formats slack message
  - [ ] **Visit the file and answer the following questions:**
    - **What is the Python data type that is used to represent the formatted message?**
      - Is a dictionary like:
        - name: ''
        - description: ''
        - detailedDescrition: ''
        - …
    - **What are the three main attributes of the formatted message passed back to Slack?**
      - response_type
      - text
      - attachments
- [ ] Knowledge graph setup
  - [ ] AIzaSyA3skl5HIlG_bFBgMoF3VdpLZqOHcOoWwE
- [ ] Create a Slack workspace
  - [ ] **What would be the difference between an adversary finding out YOUR_SLACK_SIGNING_SECRET versus finding out YOUR_KG_API_KEY?**
    - Gain access to 1 API via **YOUR_SLACK_SIGNING_SECRET** vs many w/ **YOUR_KG_API_KEY**.

- [ ] Configure and Deploy
- [ ] Create Slack command
- [ ] Test the command
    - [ ] **Test**



Lambda, API Gateway Guestbook (Link)

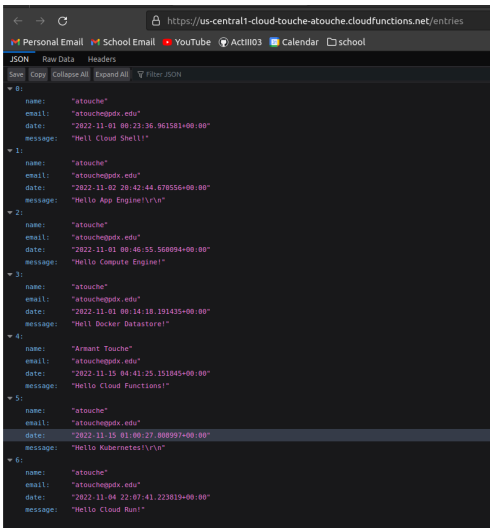
- [ ] Overview
- [ ] Obtain AWS account ID
- [ ] REST API Code
    - [ ] **What might go wrong when we call scan? Think about the way DynamoDB works, and look at the scan documentation for a hint. What could be done to address this problem?**
        - If the total number of scanned items exceeds the maximum dataset size limit of 1 MB, the scan stops and results are returned to the user as a LastEvaluatedKey value to continue the scan in a subsequent operation. To address it, limit the number of scans to not exceed.
- [ ] Deploy the Lambda for viewing entries
    - [ ] run

      aws lambda create-function --function-name ${odin_id}-gb-lambda \
        --zip-file fileb://./function.zip \
        --handler get_entries.handler \
        --runtime python3.7 \
        --environment Variables={TABLE='guestbook'} \
        --role 695141229392

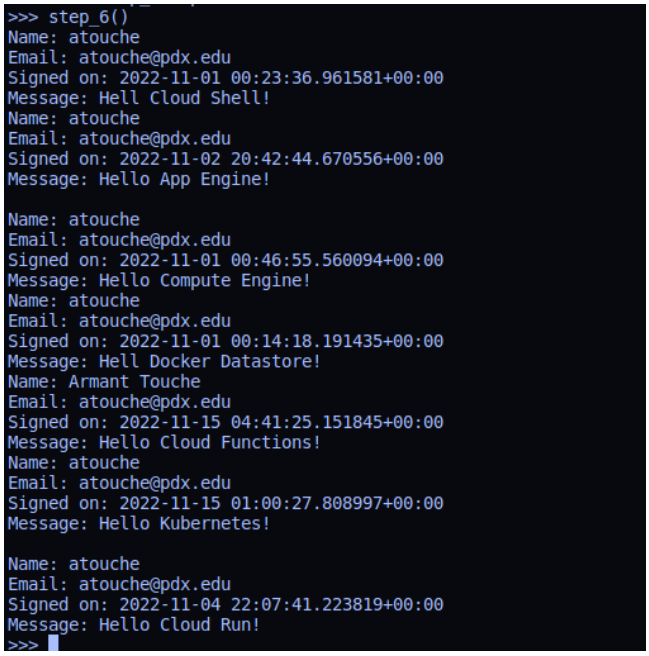
- [ ] Create API in API Gateway
- [ ] Enable API to invoke Lambda function
- [ ] API endpoint for viewing entries (1)
- [ ] API endpoint for viewing entries (2)
- [ ] CORS setup for viewing entries
- [ ] Deploy API to production
- [ ] API endpoint for signing (1)
- [ ] API endpoint for signing (2)
- [ ] CORS setup for signing
- [ ] Frontend Code
- [ ] Configure and Deploy the Frontend
- [ ] Clean up

Cloud Functions API Guestbook (Link)

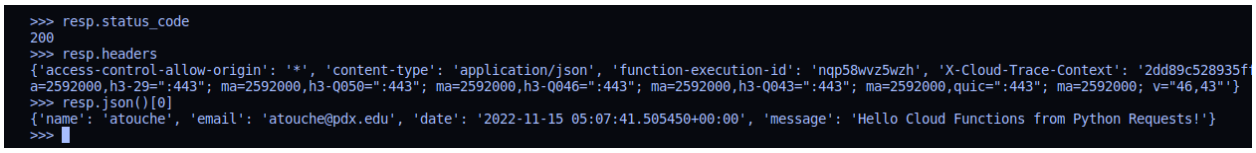
- [ ] Cloud Functions
- [ ] REST API (GET)
- [ ] REST API (POST)
- [ ] Deploy the API
- [ ] Test the API via Cloud Functions (POST)
    - [ ] entries



- [ ] Test the API via Python Requests (GET)
    - [ ] loop



- [ ] Test the API via Python Requests (POST)

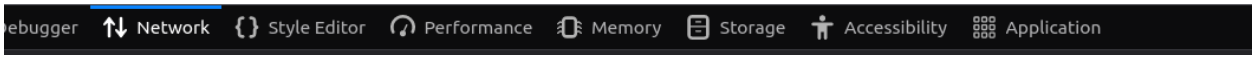


- [ ] Client-side Guestbook application
- [ ] Guestbook.js
- [ ] Version #1: Local file system
    - [ ] local

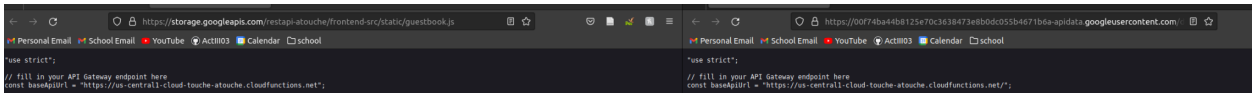
signed on 2022-11-15 05:11:06.821900+00:00
Hello Cloud Functions from Python Requests take2!

---

atouche <atouche@pdx.edu>
signed on 2022-11-15 05:23:14.676913+00:00
Hello Cloud Functions from SPA!



- [ ] Version #2: Google Cloud Storage bucket
    - [ ] Could not get past this step because the storage bucket would not invalidate guestbook.js w/ the corrected bse url. For some reason, the authenticated URL had the correct guestbook.js script.



- [ ] Clean up