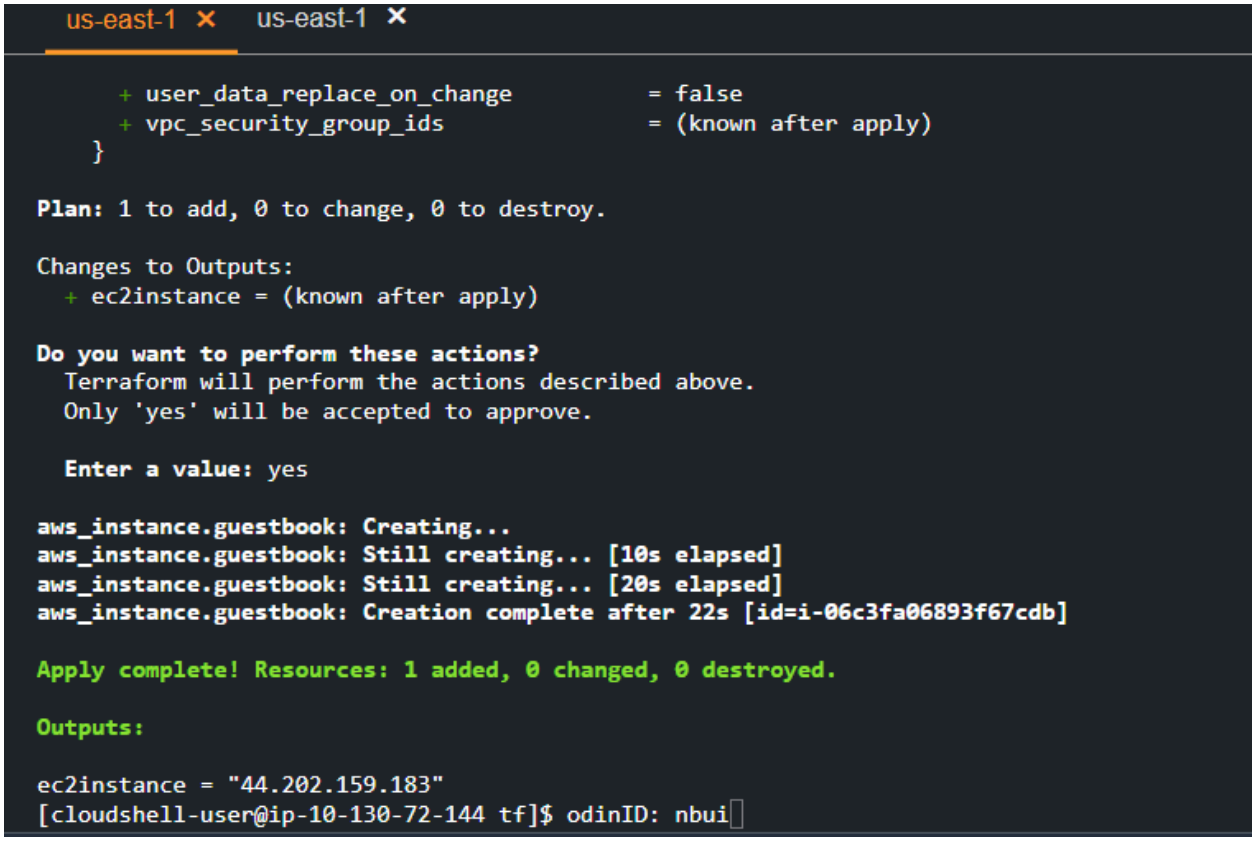
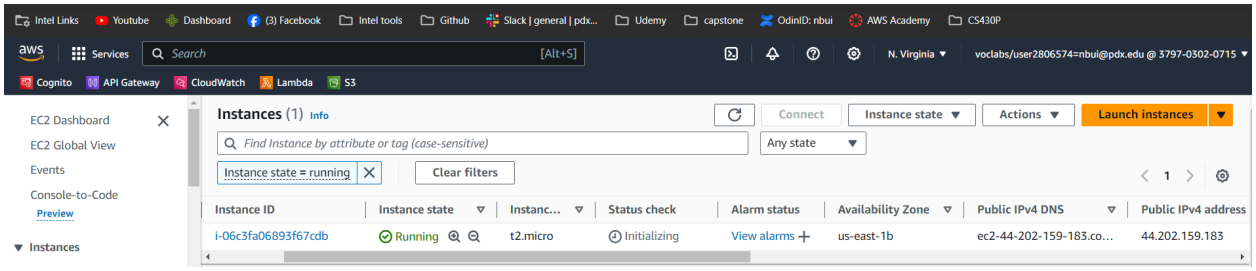
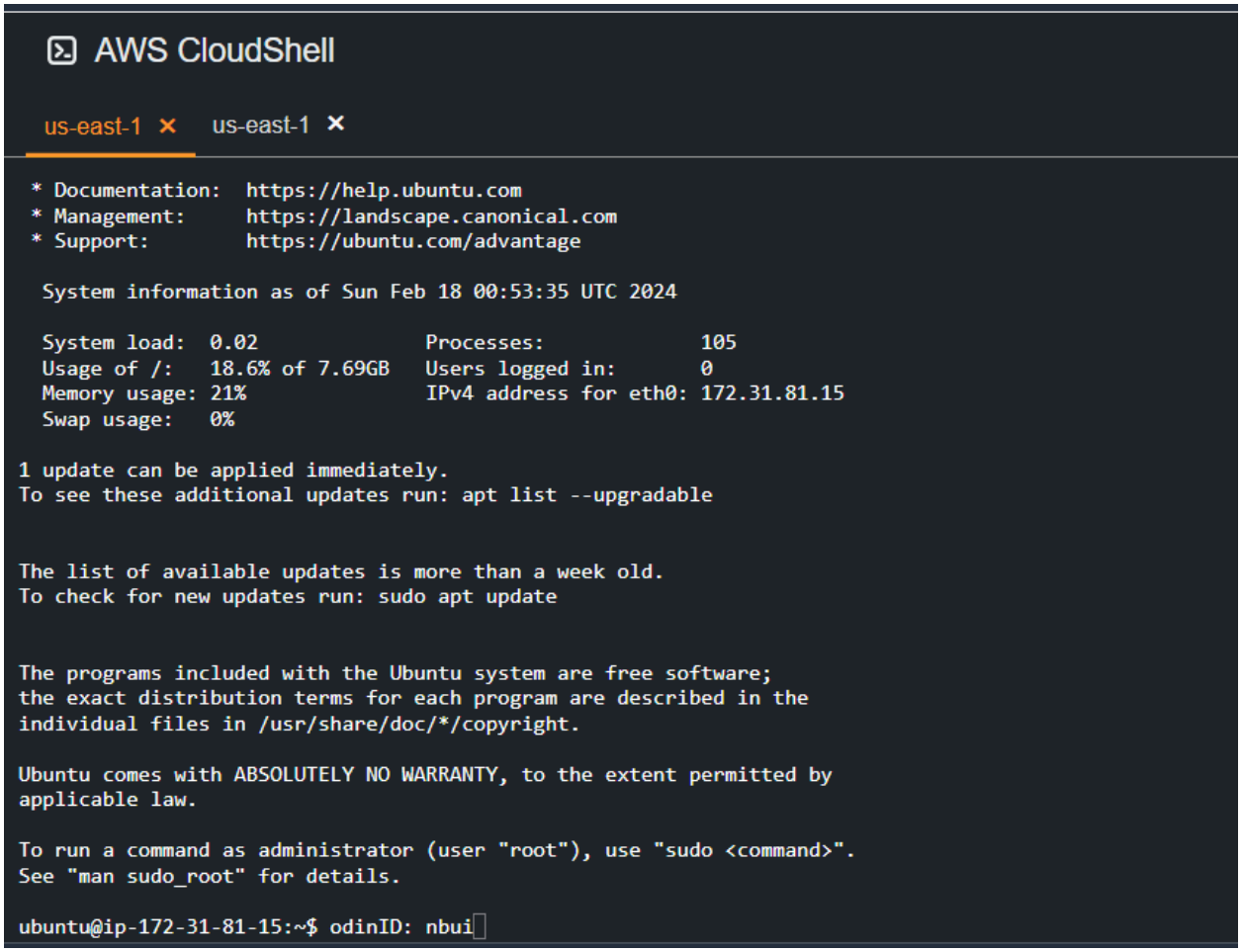
Lab 07.1a

4. Launching configuration

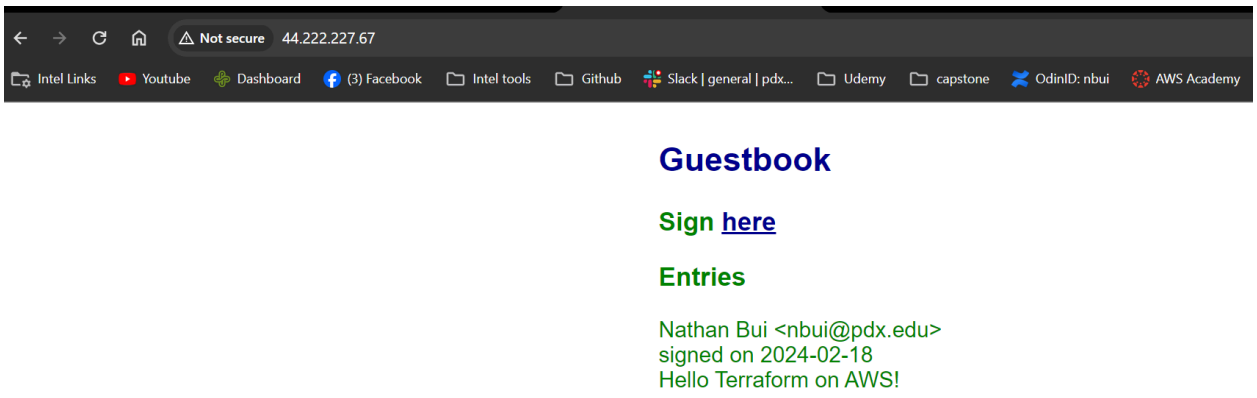




6. Adding ssh access

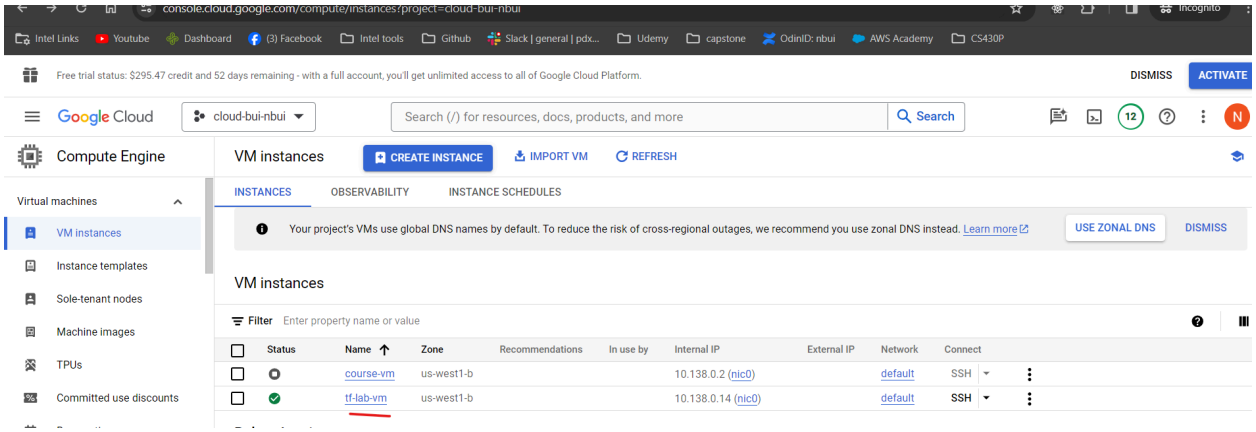


8. View the Guestbook



Lab 07.1g

4. Launching configuration

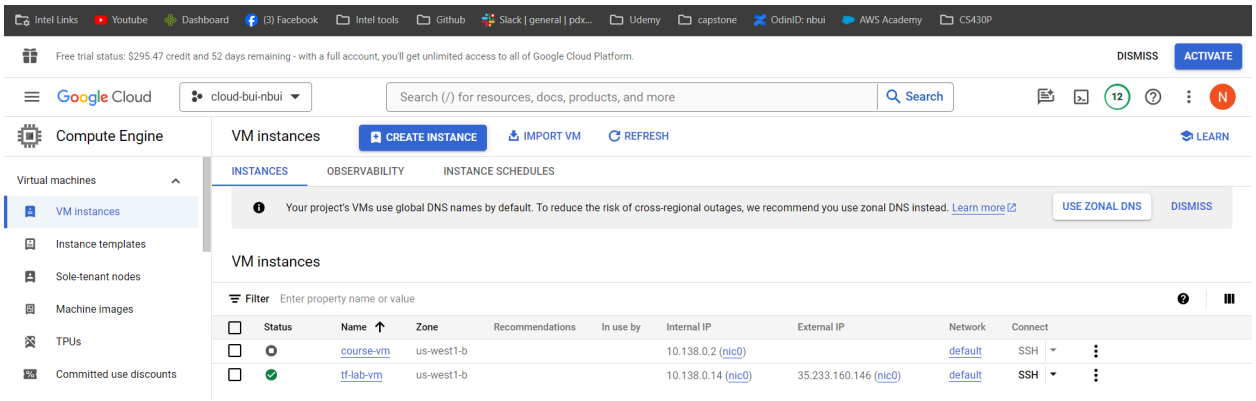


5. Adding an external IP address

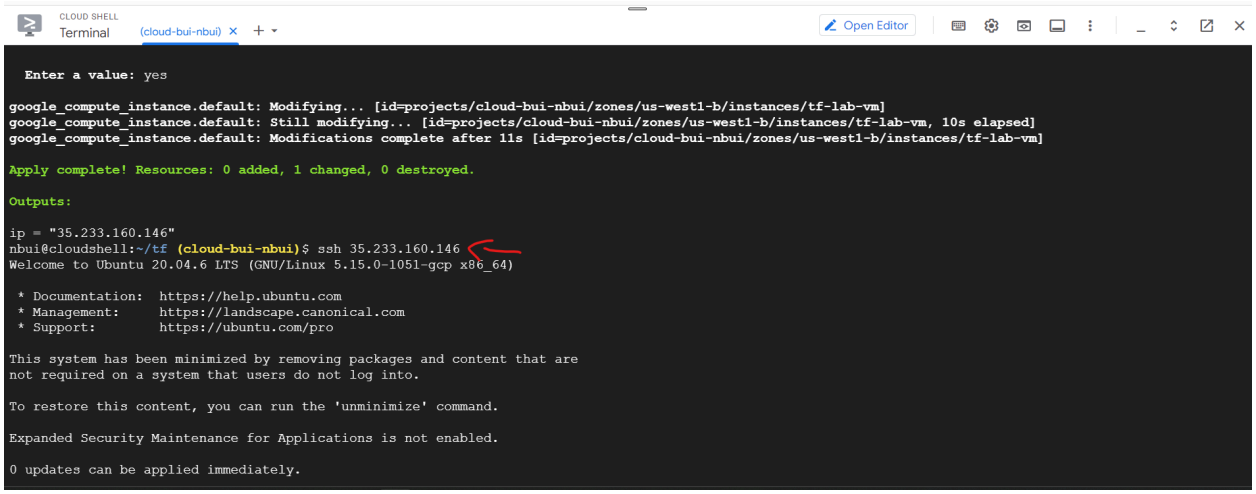
- Take a screenshot showing the completion of the command including its output

```
Changes to Outputs:
  + ip = (known after apply)

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

google_compute_address.static: Creating...
google_compute_address.static: Still creating... [10s elapsed]
google_compute_address.static: Creation complete after 11s [id=projects/clou
d-bui-nbui/regions/us-west1/addresses/ipv4-address]
google_compute_instance.default: Modifying... [id=projects/cloud-bui-nbui/zo
nes/us-west1-b/instances/tf-lab-vm]
google_compute_instance.default: Still modifying... [id=projects/cloud-bui-n
bui/zones/us-west1-b/instances/tf-lab-vm, 10s elapsed]
google_compute_instance.default: Modifications complete after 11s [id=projec
ts/cloud-bui-nbui/zones/us-west1-b/instances/tf-lab-vm]

Apply complete! Resources: 1 added, 1 changed, 0 destroyed.

Outputs:

ip = "35.233.160.146"
nbui@cloudshell:~/tf (cloud-bui-nbui)$
```

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



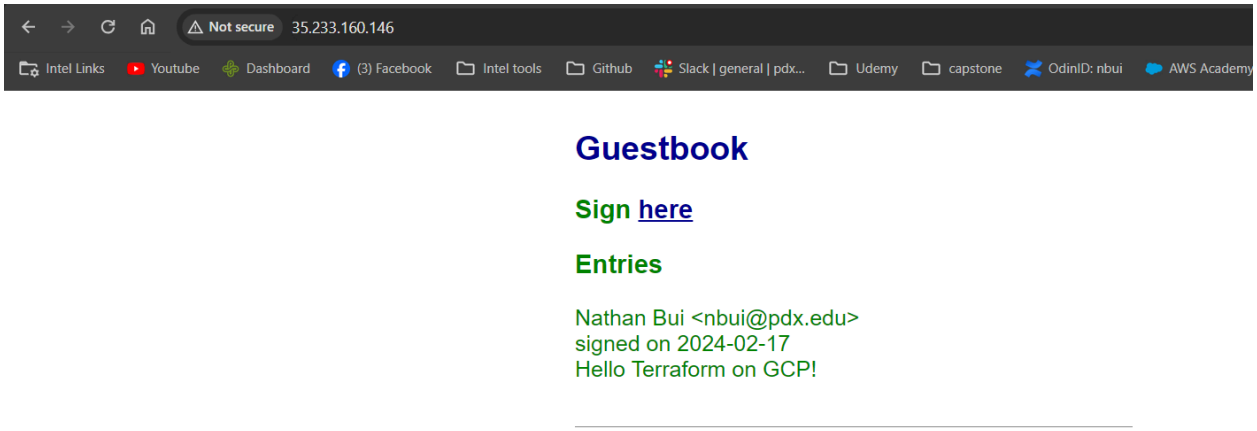
6. Adding ssh access



7. Adding the Guestbook application

- What resources are being added, changed, or destroyed?
    - Google_compute_instance.default will be destroyed and created again.
        - Metadata_startup_script, "Http-server" tag, Ipv6_access_type, and ipv6_address are added
        - Shielded_instance_config and scheduling are destroyed
- What part of the configuration forces a replacement to occur?
    - Metadata_startup_script forced replacement

8. View the Guestbook

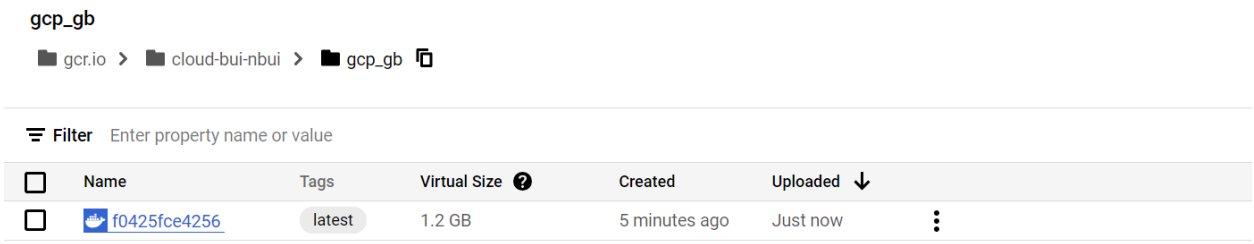


Lab 07.2g

4. Create Kubernetes cluster

- What is the name of the Instance Template dynamically generated to create the two nodes (VMs)?
    - gke-guestbook-default-pool-44f19f26
- What is the name of the Instance Group dynamically generated that the two nodes belong to?
    - gke-guestbook-default-pool-44f19f26-grp
- What are the names of the two nodes?
    - Gke-guestbook-default-pool-44f19f26-r3z5
    - Gke-guestbook-default-pool-44f19f26-hxfx

5. Prepare a container image



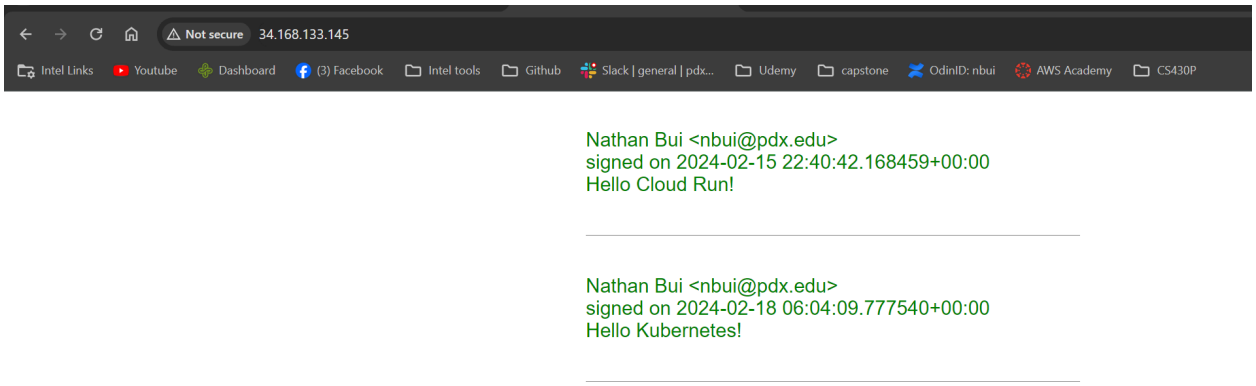
7. Deploy the configuration

```
nbui@cloudshell:~/cs430-src/05_gcp_datastore (cloud-bui-nbui)$ kubectl get pods
NAME                          READY   STATUS              RESTARTS   AGE
guestbook-replicas-2f6ss      0/1     ContainerCreating   0          12s
guestbook-replicas-bt5cf      0/1     ContainerCreating   0          13s
guestbook-replicas-kxv98      0/1     ContainerCreating   0          12s
nbui@cloudshell:~/cs430-src/05_gcp_datastore (cloud-bui-nbui)$
```

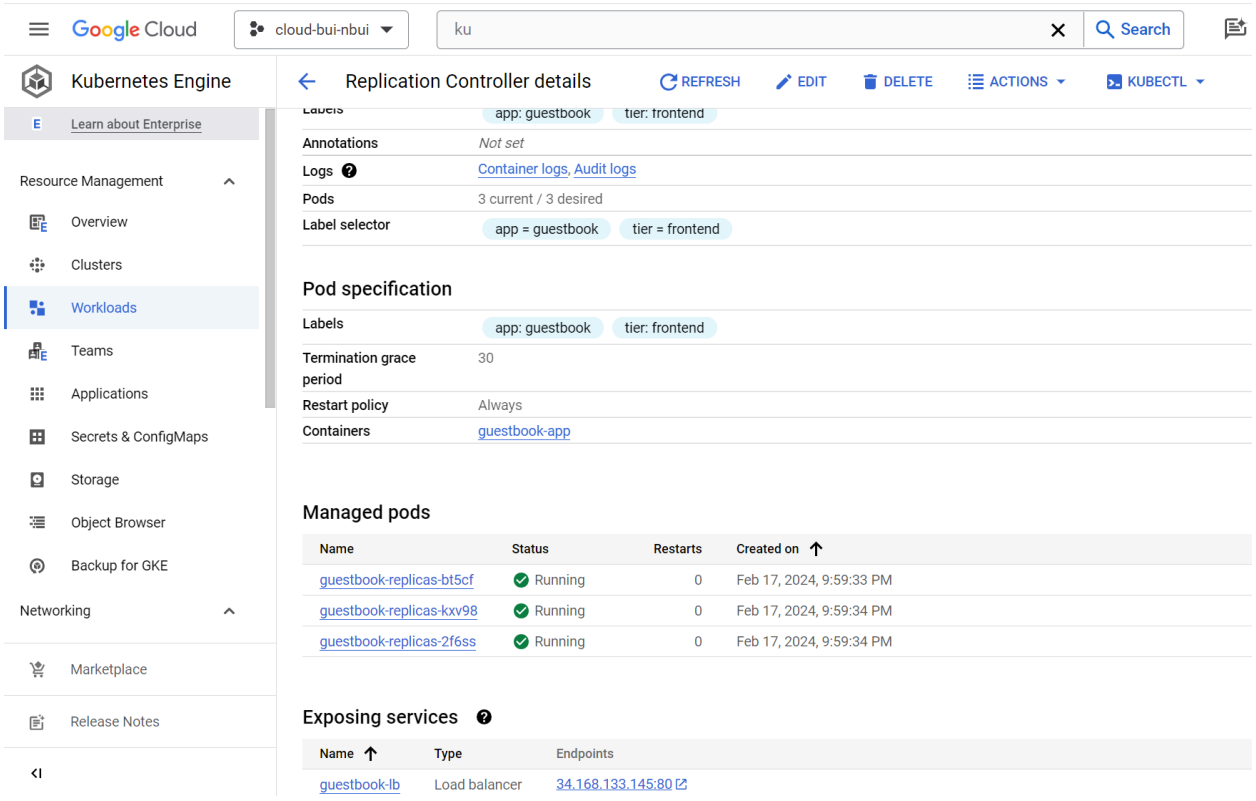
```
nbui@cloudshell:~/cs430-src/05_gcp_datastore (cloud-bui-nbui)$ kubectl get services
NAME          TYPE           CLUSTER-IP    EXTERNAL-IP      PORT(S)        AGE
guestbook-lb  LoadBalancer   10.20.6.57    34.168.133.145   80:31989/TCP   2m2s
kubernetes    ClusterIP      10.20.0.1     <none>           443/TCP        29m
nbui@cloudshell:~/cs430-src/05_gcp_datastore (cloud-bui-nbui)$
```

8. View the Guestbook

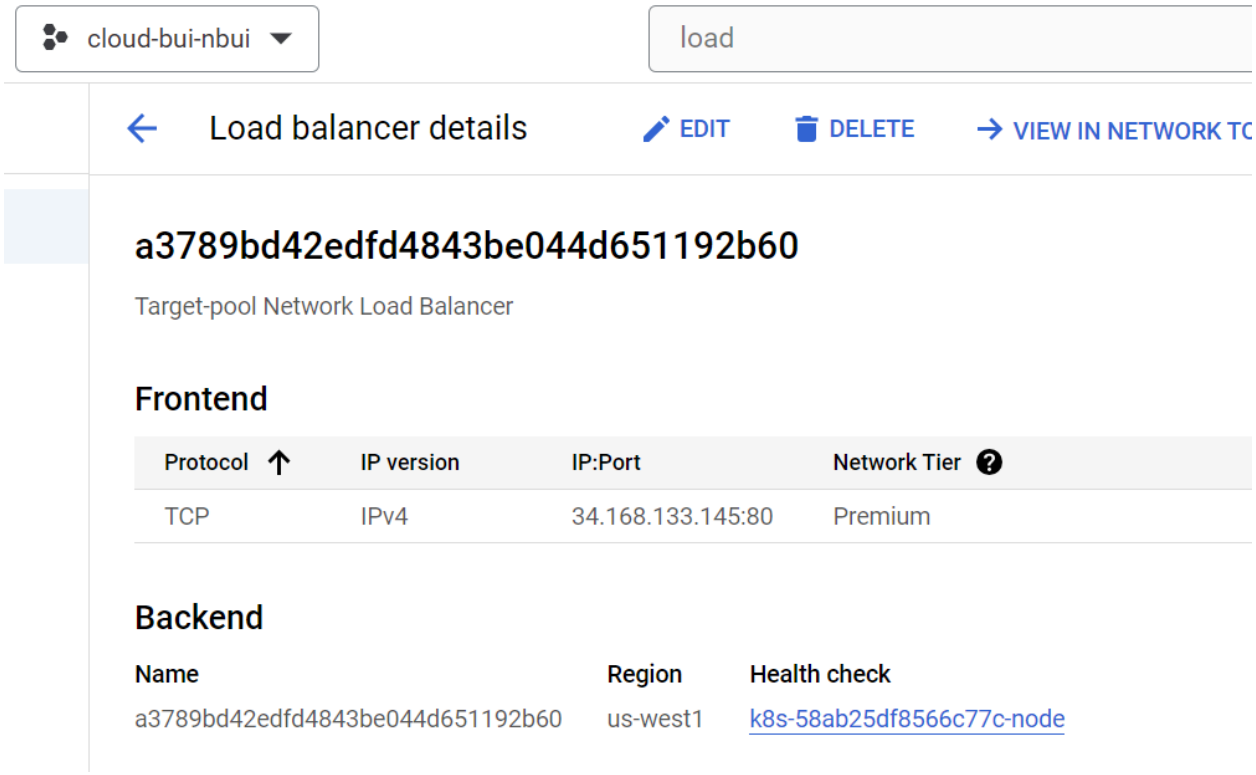
- Take a screenshot of the Guestbook including the URL with the entry in it.



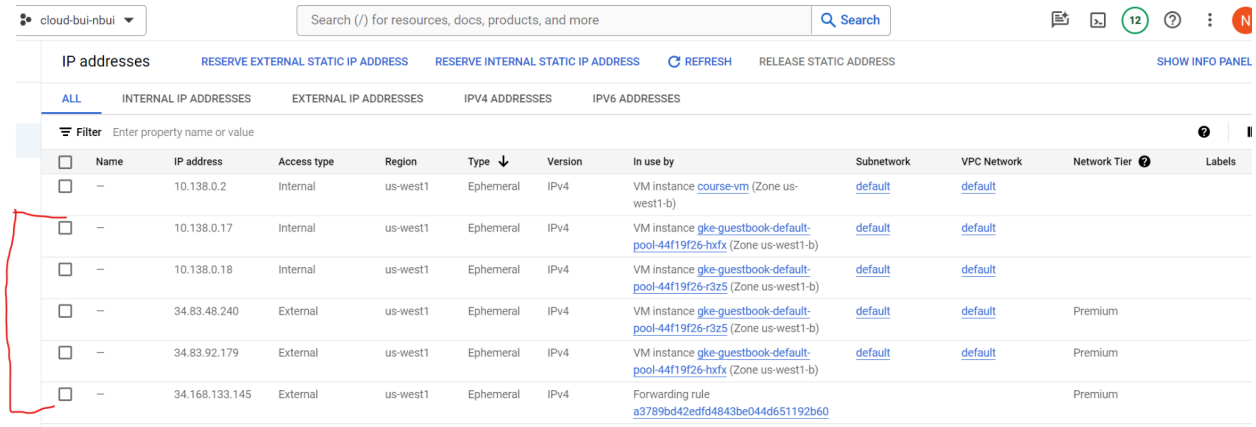
- Take a screenshot of the managed guestbook pods and the service being exposed.



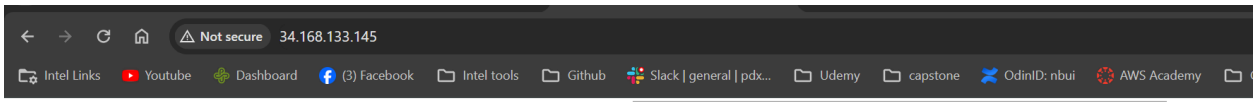
- Take a screenshot of the load balancer and its details



- Take a screenshot of the addresses allocated and indicate the ones associated with nodes versus the one associated with the load balancer.
    - The last one is associated with the load balancer



12. Deploy and view application



Nathan Bui <nbui@pdx.edu>
signed on 2024-02-11 07:13:05.467421+00:00
Hello Datastore

Nathan Bui <nbui@pdx.edu>
signed on 2024-02-18 06:26:02.156269+00:00
Hello Cloud Build!

Lab 07.3g

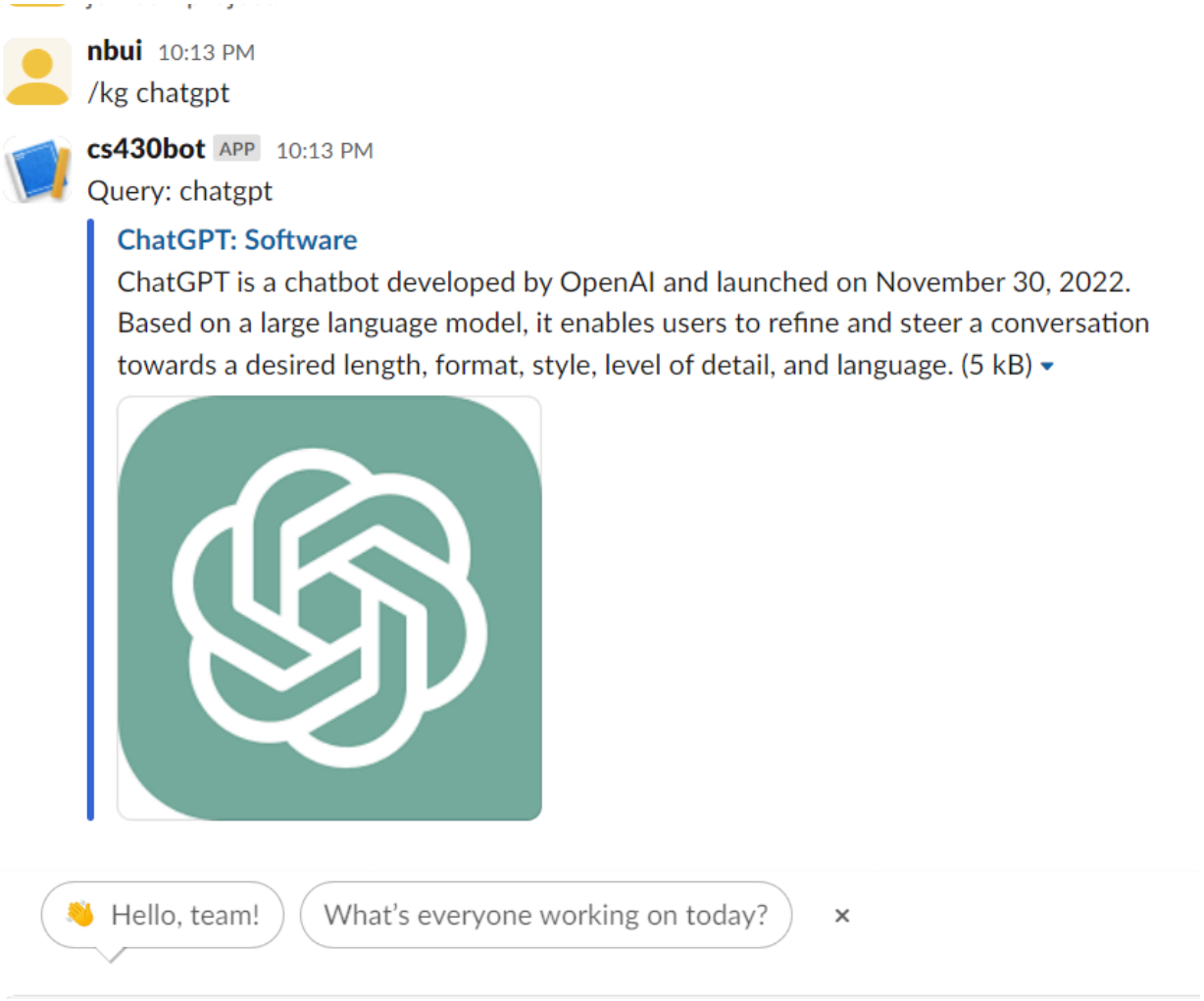
2. Code

- Does Google provide a Python package specifically for accessing the Knowledge Graph API?
    - No, it doesn't. We can only use its API endpoints

3. Code

- Show the source line that constructs the query we wish to send to the Knowledge Graph API.
    - Line 105: kg_search_response = make_search_request(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?
    - The code is defined in "make_search_request" method, from line 89 - 92
    - The response is saved in the kg_serach_response variable in line 105
- What is the Python data type that is used to represent the formatted message?
    - A dictionary
- What are the three main attributes of the formatted message passed back to Slack?
    - Response_type, text, and attachments

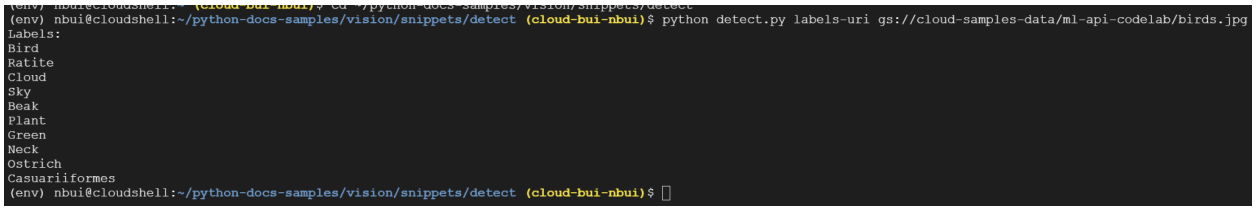
8. Test the command



Lab 07.4g

3. Vision

- Show the output for your lab notebook

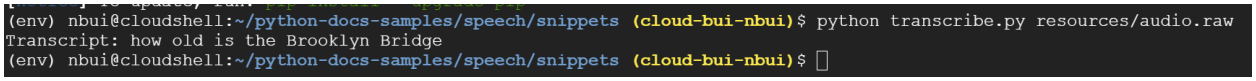


- What is the name of the function?
    - `detect_labels_uri`
- What type of Vision client is instantiated in it?
    - `ImageAnnotatorClient`
- What method is invoked in the Vision client to perform the detection?
    - `label_detection(image=image)`
- What is the name of the attribute in the response object that contains the results we seek?
    - `Label_annotations`
- Take a screenshot of the output for the above commands

- What method is invoked in the Vision client to perform the detection?
    - `logo_detection(image=image)`

4. Speech

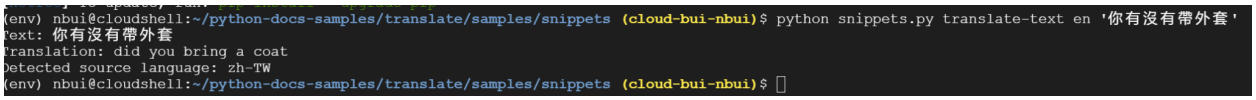
- Show the output for your lab notebook



- What is the name of the function?
    - `transcribe_file`
- What method is invoked in the Speech client to perform the detection?
    - `recognize(config=config, audio=audio)`
- What is the name of the attribute in the response object that contains the results we seek?
    - `result.alternatives[0].transcript`

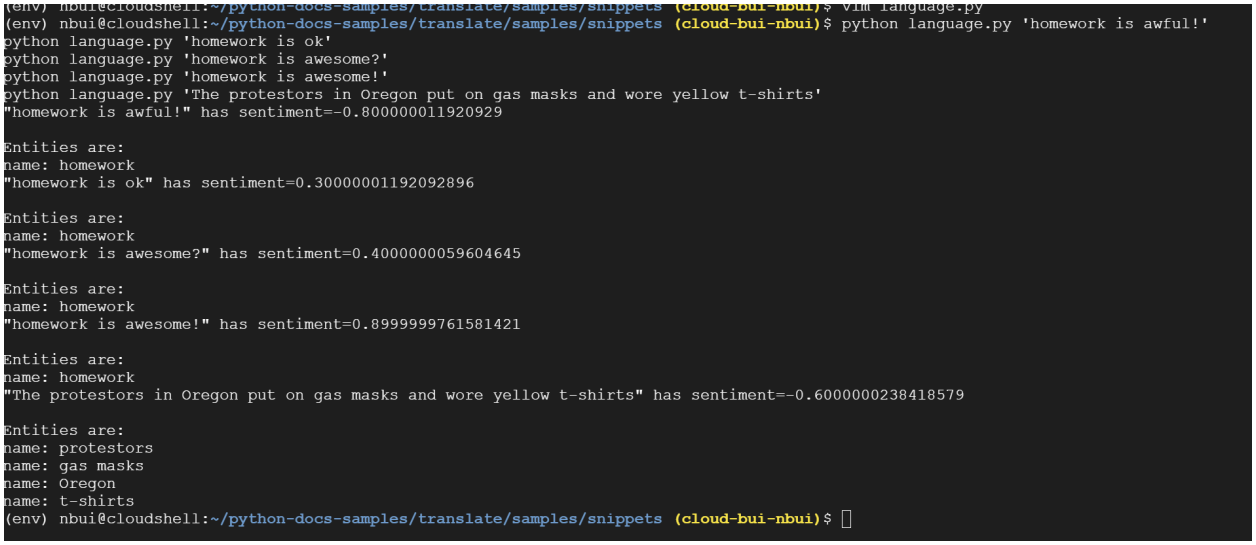
5. Translate

- Show the output for your lab notebook



- What is the name of the function?
    - `translate_text`
- What method is invoked in the Translate client to perform the detection?
    - `translate(text, target_language=target)`
- What is the name of the attribute in the response object that contains the results we seek?
    - `translatedText`

6. Natural Language



8. Code

- What is the name of the function that performs the transcription?
    - Transcribe_gcs
- What is the name of the function that performs the translation?
    - translate_text
- What is the name of the function that performs the entity analysis on the translation?
    - entities_text
- What is the name of the function that performs the entity analysis on the image?
    - Detect_labels_uri

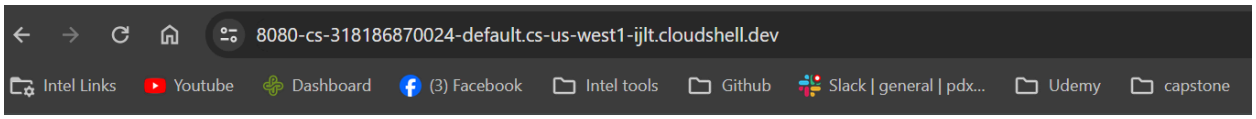
9. Test integration

- If the program deems them unrelated, then based on the results from the APIs, what must be changed in the program to address this?
    - The program should convert strings to ALL uppercase or lowercase letters, then check if the string labels contain the entities' strings and vice versa
- If the program deems them unrelated, then based on the results from the APIs, what must be changed in the program to address this?
    - We should train the program to recognize the synonym/acronym words in the program or using another ML entity at the comparison step
- If the program deems them unrelated, then based on the results from the APIs, what must be changed in the program to address this?
    - The program should convert strings to ALL uppercase or lowercase letters, then check if the string labels contain the entities' strings and vice versa
    - Implement another ML entity at the comparison step to recognize word's single/plural forms

13. Video Intelligence

- What are the 3 labels with the highest confidence that the Video Intelligence API associates with the video and what are the confidences for each?
    - Sports : 0.9218811392784119
    - Basketball: 0.9137870669364929
    - Player: 0.8446521162986755
- What is the name of the client class in the package that is used?
    - VideoIntelligenceServiceClient
- What method is used in that class to perform the annotation?
    - Annotate_video

16. Application



Google Cloud Platform - Face Detection Sample

This Python Flask application demonstrates App Engine Flexible, Google Cloud Storage, Datastore, and the Cloud Vision API.

Upload File: Choose File No file chosen
Submit

joy-face.jpg was uploaded 2024-02-20 23:06:25.363920+00:00.

Joy Likelihood for Face: Very Likely

17. Code

- What line of code creates the query for previous detections?
  - `query = datastore_client.query(kind="Faces")`
- What line of code sends the query to Cloud Datastore?
  - `image_entities = list(query.fetch())`
- Show the line that retrieves the name of the storage bucket to use.
  - `bucket = storage_client.get_bucket(CLOUD_STORAGE_BUCKET)`
- What form field is used to specify the uploaded photo?
  - `file`
- Show the line that copies the photo's contents to the storage bucket.
  - `blob.upload_from_string(photo.read(), content_type=photo.content_type)`
- What method in Vision's annotation client is used to perform the analysis?
  - `face_detection(image=image).face_annotations`
- What fields are stored in Cloud Datastore for each image?
  - `blob_name`
  - `Image_public_url`
  - `timestamp`
  - `joy`
- What happens at the end of the `upload_photo` route?
  - It uploads the new entity to the db and redirects the user back to the home page