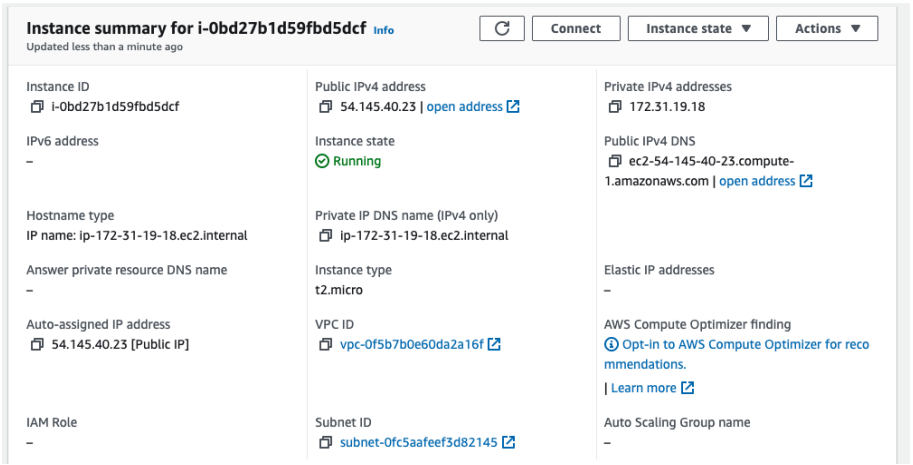
Max Hueckstead
CS 530
Lab Week 7

1.

```
Plan: 1 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + ec2instance = (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:
aws_instance.guestbook: Creating...
aws_instance.guestbook: Still creating... [10s elapsed]
aws_instance.guestbook: Still creating... [20s elapsed]
aws_instance.guestbook: Still creating... [30s elapsed]
aws_instance.guestbook: Still creating... [40s elapsed]
aws_instance.guestbook: Creation complete after 42s [id=i-0bd27b1d59fbd5dcf]

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

Outputs:

ec2instance = "54.145.40.23"
```

2.



3.

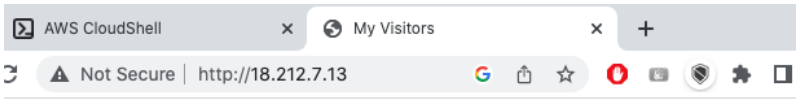
```
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.15.0-1022-aws x86_64)

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

  System information as of Sun Nov 13 20:27:52 UTC 2022

  System load:  0.07              Processes:             102
  Usage of /:   19.7% of 7.57GB   Users logged in:       0
  Memory usage: 22%               IPv4 address for eth0: 172.31.93.64
  Swap usage:   0%

0 updates can be applied immediately.


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-93-64:~$
```

4.

```
aws_key_pair.kp: Creating...
aws_security_group.sg-guestbook: Creating...
aws_key_pair.kp: Creation complete after 0s [id=guestbook-key]
aws_security_group.sg-guestbook: Creation complete after 2s [id=sg-08677424040c077c8]
aws_instance.guestbook: Creating...
aws_instance.guestbook: Still creating... [10s elapsed]
aws_instance.guestbook: Creation complete after 12s [id=i-0f8af9e55e8e4f1a3]

Apply complete! Resources: 3 added, 0 changed, 0 destroyed.

Outputs:

ec2instance = "18.233.225.196"
```

*note URL is different as I ran into errors and redid the above steps!

5.



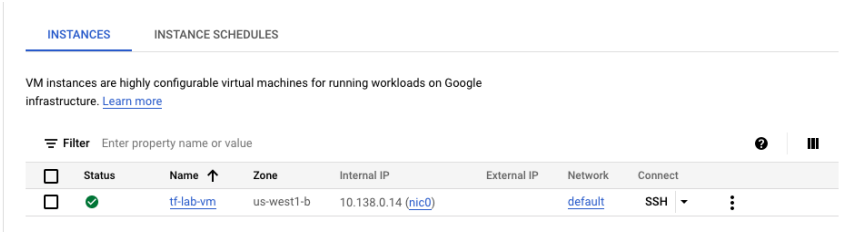
Guestbook

Sign here

Entries

Max <mhueck2@pdx.ed>
signed on 2022-11-13
Hello Terraform on AWS!

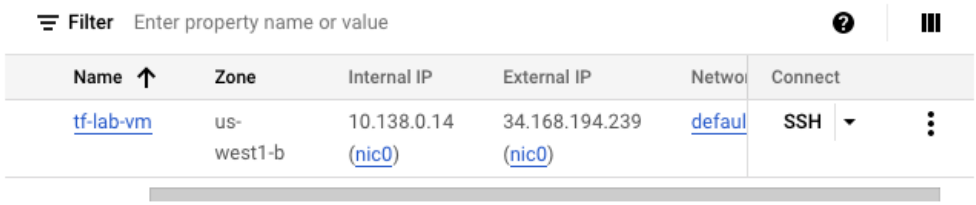
6.



7.

```
google_compute_address.static: Creating...
google_compute_address.static: Still creating... [10s elapsed]
google_compute_address.static: Creation complete after 10s [id=projects/cloud-hueckstead-mhueck2/regions/us-west1/addresses/ipv4-address]
google_compute_instance.default: Modifying... [id=projects/cloud-hueckstead-mhueck2/zones/us-west1-b/instances/tf-lab-vm]
google_compute_instance.default: Still modifying... [id=projects/cloud-hueckstead-mhueck2/zones/us-west1-b/instances/tf-lab-vm, 10s elapsed]
google_compute_instance.default: Modifications complete after 11s [id=projects/cloud-hueckstead-mhueck2/zones/us-west1-b/instances/tf-lab-vm]

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

Outputs:

ip = "34.168.194.239"
```

8.



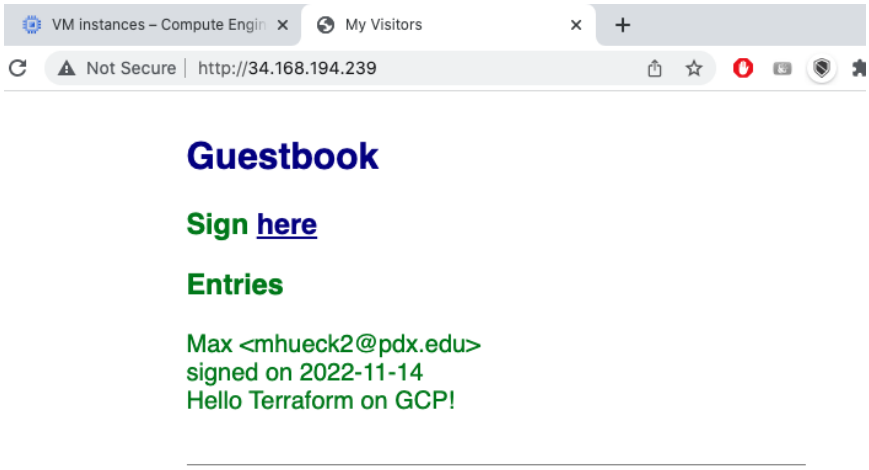
9.

```
mhueck2@cloudshell:~/tf (cloud-hueckstead-mhueck2)$ ssh 34.168.194.239
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

  System information as of Sun Nov 13 23:51:53 UTC 2022

  System load:  0.0               Processes:             91
  Usage of /:   18.8% of 9.51GB   Users logged in:       0
  Memory usage: 34%               IPv4 address for ens4: 10.138.0.14
  Swap usage:   0%

0 updates can be applied immediately.
```

10.

- What resources are being added, changed, or destroyed?
    - The google cloud default settings are being changed and destroyed, and the app settings and those from install.sh are being added.
- What part of the configuration forces a replacement to occur?
    - The install.sh causes the replacement to occur

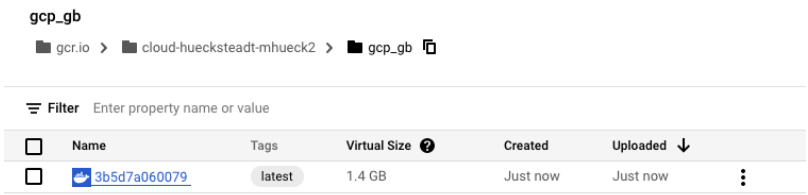
11.



12.

- What is the name of the Instance Template dynamically generated to create the two nodes (VMs)?
  - gke-guestbook-default-pool-ed6e6bf7
- What is the name of the Instance Group dynamically generated that the two nodes belong to?
  - gke-guestbook-default-pool-ed6e6bf7-grp
- What are the names of the two nodes?
  - Gke-guestbook-default-pool-ed6e6bf7-567r, gke-guestbook-default-pool-ed6e6bf7-k14j

13.



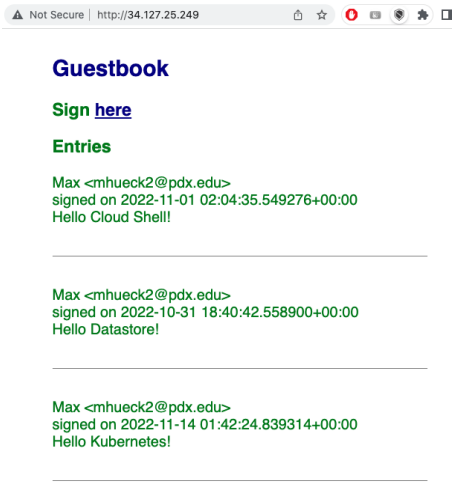
14.

```
mhueck2@cloudshell:~/cs430-src/05_gcp_datastore (cloud-hueckstead-mhueck2)$ kubectl get pods
NAME                          READY   STATUS    RESTARTS   AGE
guestbook-replicas-8djsl      1/1     Running   0          2m22s
guestbook-replicas-8j5nt      1/1     Running   0          2m22s
guestbook-replicas-d97qt      1/1     Running   0          2m22s
```

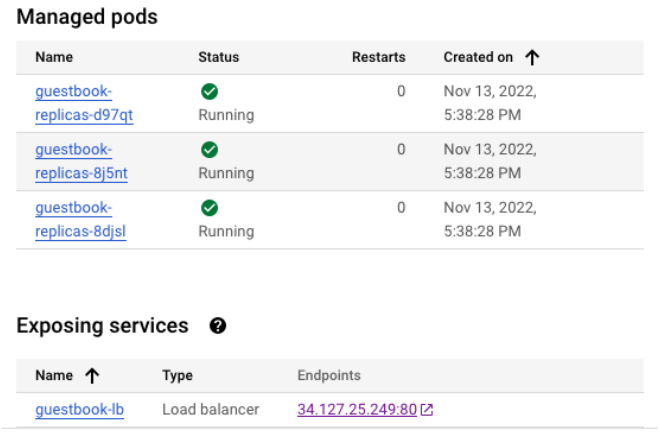
15.

```
mhueck2@cloudshell:~/cs430-src/05_gcp_datastore (cloud-hueckstead-mhueck2)$ kubectl get services
NAME           TYPE           CLUSTER-IP     EXTERNAL-IP     PORT(S)        AGE
guestbook-lb   LoadBalancer   10.20.0.201    34.127.25.249   80:30825/TCP   2m49s
kubernetes     ClusterIP      10.20.0.1      <none>          443/TCP        28m
```

16.



17.



18.

LOAD BALANCERS | BACKENDS | FRONTENDS

Filter Enter property name or value

Name	Load balancer type	Protocols	Region	Backends
a8ec06b2a401148119f8d8445d2cc6f0	Network (target pool-based)	TCP	us-west1	1 target pool (2 instances)

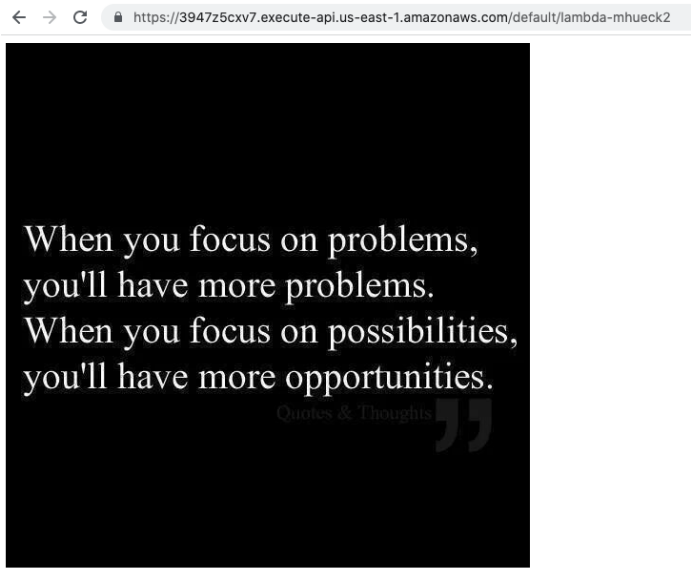
19.

IP address	Access type	Region	Type	Version	In use by	Subnetwork	VPC Netw
34.127.25.249	External	us-west1	Ephemeral	IPv4	Forwarding rule a8ec06b2a401148119f8d8445d2cc6f0		
34.168.194.239	External	us-west1	Ephemeral	IPv4	VM instance gke-guestbook-default-pool-ed6e6bf7-567r (Zone us-west1-b)	default	default
35.197.43.139	External	us-west1	Ephemeral	IPv4	VM instance gke-guestbook-default-pool-ed6e6bf7-k14j (Zone us-west1-b)	default	default

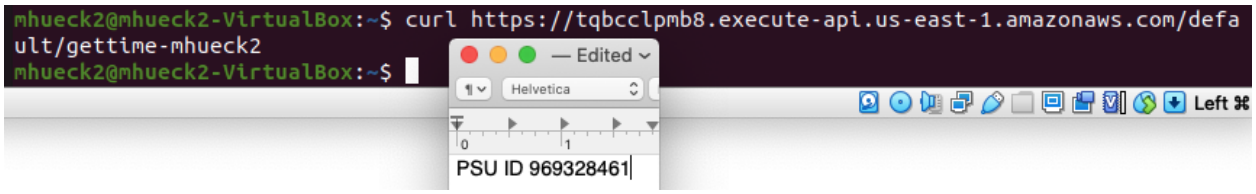
20.

https://3947z5cxv7.execute-api.us-east-1.amazonaws.com/default/lambda-mhueck2

21.



22.



23.

- Could we have used the API Discovery package to interact with the Vision API?
    - Yes, Google implements the discovery package in the Vision API so it should be possible.
- Does Google provide a Python package specifically for accessing the Knowledge Graph API?
    - Yes, using kgsearch

24.

- Show the source line that constructs the query we wish to send to the Knowledge Graph API.
    - req = kgsearch.entities().search(query=query, limit=1)
- 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?
    - kg_search_response = make_search_request(request.form['text'])
    - return jsonify(kg_search_response)

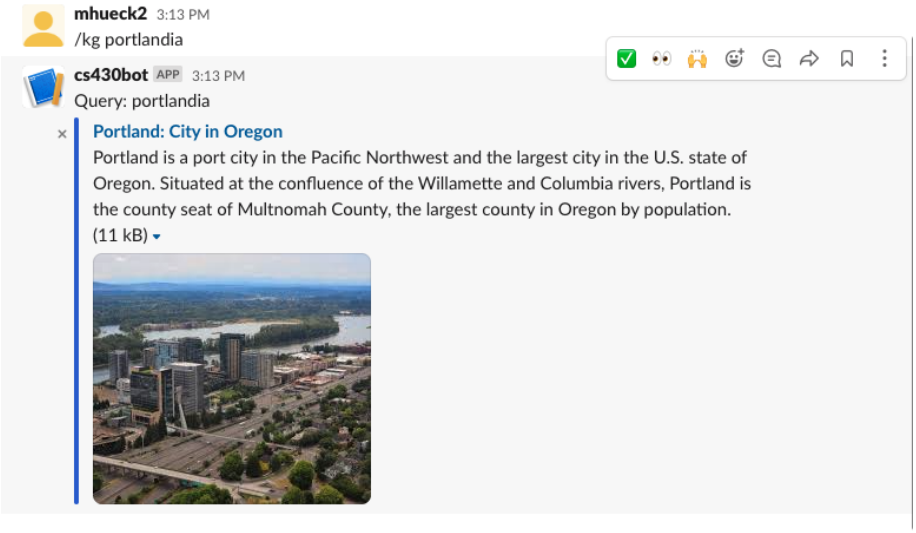
25.

- 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, attachments

26.

- What would be the difference between an adversary finding out `YOUR_SLACK_SIGNING_SECRET` versus finding out `YOUR_KG_API_KEY`?
    - The adversary would be able to pretend to be the slack app if it got the signing secret, and would be able to make calls to slack and KG with the API key

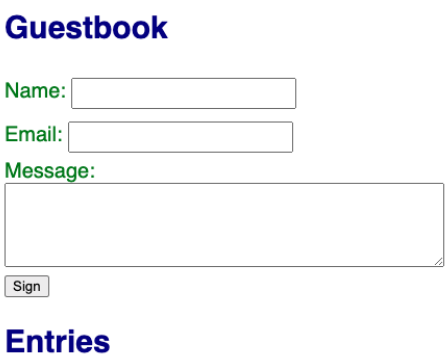
27.



28.

- 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 dataset size is too big, scan won't be able to return everything, which would mean the client only gets part of the table

29. For some reason, the preview function in Cloud9 does not show the previous entries:



30.

Request: /entry

Status: 200

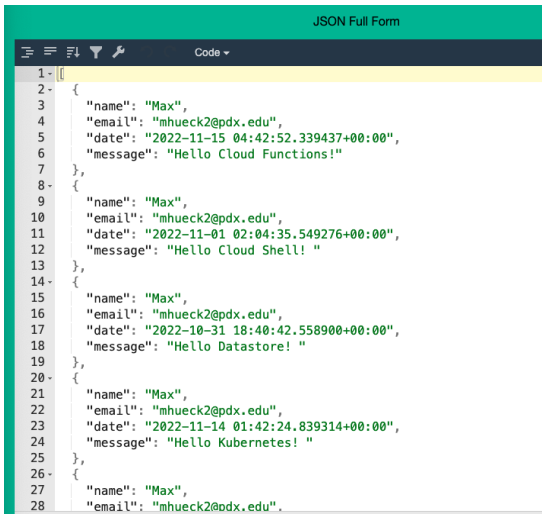
Latency: 368 ms

Response Body


```
[{"message": "Hello DynamoDB! ", "date": "2022-10-31 17:0
3:02.810286", "email": "mhueck2@pdx.edu", "name": "Max"},
{"message": "Hello Docker DynamoDB! ", "date": "2022-11-0
1 00:14:36.531207", "email": "mhueck2@pdx.edu", "name":
"Max"}, {"message": "Hello Cloud9! ", "date": "2022-11-01
00:37:18.256932", "email": "mhueck2@pdx.edu", "name": "Ma
x"}, {"message": "Hello EC2! ", "date": "2022-11-01 01:1
1:28.984264", "email": "mhueck2@pdx.edu", "name": "Max"},
{"message": "Hello Elastic Beanstalk! ", "date": "2022-11
-07 21:05:09.176866", "email": "mhueck2@pdx.edu", "name":
"Max"}, {"message": "Hello API Gateway", "date": "2022-11
-15 03:55:00.722855", "email": "mhueck2@pdx.edu", "name":
"Max"}]
```


31. I am getting an error at: **http://mhueck2-frontend.s3-website-us-east-1.amazonaws.com/**

32.

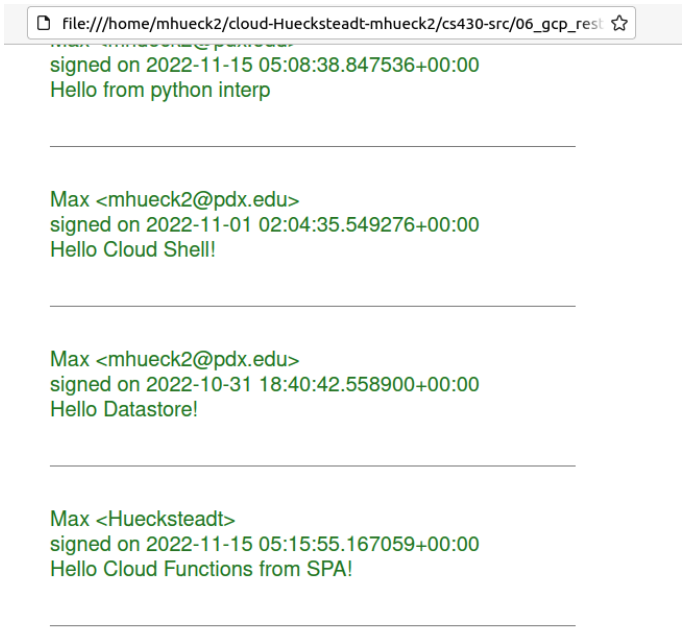



```
[
  {
    "name": "Max",
    "email": "mhueck2@pdx.edu",
    "date": "2022-11-15 04:42:52.339437+00:00",
    "message": "Hello Cloud Functions!"
  },
  {
    "name": "Max",
    "email": "mhueck2@pdx.edu",
    "date": "2022-11-01 02:04:35.549276+00:00",
    "message": "Hello Cloud Shell! "
  },
  {
    "name": "Max",
    "email": "mhueck2@pdx.edu",
    "date": "2022-10-31 18:40:42.558900+00:00",
    "message": "Hello Datastore! "
  },
  {
    "name": "Max",
    "email": "mhueck2@pdx.edu",
    "date": "2022-11-14 01:42:24.839314+00:00",
    "message": "Hello Kubernetes! "
  },
  {
    "name": "Max",
    "email": "mhueck2@pdx.edu",
```

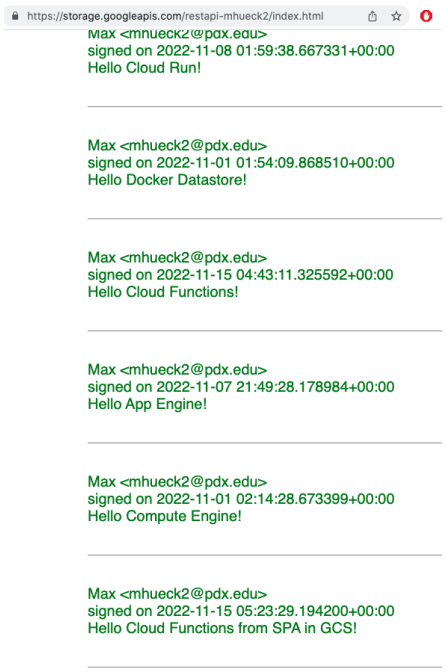

33.


```
>>> print(resp.status_code, resp.headers, resp.text)
200 {'access-control-allow-origin': '*', 'content-type': 'application/json', 'function-execution-id': 'vwuof00y7936', 'X-Cloud-Trace-Context': 'bcbbd83437204da065ccca71cf9e7271;o=1', 'Date': 'Tue, 15 Nov 2022 05:08:39 GMT', 'Server': 'Google Frontend', 'Content-Length': '1243', 'Alt-Svc': 'h3=":443"; ma=2592000,h3-29=":443"; ma=2592000,h3-Q050=":443"; ma=2592000,h3-Q046=":443"; ma=2592000,h3-Q043=":443"; ma=2592000,quic=":443"; ma=2592000; v="46,43"'} [{"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-15 04:42:52.339437+00:00", "message": "Hello Cloud Functions!"}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-15 05:08:38.847536+00:00", "message": "Hello from python interp"}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-01 02:04:35.549276+00:00", "message": "Hello Cloud Shell! "}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-10-31 18:40:42.558900+00:00", "message": "Hello Datastore! "}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-14 01:42:24.839314+00:00", "message": "Hello Kubernetes! "}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-08 01:59:38.667331+00:00", "message": "Hello Cloud Run! "}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-01 01:54:09.868510+00:00", "message": "Hello Docker Datastore! "}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-15 04:43:11.325592+00:00", "message": "Hello Cloud Functions!"}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-07 21:49:28.178984+00:00", "message": "Hello App Engine! "}, {"name": "Max", "email": "mhueck2@pdx.edu", "date": "2022-11-01 02:14:28.673399+00:00", "message": "Hello Compute Engine! "}]
>>>
```


34.


file:///home/mhueck2/cloud-Hueckssteadt-mhueck2/cs430-src/06_gcp_rest
signed on 2022-11-15 05:08:38.847536+00:00
Hello from python interp
Max <mhueck2@pdx.edu>
signed on 2022-11-01 02:04:35.549276+00:00
Hello Cloud Shell!
Max <mhueck2@pdx.edu>
signed on 2022-10-31 18:40:42.558900+00:00
Hello Datastore!
Max <Hueckssteadt>
signed on 2022-11-15 05:15:55.167059+00:00
Hello Cloud Functions from SPA!

35.


https://storage.googleapis.com/restapi-mhueck2/index.html
signed on 2022-11-08 01:59:38.667331+00:00
Hello Cloud Run!
Max <mhueck2@pdx.edu>
signed on 2022-11-01 01:54:09.868510+00:00
Hello Docker Datastore!
Max <mhueck2@pdx.edu>
signed on 2022-11-15 04:43:11.325592+00:00
Hello Cloud Functions!
Max <mhueck2@pdx.edu>
signed on 2022-11-07 21:49:28.178984+00:00
Hello App Engine!
Max <mhueck2@pdx.edu>
signed on 2022-11-01 02:14:28.673399+00:00
Hello Compute Engine!
Max <mhueck2@pdx.edu>
signed on 2022-11-15 05:23:29.194200+00:00
Hello Cloud Functions from SPA in GCS!