DS561-HW10

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Github Link:

git clone git@github.com:tigeryi1998/ds561-tigeryi.git

YAML Config file

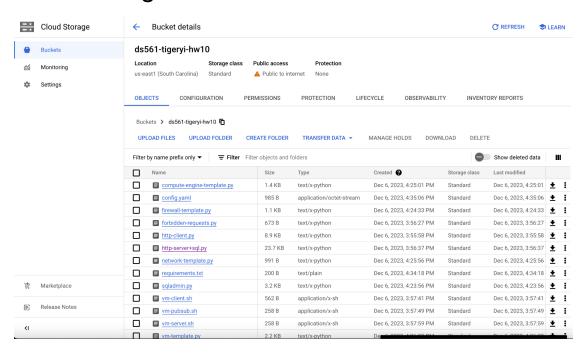gcloud deployment-manager deployments create my-deployment --config config.yaml

config.yaml
```yaml
imports:
- path: vm-template.py
- path: network-template.py
- path: firewall-template.py
- path: compute-engine-template.py
- path: sqladmin.py
resources:
- name: compute-engine-setup
  type: compute-engine-template.py
```
vm-template.py
```yaml
properties:
  zone: us-east1
  startup-script: |
    #!/bin/bash
    if [-d "/home/tigeryi/hw10"]; then
      echo "hw10 exist"
    else
      gsutil -m cp -r gs://ds561-tigeryi-hw10 /home/tigeryi/hw10/
    fi
    cd /home/tigeryi/hw10
    apt install python3-pip -y
    python3 -m pip install -r requirements.txt
    python3 http-server+sql.py -s
    python3 forbidden-requests.py
    python3 http-client.py -d '127.0.0.1' -b 'ds561-tigeryi-hw10' -w files -i 11000 -n 20 -p 8080 -r 0 -f -m 'GET'
```

```
    python3 http-client.py -d '127.0.0.1' -b 'ds561-tigeryi-hw10' -w files -i 11000
-n 5 -p 8080 -r 0 -f -m 'POST'
    python3 http-client.py -d '127.0.0.1' -b 'ds561-tigeryi-hw10' -w files -i 11000
-n 5 -p 8080 -r 0 -f -m 'PUT'
```

GCS Storage Bucket

http client requests

http-client.py code is modified to take all HTTP methods such as 'GET', 'POST' etc.

'GET' will return either 200 OK, or 404 File Not Found

'POST' or 'PUT' etc will return 501 Method Not Implemented

First, start the Web Server and Pub Sub Listener

python3 http-server+sql.py -l -s

python3 forbidden-requests.py

Then, the client to issue html GET, POST, PUT requests:

python3 http-client.py -d 127.0.0.1 -b 'none' -w files -i 11000 -n 20 -p 8080 -r 0 -f -m 'GET'

python3 http-client.py -d 127.0.0.1 -b 'none' -w files -i 11000 -n 1 -p 8080 -r 0 -f -m 'POST'

python3 http-client.py -d 127.0.0.1 -b 'none' -w files -i 11000 -n 1 -p 8080 -r 0 -f -m 'PUT'

HTTP Server Response

HTTP server 200 OK + 404 File Not Found (GET)

```
127.0.0.1 - - [06/Dec/2023 11:53:22] "GET /files/7093.html HTTP/1.1" 200 -
127.0.0.1 - - [06/Dec/2023 11:53:38] "GET /files/6754.html HTTP/1.1" 200 -
127.0.0.1 - - [06/Dec/2023 11:53:49] "GET /files/10475.html HTTP/1.1" 404 -
127.0.0.1 - - [06/Dec/2023 11:54:02] "GET /files/10770.html HTTP/1.1" 404 -
127.0.0.1 - - [06/Dec/2023 11:54:08] "GET /files/6821.html HTTP/1.1" 200 -
127.0.0.1 - - [06/Dec/2023 11:54:10] "GET /files/10693.html HTTP/1.1" 404 -
127.0.0.1 - - [06/Dec/2023 11:55:00] "GET /files/10929.html HTTP/1.1" 404 -
127.0.0.1 - - [06/Dec/2023 11:55:32] "GET /files/7026.html HTTP/1.1" 200 -
127.0.0.1 - - [06/Dec/2023 11:55:33] "GET /files/4658.html HTTP/1.1" 200 -
127.0.0.1 - - [06/Dec/2023 11:55:33] "GET /files/10920.html HTTP/1.1" 404 -
```

HTTP server 501 Method Not Implemented (PUT, POST)

```
127.0.0.1 - - [06/Dec/2023 12:20:12] "POST /files/4651.html HTTP/1.1" 501 -
127.0.0.1 - - [06/Dec/2023 12:24:07] "PUT /files/6239.html HTTP/1.1" 501 -
```

HTTP server banned countries

```
127.0.0.1 - - [06/Dec/2023 11:55:34] "GET /files/9205.html HTTP/1.1" 200 -
Banned country  Zimbabwe
127.0.0.1 - - [06/Dec/2023 11:55:36] "GET /files/12.html HTTP/1.1" 200 -
Banned country  North Korea
```

Pub Sub

```python
from google.cloud import pubsub_v1
PROJECT_ID = "feisty-gasket-398719"
TOPIC_ID = "my-topic"
SUBSCRIPTION_NAME = "my-topic-sub"
# listen for banned countries
subscriber = pubsub_v1.SubscriberClient()
...
```

```
Listening for banned countries...
Received message: Banned country Zimbabwe
Received message: Banned country North Korea
Received message: Banned country North Korea
Received message: Banned country North Korea
Received message: Banned country Zimbabwe
```

Curl

200 OK

curl -X GET -G "http://127.0.0.1:8080/files/9999.html" -i \
-H "X-country: Nepal" \
-H "X-client-IP: 34.228.248.208" \
-H "X-gender: Female" \
-H "X-age: 36-45" \
-H "X-income: 250k+" \
-H "X-time: 2023-12-06 22:00:00"

```
HTTP/1.0 200 OK
Server: BaseHTTP/0.6 Python/3.8.8
Date: Wed, 06 Dec 2023 18:49:51 GMT
Content-type: text/html

<html><head><title>https://pythonbasics.org</title></head><p>Request: /files/9999.html</p><body><p>This is an example web
 server.</p>Got header Host:127.0.0.1:8080
Got header User-Agent:curl/7.84.0
Got header Accept:*/*
Got header X-country:Nepal
Got header X-client-IP:34.228.248.208
Got header X-gender:Female
Got header X-age:36-45
Got header X-income:250k+
Got header X-time:2023-12-06 22:00:00
Response header zone: projects/946005535036/zones/us-east1-b
</body></html><!DOCTYPE html>
<html>
<body>
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqu
a. Ut enim ad
minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in
 reprehenderit in voluptate velit esse
cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserun
t mollit anim id est laborum.
<p>
<a HREF="1939.html"> This is a link </a>
<p>
```

404 File Not Found

curl -X GET -G "http://127.0.0.1:8080/files/12345.html" -i \
-H "X-country: Bahrain" \
-H "X-client-IP: 193.65.218.137" \
-H "X-gender: Female" \
-H "X-age: 66-75" \
-H "X-income: 20k-40k" \
-H "X-time: 2023-12-06 23:00:00"

```
(base) crc-dot1x-nat-10-239-111-114:hw10 tigeryi$ curl -X GET -G "http://127.0.0.1:8080/files/12345.html" -i \
> -H "X-country: Bahrain" \
> -H "X-client-IP: 193.65.218.137" \
> -H "X-gender: Female" \
> -H "X-age: 66-75" \
> -H "X-income: 20k-40k" \
> -H "X-time: 2023-12-06 23:00:00"
HTTP/1.0 404 Not Found
Server: BaseHTTP/0.6 Python/3.8.8
Date: Wed, 06 Dec 2023 18:59:36 GMT
Content-type: text/html

<html><head><title>https://pythonbasics.org</title></head><p>Request: /files/12345.html</p><body><p>File not found.</p></body></html>(base) crc-dot1x-nat-10-239-111-114:hw10 tigeryi$
```

501 Method Not Implemented

curl -X POST -G "http://127.0.0.1:8080/files/1.html" -i \
-H "X-country: Vatican City (Holy See)" \
-H "X-client-IP: 50.137.227.137" \
-H "X-gender: Male" \
-H "X-age: 66-75" \
-H "X-income: 100k-150k" \
-H "X-time: 2023-12-06 11:00:00"

```
(base) crc-dot1x-nat-10-239-111-114:hw10 tigeryi$ curl -X POST -G "http://127.0.0.1:8080/files/1.html" -i \
> -H "X-country: Vatican City (Holy See)" \
> -H "X-client-IP: 50.137.227.137" \
> -H "X-gender: Male" \
> -H "X-age: 66-75" \
> -H "X-income: 100k-150k" \
> -H "X-time: 2023-12-06 11:00:00"
HTTP/1.0 501 Not Implemented
Server: BaseHTTP/0.6 Python/3.8.8
Date: Wed, 06 Dec 2023 19:13:43 GMT

Server method unavailable(base) crc-dot1x-nat-10-239-111-114:hw10 tigeryi$
```
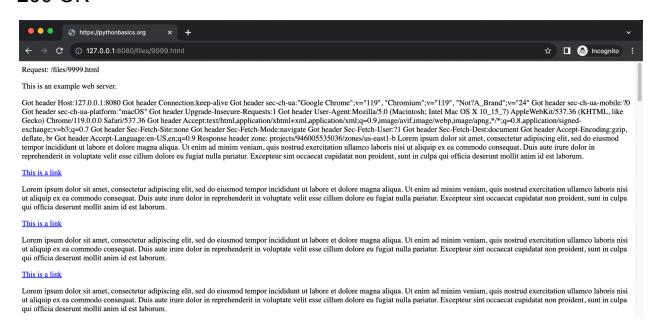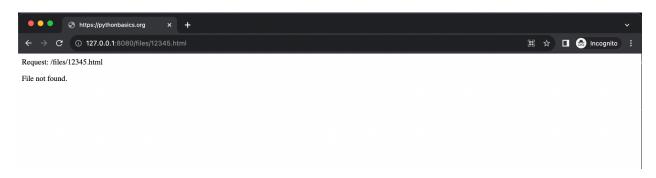
Web Browser

Demonstrate browser function from the same files in CURL commands

200 OK

Request: /files/9999.html

This is an example web server.

Got header Host:127.0.0.1:8080 Got header Connection:keep-alive Got header sec-ch-ua:"Google Chrome";v="119", "Chromium";v="119", "Not?A_Brand";v="24" Got header sec-ch-ua-mobile:?0 Got header sec-ch-ua-platform:"macOS" Got header Upgrade-Insecure-Requests:1 Got header User-Agent:Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/119.0.0.0 Safari/537.36 Got header Accept:text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7 Got header Sec-Fetch-Site:none Got header Sec-Fetch-Mode:navigate Got header Sec-Fetch-User:?1 Got header Sec-Fetch-Dest:document Got header Accept-Encoding:gzip, deflate, br Got header Accept-Language:en-US,en;q=0.9 Response header zone: projects/946005535036/zones/us-east1-b Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

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404 File Not Found

Request: /files/12345.html

File not found.

SQL database

In the Google Cloud Shell command line type:

gcloud sql connect instance-tigeryi --user=root --quiet
root password:

mysql> use dbhw10;
mysql> show tables;

Table1: IP, Time, Filename

mysql> select * from table1;

```
mysql> select * from table1;
+------------+-----------------+---------------------+-----------+------------+
| request_id | ip              | time_of_day         | filename  | ip2        |
+------------+-----------------+---------------------+-----------+------------+
|          1 | 152.113.135.192 | 2023-12-06 17:00:00 | 7093.html | 2557577152 |
|          2 | 87.23.184.163   | 2023-12-06 23:00:00 | 6754.html | 1461172387 |
|          3 | 56.142.54.73    | 2023-12-06 22:00:00 | 6821.html |  948844105 |
|          4 | 171.106.28.183  | 2023-12-06 18:00:00 | 7026.html | 2875858103 |
|          5 | 183.190.62.104  | 2023-12-06 10:00:00 | 4658.html | 3082698344 |
|          6 | 21.180.168.107  | 2023-12-06 10:00:00 | 5794.html |  364161131 |
|          7 | 172.71.76.240   | 2023-12-06 18:00:00 | 338.html  | 2890353904 |
|          8 | 115.54.106.52   | 2023-12-06 13:00:00 | 8874.html | 1932945972 |
|          9 | 164.31.221.218  | 2023-12-06 01:00:00 | 9205.html | 2753551834 |
|         10 | 235.107.109.115 | 2023-12-06 19:00:00 | 12.html   | 3949686131 |
```

Table2: GET 200 OK

mysql> select * from table2;

```
mysql> select * from table2;
+-------+-----------------+--------+-------+-----------+---------------------------+-----------+------------+---------+------+---------+----------+
| ip_id | ip              | gender | age   | income    | country                   | is_banned | ip2        | gender2 | age2 | income2 | country2 |
+-------+-----------------+--------+-------+-----------+---------------------------+-----------+------------+---------+------+---------+----------+
|     1 | 152.113.135.192 | Male   | 0-16  | 100k-150k | Uzbekistan                |         0 | 2557577152 |       0 |    0 |       5 |      189 |
|     2 | 87.23.184.163   | Female | 76+   | 0-10k     | Tanzania                  |         0 | 1461172387 |       1 |    7 |       0 |      173 |
|     3 | 49.20.48.65     | Female | 56-65 | 100k-150k | Guinea                    |         0 |  823406657 |       1 |    5 |       5 |       69 |
|     4 | 83.107.159.167  | Male   | 46-55 | 40k-60k   | Papua New Guinea          |         0 | 1399562151 |       0 |    4 |       3 |      135 |
|     5 | 56.142.54.73    | Female | 36-45 | 10k-20k   | Denmark                   |         0 |  948844105 |       1 |    3 |       1 |       46 |
|     6 | 98.3.44.56      | Female | 17-25 | 20k-40k   | Gabon                     |         0 | 1644375096 |       1 |    1 |       2 |       61 |
|     7 | 13.125.3.123    | Female | 36-45 | 250k+     | Lithuania                 |         0 |  226296699 |       1 |    3 |       7 |       99 |
|     8 | 171.106.28.183  | Female | 66-75 | 150k-250k | Bosnia and Herzegovina    |         0 | 2875858103 |       1 |    6 |       6 |       21 |
|     9 | 183.190.62.104  | Female | 0-16  | 100k-150k | Monaco                    |         0 | 3082698344 |       1 |    0 |       5 |      113 |
|    10 | 136.67.193.179  | Male   | 56-65 | 100k-150k | Montenegro                |         0 | 2286141875 |       0 |    5 |       5 |      115 |
|    11 | 21.180.168.107  | Female | 56-65 | 20k-40k   | Tanzania                  |         0 |  364161131 |       1 |    5 |       2 |      173 |
|    12 | 172.71.76.240   | Female | 56-65 | 250k+     | Liberia                   |         0 | 2890353904 |       1 |    5 |       7 |       96 |
|    13 | 53.55.130.131   | Female | 36-45 | 40k-60k   | Jordan                    |         0 |  892830339 |       1 |    3 |       3 |       85 |
|    14 | 115.54.106.52   | Male   | 17-25 | 10k-20k   | United Arab Emirates (UAE)|         0 | 1932945972 |       0 |    1 |       1 |      185 |
|    15 | 164.31.221.218  | Male   | 26-35 | 250k+     | Iceland                   |         0 | 2753551834 |       0 |    2 |       7 |       75 |
|    16 | 235.107.109.115 | Male   | 26-35 | 10k-20k   | Zimbabwe                  |         1 | 3949686131 |       0 |    2 |       1 |      196 |
|    17 | 163.10.48.234   | Female | 46-55 | 40k-60k   | North Korea               |         1 | 2735354090 |       1 |    4 |       3 |      127 |
|    18 | 171.107.234.213 | Male   | 36-45 | 10k-20k   | Tajikistan                |         0 | 2875976405 |       0 |    3 |       1 |      172 |
|    19 | 153.248.124.144 | Male   | 46-55 | 10k-20k   | United Arab Emirates (UAE)|         0 | 2583198864 |       0 |    4 |       1 |      185 |
|    20 | 20.209.78.212   | Male   | 0-16  | 250k+     | Liechtenstein             |         0 |  349261524 |       0 |    0 |       7 |       98 |
|    21 | 165.205.204.181 | Female | 0-16  | 20k-40k   | North Korea               |         1 | 2781727925 |       1 |    0 |       2 |      127 |
|    22 | 77.192.29.110   | Female | 76+   | 10k-20k   | Vatican City (Holy See)   |         0 | 1304436078 |       1 |    7 |       1 |      191 |
|    23 | 61.134.234.42   | Female | 36-45 | 100k-150k | Norway                    |         0 | 1032251946 |       1 |    3 |       5 |      129 |
```

Table3: Error

GET 404 Not Found

POST, PUT 501 Not Implemented

mysql> select * from table3;

```
mysql> select * from table3;
+-----------+-----------------+---------------------+-------------+-------+------------+
| failed_id | ip              | time_of_day         | filename    | error | ip2        |
+-----------+-----------------+---------------------+-------------+-------+------------+
|         1 | 49.20.48.65     | 2023-12-06 03:00:00 | 10475.html  |   404 |  823406657 |
|         2 | 83.107.159.167  | 2023-12-06 21:00:00 | 10770.html  |   404 | 1399562151 |
|         3 | 98.3.44.56      | 2023-12-06 13:00:00 | 10693.html  |   404 | 1644375096 |
|         4 | 13.125.3.123    | 2023-12-06 16:00:00 | 10929.html  |   404 |  226296699 |
|         5 | 136.67.193.179  | 2023-12-06 19:00:00 | 10920.html  |   404 | 2286141875 |
|         6 | 53.55.130.131   | 2023-12-06 20:00:00 | 10207.html  |   404 |  892830339 |
|         7 | 61.134.234.42   | 2023-12-06 18:00:00 | 10291.html  |   404 | 1032251946 |
|         8 | 62.10.186.114   | 2023-12-06 09:00:00 | 4651.html   |   501 | 1040890482 |
|         9 | 79.122.195.59   | 2023-12-06 19:00:00 | 6239.html   |   501 | 1333445435 |
|        10 | 183.102.86.217  | 2023-12-06 22:00:00 | 10448.html  |   404 | 3076937433 |
|        11 | 211.84.127.37   | 2023-12-06 21:00:00 | 10546.html  |   404 | 3545530149 |
|        12 | 193.65.218.137  | 2023-12-06 23:00:00 | 12345.html  |   404 | 3242318473 |
|        13 | 50.137.227.137  | 2023-12-06 11:00:00 | 1.html      |   501 |  847897481 |
|        14 | 193.65.218.137  | 2023-12-06 23:00:00 | 12345.html  |   404 | 3242318473 |
|        15 | 50.137.227.137  | 2023-12-06 11:00:00 | 1.html      |   501 |  847897481 |
+-----------+-----------------+---------------------+-------------+-------+------------+
15 rows in set (0.01 sec)
```

Stop Deployment

In the cloud shell, run:

gcloud deployment-manager deployments stop my-deployment

gcloud deployment-manager deployments delete my-deployment