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Course: DS 561

Homework 3

Setup

- Bucket, folder, and pagerank html files from homework 2
- Enable logging for Google Cloud
- Pip install
 - Google.cloud
 - Flask
 - Requests
 - google-cloud-pubsub
- cloud pubsub topics create banned-country-topic
- cloud pubsub subscriptions create banned-country-subscription
--topic=banned-country-topic
- gcloud functions deploy serve_file --runtime python310 --trigger-http
--allow-unauthenticated --entry-point serve_file

Requirements.txt

```
Flask==2.3.3
google-cloud-storage==2.18.2
google-cloud-logging==3.1.2
google-cloud-pubsub==1.7.0
requests==2.25.1
functions-framework==3.0.0
six==1.16.0
```

- All most recent versions for imports in main and tracker
- Functions framework and six used by gcloud

Main.py

```
from google.cloud import storage, logging as cloudLogging, pubsub_v1
from flask import abort, request
import json

cloudLoggingClient = cloudLogging.Client()
cloudLogger = cloudLoggingClient.logger("cloud-function-log")
publisher = pubsub_v1.PublisherClient()
topic_path = publisher.topic_path('ds561-bucs', 'banned-country-topic')

def fetchFileFromBucket(bucketPath):
    if '/' not in bucketPath:
```

```

        return None

    bucketName, filePath = bucketPath.split('/', 1)
    bucket = storage.Client().get_bucket(bucketName)
    blob = bucket.blob(filePath)
    if blob.exists():
        return blob.download_as_text()
    return None

def checkBannedCountry():
    country = request.headers.get('X-Country', 'unknown')
    if country in ['North Korea', 'Iran', 'Cuba', 'Myanmar', 'Iraq',
'Libya', 'Sudan', 'Zimbabwe', 'Syria']:
        message = json.dumps({'country': country})
        publisher.publish(topic_path, message.encode('utf-8'))
        return True
    return False

def serve_file(request):
    bucketPath = request.path.lstrip('/')
    if request.method != 'GET':
        cloudLogger.log_text('Unsupported HTTP method: ' + request.method
+ ' was used for ' + bucketPath, severity='ERROR')
        abort(501, description="Not Implemented")

    if checkBannedCountry():
        abort(400, description="Permission Denied. The request is coming
from a banned country.")

    fileContent = fetchFileFromBucket(bucketPath)
    if fileContent is None:
        cloudLogger.log_text('File ' + bucketPath + ' is missing',
severity='ERROR')
        abort(404, description="The file has not been found!")

    return (fileContent, 200)

def manageErrors(error):
    cloudLogger.log_text('Error occurred: ' + str(error),
severity='ERROR')
    return {'error': str(error)}, error.code

```

- Imports to use for app one (storage and logging), flask, and requests
- Create Google Cloud logging client to send log messages
- Fetch files from cloud based on splits for bucket path
- Check if it is a banned country and send a POST to the second app running locally using pub/sub
- Check cases for errors to abort, otherwise return the file content
- Register error handlers for 404, 501, and 400 HTTP error codes

Tracker.py

```
from google.cloud import pubsub_v1

project_id = 'ds561-bucs'
subscription_id = 'banned-country-subscription'

def callback(message):
    print('Received message from banned country: ' +
          message.data.decode('utf-8'))
    message.ack()

def listen_to_banned_country_messages():
    subscriber = pubsub_v1.SubscriberClient()
    subscription_path = subscriber.subscription_path(project_id,
subscription_id)
    print('Listening for messages on ' + subscription_path + '...\n')

    streaming_pull_future = subscriber.subscribe(subscription_path,
callback=callback)

    try:
        streaming_pull_future.result()
    except KeyboardInterrupt:
        streaming_pull_future.cancel()

if __name__ == '__main__':
    listen_to_banned_country_messages()
```

- Listen to pub-sub message channel for banned countries
- Print out the country and message to standard out

Console App functionality

Valid Request (200 OK)

```
jrbui@LAPTOP-AA0HIA57:/mnt/c/Users/jerem/dev/github/ds561/03-cloud-functions-and-pub
-sub-bui-jeremy$ curl https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/
jeremybui_ps2/files/1000.html
<!DOCTYPE html>
<html>
<body>
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor inci
didunt ut labore et dolore magna aliqua. Ut enim ad
minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commo
do consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse
cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proid
ent, sunt in culpa qui officia deserunt mollit anim id est laborum.
<p>
```

Not existing file (404 Not Found)

```
url https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/file
s/curlNotFound.html
<!doctype html>
<html lang=en>
<title>404 Not Found</title>
<h1>Not Found</h1>
<p>The file has not been found!</p>
```

```
127.0.0.1 - - [06/Oct/2024 23:05:34] "GET /jeremybui_ps2/files/404notfound.html HTTP/1.1" 404 -
```

! 2024-10-07 15:09:12.076 GET 400 284 B 3 ms curl 7.81.0 https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/curlNotFound.html

Non supported method (501):

```
eremy$ curl -X POST https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps
2/files/curlNotFound.html -H "X-Country: North Korea"
<!doctype html>
<html lang=en>
<title>501 Not Implemented</title>
<h1>Not Implemented</h1>
<p>Not Implemented</p>
```

```
127.0.0.1 - - [06/Oct/2024 23:12:28] "POST /jeremybui_ps2/files/1000.html HTTP/1.1" 501 -
```

✓ !! 2024-10-07 15:16:19.316 POST 501 244 B 116 ms curl 7.81.0 https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/curlNotFound.html

Request from banned country (400):

```
-sub-bui-jeremy$ curl https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/
jeremybui_ps2/files/curlNotFound.html -H "X-Country: North Korea"
<!doctype html>
<html lang=en>
<title>400 Bad Request</title>
<h1>Bad Request</h1>
<p>Permission Denied. The request is coming from a banned country.</p>
```

```
Request from banned country: North Korea
127.0.0.1 - - [06/Oct/2024 23:16:19] "POST /track HTTP/1.1" 200 -
```

```
Listening for messages on projects/ds561-bucs/subscriptions/banned-country-s
ubscription...
```

```
Received message from banned country: {"country": "North Korea"}
```

```
✓ !! 2024-10-07 15:16:19.316 POST 501 244 B 116 ms curl 7.81.0 https://us-central1-ds561-
bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/curlNotFound.html
```

Http-Client App Functionality

```
python3 http-client.py --domain us-central1-ds561-bucs.cloudfunctions.net --port 443
--num_requests 100 --bucket /serve_file/jeremybui_ps2 --webdir files --verbose --ssl
```

```
jibui@LAPTOP-AA0HIAS7:/mnt/c/Users/jerem/dev/github/ds561/03-cloud-functions-and-pub-
sub-bui-jeremy$ python3 http-client.py --domain us-central1-ds561-bucs.cloudfunctions
.net --port 443 --num_requests 100 --bucket /serve_file/jeremybui_ps2 --webdir files
--verbose --ssl
/mnt/c/Users/jerem/dev/github/ds561/03-cloud-functions-and-pub-sub-bui-jeremy/http-c
lient.py:64: DeprecationWarning: ssl.PROTOCOL_TLS is deprecated
  ssl_context = ssl.SSLContext(ssl.PROTOCOL_TLS)
Requesting /serve_file/jeremybui_ps2/files/52805.html from us-central1-ds561-bucs
cloudfunctions.net 443
404 Not Found
content-type: text/html; charset=utf-8
X-Cloud-Trace-Context: b4079910217f733890d2b5e7c85aba3a;o=1
Date: Mon, 07 Oct 2024 19:23:49 GMT
Server: Google Frontend
Content-Length: 115
Alt-Svc: h3=":443"; ma=2592000,h3-29=":443"; ma=2592000

b'<!doctype html>\n<html lang=en>\n<title>404 Not Found</title>\n<h1>Not Found</h1>\n
<p>The file has not been found!</p>\n'
Requesting /serve_file/jeremybui_ps2/files/94294.html from us-central1-ds561-bucs
cloudfunctions.net 443
404 Not Found
content-type: text/html; charset=utf-8
X-Cloud-Trace-Context: eefb3dc04466e307866ed040f86ef70d
```

```
Received message from banned country: {"country": "Zimbabwe"}
Received message from banned country: {"country": "Iraq"}
Received message from banned country: {"country": "Sudan"}
Received message from banned country: {"country": "Libya"}
Received message from banned country: {"country": "Sudan"}
```

127.0.0.1	-	-	[06/Oct/2024 23:20:47]	"GET	jeremybui_ps2/files/65474.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:20:48]	"GET	jeremybui_ps2/files/98120.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:20:51]	"GET	jeremybui_ps2/files/7529.html	HTTP/1.1"	200	-
127.0.0.1	-	-	[06/Oct/2024 23:20:53]	"GET	jeremybui_ps2/files/75919.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:20:53]	"GET	jeremybui_ps2/files/89012.html	HTTP/1.1"	400	-
127.0.0.1	-	-	[06/Oct/2024 23:20:55]	"GET	jeremybui_ps2/files/32666.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:20:56]	"GET	jeremybui_ps2/files/67386.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:20:57]	"GET	jeremybui_ps2/files/23058.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:20:59]	"GET	jeremybui_ps2/files/44428.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:21:00]	"GET	jeremybui_ps2/files/31651.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:21:01]	"GET	jeremybui_ps2/files/79763.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:21:03]	"GET	jeremybui_ps2/files/69283.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:21:04]	"GET	jeremybui_ps2/files/25201.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:21:05]	"GET	jeremybui_ps2/files/26671.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:21:07]	"GET	jeremybui_ps2/files/48142.html	HTTP/1.1"	404	-
127.0.0.1	-	-	[06/Oct/2024 23:21:08]	"GET	jeremybui_ps2/files/4936.html	HTTP/1.1"	200	-

>	!	2024-10-07 15:25:03.700	GET	404	245 B	736 ms	https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/26263.html
>	!	2024-10-07 15:25:04.533	GET	404	245 B	1.181 s	https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/49190.html
>	!	2024-10-07 15:25:05.804	GET	404	245 B	668 ms	https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/17811.html
>	!	2024-10-07 15:25:06.727	GET	404	245 B	725 ms	https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/24242.html
>	!	2024-10-07 15:25:07.615	GET	404	245 B	835 ms	https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/84143.html
>	!	2024-10-07 15:25:08.592	GET	404	245 B	704 ms	https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/46573.html
>	!	2024-10-07 15:25:09.431	GET	404	245 B	792 ms	https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/38863.html

Browser App Functionality

Valid Request (200):

←

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↺

https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/1000.html

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Non existent file (404):

←

→

↺

https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/browserNotFound.html

Not Found

The file has not been found!

```
> !! 2024-10-06 23:33:31.753 File jeremybui_ps2/files/browsernotfound.html is missing
> !! 2024-10-06 23:33:31.890 Error occurred: 404 Not Found: The file has not been found!
```

```
127.0.0.1 - - [06/Oct/2024 23:34:16] "GET /jeremybui_ps2/files/browsernotfound.html HTTP/1.1" 404 -
```

Not implemented (501):

GET https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/1000.html

POST

Query Headers Auth Body Fetch

Key	Value
Key	Value

Computed URL: https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/1000.html

Preview Body Headers Cookies

```
1 <!doctype html>
2 <html lang=en>
3 <title>501 Not Implemented</title>
4 <h1>Not Implemented</h1>
5 <p>Not Implemented</p>
6
```

```
127.0.0.1 - - [06/Oct/2024 23:37:49] "POST /jeremybui_ps2/files/1000.html HTTP/1.1" 501 -
```

Permission denied from banned country (400)

GET https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/1000.html

GET Send Save

Query Headers Auth Body Fetch

<input checked="" type="checkbox"/>	sec-fetch-user	?1	×
<input checked="" type="checkbox"/>	upgrade-insecure-requests	1	×
<input checked="" type="checkbox"/>	X-Country	North Korea	×

Computed URL: https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/1000.html

Preview Body Headers Cookies

```
1 <!doctype html>
2 <html lang=en>
3 <title>400 Bad Request</title>
4 <h1>Bad Request</h1>
5 <p>Permission Denied. The request is coming from a banned country.</p>
6
```

Received message from banned country: {"country": "North Korea"}

2024-10-07 15:31:48.724 GET 400 284 B 3 ms Edg 129.0.0.0 https://us-central1-ds561-bucs.cloudfunctions.net/serve_file/jeremybui_ps2/files/1000.html

Explain this log entry

Copy

Similar entries

Expand nested fields

Hide log summary