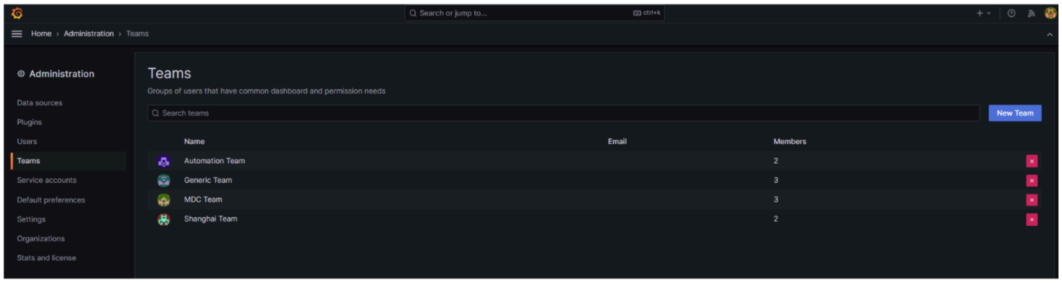
Tech Projects - Tom Liao

Grafana Dashboards

- Deployed and managed Grafana user authority (not able to show confidential chip performance data due to nondisclosure agreement)

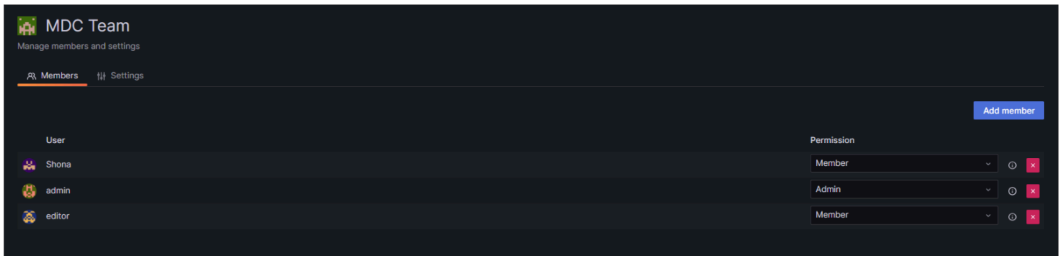
Teams in Grafana



Teams

Groups of users that have common dashboard and permission needs

Name	Email	Members
Automation Team		2
Generic Team		3
MDC Team		3
Shanghai Team		2



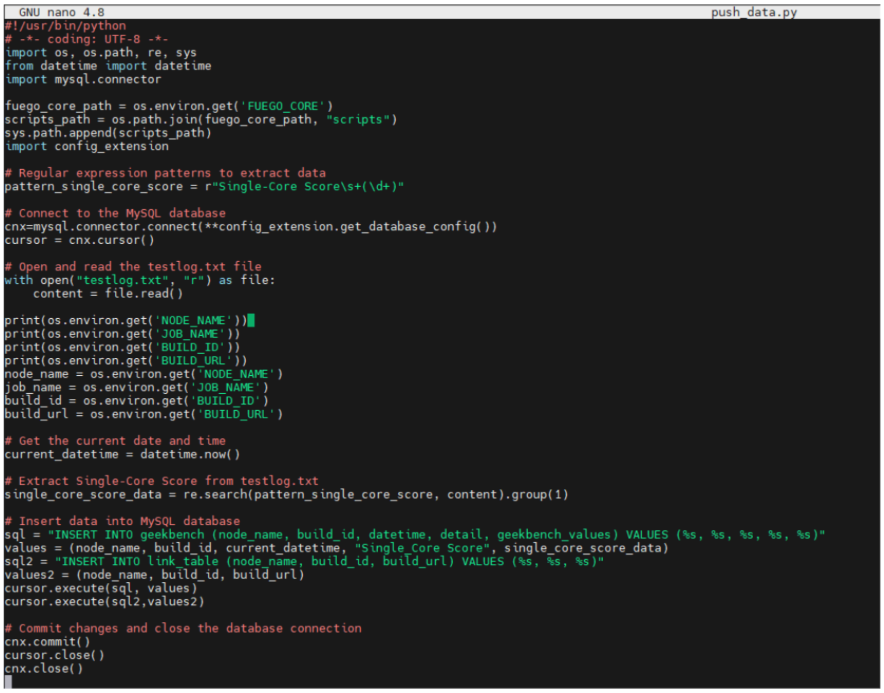
MDC Team

Manage members and settings

User	Permission
Shona	Member
admin	Admin
editor	Member

- Using custom python scripts, pushed benchmark test data to mysql database of the grafana dashboard from Starfive’s fuego testing framework in the Linux environment

push_data.py code

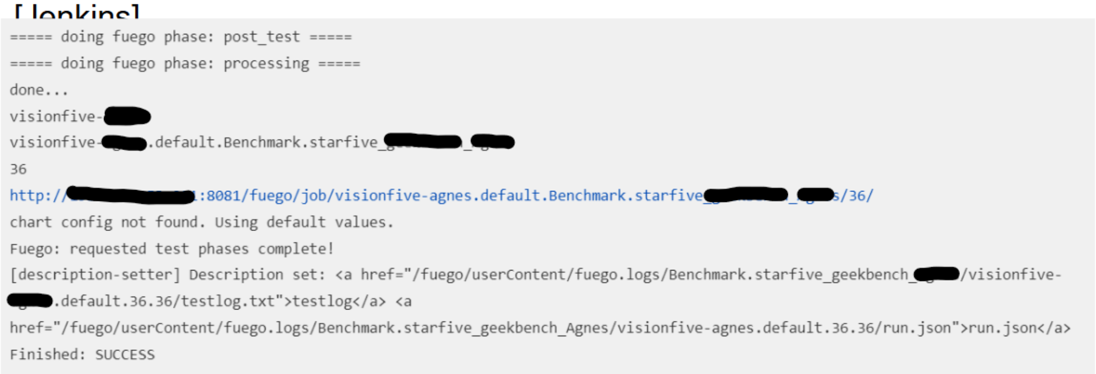


```
  GNU nano 4.8                                                    push_data.py
#!/usr/bin/python
# -*- coding: UTF-8 -*-
import os, os.path, re, sys
from datetime import datetime
import mysql.connector

fuego_core_path = os.environ.get('FUEGO_CORE')
scripts_path = os.path.join(fuego_core_path, "scripts")
sys.path.append(scripts_path)
import config_extension

# Regular expression patterns to extract data
pattern_single_core_score = r"Single-Core Score\s+(\d+)"

# Connect to the MySQL database
cnx=mysql.connector.connect(**config_extension.get_database_config())
cursor = cnx.cursor()

# Open and read the testlog.txt file
with open("testlog.txt", "r") as file:
    content = file.read()

print(os.environ.get('NODE_NAME'))
print(os.environ.get('JOB_NAME'))
print(os.environ.get('BUILD_ID'))
print(os.environ.get('BUILD_URL'))
node_name = os.environ.get('NODE_NAME')
job_name = os.environ.get('JOB_NAME')
build_id = os.environ.get('BUILD_ID')
build_url = os.environ.get('BUILD_URL')

# Get the current date and time
current_datetime = datetime.now()

# Extract Single-Core Score from testlog.txt
single_core_score_data = re.search(pattern_single_core_score, content).group(1)

# Insert data into MySQL database
sql = "INSERT INTO geekbench (node_name, build_id, datetime, detail, geekbench_values) VALUES (%s, %s, %s, %s, %s)"
values = (node_name, build_id, current_datetime, "Single_Core Score", single_core_score_data)
sql2 = "INSERT INTO link_table (node_name, build_id, build_url) VALUES (%s, %s, %s)"
values2 = (node_name, build_id, build_url)
cursor.execute(sql, values)
cursor.execute(sql2,values2)

# Commit changes and close the database connection
cnx.commit()
cursor.close()
cnx.close()
```

- **Fuego-LTP automation testing**

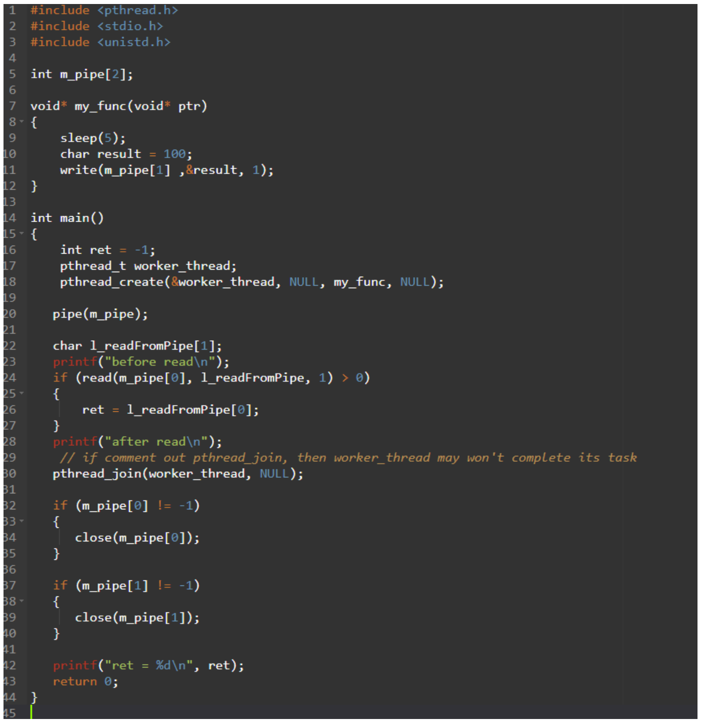
Output in Jenkins and MySQL database

visionfive-[redacted].default.Benchmark.starfive_geekbench_[redacted] #36 Console [Jenkins]



```
===== doing fuego phase: post_test =====
===== doing fuego phase: processing =====
done...
visionfive-[redacted]
visionfive-[redacted].default.Benchmark.starfive_[redacted]_[redacted]
36
http://[redacted]:8081/fuego/job/visionfive-agnes.default.Benchmark.starfive[redacted]_[redacted]s/36/
chart config not found. Using default values.
Fuego: requested test phases complete!
[description-setter] Description set: <a href="/fuego/userContent/fuego.logs/Benchmark.starfive_geekbench_[redacted]/visionfive-
[redacted].default.36.36/testlog.txt">testlog</a> <a
href="/fuego/userContent/fuego.logs/Benchmark.starfive_geekbench_Agnes/visionfive-agnes.default.36.36/run.json">run.json</a>
Finished: SUCCESS
```

Deployed Jenkins testing framework inside fuego under the linux environment. Jenkins enabled test prechecks and postchecks. Automated running benchmark tests such as geekbench, open source tests on Phoronix Test Suite(PTS) tests, and custom benchmark testing

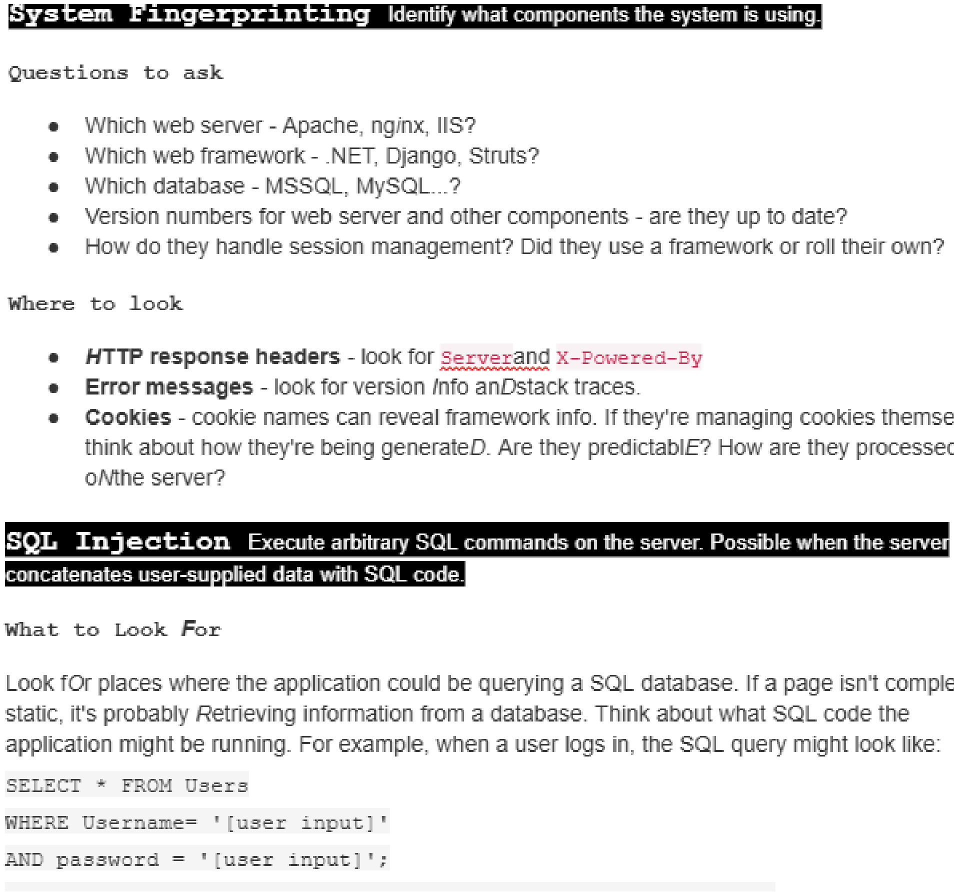


```c
#include <pthread.h>
#include <stdio.h>
#include <unistd.h>

int m_pipe[2];

void* my_func(void* ptr)
{
    sleep(5);
    char result = 100;
    write(m_pipe[1] ,&result, 1);
}

int main()
{
    int ret = -1;
    pthread_t worker_thread;
    pthread_create(&worker_thread, NULL, my_func, NULL);

   pipe(m_pipe);

   char l_readFromPipe[1];
   printf("before read\n");
   if (read(m_pipe[0], l_readFromPipe, 1) > 0)
   {
       ret = l_readFromPipe[0];
   }
   printf("after read\n");
    // if comment out pthread_join, then worker_thread may won't complete its task
   pthread_join(worker_thread, NULL);

   if (m_pipe[0] != -1)
   {
      close(m_pipe[0]);
   }

   if (m_pipe[1] != -1)
   {
      close(m_pipe[1]);
   }

   printf("ret = %d\n", ret);
   return 0;
}
```

Deployed multithreading c scripts to enable multiple hardware tests to be run simultaneously on FPGA machines for chip structural tests.

Boston Hackathon

- Worked on a team project to educate technical staff about potential risks of cyber attacks. Learned about pen testing and cookies.



System Fingerprinting Identify what components the system is using.

Questions to ask

- Which web server - Apache, nginx, IIS?
- Which web framework - .NET, Django, Struts?
- Which database - MSSQL, MySQL...?
- Version numbers for web server and other components - are they up to date?
- How do they handle session management? Did they use a framework or roll their own?

Where to look

- **HTTP response headers** - look for `Server`and `X-Powered-By`
- **Error messages** - look for version Info anDstack traces.
- **Cookies** - cookie names can reveal framework info. If they're managing cookies themselves, think about how they're being generateD. Are they predictablE? How are they processed oNthe server?

SQL Injection Execute arbitrary SQL commands on the server. Possible when the server concatenates user-supplied data with SQL code.

What to Look For

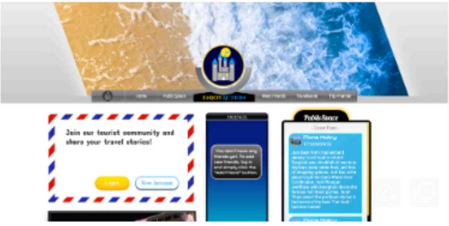
Look fOr places where the application could be querying a SQL database. If a page isn't completely static, it's probably Retrieving information from a database. Think about what SQL code the application might be running. For example, when a user logs in, the SQL query might look like:

```
SELECT * FROM Users
WHERE Username= '[user input]'
AND password = '[user input]';
```

Enjoyaction.com

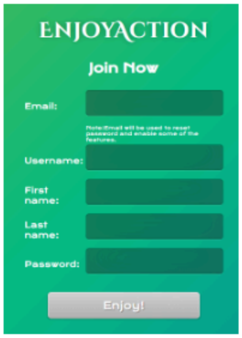
STEP 1

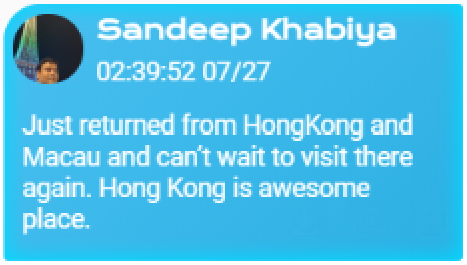
Go to www.EnjoyAction.com



STEP 2

Click the "New Account" button and fill out the signup form


ENJOYACTION
Join Now
Email:
Note: Email will be used to reset password and enable some of the features.
Username:
First name:
Last name:
Password:
Enjoy!

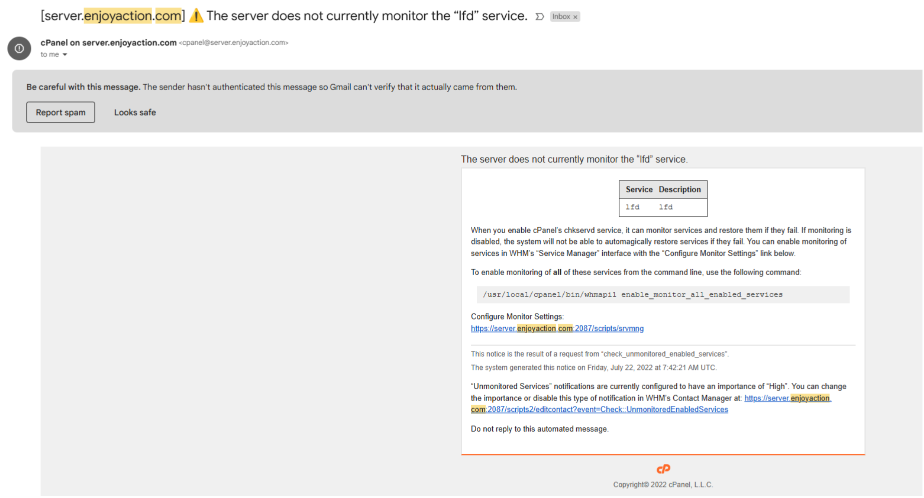


Sandeep Khabiya

02:39:52 07/27

Just returned from HongKong and Macau and can't wait to visit there again. Hong Kong is awesome place.

- Custom UI designs and user guidance
- Tourist social media website built using PHP, javascript, html, css, mySQL



[server.enjoyaction.com] ⚠️ The server does not currently monitor the "lfd" service.

cPanel on server.enjoyaction.com <cpanel@server.enjoyaction.com>

to me

Be careful with this message. The sender hasn't authenticated this message so Gmail can't verify that it actually came from them.

The server does not currently monitor the "lfd" service.

Service	Description
lfd	lfd

When you enable cPanel's chkservd service, it can monitor services and restore them if they fail. If monitoring is disabled, the system will not be able to automagically restore services if they fail. You can enable monitoring of services in WHM's "Service Manager" interface with the "Configure Monitor Settings" link below.

To enable monitoring of **all** of these services from the command line, use the following command:

```
/usr/local/cpanel/bin/whmapi1 enable_monitor_all_enabled_services
```

Configure Monitor Settings:
https://server.enjoyaction.com:2087/scripts/srvmng

This notice is the result of a request from "check_unmonitored_enabled_services".

The system generated this notice on Friday, July 22, 2022 at 7:42:21 AM UTC.

"Unmonitored Services" notifications are currently configured to have an importance of "High". You can change the importance or disable this type of notification in WHM's Contact Manager at: https://server.enjoyaction.com:2087/scripts2/editcontact?event=Check::UnmonitoredEnabledServices

Do not reply to this automated message.

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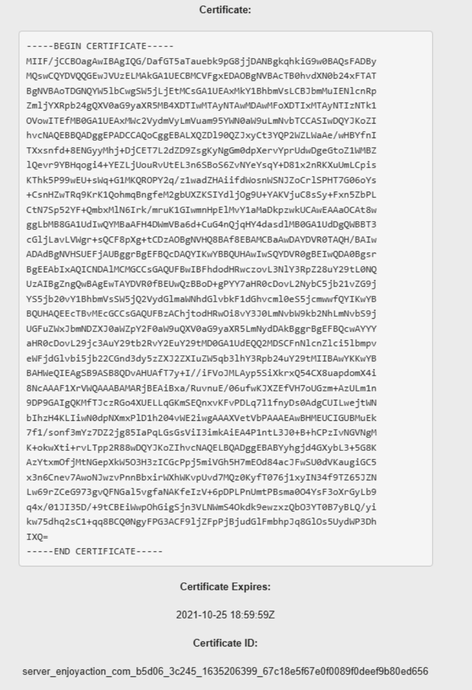
- Managed shared hosting server on Bluehost, then successfully transferred the website and its user data to a dedicated server with Hivelocity Hosting.



Certificate:

```
-----BEGIN CERTIFICATE-----
MIIF/jCCBOagAwIBAgIQG/DafGT5aTauebk9pG8jjDANBgkqhkiG9w0BAQsFADBy
MQswCQYDVQQGEwJVUzELMAkGA1UECBMCVFgxEDAOBgNVBAcTB0hvdXN0b24xFTAT
BgNVBAoTDGNQYW5lbCwgSW5jLjEtMCsGA1UEAxMkY1BhbmVsLCBJbmMuIENlcnRp
ZmljYXRpb24gQXV0aG9yaXR5MB4XDTIwMTAyNTAwMDAwMFoXDTIxMTAyNTIzNTk1
OVowITEfMB0GA1UEAxMWc2VydmVyLmVuam95YWN0aW9uLmNvbTCCASIwDQYJKoZI
hvcNAQEBBQADggEPADCCAQoCggEBALXQZDl90QZJxyCt3YQP2WZLWaAe/wHBYfnI
TXxsnfd+8ENGyyMhj+DjCET7L2dZD9ZsgKyNgGm0dpXervYprUdwDgeGtoZ1WMBZ
lQevr9YBHqogi4+YEZLjUouRvUtEL3n6SBoS6ZvNYeYsqY+D81x2nRKXuUmLCpis
KThk5P99wEU+sWq+G1MKQROPY2q/z1wadZHAiifdWosnWSNJZoCrlSPHT7G06oYs
+CsnHZwTRq9KrK1QohmqBngfeM2gbUXZKSIYdljOg9U+YAKVjuC8sSy+Fxn5ZbPL
CtN7Sp52YF+QmbxMlN6Irk/mruK1GIwmnHpElMvY1aMaDkpzwkUCAwEAAaOCAt8w
ggLbMB8GA1UdIwQYMBaAFH4DWmVBa6d+CuG4nQjqHY4dasdlMB0GA1UdDgQWBBT3
cGljLavLVWgr+sQCF8pXg+tCDzAOBgNVHQ8BAf8EBAMCBaAwDAYDVR0TAQH/BAIw
ADAdBgNVHSUEFjAUBggrBgEFBQcDAQYIKwYBBQUHAwIwSQYDVR0gBEIwQDA0Bgsr
BgEEAbIxAQICNDAlMCMGCCsGAQUFBwIBFhdodHRwczovL3NlY3RpZ28uY29tL0NQ
UzAIBgZngQwBAgEwTAYDVR0fBEUwQzBBoD+gPYY7aHR0cDovL2NybC5jb21vZG9j
YS5jb20vY1BhbmVsSW5jQ2VydGlmaWNhdGlvbkF1dGhvcml0eS5jcmwwfQYIKwYB
BQUHAQEEcTBvMEcGCCsGAQUFBzAChjtodHRwOi8vY3J0LmNvbW9kb2NhLmNvbS9j
UGFuZWxJbmNDZXJ0aWZpY2F0aW9uQXV0aG9yaXR5LmNydDAkBggrBgEFBQcwAYYY
aHR0cDovL29jc3AuY29tb2RvY2EuY29tMD0GA1UdEQQ2MDSCFnNlcnZlci5lbmpv
eWFjdGlvbi5jb22CGnd3dy5zZXJ2ZXIuZW5qb3lhY3Rpb24uY29tMIIBAwYKKwYB
BAHWeQIEAgSB9ASB8QDvAHUAfT7y+I//iFVoJMLAyp5SiXkrxQ54CX8uapdomX4i
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bIhzH4KLIiwN0dpNXmxPlD1h204vWE2iwgAAAXVetVbPAAAEAwBHMEUCIGUBMuEk
7f1/sonf3mYz7DZ2jg85IaPqLGsGsViI3imkAiEA4P1ntL3J0+B+hCPzIvNGVNgM
K+okwXti+rvLTpp2R88wDQYJKoZIhvcNAQELBQADggEBABYyhgjd4GXybL3+5G8K
AzYtxmOfjMtNGepXkW5O3H3zICGcPpj5miVGh5H7mEOd84acJFwSU0dVKaugiGC5
x3n6Cnev7AwoNJwzvPnnBbxirWXhWKvpUvd7MQz0KyfT076j1xyIN34f9TZ65JZN
Lw69rZCeG973gvQFNGal5vgfaNAKfeIzV+6pDPLPnUmtPBsma0O4YsF3oXrGyLb9
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kw75dhq2sC1+qq8BCQ0NgyFPG3ACF9ljZFpPjBjudGlFmbhpJq8GlOs5UydWP3Dh
IXQ=
-----END CERTIFICATE-----
```

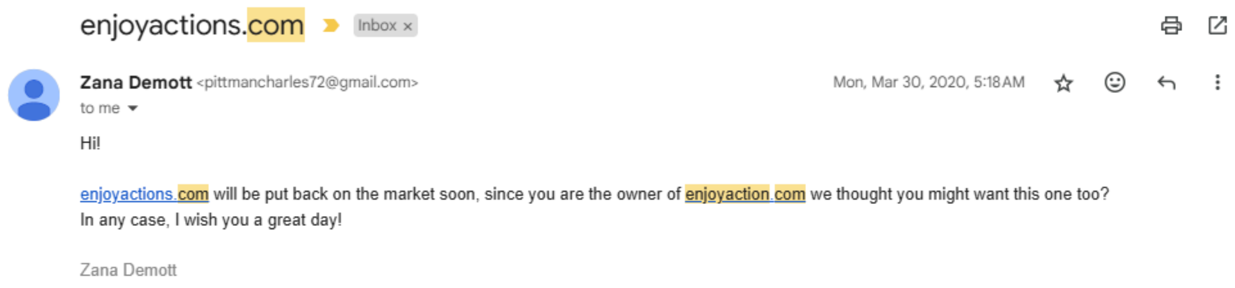
Certificate Expires:

2021-10-25 18:59:59Z

Certificate ID:

server_enjoyaction_com_b5d06_3c245_1635206399_67c18e5f67e0f0089f0deef9b80ed656

- Practiced SEO html tags and CSS frameworks, registered SSL, enabled Google analytics and compared user data to that of CPanel



enjoyactions.com

Zana Demott <pittmancharles72@gmail.com>

to me

Mon, Mar 30, 2020, 5:18 AM

Hi!

enjoyactions.com will be put back on the market soon, since you are the owner of enjoyaction.com we thought you might want this one too?
In any case, I wish you a great day!

Zana Demott

An example of user feedback.

Mini project examples:

- pong game

One of the class assignments. Later improved the pong game by learning more js on CodePen. Enabled sounds, collision detection, paddler control with mouse and click events. Game is resizable with the CSS layout.

- whack-a-mole

Developed using javascript, CSS. Built using event listeners, oop, and applied sounds and CSS animations when the object was activated.

- Christmas quiz

Used as a data structure exercise. User inputs are inserted into or removed from arraylists and compared to the stored data in the answer arraylist after the loop has been completed.

- Weather API

python local program exercise using real time data from weather.com and compare weather data among user inputs. Predict weather based on randomness.