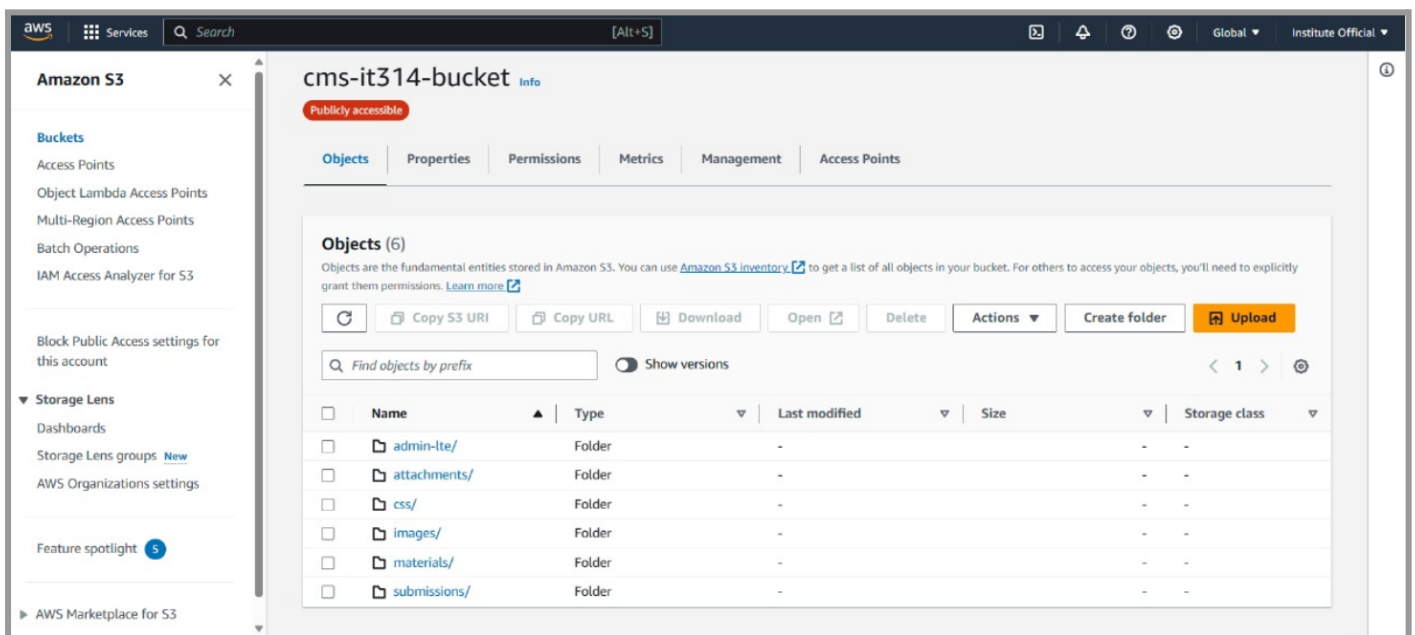


Non-Functional Testing

1. Data Availability

To fulfil this, we have integrated our files storage system with cloud using Amazon web service (AWS). This ensures data availability. Data, including course materials, assignments, and project files, will be stored in a reliable and redundant cloud infrastructure, minimising the risk of downtime or data loss. We are storing all the assignment , material and submission of the student on our aws cloud rather than local file storage.

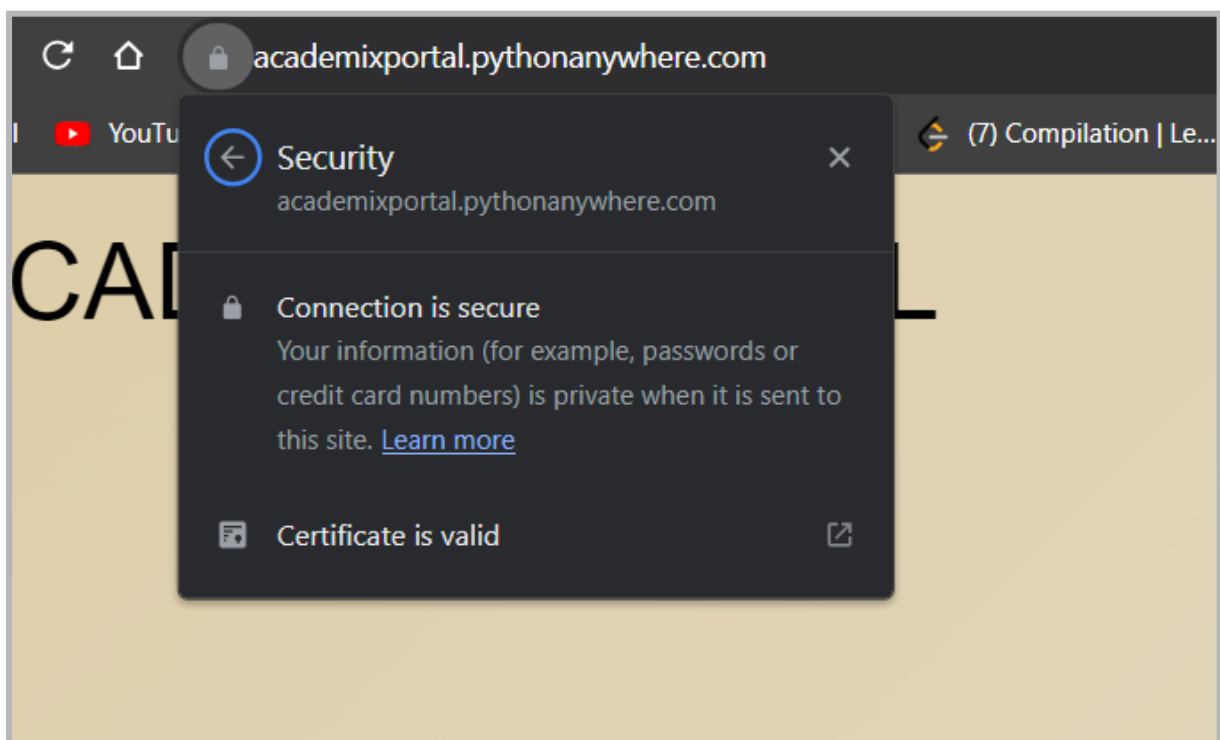
Aws portal:



2. Security

For the security purpose we have used https protocol which ensures:

1. Data Encryption: When you access a website using HTTPS, the data exchanged between your web browser and the website's server is encrypted.
2. Data integrity: HTTPS ensures that the data transmitted between the user and the server remains intact and unaltered during the transfer.
3. Protection Against Man-in-the-Middle Attacks: HTTPS protects against Man-in-the-Middle (MitM) attacks, where an attacker intercepts and potentially alters the communication between the user and the server.



Security:

An HTTPS certificate is needed so that people can access your site securely. We automatically provide a certificate for `academixportal.pythonanywhere.com`.

HTTPS certificate: Automatically provided for this hostname

You need to **Reload your web app** to activate any changes made below.

Forcing HTTPS means that anyone who goes to your site using the insecure `http` URL will immediately be redirected to the secure `https` one. [More information here](#).

Force HTTPS:

Enabled

3. CSRF

We have used CSRF(cross-site request forgery) token in our middleware which adds protects against csrf(a security vulnerability that occurs when a malicious website, email, or other means tricks a user's browser into making an unintended request to a different site where the user is authenticated) attacks.

Csrf middleware:

```
MIDDLEWARE = [  
    'django.middleware.security.SecurityMiddleware',  
    'django.contrib.sessions.middleware.SessionMiddleware',  
    'django.middleware.common.CommonMiddleware',  
    'django.middleware.csrf.CsrfViewMiddleware',  
    'django.contrib.auth.middleware.AuthenticationMiddleware',  
    'django.contrib.messages.middleware.MessageMiddleware',  
    'django.middleware.clickjacking.XFrameOptionsMiddleware',  
]
```

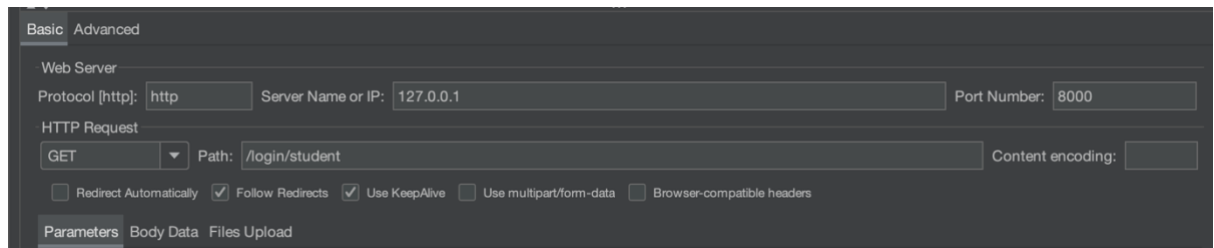
Csrf tokens in the forms:

```
<form action="/mycourse/{{course.course_code}}/feedback" method="post" style="border-radius: 10px; padding: 10px">
  {% csrf_token %}
  <div class="container-fluid text-center">
    <div class="form-group">
      <label for="feedback"><b>Write Your Query : </b></label><br>
      <textarea required class="wh" name="qry"></textarea>
      {% csrf_token %}
    </div>
    <button type="submit" class="button-3">Submit</button>
  </div>
</form>
```

4. LOAD TEST OF ACADEMIX-PORTAL

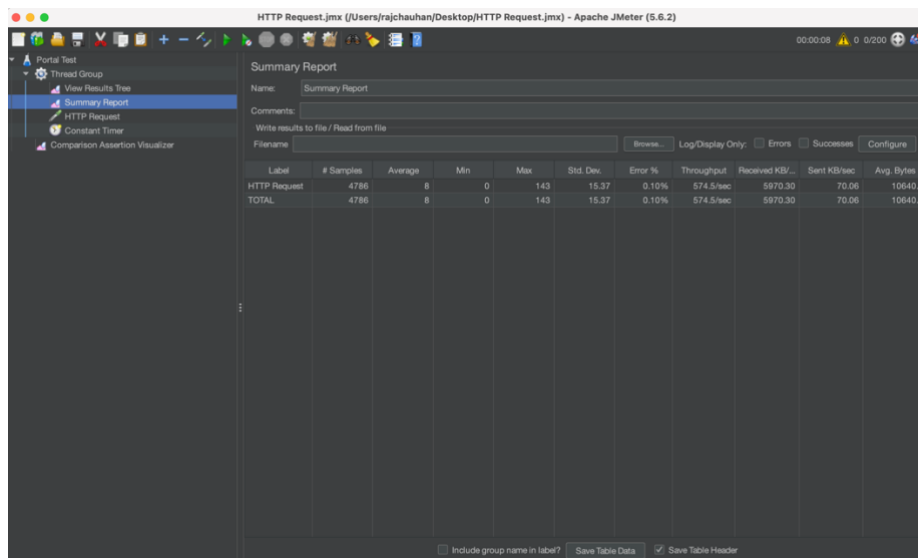
Tools Used : Apache Jmeter v5.6.2 with Development server running locally on Pycharm Professional ARM64 Build #PY-232.9559.58, built on August 22, 2023

1. Student Login Page (/login/student)



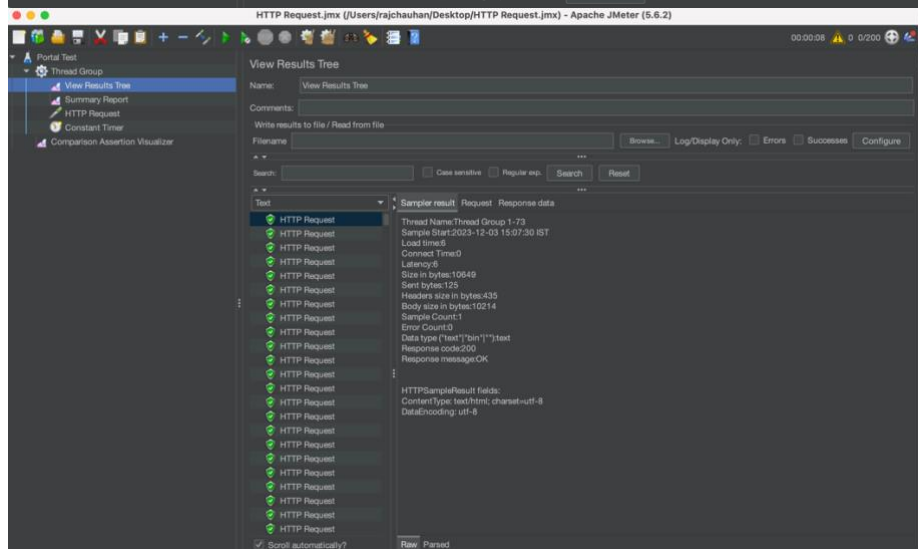
The screenshot shows the 'Basic' tab of the 'HTTP Request' configuration in Apache JMeter. The 'Web Server' section is set to 'http' protocol, '127.0.0.1' server name, and '8000' port. The 'HTTP Request' section is set to 'GET' method and '/login/student' path. The 'Content encoding' is empty. The 'Follow Redirects' and 'Use KeepAlive' checkboxes are checked. The 'Parameters' tab is also visible at the bottom.

No of users : 200 with Ramp-up period : 2 seconds ,loop count : 1



The screenshot shows the 'Summary Report' in Apache JMeter. The report is titled 'Summary Report' and shows the following data:

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/s	Sent KB/s	Avg. Bytes
HTTP Request	4786	8	0	143	15.37	0.10%	574.5/sec	5970.30	70.06	10640.7
TOTAL	4786	8	0	143	15.37	0.10%	574.5/sec	5970.30	70.06	10640.7



The screenshot shows the 'View Results Tree' in Apache JMeter. The tree is titled 'View Results Tree' and shows the following data:

Test	Sampler result	Request	Response data
HTTP Request	Thread Name: Thread Group 1-73 Sample Start: 2023-12-03 15:07:30 IST Load time: 5 Connect Time: 0 Latency: 8 Size in bytes: 10649 Sent bytes: 125 Header size in bytes: 435 Body size in bytes: 10214 Sample Count: 1 Error Count: 0 Data type: 'text/html'		Response code: 200 Response message: OK

3. Student Profile (/student_profile)

