

COMPUTER NETWORKS LAB – WEEK 3

Name: TUSHAR Y S

SRN: PES1UG19CS545

1. Password Authentication:

1.1. Setting the username and password:

- The apache utilities are installed using the following command:

```
sudo apt-get install apache2 apache2-utils
```

```
tushar@tushar:~$ sudo apt-get install apache2 apache2-utils
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.1).
apache2-utils is already the newest version (2.4.41-4ubuntu3.1).
apache2-utils set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 343 not upgraded.
tushar@tushar:~$
```

- We can set a password for a given user and write it into .htpasswd file after running the following command:

```
sudo htpasswd -c/etc/apache2/.htpasswd tushar
```

Here username is 'tushar'

```
tushar@tushar:~$ sudo htpasswd -c /etc/apache2/.htpasswd tushar
New password:
Re-type new password:
Adding password for user tushar
tushar@tushar:~$
```

- To view the authentication , following command is used:

```
sudo cat /etc/apache2/.htpasswd
```

```
tushar@tushar:~$ sudo cat /etc/apache2/.htpasswd
tushar:$apr1$HFr9Ea21$e39WJyvBma0CYcAD/8ihL0
tushar@tushar:~$
```

1.2. Setting up the Authentication phase:

- The file is opened for authentication by using the command:

```
sudo nano /etc/apache2/sites-available/000-default.conf
```

The file is modified by writing the following:

```
<Directory "/var/www/html">
AuthType Basic
AuthName "RESTRICTED"
AuthUserFile /etc/apache2/.htpasswd
Require valid-user
</Directory>
```

```
ErrorLog ${APACHE_LOG_DIR}/error.log
CustomLog ${APACHE_LOG_DIR}/access.log combined

# For most configuration files from conf-available/, which are
# enabled or disabled at a global level, it is possible to
# include a line for only one particular virtual host. For example the
# following line enables the CGI configuration for this host only
# after it has been globally disabled with "a2disconf".
#Include conf-available/serve-cgi-bin.conf
<Directory "/var/www/html">
    AuthType Basic
    AuthName "RESTRICTED"
    AuthUserFile /etc/apache2/.htpasswd
    Require valid-user
</Directory>
</VirtualHost>

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
```

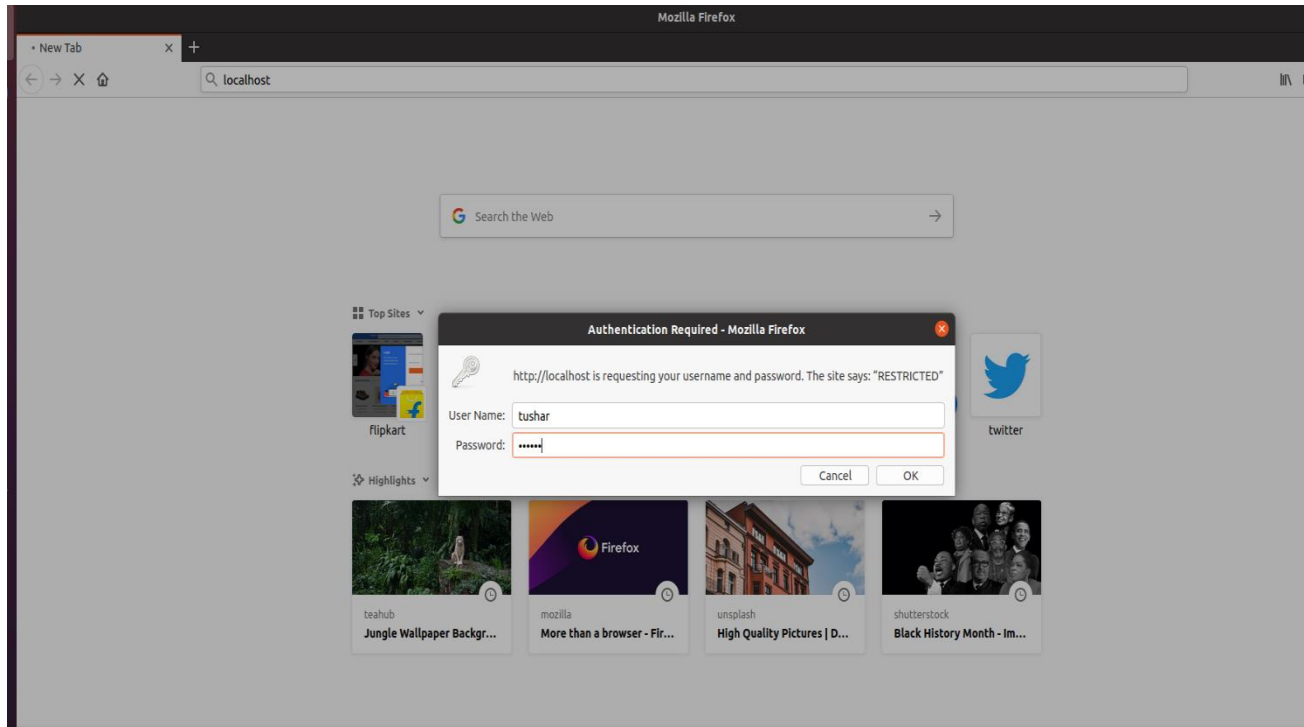
- Password policy implementation is done by restarting the apache server by using the command:

```
sudo service apache2 restart
```

```
tushar@tushar:~$ sudo service apache2 restart
tushar@tushar:~$
```

1.3. Accessing the localhost:

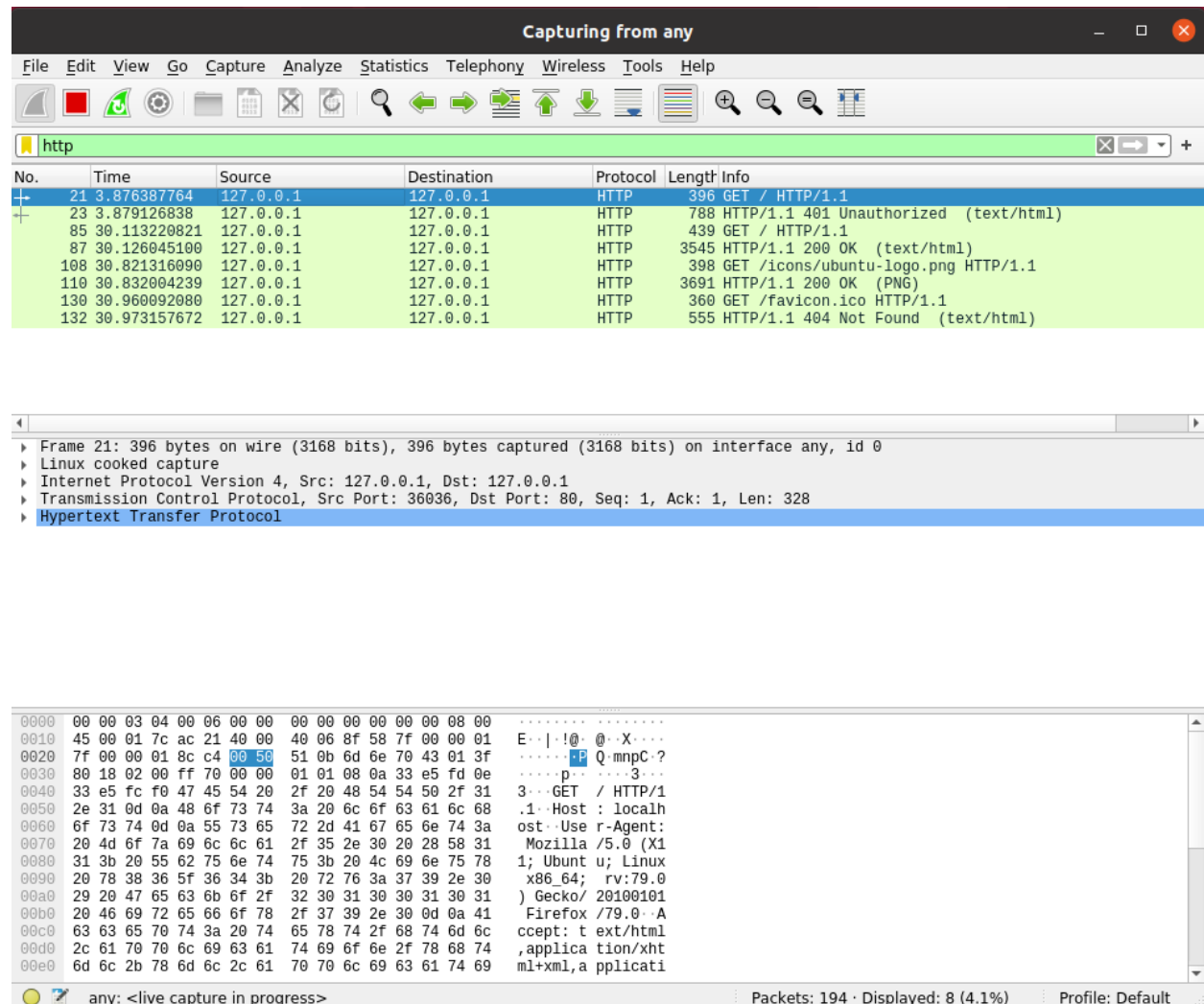
- The local host is accessed using the browser by entering the username and password.



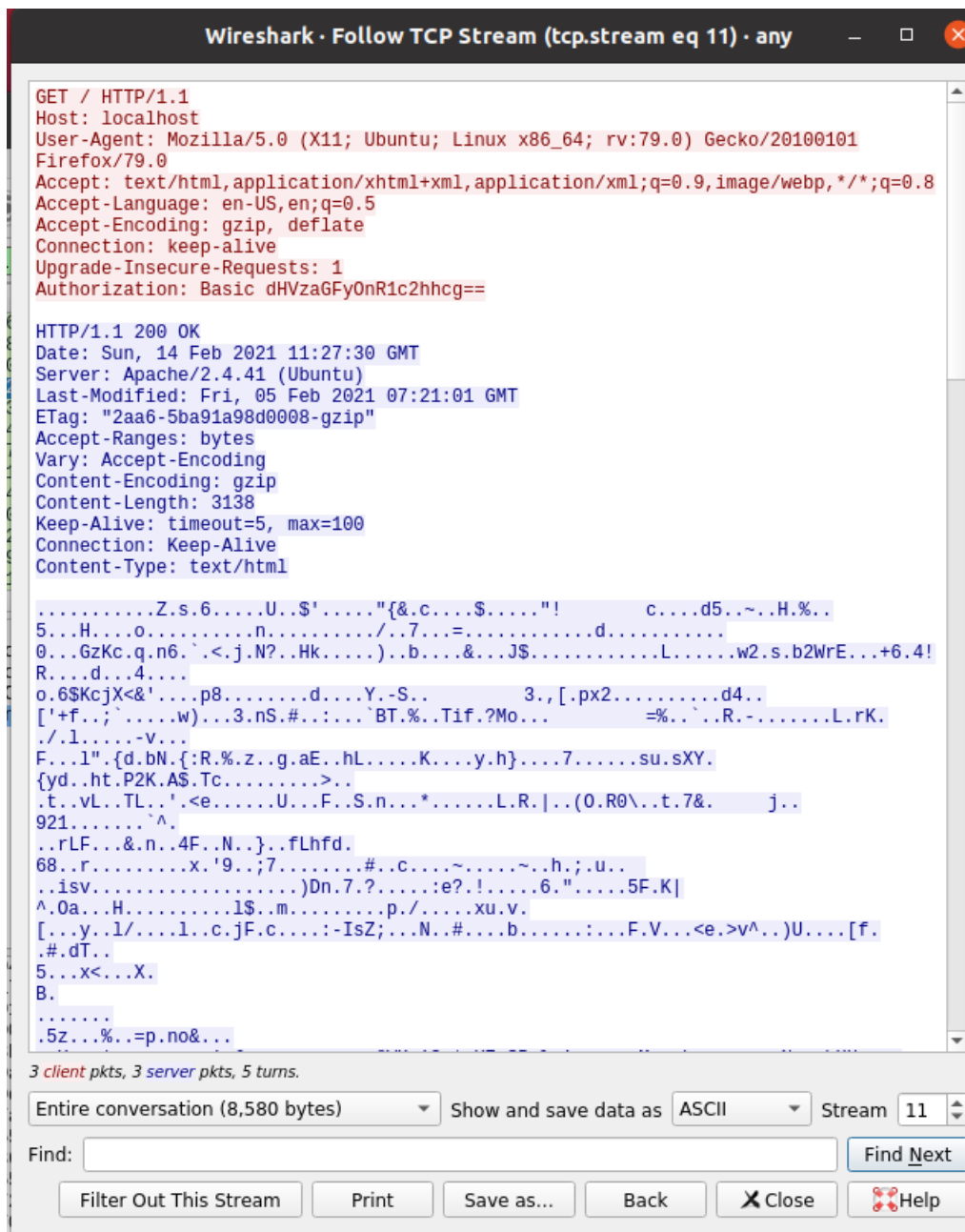
1.4. Packets capture using Wireshark

- Wireshark is used to capture the packets sent upon the network.

Wireshark packet capture:



- Using the 'follow TCP stream' on HTTP message segment the password is retrieved which is being encrypted by the base64 algorithm.



As we can observe above, the encrypted content is :

“dHVzaGFyOnR1c2hhcg”

1.5. Decrypting the encryption (base64 algorithm):

Encrypted Character	Index	Binary Equivalent
d	29	011101
H	7	000111
V	21	010101
z	51	110011
a	26	011010
G	6	000110
F	5	000101
y	50	110010
O	14	001110
n	39	100111
R	17	010001
1	53	110101
c	28	011100
2	54	110110
h	33	100001
h	33	100001
c	28	011100
g	32	100000

Combined 8 bit word	ASCII Value	Decrypted Character
01110100	116	t
01110101	117	u
01110011	115	s
01101000	104	h
01100001	97	a
01110010	114	r
00111010	58	:
01110100	116	t
01110101	117	u
01110011	115	s
01101000	104	h
01100001	97	a
01110010	114	r

Therefore, the decrypted content is:

tushar:tushar

The word before the semi colon is the username.

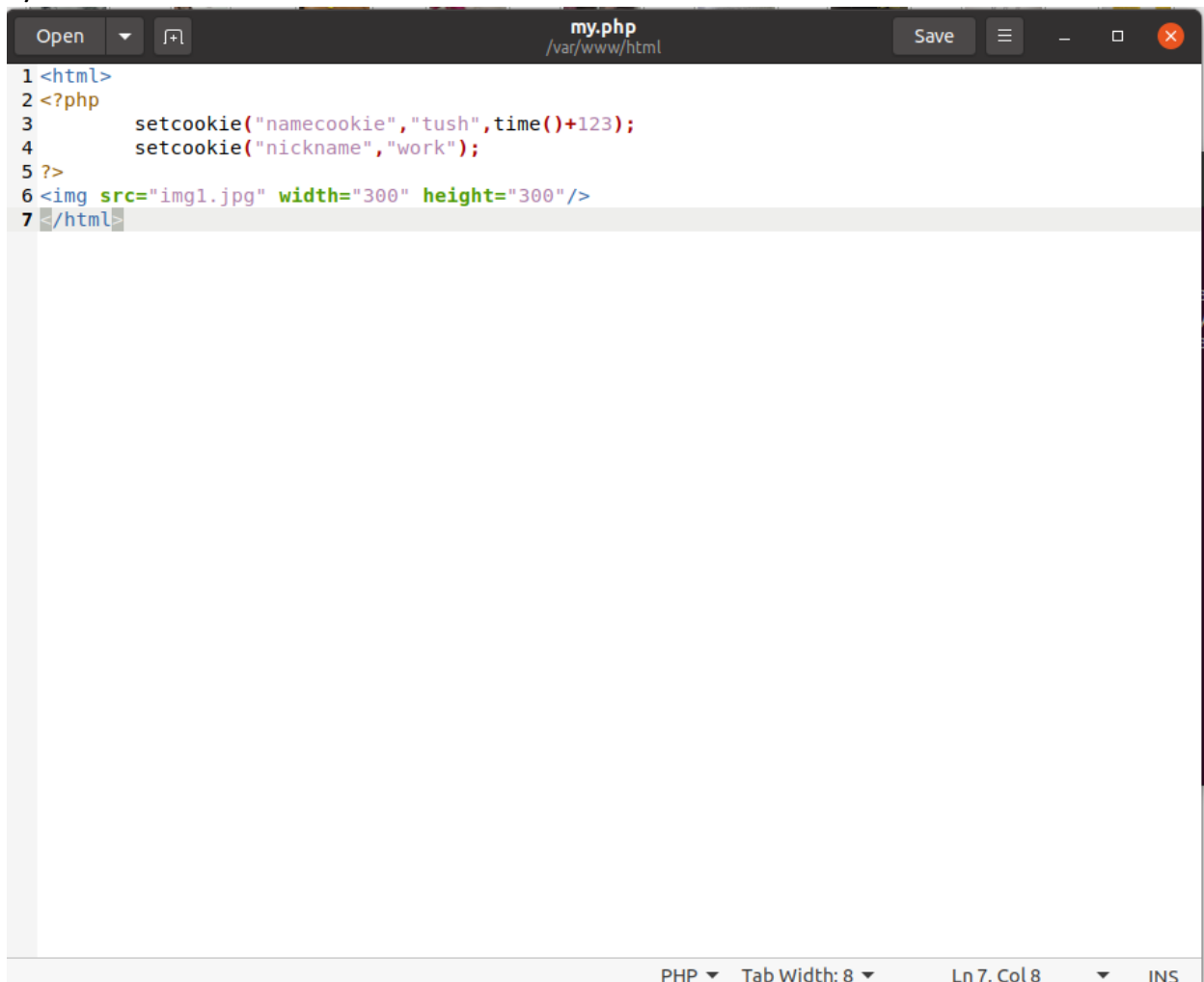
The word after the semi colon is the password corresponding to that username.

2. Cookie Setting:

2.1. Cookie setting using PHP:

- A PHP file is created to set the cookie using the following code:

```
<html>
<?php
    setcookie("namecookie","tush",time()+123);
    setcookie("nickname","work");
?>
<img src= "img1.jpg" width= "300" height= "300" />
</html>
```

A screenshot of a code editor window titled 'my.php' with the file path '/var/www/html'. The editor contains the following code:

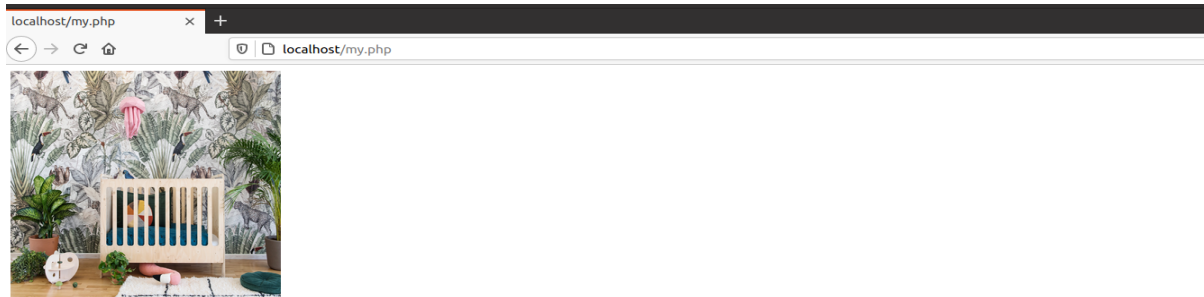
```
1 <html>
2 <?php
3     setcookie("namecookie","tush",time()+123);
4     setcookie("nickname","work");
5 ?>
6 
7 </html>
```

The code is syntax-highlighted. The editor has a dark theme and includes standard window controls (Open, Save, etc.) and a status bar at the bottom showing 'PHP', 'Tab Width: 8', 'Ln 7, Col 8', and 'INS'.

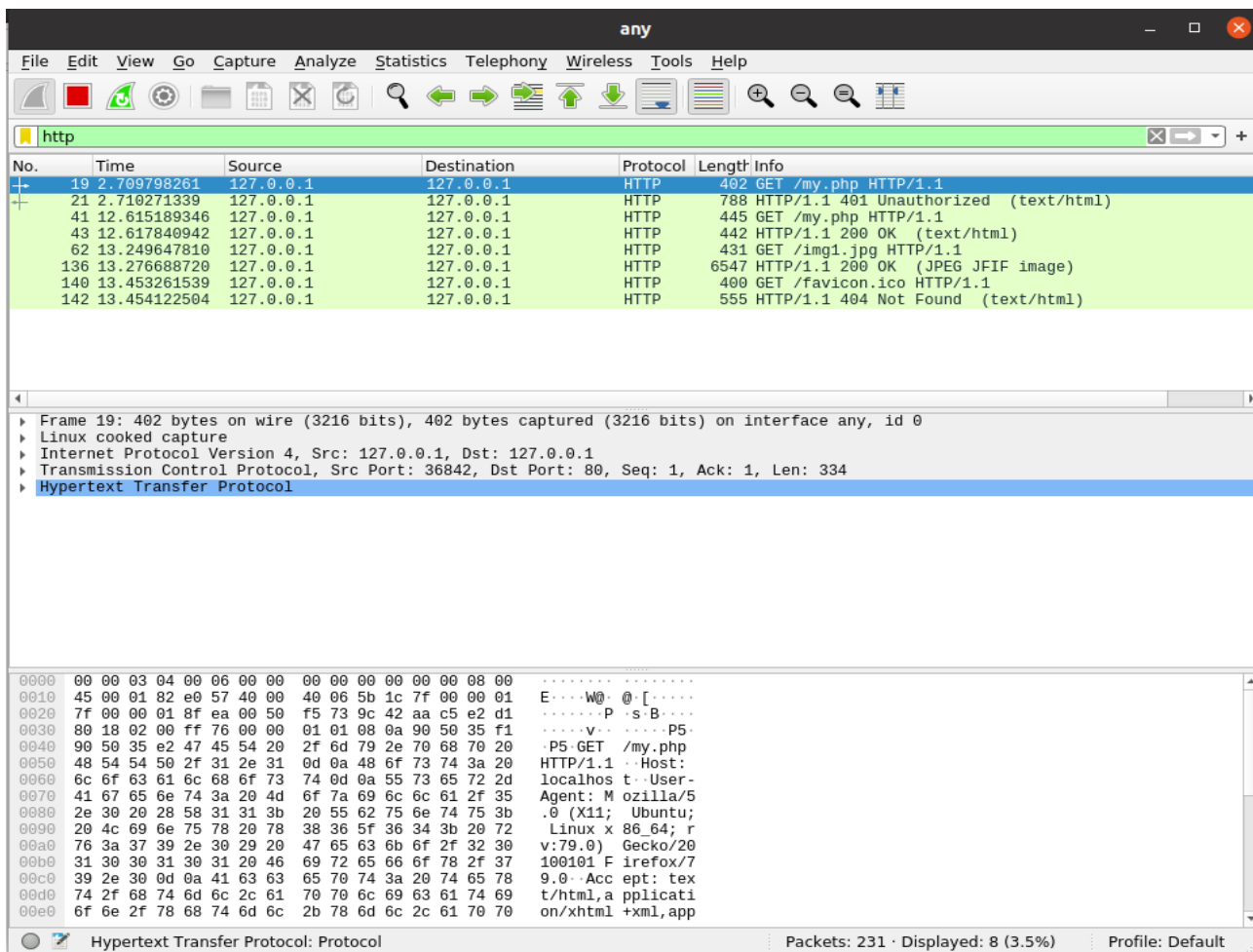
This 'my.php' is placed under /var/www/html.

2.2. Wireshark Packet Capture:

- The php file is accessed using the browser.



- At the same time, packets are captured using wireshark.



- The packet of GET request for the php file is analyzed and its follow TCP stream is shown below:



From the above screenshot, it can be seen that the cookie has been set.

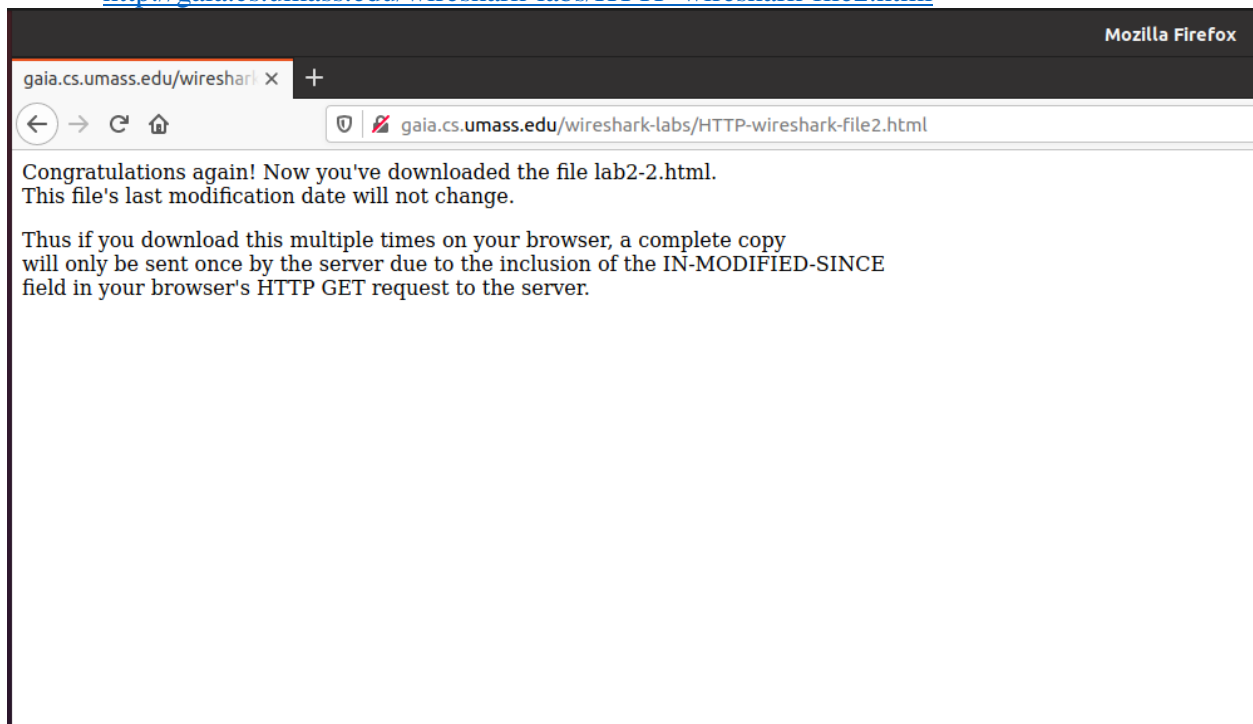
The cookie name, value and the expiry time of the cookie are some of the parameters associated with the cookie which can be observed above.

3. Conditional Get: If-Modified-Since

3.1. Conditional Get for plain HTML:

- The browser cache and browser history is cleared.
- Wireshark is launched.
- The following URL is entered in the browser:

<http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html>



Next, the website is refreshed.

- Wireshark packet capture:

The image shows a Wireshark packet capture window titled '*any'. The main pane displays a list of captured packets. The first packet (No. 26) is an HTTP GET request from 10.0.2.15 to 128.119.245.12 for the resource '/wireshark-labs/HTTP-wireshark-file2.html'. The response (No. 28) is an HTTP 200 OK status. Subsequent packets show a GET request for a favicon (No. 51), a 404 Not Found response (No. 66), and a 304 Not Modified response (No. 144).

No.	Time	Source	Destination	Protocol	Length	Info
26	9.321174792	10.0.2.15	128.119.245.12	HTTP	432	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
28	10.139786650	128.119.245.12	10.0.2.15	HTTP	786	HTTP/1.1 200 OK (text/html)
51	10.953153766	10.0.2.15	128.119.245.12	HTTP	313	GET /favicon.ico HTTP/1.1
66	11.252657269	128.119.245.12	10.0.2.15	HTTP	541	HTTP/1.1 404 Not Found (text/html)
116	28.775581758	10.0.2.15	34.122.121.32	HTTP	143	GET / HTTP/1.1
118	29.184893031	34.122.121.32	10.0.2.15	HTTP	204	HTTP/1.1 204 No Content
140	36.077310544	10.0.2.15	128.119.245.12	HTTP	544	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
144	36.455669366	128.119.245.12	10.0.2.15	HTTP	296	HTTP/1.1 304 Not Modified

The packet details pane for the selected packet (No. 26) shows the following structure:

- Frame 26: 432 bytes on wire (3456 bits), 432 bytes captured (3456 bits) on interface any, id 0
- Linux cooked capture
- Internet Protocol Version 4, Src: 10.0.2.15, Dst: 128.119.245.12
- Transmission Control Protocol, Src Port: 42106, Dst Port: 80, Seq: 1, Ack: 1, Len: 376
- Hypertext Transfer Protocol

The packet bytes pane shows the raw data in hexadecimal and ASCII. The ASCII portion of the packet body is:

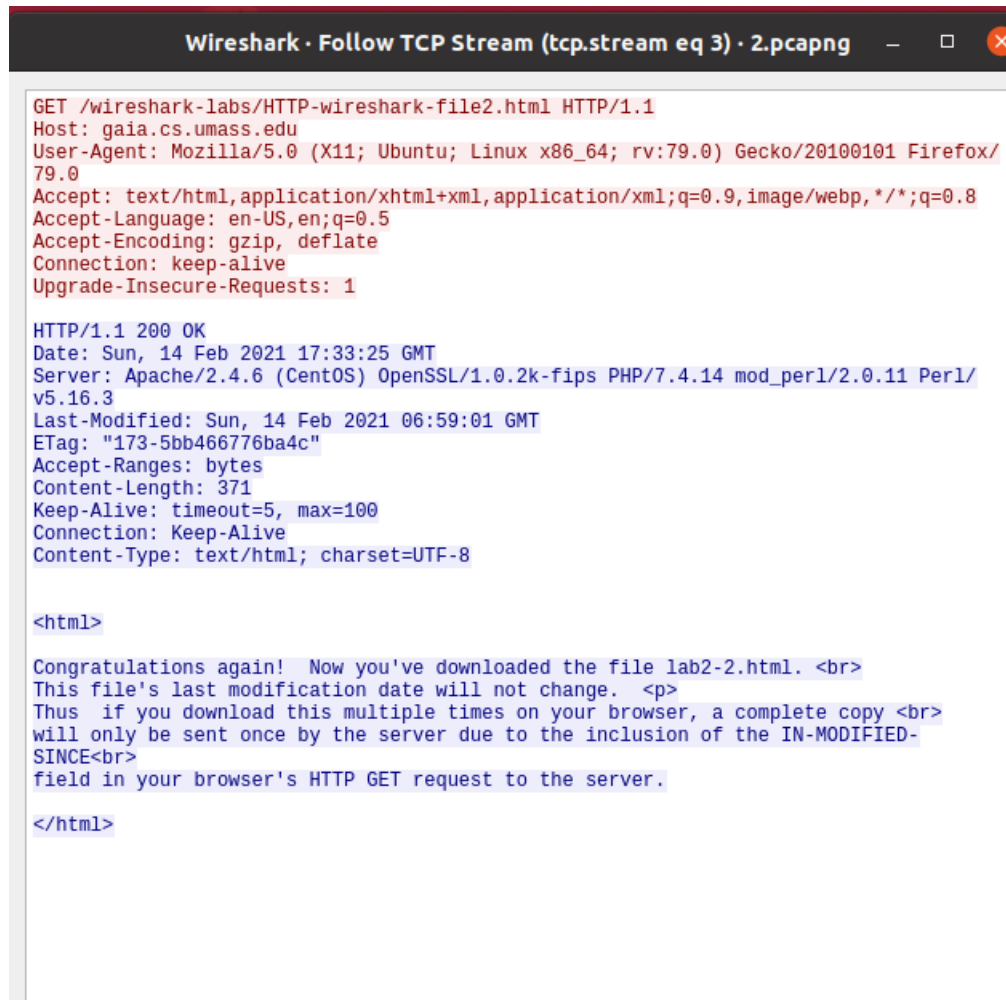
```

GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
Host: gaia.cs.umass.edu
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101 Firefox/79.0
Accept: text/
  
```

As can be observed above, the response for the first GET request is having a 200 OK response status. The response from the server for the second request is obtained as '304 Not Modified'. This is because we just refreshed the page and while doing so there wasn't any change in the content of the resource(it wasn't modified).

- Follow TCP Stream:

First GET request:



```
Wireshark · Follow TCP Stream (tcp.stream eq 3) · 2.pcapng

GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
Host: gaia.cs.umass.edu
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101 Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1

HTTP/1.1 200 OK
Date: Sun, 14 Feb 2021 17:33:25 GMT
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.14 mod_perl/2.0.11 Perl/v5.16.3
Last-Modified: Sun, 14 Feb 2021 06:59:01 GMT
ETag: "173-5bb466776ba4c"
Accept-Ranges: bytes
Content-Length: 371
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: text/html; charset=UTF-8

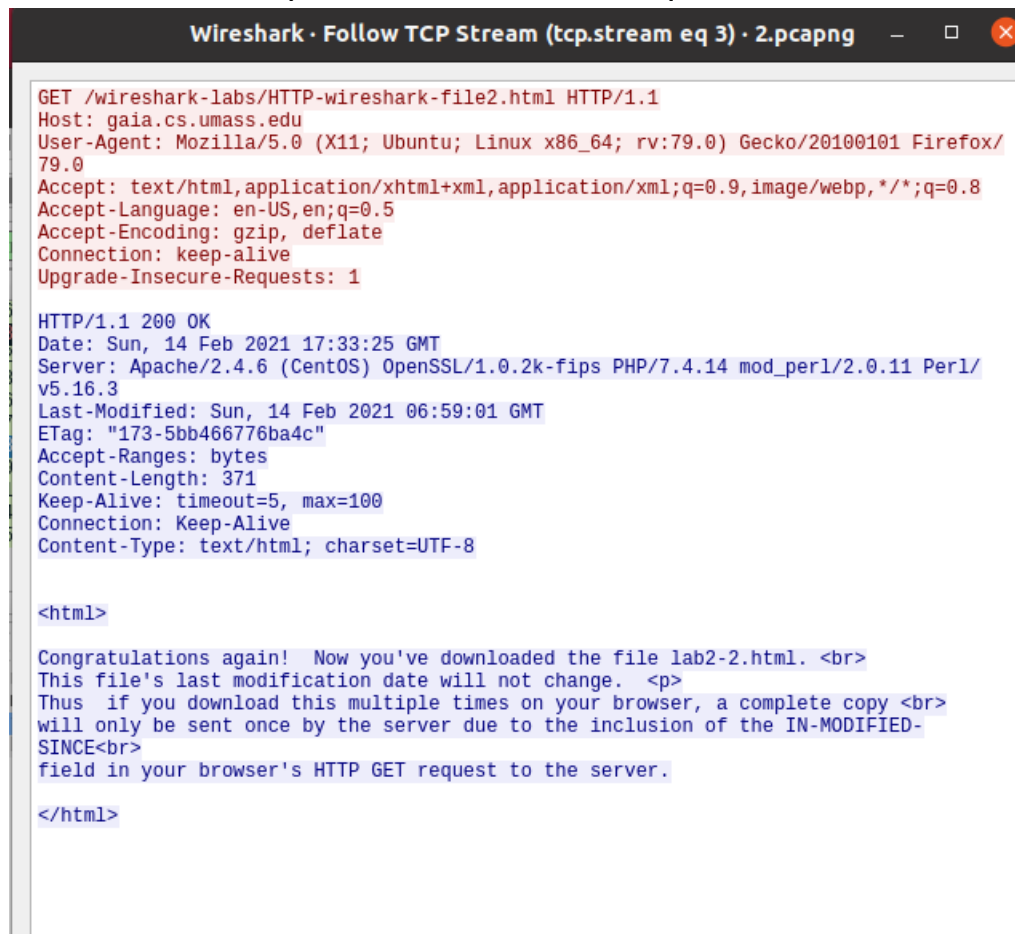
<html>

Congratulations again! Now you've downloaded the file lab2-2.html. <br>
This file's last modification date will not change. <p>
Thus if you download this multiple times on your browser, a complete copy <br>
will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE<br>
field in your browser's HTTP GET request to the server.

</html>
```

As can be observed from the above screenshot, there is no “If-Modified-Since” line for the first GET request.

Server Response for first GET request:



The image shows a Wireshark packet capture window titled "Wireshark · Follow TCP Stream (tcp.stream eq 3) · 2.pcapng". The packet list on the left shows a single packet, packet 1, which is an HTTP GET request. The packet details pane on the right shows the structure of the request and the response. The request is a GET for "/wireshark-labs/HTTP-wireshark-file2.html" from host "gaia.cs.umass.edu". The response is an HTTP/1.1 200 OK from "Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.14 mod_perl/2.0.11 Perl/v5.16.3". The response includes headers for Date, Last-Modified, ETag, Accept-Ranges, Content-Length, Keep-Alive, Connection, and Content-Type. The body of the response is HTML text that congratulates the user for downloading the file and explains that the file's modification date will not change, so only one copy will be sent.

```
GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
Host: gaia.cs.umass.edu
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101 Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1

HTTP/1.1 200 OK
Date: Sun, 14 Feb 2021 17:33:25 GMT
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.14 mod_perl/2.0.11 Perl/v5.16.3
Last-Modified: Sun, 14 Feb 2021 06:59:01 GMT
ETag: "173-5bb466776ba4c"
Accept-Ranges: bytes
Content-Length: 371
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: text/html; charset=UTF-8

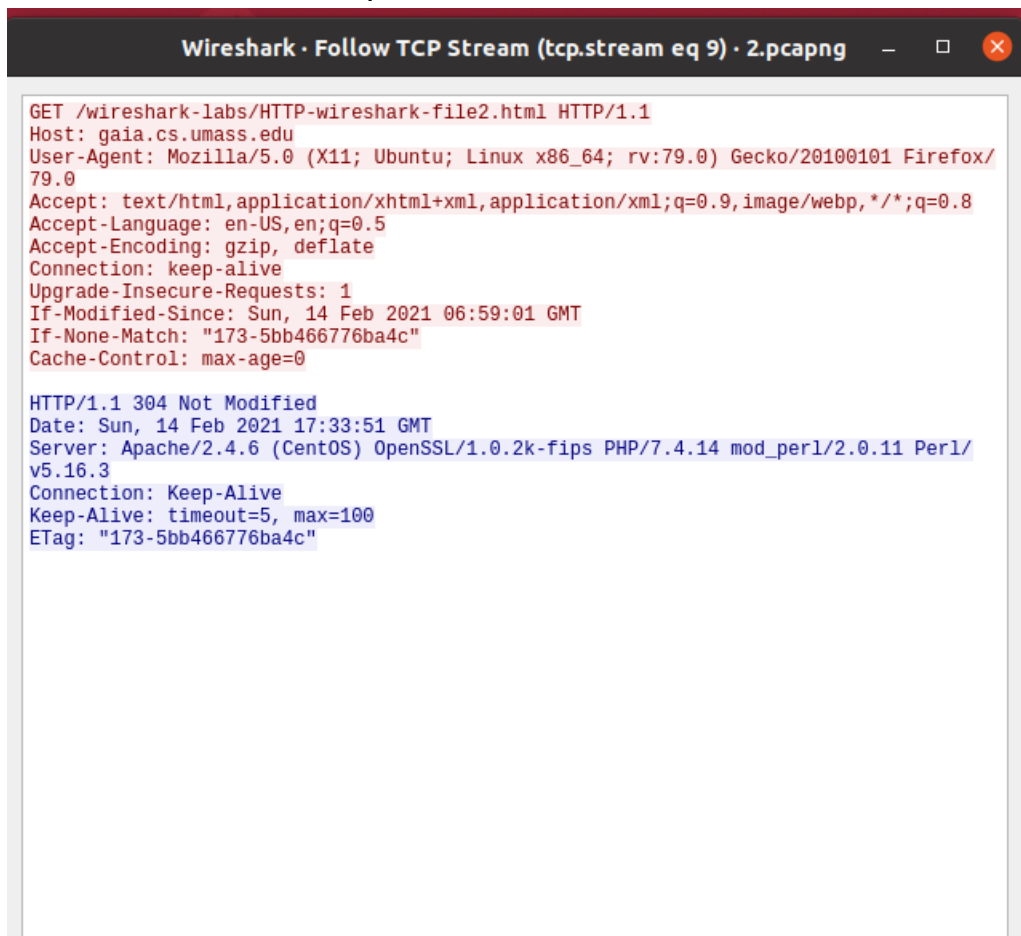
<html>

Congratulations again! Now you've downloaded the file lab2-2.html. <br>
This file's last modification date will not change. <p>
Thus if you download this multiple times on your browser, a complete copy <br>
will only be sent once by the server due to the inclusion of the IN-MODIFIED-
SINCE<br>
field in your browser's HTTP GET request to the server.

</html>
```

As can be observed above, the server has explicitly returned the content of the file. The HTML file contents can be seen above.

Second GET request:

A screenshot of the Wireshark network protocol analyzer. The title bar reads "Wireshark · Follow TCP Stream (tcp.stream eq 9) · 2.pcapng". The main display area shows the details of an HTTP transaction. The request (GET) is shown in red text, and the response (304 Not Modified) is shown in blue text. The request includes headers for Host, User-Agent, Accept, Accept-Language, Accept-Encoding, Connection, Upgrade-Insecure-Requests, If-Modified-Since, If-None-Match, and Cache-Control. The response includes headers for Date, Server, Connection, Keep-Alive, and ETag.

```
GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
Host: gaia.cs.umass.edu
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101 Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1
If-Modified-Since: Sun, 14 Feb 2021 06:59:01 GMT
If-None-Match: "173-5bb466776ba4c"
Cache-Control: max-age=0

HTTP/1.1 304 Not Modified
Date: Sun, 14 Feb 2021 17:33:51 GMT
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.14 mod_perl/2.0.11 Perl/v5.16.3
Connection: Keep-Alive
Keep-Alive: timeout=5, max=100
ETag: "173-5bb466776ba4c"
```

From the above screenshot , we can see the “If-Modified-Since” field for the second GET request(if the resource remains unmodified).

The “If-Modified-Since” header indicates the time for which a browser first downloaded a resource from the server.

Server response for second GET request:

A screenshot of the Wireshark network protocol analyzer interface. The title bar reads "Wireshark · Follow TCP Stream (tcp.stream eq 9) · 2.pcapng". The main display area shows the details of an HTTP response. The request line is "GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1". The host is "gaia.cs.umass.edu". The user agent is "Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101 Firefox/79.0". The accept headers are "text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8". The accept language is "en-US,en;q=0.5". The accept encoding is "gzip, deflate". The connection is "keep-alive". The upgrade-insecure-requests header is "1". The if-modified-since header is "Sun, 14 Feb 2021 06:59:01 GMT". The if-none-match header is "\"173-5bb466776ba4c\"". The cache-control header is "max-age=0". The response line is "HTTP/1.1 304 Not Modified". The date is "Sun, 14 Feb 2021 17:33:51 GMT". The server is "Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.14 mod_perl/2.0.11 Perl/v5.16.3". The connection is "Keep-Alive". The keep-alive timeout is "5" and the maximum number of keep-alive requests is "100". The etag header is "\"173-5bb466776ba4c\"".

```
GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
Host: gaia.cs.umass.edu
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101 Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1
If-Modified-Since: Sun, 14 Feb 2021 06:59:01 GMT
If-None-Match: "173-5bb466776ba4c"
Cache-Control: max-age=0

HTTP/1.1 304 Not Modified
Date: Sun, 14 Feb 2021 17:33:51 GMT
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.14 mod_perl/2.0.11 Perl/v5.16.3
Connection: Keep-Alive
Keep-Alive: timeout=5, max=100
ETag: "173-5bb466776ba4c"
```

The server response for the second GET request is having a response status code and phrase of “304 Not Modified”.

The server hasn’t explicitly returned the contents of the file(as the request is made for the second time and the resource remains unchanged).

3.2. Conditional GET in Local machine(with some image):

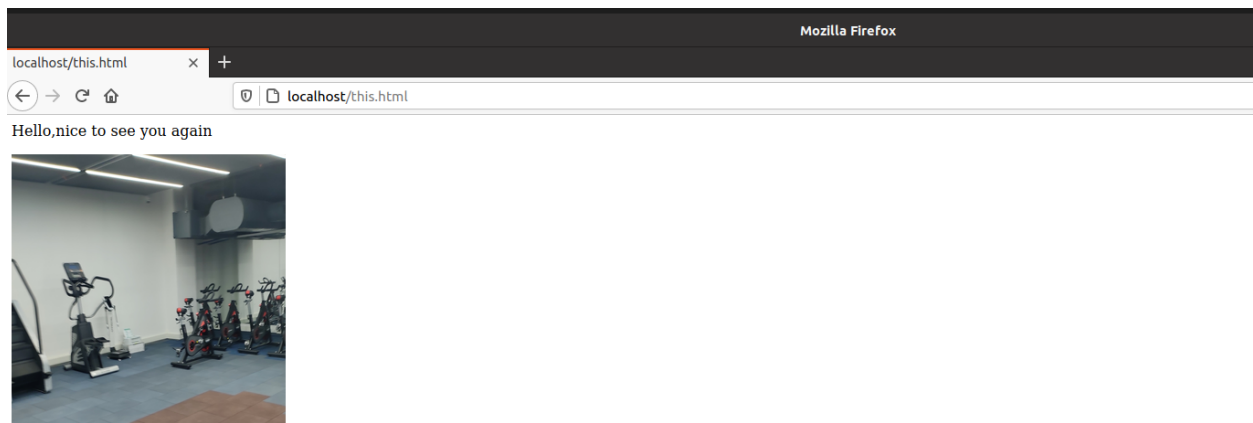
- The browser cache and browser history is cleared.
- Wireshark is launched.
- A html file named 'this.html' is placed under the html directory.



A screenshot of a text editor window titled 'this.html' with the file path '/var/www/html'. The editor contains the following HTML code:

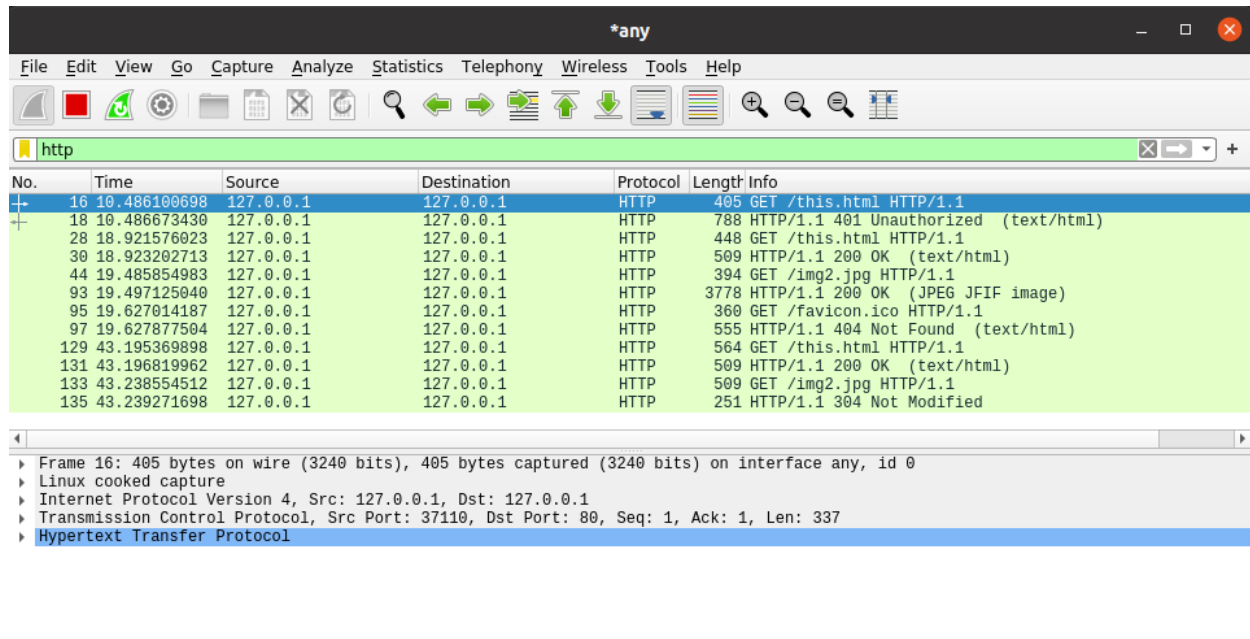
```
1 <html>
2 <p>Hello,nice to see you again</p>
3 
4 </html>
```

- This html file accessed with the help of a web browser



Now the website is refreshed.

- Wireshark Packet Capture:



Again, the response for the first GET request of image is having a 200 OK response status. The response from the server for the second request of image is obtained as '304 Not Modified'. Since the image wasn't modified, we get '304 Not Modified' server response.

- Follow TCP Stream:

First GET request:

A screenshot of the Wireshark network protocol analyzer. The title bar reads "Wireshark · Follow TCP Stream (tcp.stream eq 5) · 3.pcapng". The main display area shows the details of a selected packet. The packet list on the left shows a GET request for /this.html. The details pane on the right shows the following information:

```
GET /this.html HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101
Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Authorization: Basic dHVzaGFyOnR1c2hhcg==

HTTP/1.1 200 OK
Date: Sun, 14 Feb 2021 17:45:01 GMT
Server: Apache/2.4.41 (Ubuntu)
Last-Modified: Sun, 14 Feb 2021 17:43:26 GMT
ETag: "61-5bb4f680da68d-gzip"
Accept-Ranges: bytes
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 105
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: text/html

.....(.....).H.....LNU(.W(NMU../UHLO..../*..MW(.J.U.2...
...2R3.3J1..
...3SJ2 l}.r}...../a...GET /img2.jpg HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101
Firefox/79.0
Accept: image/webp,*/*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Authorization: Basic dHVzaGFyOnR1c2hhcg==
Connection: keep-alive
Referer: http://localhost/this.html

HTTP/1.1 200 OK
Date: Sun, 14 Feb 2021 17:45:01 GMT
Server: Apache/2.4.41 (Ubuntu)
Last-Modified: Fri, 05 Feb 2021 14:45:53 GMT
ETag: "118d5a-5ba97e0835d54"
Accept-Ranges: bytes
Content-Length: 1150298
Keep-Alive: timeout=5, max=99
```

As can be observed from the above screenshot, there is no “If-Modified-Since” line for the first GET request.

Server response for first GET request:



The image shows a Wireshark packet capture window titled "Wireshark · Follow TCP Stream (tcp.stream eq 5) · 3.pcapng". The packet list on the left shows three packets. The packet details pane displays the following information:

```
GET /this.html HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101
Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Authorization: Basic dHVzaGFyOnR1c2hhcg==


HTTP/1.1 200 OK
Date: Sun, 14 Feb 2021 17:45:01 GMT
Server: Apache/2.4.41 (Ubuntu)
Last-Modified: Sun, 14 Feb 2021 17:43:26 GMT
ETag: "61-5bb4f680da68d-gzip"
Accept-Ranges: bytes
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 105
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: text/html

.....(.....)H.....LNU(.W(NMU../UHLO.../.*..MW(.J.U.2...
...2R3.3Jl..
....3SJ2 l}.r}...../a...GET /img2.jpg HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101
Firefox/79.0
Accept: image/webp,*/*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Authorization: Basic dHVzaGFyOnR1c2hhcg==
Connection: keep-alive
Referer: http://localhost/this.html

HTTP/1.1 200 OK
Date: Sun, 14 Feb 2021 17:45:01 GMT
Server: Apache/2.4.41 (Ubuntu)
Last-Modified: Fri, 05 Feb 2021 14:45:53 GMT
ETag: "118d5a-5ba97e0835d54"
Accept-Ranges: bytes
Content-Length: 1150298
Keep-Alive: timeout=5, max=99
```

As can be observed above, the server has explicitly returned the content of the file. GET request is made further for obtaining the image from the server.

Second GET request:



```
Wireshark · Follow TCP Stream (tcp.stream eq 6) · 3.pcapng

GET /this.html HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101
Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Authorization: Basic dHVzaGFyOnR1c2hhcg==
Connection: keep-alive
Upgrade-Insecure-Requests: 1
If-Modified-Since: Sun, 14 Feb 2021 17:43:26 GMT
If-None-Match: "61-5bb4f680da68d-gzip"
Cache-Control: max-age=0

HTTP/1.1 200 OK
Date: Sun, 14 Feb 2021 17:45:25 GMT
Server: Apache/2.4.41 (Ubuntu)
Last-Modified: Sun, 14 Feb 2021 17:43:26 GMT
ETag: "61-5bb4f680da68d-gzip"
Accept-Ranges: bytes
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 105
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: text/html

.....(.....).H.....LNU(.W(NMU../UHLO..../*...MW(.J.U.2...
...2R3.3JL..
...3SJ2 l}.r}...../a...GET /img2.jpg HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101
Firefox/79.0
Accept: image/webp,*/*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Authorization: Basic dHVzaGFyOnR1c2hhcg==
Connection: keep-alive
Referer: http://localhost/this.html
If-Modified-Since: Fri, 05 Feb 2021 14:45:53 GMT
If-None-Match: "118d5a-5ba97e0835d54"
Cache-Control: max-age=0

HTTP/1.1 304 Not Modified
Date: Sun, 14 Feb 2021 17:45:25 GMT
```

From the above screenshot , we can see the “If-Modified-Since” field (highlighted in blue color)for the second GET request(if the resource remains unchanged).

The “If-Modified-Since” header indicates the time for which a browser first downloaded a resource from the server.

Server response for second GET request:

```
Content-Type: text/html
.....(.....)..H.....LNU(.W(NMU../UHLO.../*..MW(.J.U.2...
...2R3.3J1..
...3SJ2 1}.r}...../a...GET /img2.jpg HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:79.0) Gecko/20100101
Firefox/79.0
Accept: image/webp, */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Authorization: Basic dHVzaGFyOnR1c2hhcg==
Connection: keep-alive
Referer: http://localhost/this.html
If-Modified-Since: Fri, 05 Feb 2021 14:45:53 GMT
If-None-Match: "118d5a-5ba97e0835d54"
Cache-Control: max-age=0

HTTP/1.1 304 Not Modified
Date: Sun, 14 Feb 2021 17:45:25 GMT
Server: Apache/2.4.41 (Ubuntu)
Connection: Keep-Alive
Keep-Alive: timeout=5, max=99
ETag: "118d5a-5ba97e0835d54"
```

2 client pkts, 2 server pkts, 3 turns.

Entire conversation (1,561 bytes) Show and save data as ASCII Stream 6

Find: Find Next

Filter Out This Stream Print Save as... Back Close Help

The server response for the second GET request is having a response status code and phrase of “304 Not Modified”. This is because the resource which is being requested has not been modified.