Assignment 3

Part 1:-

1)
My browser is running HTTP/1.1
The server is running HTTP/1.1

2)
Accept-Language: en-US,en;q=0.5
Hence, the language is English(US).

3)
My computer ip is **10.196.8.81**
gaia.cs.umass.edu server's IP is **128.119.245.12**

4)
Status code: **200** is returned from the server to my computer.

5)
The HTML file which I retreived was last modified on Tue, 16 Jan 2024 06:59:02 GMT

6)
128 bytes of content are being returned to your browser

7)
The following are not in the packet listing window but are in the package content window

```
Content-Type: text/html; charset=UTF-8\r\n
\r\n
[HTTP response 1/1]
[Time since request: 0.303323000 seconds]
[Request in frame: 386]
[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
File Data: 128 bytes
```

Part 2:-

1)
No, I did not see "IF-MODIFIED-SINCE" line in the HTTP GET.

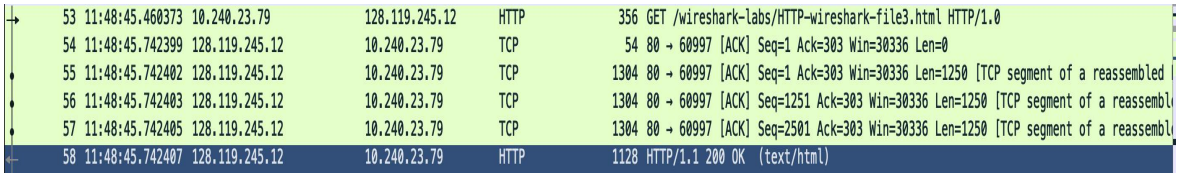
2)
Yes, initially the server did explicitly return the contents of the file as follows:

```
Line-based text data: text/html (10 lines)
    \n
    <html>\n
    \n
    Congratulations again!  Now you've downloaded the file lab2-2.html. <br>\n
    This file's last modification date will not change.  <p>\n
    Thus  if you download this multiple times on your browser, a complete copy <br>\n
    will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE<br>\n
    field in your browser's HTTP GET request to the server.\n
    \n
    </html>\n
```

3)
Yes, I see an “IF-MODIFIED-SINCE:” line in the HTTP GET.
Tue, 16 Jan 2024 06:59:02 GMT\r\n follows the respective header.

4)
Status code **304** status code is returned from the server in response to this second HTTP GET.
No, the server did not explicitly return the contents of the file since the IF-MODIFIED-SINCE time is same as the time for last modified in the previous request. Since, nothing was modified in the previous sent file, no new content was received.

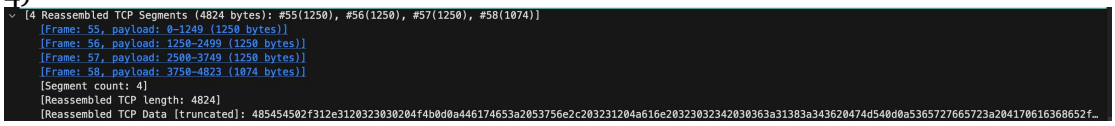
Part 3:-



1)
The browser sent 1 HTTP GET request message. The associated packet number is **53**.

2)
Packet number **58** contains the status code and phrase associated with the response to the request.

3)
Status code: **200**
Response Phrase: **OK**

4)


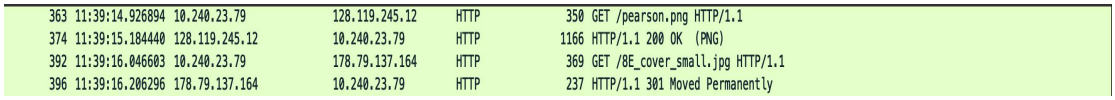
4 TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights with the data distribution as follows: **1250 bytes** in the first three and **1074 bytes** in the last one sending a total of **4824 bytes**.

Part 4:-

1)
The browser sent 3 HTTP GET response to the source.

The first one was sent to **128.119.245.12**
The second one was sent to **128.119.245.12**
The third one was sent to **178.79.137.164**

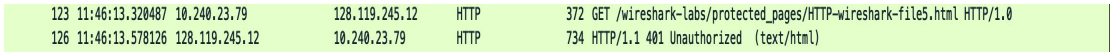
2)
The images were downloaded serially. We can tell this by looking at the time log of each of the packets as shown in the below screenshot.



There was a time difference of nearly 1.02 seconds between the downloading of these two images.

Part 5:-

1)
The server's response for the first HTTP GET request sent was
status code: **401** message: **Unauthorized** message



2)
When the browser sends the GET request for the second time, there is an extra field of Authorization: Basic header which took in our login credentials such as username and password.