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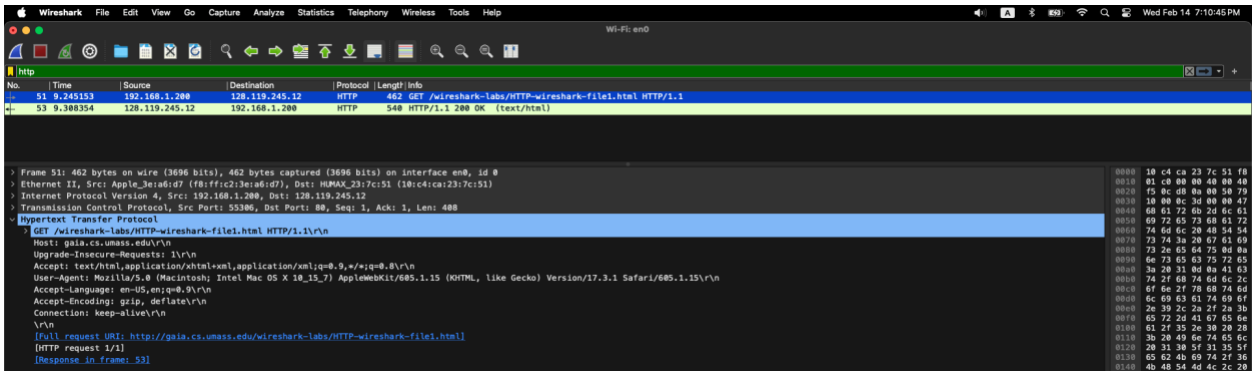
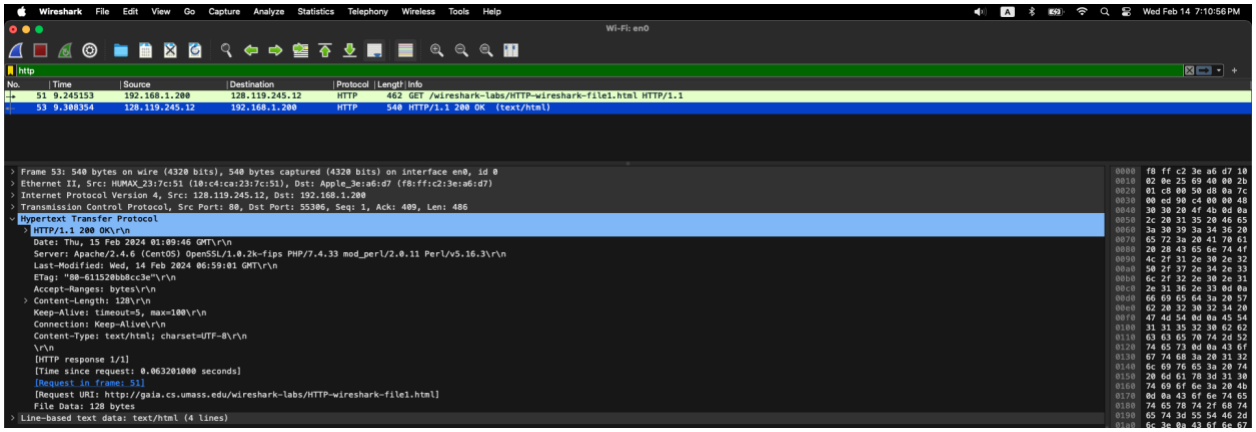
CSE 4344-002
2/17/24

Lab 1

1. The Basic HTTP GET/Response Interaction





1. Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?
    a. My browser is running HTTP version 1.1. The server is running HTTP version 1.1. I found these by clicking both destinations and version is found in the first line of the “Hypertext Transfer Protocol” window.

2. What languages (if any) does your browser indicate that it can accept to the server?
    a. My browser indicates it can accept the following, “en-US,en;q=0.9\r\n”. I found this by clicking the 128.119.245.12 destination then, “Hypertext Transfer Protocol” and found “Accept-Language.” (shown in the first screenshot)

3. What is the IP address of your computer? Of the gaia.cs.umass.edu server?

a. The IP address of my computer is 192.168.1.200. The IP address of the server is 128.119.245.12. I found these by looking at the number under “Source” and “Destination”.

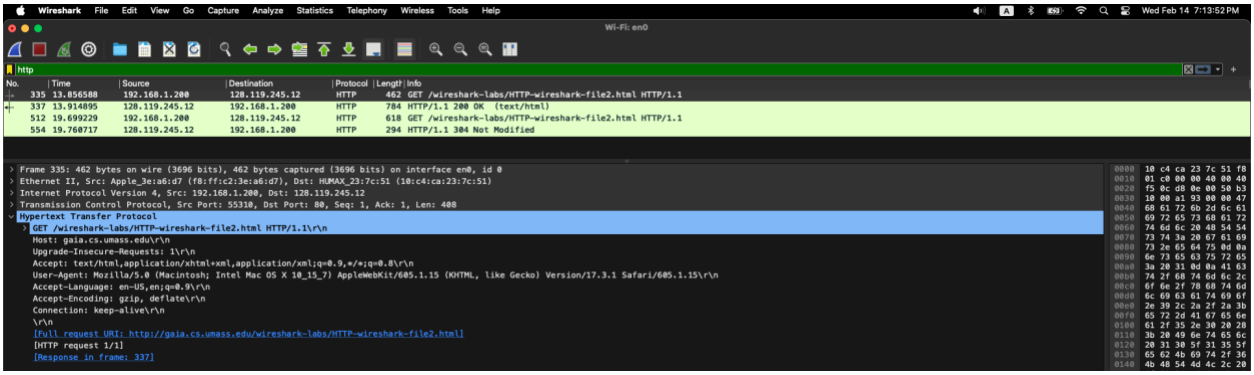
4. What is the status code returned from the server to your browser?
    a. The status code returned from the server to my browser is 200. I found this by clicking on 192.168.1.200 destination, looking at the “Hypertext Transfer Protocol” and it is the number after HTTP/1.1 in the first line.

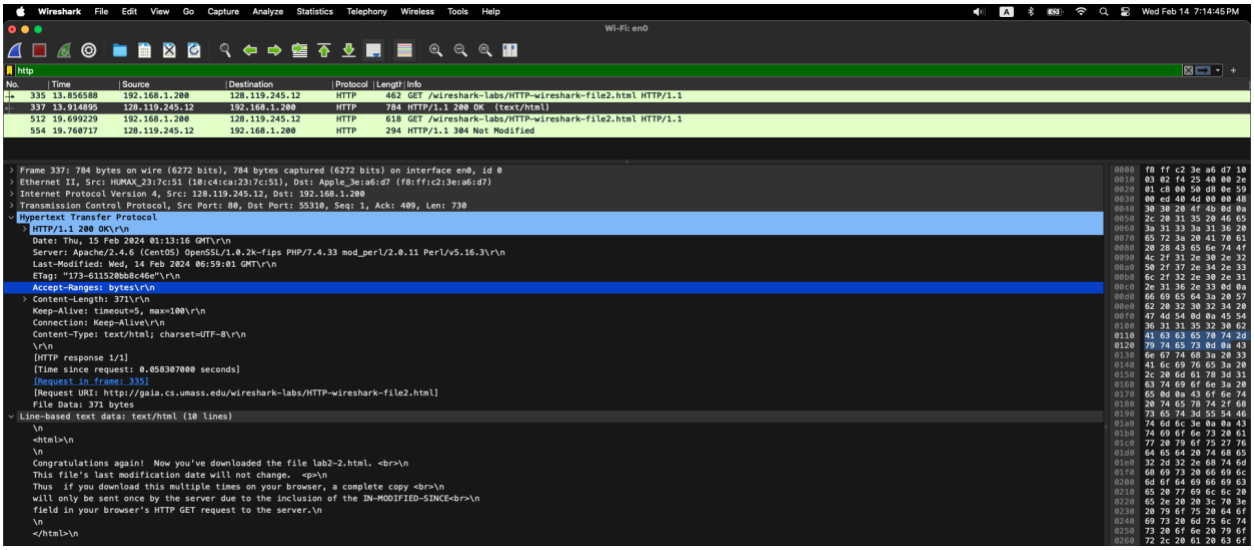
5. When was the HTML file that you are retrieving last modified at the server?
    a. The HTML file that I retrieved was last modified: Wed, 14 Feb 2024 06:59:01 GMT\r\n. I found this by looking under “Hypertext Transfer Protocol and next to the line “Last-Modified”. (shown in the second screenshot)

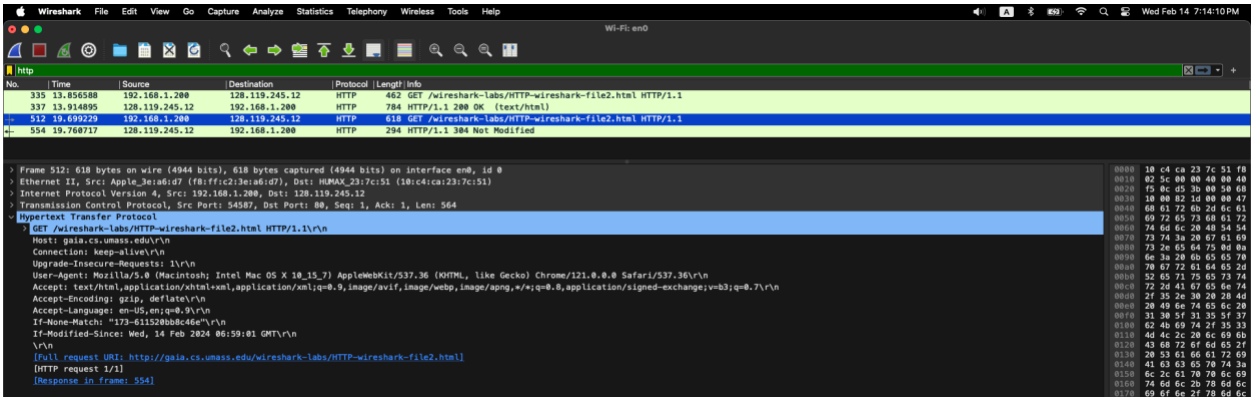
6. How many bytes of content are being returned to your browser?
    a. 128 bytes of content are being returned to my browser. I found this like the previous step by next to the line “Content-Length”. (shown in the second screenshot)

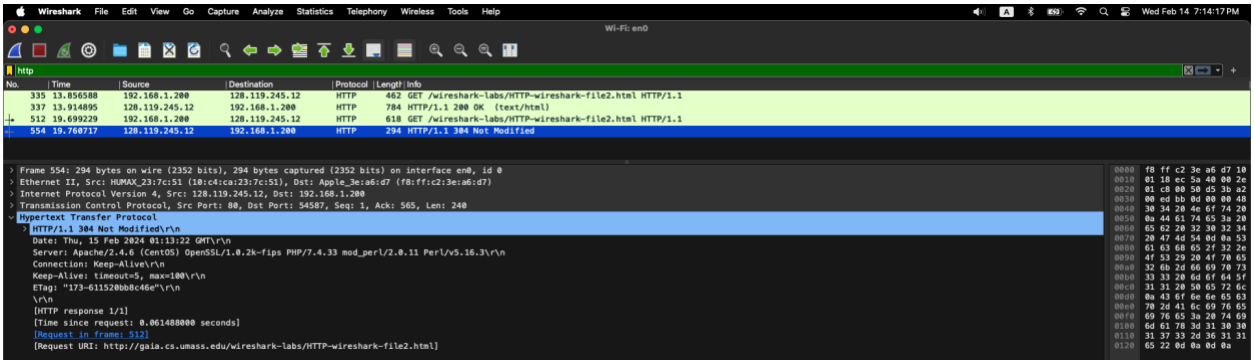
7. By inspecting the raw data in the packet content window, do you see any headers within the data that are not displayed in the packet-listing window? If so, name one.
    a. No headers within the data are displayed in the packet-listing window.

2. The HTTP CONDITIONAL GET/response interaction









8. Inspect the contents of the first HTTP GET request from your browser to the server. Do you see an “IF-MODIFIED-SINCE” line in the HTTP GET?
    a. No, there is not an “If-Modified-Since” line in the first HTTP GET request. (as shown in the first screenshot)

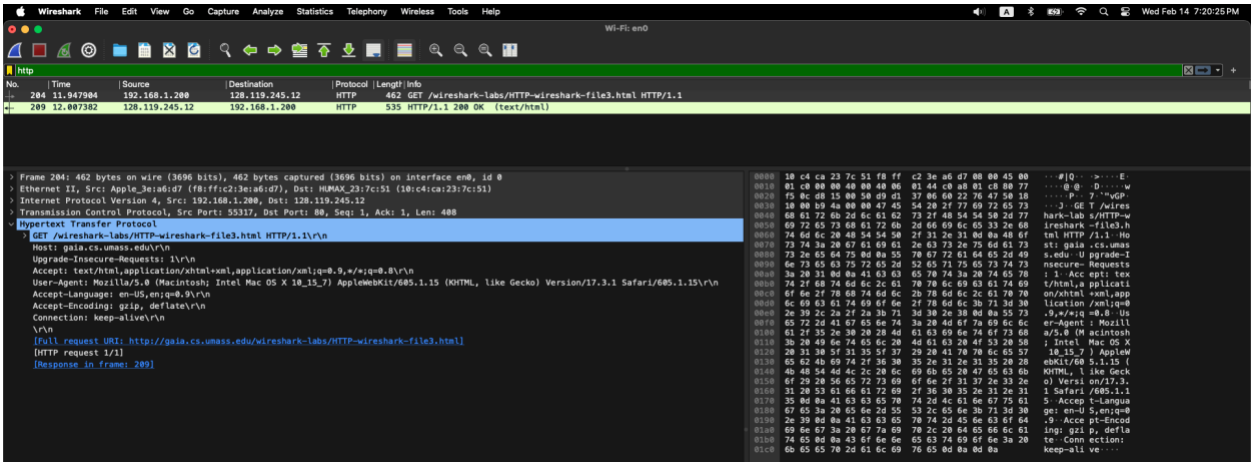
9. Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?

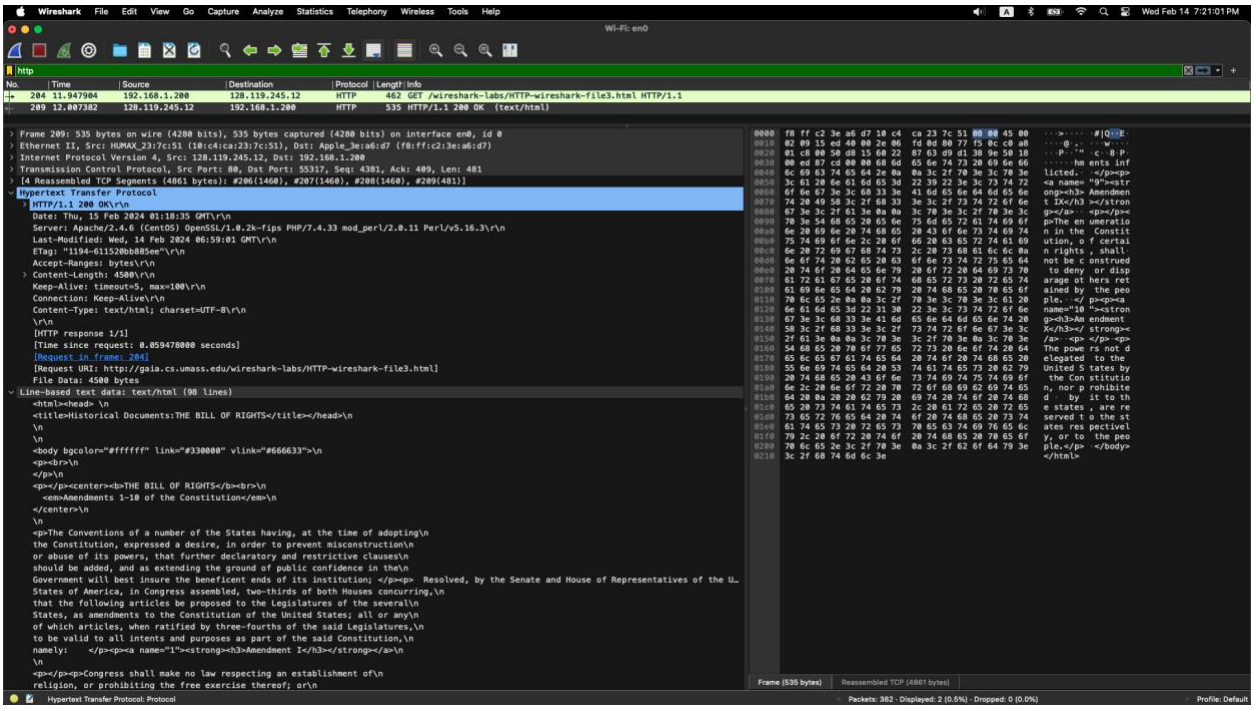
a. Yes, the server explicitly returned the contents of the file after clicking on the line, “Line-based text data”. (as shown in the second screenshot)

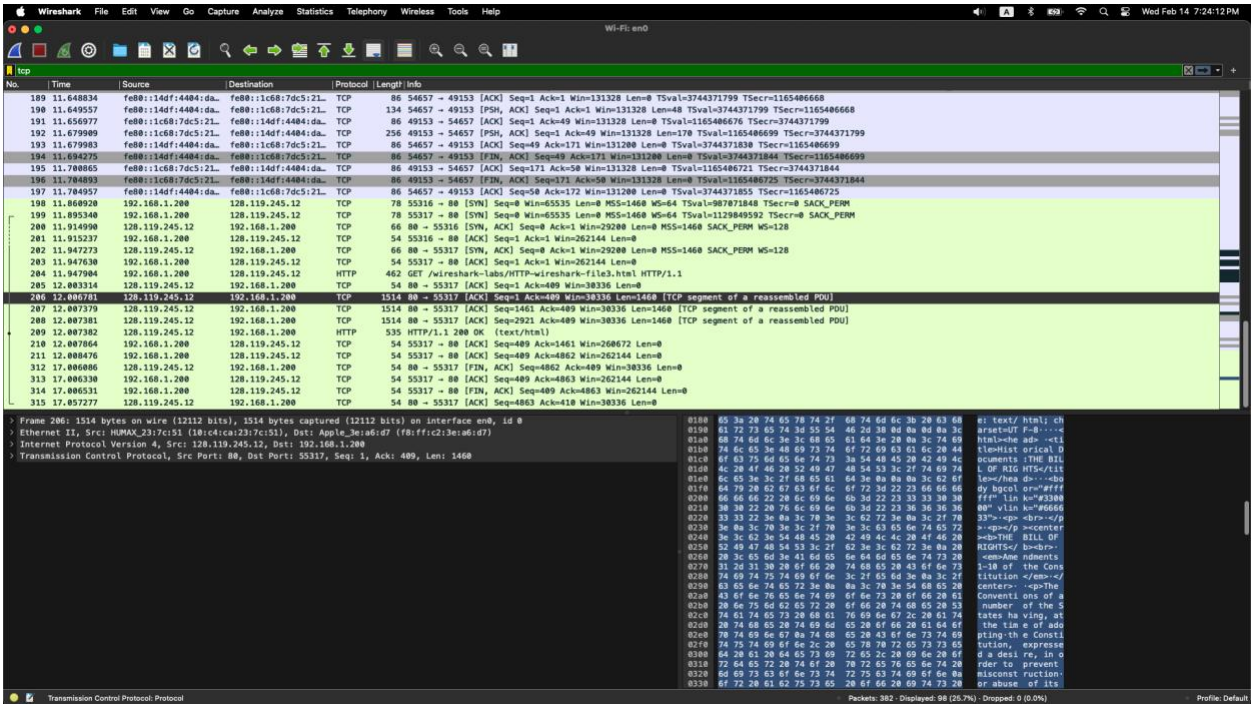
10. Now inspect the contents of the second HTTP GET request from your browser to the server. Do you see an “IF-MODIFIED-SINCE:” line in the HTTP GET? If so, what information follows the “IF-MODIFIED-SINCE:” header?
    a. Yes, there is now an “If-Modified-Since” line in the second HTTP GET request. The information that follows is: “Wed, 14 Feb 2024 06:59:01 GMT\r\n”. (shown in the third screenshot)

11. What is the HTTP status code and phrase returned from the server in response to this second HTTP GET? Did the server explicitly return the contents of the file? Explain.
    a. The HTTP status code and phrase returned from the server in response to this second HTTP GET is “304 Not Modified” and the server the not explicitly return the contents of the file because the browser loaded it from its cache. (shown in the fourth screenshot)

3. Retrieving Long Documents







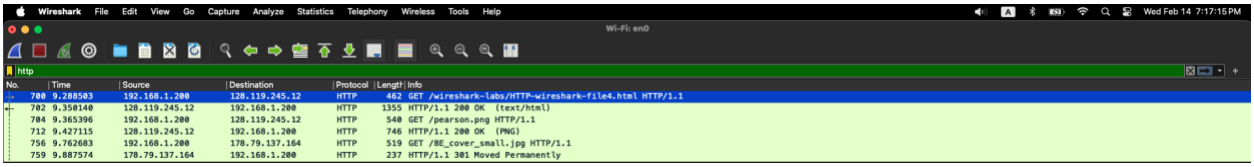
12. How many HTTP GET request messages did your browser send? Which packet number in the trace contains the GET message for the Bill of Rights?
    a. One HTTP GET request message was sent by my browser. Packet number 204 contains the GET message for the Bill of Rights. (shown in the first screenshot)

13. Which packet number in the trace contains the status code and phrase associated with the response to the HTTP GET request?
    a. Packet number 209 in the trace contains the status code and phrase associated with the response to the HTTP GET request. (shown in the first screenshot)

14. What is the status code and phrase in the response?
    a. The status code and phrase in the response is 200 OK. (shown in the second screenshot)

15. How many data-containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights?
    a. Three data containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights. They are packet number 206, 207, and 209. (shown in the third screenshot)

4. HTML Documents with Embedded Objects



16. How many HTTP GET request messages did your browser send? To which Internet addresses were these GET requests sent?
    a. Three HTTP GET request messages were sent by my browser. The Internet addresses are 128.119.245.12, 128.119.245.12, and 178.79.137.164.

17. Can you tell whether your browser downloaded the two images serially, or whether they were downloaded from the two web sites in parallel? Explain.
    a. My browser downloaded the two images serially by checking the TCP ports. The 2 images were transmitted over 2 TCP connections.