1. Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?

Ans:- Browser is running HTTP version 1.1

2. What languages (if any) does your browser indicate that it can accept to the server?

Ans:- Browser indicates to the server that accepts language : en-us. and it can also accept other english at the factor of 0.5
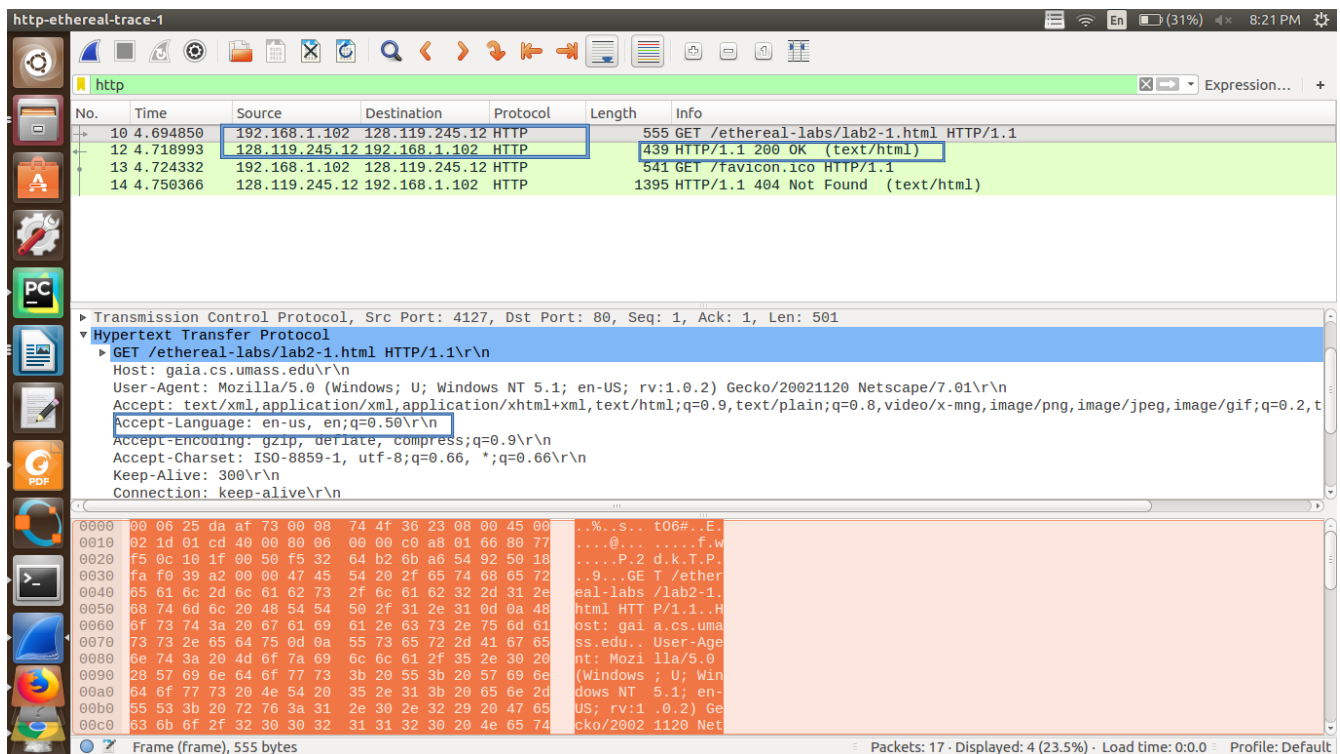
3. What is the IP address of your computer? Of the gaia.cs.umass.edu server?
Ans:- Computer : 172.16.15.186
          Server : 77.67.29.136

4. What is the status code returned from the server to your browser?
Ans:- 200

5. When was the HTML file that you are retrieving last modified at the server?
Ans:- Tue, 23rd Sep 2003 05:29:50 GMT.

6. How many bytes of content are being returned to your browser?
Ans:- Content length : 73 Bytes and including header it is : 439 bytes.

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.
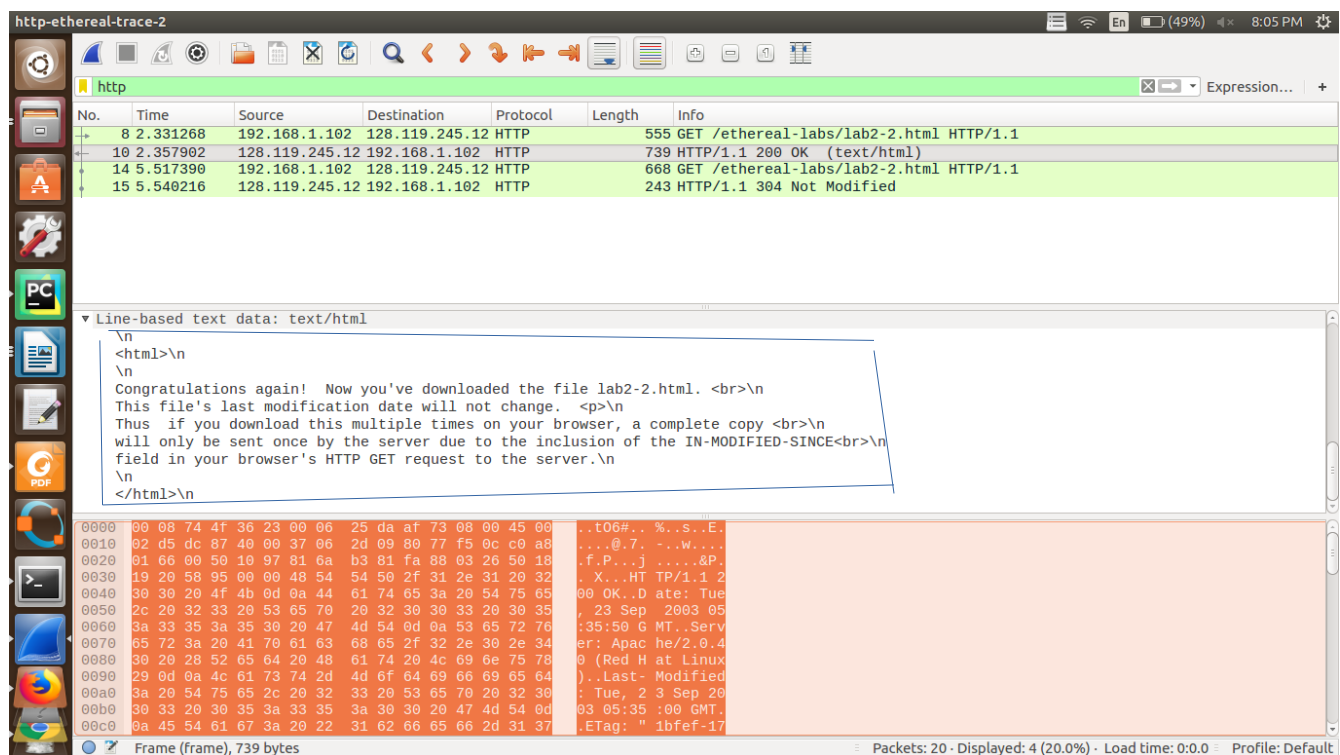Ans:- NO

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?
Ans :- Not for the first GET request but for the Second GET request.

9. Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?
Ans: - Yes, the server explicitly returned the contents of the file. It can be seen in the field line based text data.

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?**
Ans:- The time and date when it was last modified.
In this case: **Tue, 13 Feb 2018 05:35:00 GMT.**

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.

Ans:- The status code returned is 304 – Not Modified. No, The server didn't send the contents of explicitly. The server returned the status code as 304 Not Modified and hence the file was taken from the cache instead of the server.

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 or Rights?
Ans:- Only one Get request is sent by the browser (ignoring the favicon.ico request). Packet Number 8 contains the get message for the Bill or Rights.

13. Which packet number in the trace contains the status code and phrase associated with the response to the HTTP GET request?

Ans:- Packet Number 14 contains the status code and phrase associated with the response to the HTTP get Request.

14. What is the status code and phrase in the response?

Ans:- The status code is 200 and phrase is "OK".

15. How many data-containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights?

Ans:- 4 data containing TCP segments were required.

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?

Ans:- Number of HTTP Get request : 4

Servers IP address to which get request was made : 128.119.245.12

128.119.240.90

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.

Ans:- The browser downloaded the file serially because as we see that browser first make a GET request for pearson.png and then after receiving the response for the given request

It later makes a HTTP GET Request for the second image .

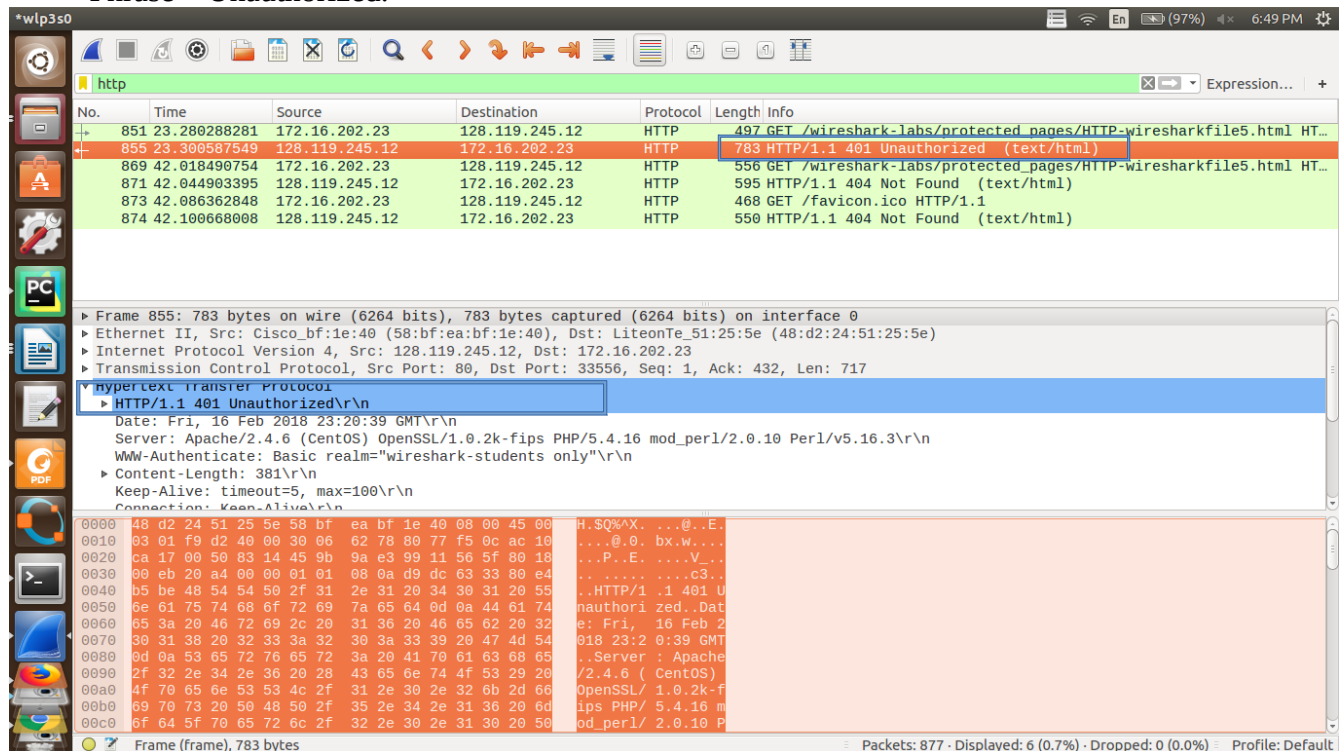Request Made for first image (Time): 128.119.245.12

Request Made for second image(Time): 128.119.240.90

5. HTTP Authentication

18. What is the server's response (status code and phrase) in response to the initial HTTP GET message from your browser?
Ans:- Status Code – 401

Phrase – Unauthorized.

19. When your browser's sends the HTTP GET message for the second time, what new field is included in the HTTP GET message?
Ans:- Additional field in second get message is : Authorization.