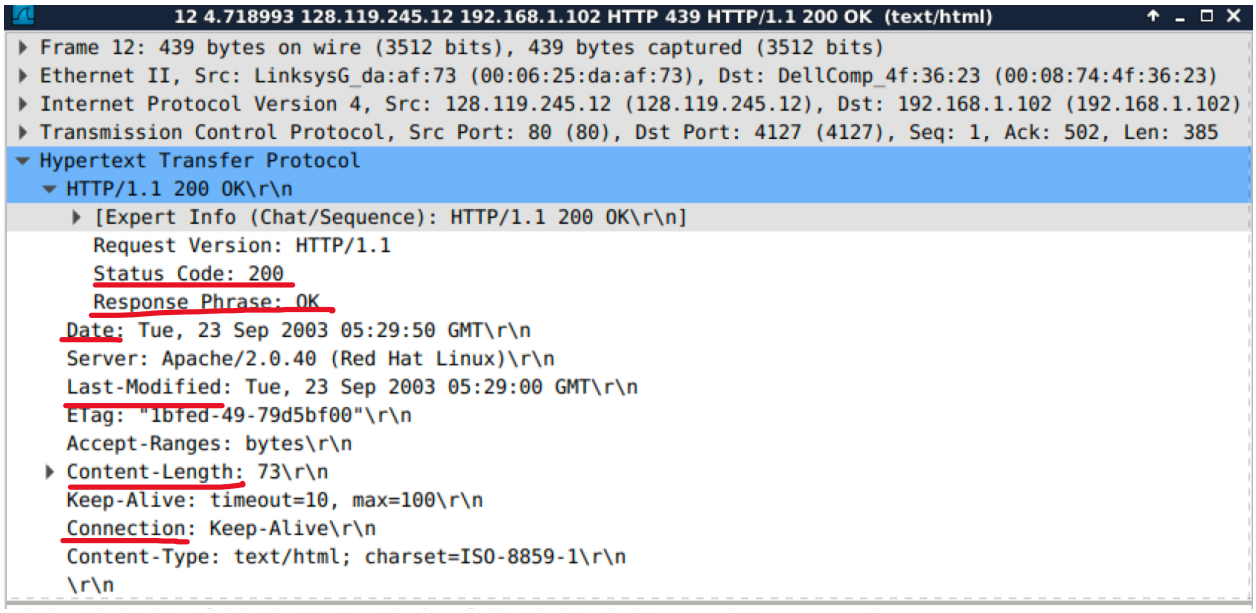
Yiyun Yang
Z5187469

Ex3



Question 1: What is the status code and phrase returned from the server to the client browser?

The status code is 200 and response phrase is OK.

Question 2: When was the HTML file that the browser is retrieving last modified at the server? Does the response also contain a DATE header? How are these two fields different?

The HTML file was last modified on Tue, 23 Sep 2003 05:29:00 GMT. The response contains a DATE header as Tue, 23 Sep 2003 05:29:50 GMT. DATE tells the time the file was created and last modified tells when the file was last modified.

Question 3: Is the connection established between the browser and the server persistent or non-persistent? How can you infer this?

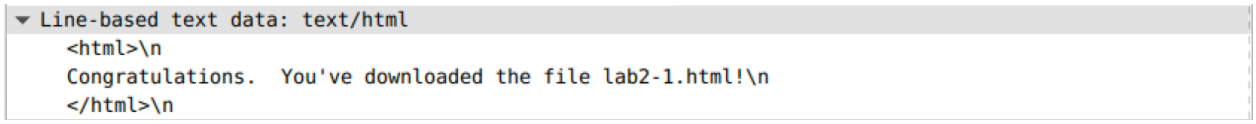
The connection is persistent as the connection header is ‘Keep-Alive’.

Question 4: How many bytes of content are being returned to the browser?

73 bytes.

Question 5: What is the data contained inside the HTTP response packet?

The data contained is a html page with the message ‘Congratulations. You’ve downloaded the file lab2-1.html!\n’.



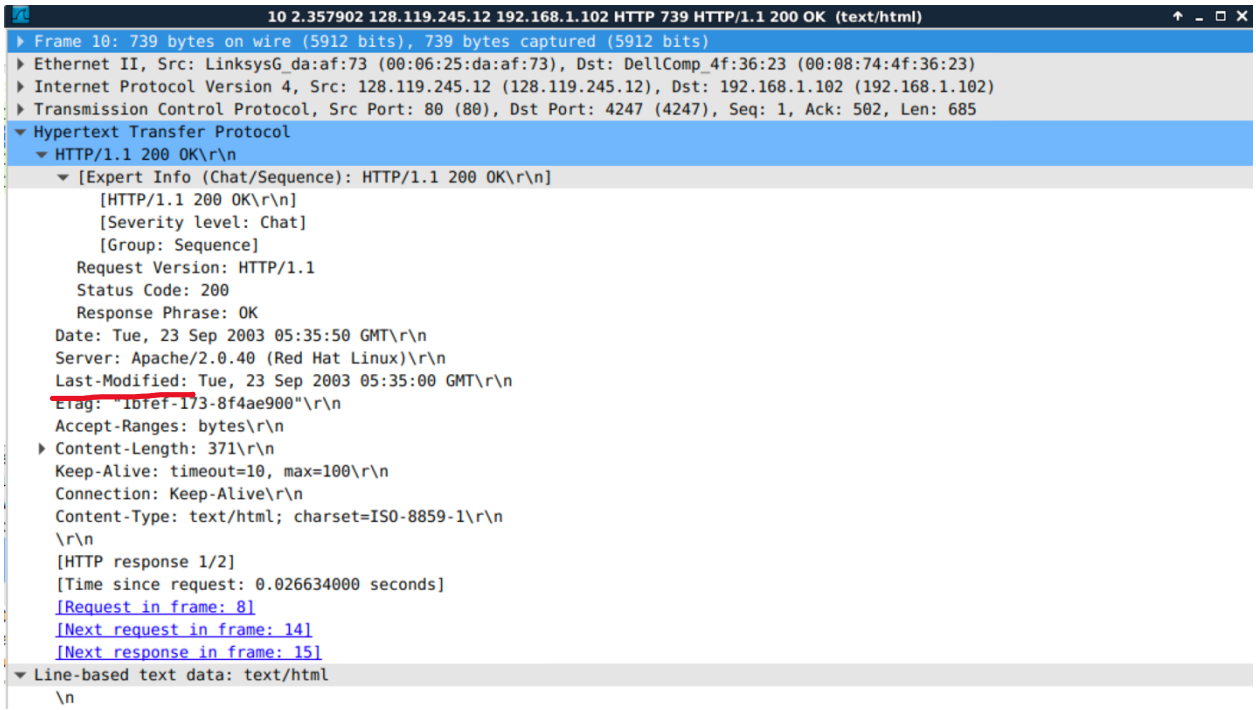
Ex4

Question 1: Inspect the contents of the first HTTP GET request from the browser to the server. Do you see an “IF-MODIFIED-SINCE” line in the HTTP GET?

No, it does not contain “IF-MODIFIED-SINCE”.

Question 2: Does the response indicate the last time that the requested file was modified?

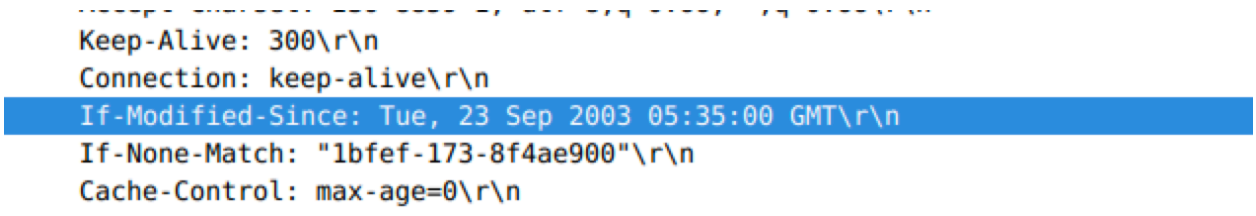
It was last modified on Tue, 23 Sep 2003 05:35:00GMT.



Question 3: Now inspect the contents of the second HTTP GET request from the browser to the server. Do you see an “IF-MODIFIED-SINCE:” and “IF-NONE-MATCH” lines in the HTTP GET? If so, what information is contained in these header lines?

“IF-MODIFIED-SINCE:” contains the date last modified as Tue, 23 Sep 2003 05:35:00GMT.

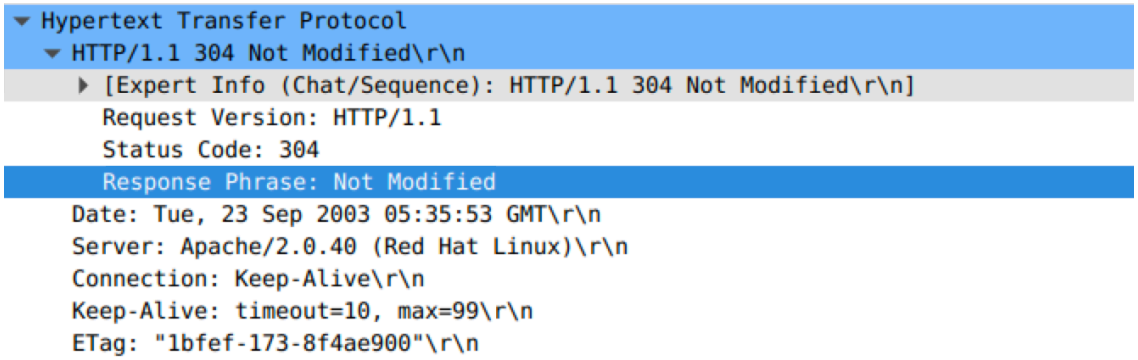
“IF-NONE-MATCH” contains the Etag value.



Question 4: 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.

The status code is 304 and response phrase is not modified.

The server didn't explicitly return the contents of the file as the etag value is the same as "IF-NONE-MATCH" value, it returns 304 status code meaning the second file sent has not been modified.



Question 5: What is the value of the Etag field in the 2nd response message and how it is used? Has this value changed since the 1 st response message was received?

The value of the Etag field is 1bfef-173-8f4ae900. It is used for Web cache validation and conditional requests from browsers for resources. Most typically, ETags request Web resources on the condition that they have been updated since the user's last visit to the site.
The value has not changed since the 1st response message was received, thus it returns 304 status code as mentioned in q4.

Ex5

```
z5187469@vx7:/tmp_amd/reed/export/reed/1/z5187469/cs3331/lab2$ java PingServer 6666
Received from 127.0.0.1: PING 3331 1592817650962
   Reply sent.
Received from 127.0.0.1: PING 3332 1592817651196
   Reply sent.
Received from 127.0.0.1: PING 3333 1592817651216
   Reply sent.
Received from 127.0.0.1: PING 3334 1592817651216
   Reply sent.
Received from 127.0.0.1: PING 3335 1592817651401
   Reply sent.
Received from 127.0.0.1: PING 3336 1592817651492
   Reply sent.
Received from 127.0.0.1: PING 3337 1592817651544
   Reply sent.
Received from 127.0.0.1: PING 3338 1592817651564
   Reply sent.
Received from 127.0.0.1: PING 3339 1592817651700
   Reply sent.
Received from 127.0.0.1: PING 3340 1592817651769
   Reply not sent.
Received from 127.0.0.1: PING 3341 1592817652396
   Reply sent.
Received from 127.0.0.1: PING 3342 1592817652408
   Reply sent.
Received from 127.0.0.1: PING 3343 1592817652440
   Reply sent.
Received from 127.0.0.1: PING 3344 1592817652592
   Reply not sent.
Received from 127.0.0.1: PING 3345 1592817653193
   Reply not sent.
```

```
z5187469@vx7:/tmp_amd/reed/export/reed/1/z5187469/cs3331/lab2$ java PingClient 1
27.0.0.1 6666
ping to 127.0.0.1, seq = 3331, rtt = 169 ms
ping to 127.0.0.1, seq = 3332, rtt = 20 ms
ping to 127.0.0.1, seq = 3333, rtt = 0 ms
ping to 127.0.0.1, seq = 3334, rtt = 185 ms
ping to 127.0.0.1, seq = 3335, rtt = 91 ms
ping to 127.0.0.1, seq = 3336, rtt = 52 ms
ping to 127.0.0.1, seq = 3337, rtt = 20 ms
ping to 127.0.0.1, seq = 3338, rtt = 135 ms
ping to 127.0.0.1, seq = 3339, rtt = 69 ms
ping to 127.0.0.1, seq = 3340, time out
ping to 127.0.0.1, seq = 3341, rtt = 11 ms
ping to 127.0.0.1, seq = 3342, rtt = 32 ms
ping to 127.0.0.1, seq = 3343, rtt = 152 ms
ping to 127.0.0.1, seq = 3344, time out
ping to 127.0.0.1, seq = 3345, time out
Average RTT = 78 ms, Minimum RTT = 0 ms, Maximum RTT = 185 ms
```