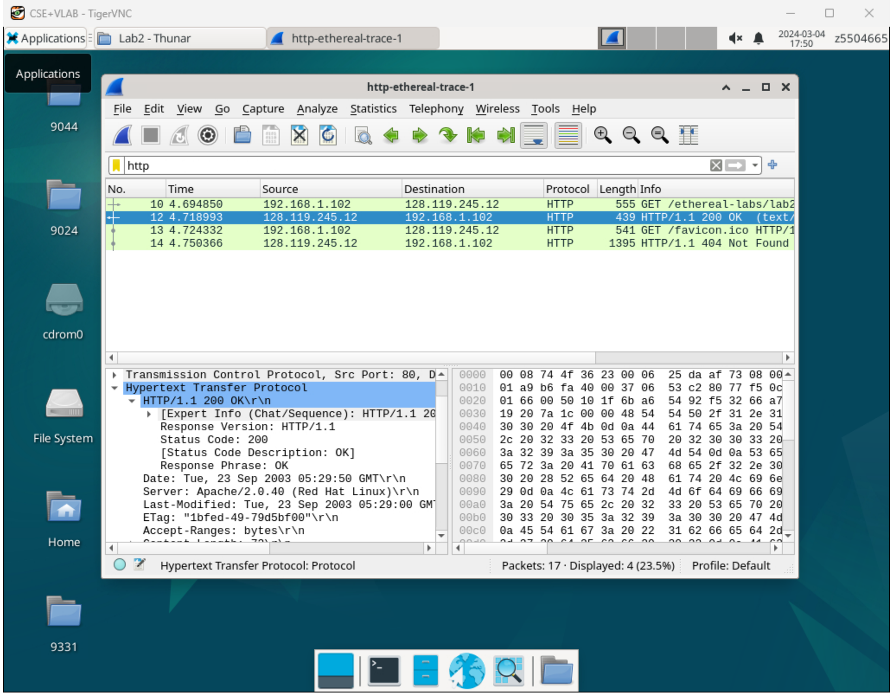
Lab2

Exercise 3

Q1:



http

```
No.  Time      Source          Destination     Protocol Length Info
  10 4.694850  192.168.1.102   128.119.245.12  HTTP      555 GET /ethereal-labs/lab2
  12 4.718993  128.119.245.12  192.168.1.102   HTTP      439 HTTP/1.1 200 OK  (text/
  13 4.724332  192.168.1.102   128.119.245.12  HTTP      541 GET /favicon.ico HTTP/1
  14 4.750366  128.119.245.12  192.168.1.102   HTTP     1395 HTTP/1.1 404 Not Found
```

```
Transmission Control Protocol, Src Port: 80, D
Hypertext Transfer Protocol
  HTTP/1.1 200 OK\r\n
    [Expert Info (Chat/Sequence): HTTP/1.1 20
    Response Version: HTTP/1.1
    Status Code: 200
    [Status Code Description: OK]
    Response Phrase: OK
  Date: Tue, 23 Sep 2003 05:29:50 GMT\r\n
  Server: Apache/2.0.40 (Red Hat Linux)\r\n
  Last-Modified: Tue, 23 Sep 2003 05:29:00 GM
  ETag: "1bfed-49-79d5bf00"\r\n
  Accept-Ranges: bytes\r\n
```

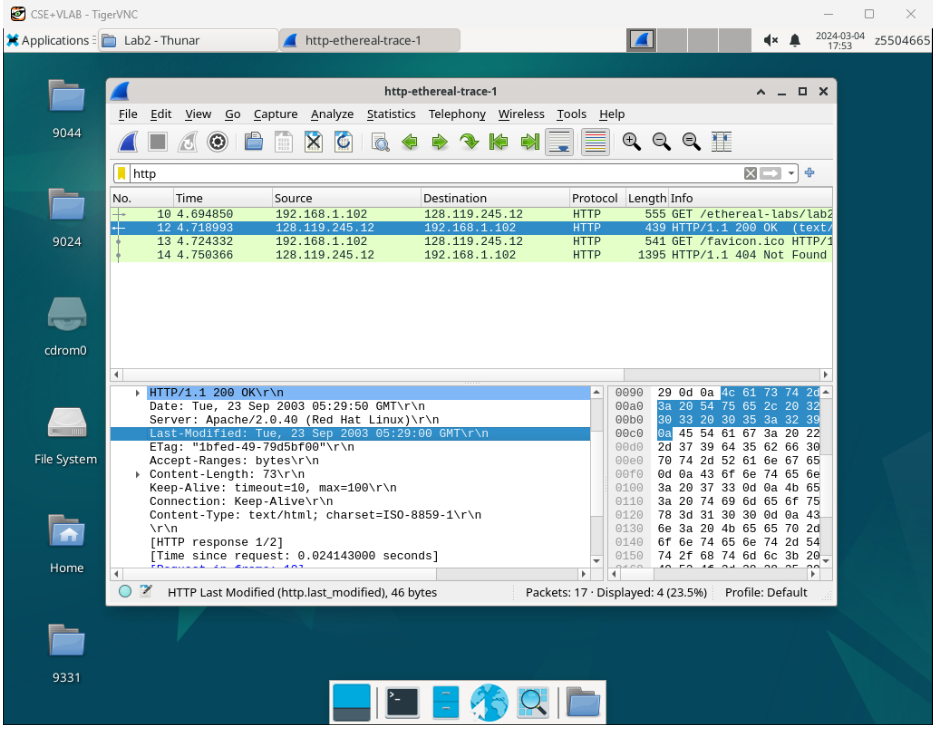
```
0000  00 08 74 4f 36 23 00 06  25 da af 73 08 00
0010  01 a9 b6 fa 40 00 37 06  53 c2 80 77 f5 0c
0020  01 66 00 50 10 1f 6b a6  54 92 f5 32 66 a7
0030  19 20 7a 1c 00 00 48 54  54 50 2f 31 2e 31
0040  30 30 20 4f 4b 0d 0a 44  61 74 65 3a 20 54
0050  2c 20 32 33 20 53 65 70  20 32 30 30 33 20
0060  3a 32 39 3a 35 30 20 47  4d 54 0d 0a 53 65
0070  65 72 3a 20 41 70 61 63  68 65 2f 32 2e 30
0080  30 20 28 52 65 64 20 48  61 74 20 4c 69 6e
0090  29 0d 0a 4c 61 73 74 2d  4d 6f 64 69 66 69
00a0  3a 20 54 75 65 2c 20 32  33 20 53 65 70 20
00b0  30 33 20 30 35 3a 32 39  3a 30 30 20 47 4d
00c0  0a 45 54 61 67 3a 20 22  31 62 66 65 64 2d
```

Hypertext Transfer Protocol: Protocol   Packets: 17 · Displayed: 4 (23.5%)   Profile: Default

state code:200

phrase:OK

Q2:



```
http

No.  Time      Source           Destination      Protocol Length Info
  10 4.694850  192.168.1.102    128.119.245.12   HTTP      555 GET /ethereal-labs/lab2
  12 4.718993  128.119.245.12   192.168.1.102    HTTP      439 HTTP/1.1 200 OK  (text/
  13 4.724332  192.168.1.102    128.119.245.12   HTTP      541 GET /favicon.ico HTTP/1
  14 4.750366  128.119.245.12   192.168.1.102    HTTP     1395 HTTP/1.1 404 Not Found
```

```
  HTTP/1.1 200 OK\r\n
  Date: Tue, 23 Sep 2003 05:29:50 GMT\r\n
  Server: Apache/2.0.40 (Red Hat Linux)\r\n
  Last-Modified: Tue, 23 Sep 2003 05:29:00 GMT\r\n
  ETag: "1bfed-49-79d5bf00"\r\n
  Accept-Ranges: bytes\r\n
  Content-Length: 73\r\n
  Keep-Alive: timeout=10, max=100\r\n
  Connection: Keep-Alive\r\n
  Content-Type: text/html; charset=ISO-8859-1\r\n
  \r\n
  [HTTP response 1/2]
  [Time since request: 0.024143000 seconds]
```

```
0090  29 0d 0a 4c 61 73 74 2d
00a0  3a 20 54 75 65 2c 20 32
00b0  30 33 20 30 35 3a 32 39
00c0  0a 45 54 61 67 3a 20 22
00d0  2d 37 39 64 35 62 66 30
00e0  70 74 2d 52 61 6e 67 65
00f0  0d 0a 43 6f 6e 74 65 6e
0100  3a 20 37 33 0d 0a 4b 65
0110  3a 20 74 69 6d 65 6f 75
0120  78 3d 31 30 30 0d 0a 43
0130  6e 3a 20 4b 65 65 70 2d
0140  6f 6e 74 65 6e 74 2d 54
0150  74 2f 68 74 6d 6c 3b 20
```

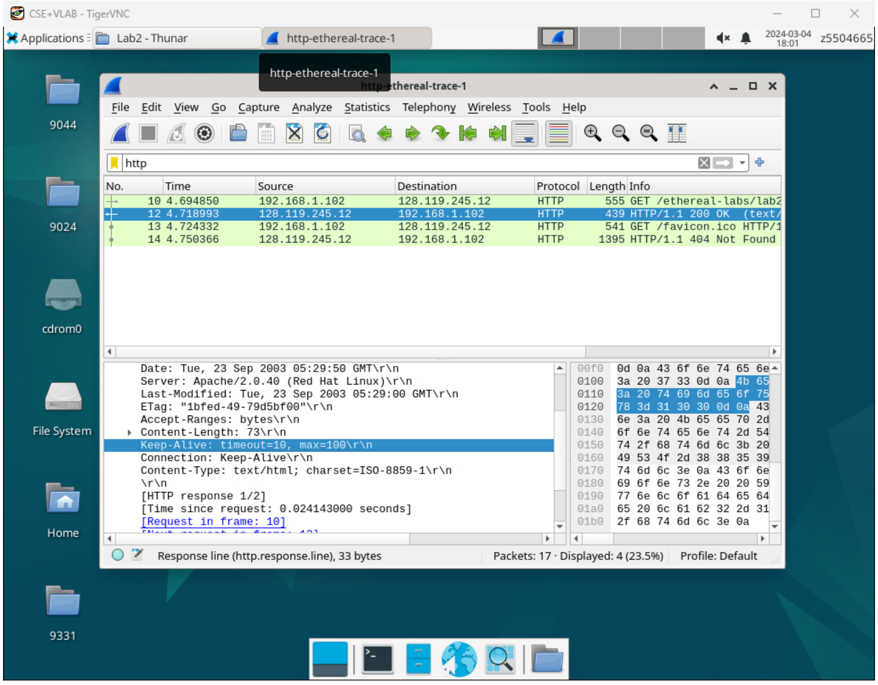
```
HTTP Last Modified (http.last_modified), 46 bytes    Packets: 17 · Displayed: 4 (23.5%)    Profile: Default
```

1) Last-modified time is Tue, 23 Sep 2003 05:29:00 GMT.

2) Yes,it does.

3) Date is the time when package was transported, and the last-modified is the last time when the package was changed.

Q3:



```
http

No.  Time      Source           Destination      Protocol Length Info
  10 4.694850  192.168.1.102    128.119.245.12   HTTP      555 GET /ethereal-labs/lab2
  12 4.718993  128.119.245.12   192.168.1.102    HTTP      439 HTTP/1.1 200 OK  (text/
  13 4.724332  192.168.1.102    128.119.245.12   HTTP      541 GET /favicon.ico HTTP/1
  14 4.750366  128.119.245.12   192.168.1.102    HTTP     1395 HTTP/1.1 404 Not Found
```

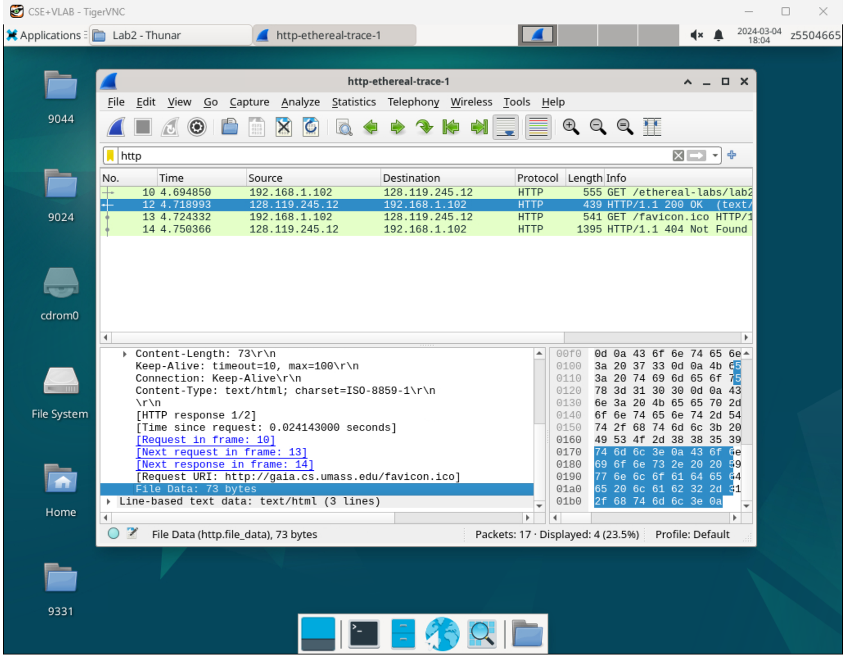
```
  Date: Tue, 23 Sep 2003 05:29:50 GMT\r\n
  Server: Apache/2.0.40 (Red Hat Linux)\r\n
  Last-Modified: Tue, 23 Sep 2003 05:29:00 GMT\r\n
  ETag: "1bfed-49-79d5bf00"\r\n
  Accept-Ranges: bytes\r\n
  Content-Length: 73\r\n
  Keep-Alive: timeout=10, max=100\r\n
  Connection: Keep-Alive\r\n
  Content-Type: text/html; charset=ISO-8859-1\r\n
  \r\n
  [HTTP response 1/2]
  [Time since request: 0.024143000 seconds]
  [Request in frame: 10]
```

```
00f0  0d 0a 43 6f 6e 74 65 6e
0100  3a 20 37 33 0d 0a 4b 65
0110  3a 20 74 69 6d 65 6f 75
0120  78 3d 31 30 30 0d 0a 43
0130  6e 3a 20 4b 65 65 70 2d
0140  6f 6e 74 65 6e 74 2d 54
0150  74 2f 68 74 6d 6c 3b 20
0160  49 53 4f 2d 38 38 35 39
0170  74 6d 6c 3e 0a 43 6f 6e
0180  69 6f 6e 73 2e 20 20 59
0190  77 6e 6c 6f 61 64 65 64
01a0  65 20 6c 61 62 32 2d 31
01b0  2f 68 74 6d 6c 3e 0a
```

```
Response line (http.response.line), 33 bytes    Packets: 17 · Displayed: 4 (23.5%)    Profile: Default
```

It is persistent, because we can see that there is a Keep-Alive in connection line,which means this connection is persistent.

Q4:



```
No.  Time       Source           Destination      Protocol Length Info
  10 4.694850   192.168.1.102    128.119.245.12   HTTP       555 GET /ethereal-labs/lab2
  12 4.718993   128.119.245.12   192.168.1.102    HTTP       439 HTTP/1.1 200 OK  (text/
  13 4.724332   192.168.1.102    128.119.245.12   HTTP       541 GET /favicon.ico HTTP/1
  14 4.750366   128.119.245.12   192.168.1.102    HTTP      1395 HTTP/1.1 404 Not Found
```

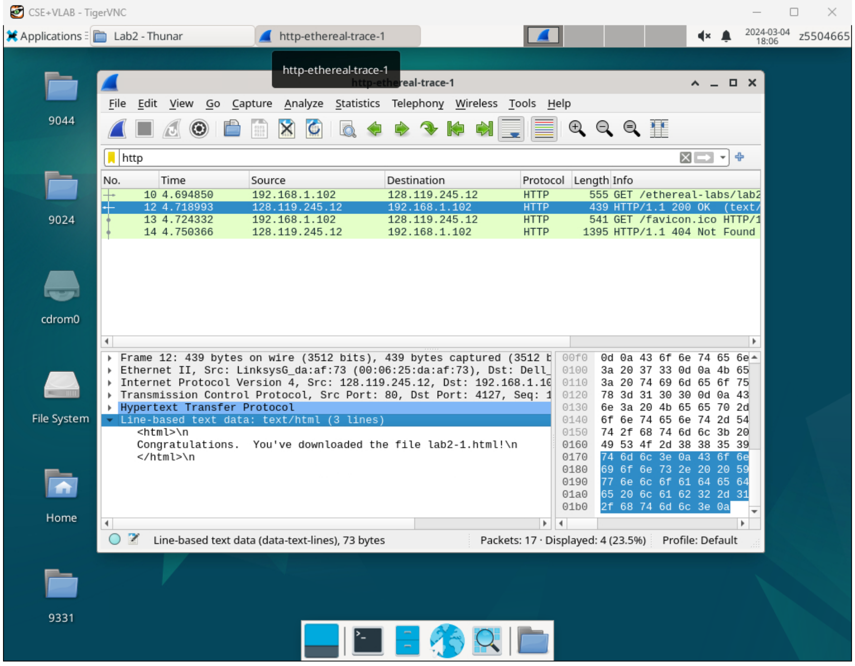
```
  > Content-Length: 73\r\n
    Keep-Alive: timeout=10, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=ISO-8859-1\r\n
    \r\n
    [HTTP response 1/2]
    [Time since request: 0.024143000 seconds]
    [Request in frame: 10]
    [Next request in frame: 13]
    [Next response in frame: 14]
    [Request URI: http://gaia.cs.umass.edu/favicon.ico]
    File Data: 73 bytes
> Line-based text data: text/html (3 lines)
```

```
00f0  0d 0a 43 6f 6e 74 65 6e
0100  3a 20 37 33 0d 0a 4b 65
0110  3a 20 74 69 6d 65 6f 75
0120  78 3d 31 30 30 0d 0a 43
0130  6e 3a 20 4b 65 65 70 2d
0140  6f 6e 74 65 6e 74 2d 54
0150  74 2f 68 74 6d 6c 3b 20
0160  49 53 4f 2d 38 38 35 39
0170  74 6d 6c 3e 0a 43 6f 6e
0180  69 6f 6e 73 2e 20 20 59
0190  77 6e 6c 6f 61 64 65 64
01a0  65 20 6c 61 62 32 2d 31
01b0  2f 68 74 6d 6c 3e 0a
```

```
File Data (http.file_data), 73 bytes    Packets: 17 · Displayed: 4 (23.5%)    Profile: Default
```

73 bytes

Q5:



```
No.  Time       Source           Destination      Protocol Length Info
  10 4.694850   192.168.1.102    128.119.245.12   HTTP       555 GET /ethereal-labs/lab2
  12 4.718993   128.119.245.12   192.168.1.102    HTTP       439 HTTP/1.1 200 OK  (text/
  13 4.724332   192.168.1.102    128.119.245.12   HTTP       541 GET /favicon.ico HTTP/1
  14 4.750366   128.119.245.12   192.168.1.102    HTTP      1395 HTTP/1.1 404 Not Found
```

```
> Frame 12: 439 bytes on wire (3512 bits), 439 bytes captured (3512 b
> Ethernet II, Src: LinksysG_da:af:73 (00:06:25:da:af:73), Dst: Dell_
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.10
> Transmission Control Protocol, Src Port: 80, Dst Port: 4127, Seq: 1
> Hypertext Transfer Protocol
v Line-based text data: text/html (3 lines)
    <html>\n
    Congratulations.  You've downloaded the file lab2-1.html!\n
    </html>\n
```

```
00f0  0d 0a 43 6f 6e 74 65 6e
0100  3a 20 37 33 0d 0a 4b 65
0110  3a 20 74 69 6d 65 6f 75
0120  78 3d 31 30 30 0d 0a 43
0130  6e 3a 20 4b 65 65 70 2d
0140  6f 6e 74 65 6e 74 2d 54
0150  74 2f 68 74 6d 6c 3b 20
0160  49 53 4f 2d 38 38 35 39
0170  74 6d 6c 3e 0a 43 6f 6e
0180  69 6f 6e 73 2e 20 20 59
0190  77 6e 6c 6f 61 64 65 64
01a0  65 20 6c 61 62 32 2d 31
01b0  2f 68 74 6d 6c 3e 0a
```

```
Line-based text data (data-text-lines), 73 bytes    Packets: 17 · Displayed: 4 (23.5%)    Profile: Default
```

Data:

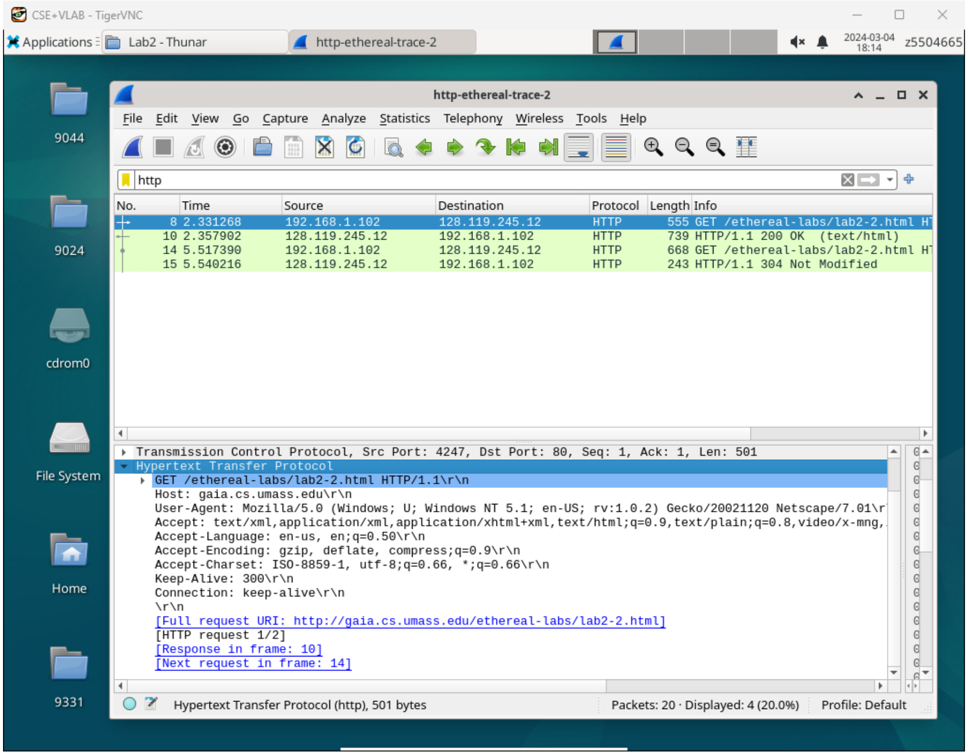
<html>\n

Congratulations. You've downloaded the file lab2-1.html!\n

<html>\n

Exercise 4

Q1：



http-ethereal-trace-2

http

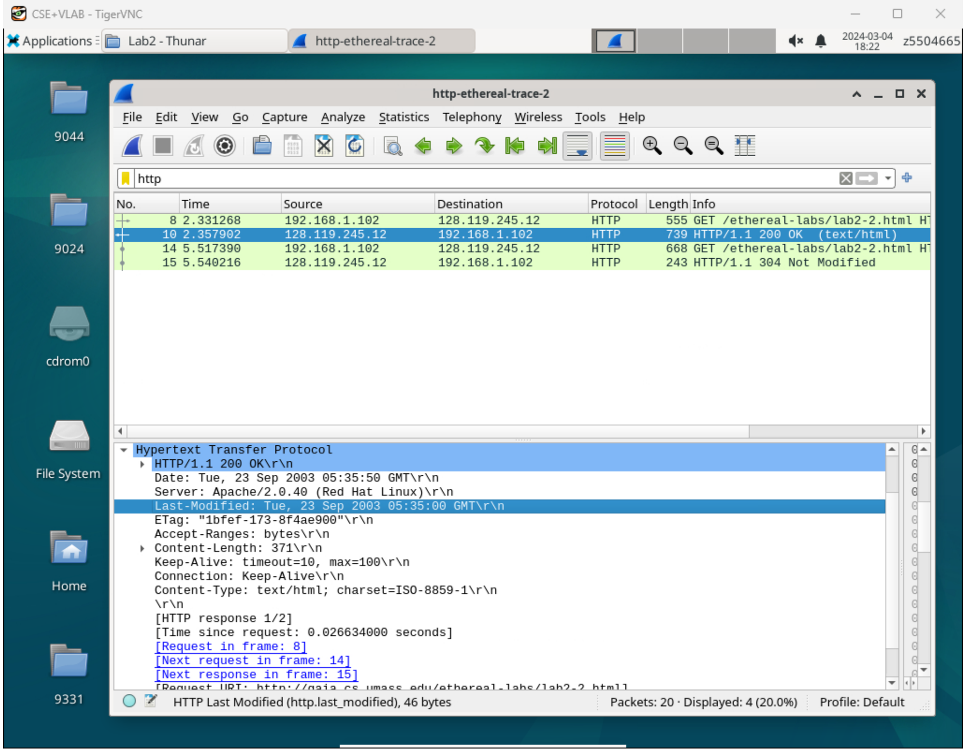
```
No.   Time      Source          Destination     Protocol Length Info
    8 2.331268  192.168.1.102   128.119.245.12  HTTP       555 GET /ethereal-labs/lab2-2.html HT
   10 2.357902  128.119.245.12  192.168.1.102   HTTP       739 HTTP/1.1 200 OK  (text/html)
   14 5.517390  192.168.1.102   128.119.245.12  HTTP       668 GET /ethereal-labs/lab2-2.html HT
   15 5.540216  128.119.245.12  192.168.1.102   HTTP       243 HTTP/1.1 304 Not Modified
```

```
▸ Transmission Control Protocol, Src Port: 4247, Dst Port: 80, Seq: 1, Ack: 1, Len: 501
▾ Hypertext Transfer Protocol
  ▸ GET /ethereal-labs/lab2-2.html HTTP/1.1\r\n
    Host: gaia.cs.umass.edu\r\n
    User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.0.2) Gecko/20021120 Netscape/7.01\r
    Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,video/x-mng,
    Accept-Language: en-us, en;q=0.50\r\n
    Accept-Encoding: gzip, deflate, compress;q=0.9\r\n
    Accept-Charset: ISO-8859-1, utf-8;q=0.66, *;q=0.66\r\n
    Keep-Alive: 300\r\n
    Connection: keep-alive\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/ethereal-labs/lab2-2.html]
    [HTTP request 1/2]
    [Response in frame: 10]
    [Next request in frame: 14]
```

Hypertext Transfer Protocol (http), 501 bytes | Packets: 20 · Displayed: 4 (20.0%) | Profile: Default

There is not “IF-MODIFIED-SINCE” line in the HTTP GET.

Q2:



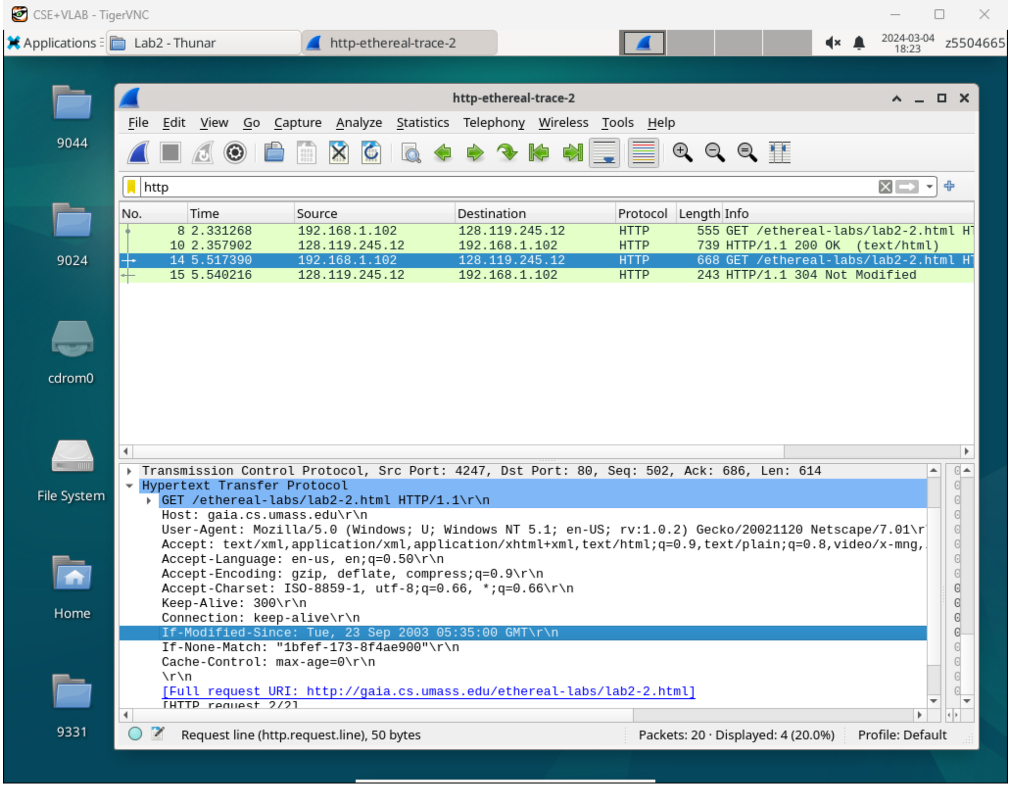
```
http
No.   Time       Source          Destination     Protocol Length Info
    8 2.331268   192.168.1.102   128.119.245.12  HTTP      555 GET /ethereal-labs/lab2-2.html HT
   10 2.357902   128.119.245.12  192.168.1.102   HTTP      739 HTTP/1.1 200 OK  (text/html)
   14 5.517390   192.168.1.102   128.119.245.12  HTTP      668 GET /ethereal-labs/lab2-2.html HT
   15 5.540216   128.119.245.12  192.168.1.102   HTTP      243 HTTP/1.1 304 Not Modified

Hypertext Transfer Protocol
  HTTP/1.1 200 OK\r\n
  Date: Tue, 23 Sep 2003 05:35:50 GMT\r\n
  Server: Apache/2.0.40 (Red Hat Linux)\r\n
  Last-Modified: Tue, 23 Sep 2003 05:35:00 GMT\r\n
  ETag: "1bfef-173-8f4ae900"\r\n
  Accept-Ranges: bytes\r\n
  Content-Length: 371\r\n
  Keep-Alive: timeout=10, max=100\r\n
  Connection: Keep-Alive\r\n
  Content-Type: text/html; charset=ISO-8859-1\r\n
  \r\n
  [HTTP response 1/2]
  [Time since request: 0.026634000 seconds]
  [Request in frame: 8]
  [Next request in frame: 14]
  [Next response in frame: 15]
  [Request URI: http://gaia.cs.umass.edu/ethereal-labs/lab2-2.html]

HTTP Last Modified (http.last_modified), 46 bytes    Packets: 20 · Displayed: 4 (20.0%)    Profile: Default
```

Yes it does,and the time is Tue, 23 Sep 2003 05:35:00 GMT.

Q3:



```
http
No.   Time       Source          Destination     Protocol Length Info
    8 2.331268   192.168.1.102   128.119.245.12  HTTP      555 GET /ethereal-labs/lab2-2.html HT
   10 2.357902   128.119.245.12  192.168.1.102   HTTP      739 HTTP/1.1 200 OK  (text/html)
   14 5.517390   192.168.1.102   128.119.245.12  HTTP      668 GET /ethereal-labs/lab2-2.html HT
   15 5.540216   128.119.245.12  192.168.1.102   HTTP      243 HTTP/1.1 304 Not Modified

Transmission Control Protocol, Src Port: 4247, Dst Port: 80, Seq: 502, Ack: 686, Len: 614
Hypertext Transfer Protocol
  GET /ethereal-labs/lab2-2.html HTTP/1.1\r\n
  Host: gaia.cs.umass.edu\r\n
  User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.0.2) Gecko/20021120 Netscape/7.01\r
  Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,video/x-mng,
  Accept-Language: en-us, en;q=0.50\r\n
  Accept-Encoding: gzip, deflate, compress;q=0.9\r\n
  Accept-Charset: ISO-8859-1, utf-8;q=0.66, *;q=0.66\r\n
  Keep-Alive: 300\r\n
  Connection: keep-alive\r\n
  If-Modified-Since: Tue, 23 Sep 2003 05:35:00 GMT\r\n
  If-None-Match: "1bfef-173-8f4ae900"\r\n
  Cache-Control: max-age=0\r\n
  \r\n
  [Full request URI: http://gaia.cs.umass.edu/ethereal-labs/lab2-2.html]
  [HTTP request 2/2]

Request line (http.request.line), 50 bytes    Packets: 20 · Displayed: 4 (20.0%)    Profile: Default
```

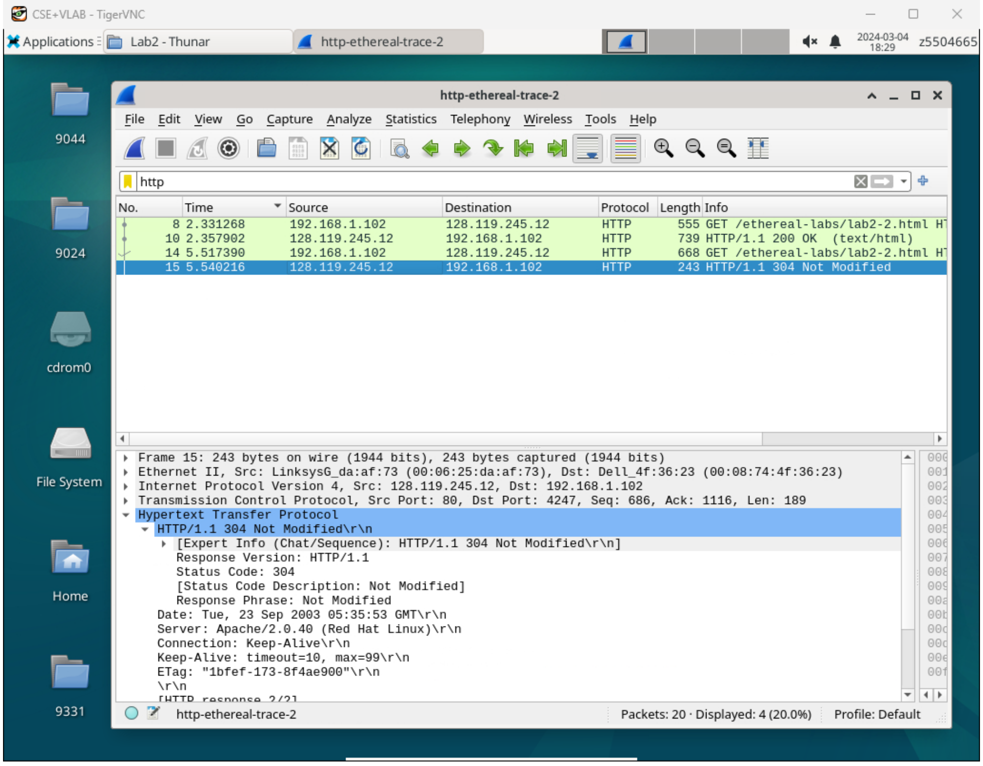
1)Yes,I see these two line.

2)And the information they contained are:

If-Modified-Since: Tue, 23 Sep 2003 05:35:00 GMT

If-None-Match: "1bfef-173-8f4ae900"

Q4：



```
http
```

```
No.   Time       Source          Destination     Protocol Length Info
    8 2.331268   192.168.1.102   128.119.245.12  HTTP     555 GET /ethereal-labs/lab2-2.html HT
   10 2.357902   128.119.245.12  192.168.1.102   HTTP     739 HTTP/1.1 200 OK  (text/html)
   14 5.517390   192.168.1.102   128.119.245.12  HTTP     668 GET /ethereal-labs/lab2-2.html HT
   15 5.540216   128.119.245.12  192.168.1.102   HTTP     243 HTTP/1.1 304 Not Modified
```

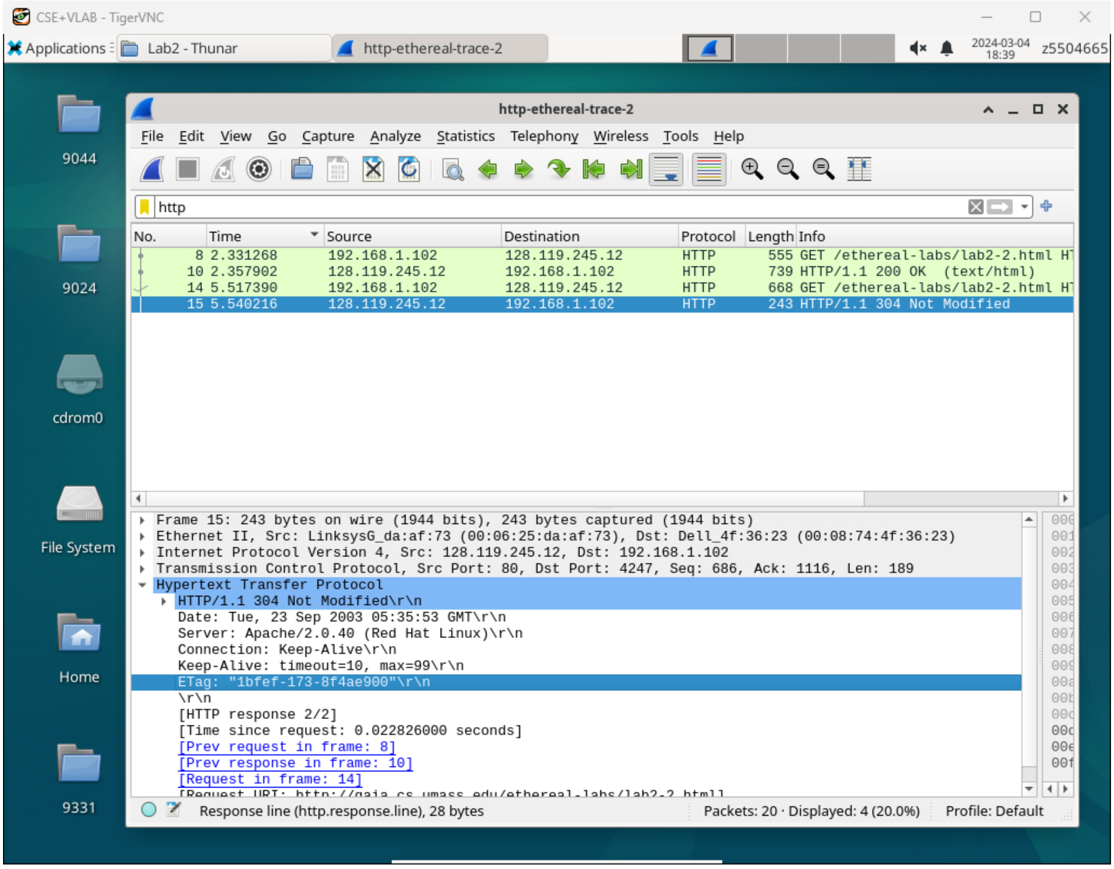
```
Frame 15: 243 bytes on wire (1944 bits), 243 bytes captured (1944 bits)
Ethernet II, Src: LinksysG_da:af:73 (00:06:25:da:af:73), Dst: Dell_4f:36:23 (00:08:74:4f:36:23)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.102
Transmission Control Protocol, Src Port: 80, Dst Port: 4247, Seq: 686, Ack: 1116, Len: 189
Hypertext Transfer Protocol
  HTTP/1.1 304 Not Modified\r\n
    [Expert Info (Chat/Sequence): HTTP/1.1 304 Not Modified\r\n]
    Response Version: HTTP/1.1
    Status Code: 304
    [Status Code Description: Not Modified]
    Response Phrase: Not Modified
  Date: Tue, 23 Sep 2003 05:35:53 GMT\r\n
  Server: Apache/2.0.40 (Red Hat Linux)\r\n
  Connection: Keep-Alive\r\n
  Keep-Alive: timeout=10, max=99\r\n
  ETag: "1bfef-173-8f4ae900"\r\n
  \r\n
  [HTTP response 2/2]
```

http-ethereal-trace-2   Packets: 20 · Displayed: 4 (20.0%)   Profile: Default

1)state code: 300   phrase: Not Modified

2)No, it did not. Because the content the client second request has not modified after first time, so there is no need to return the file’s content, it is same as the first one the client gained.

Q5:

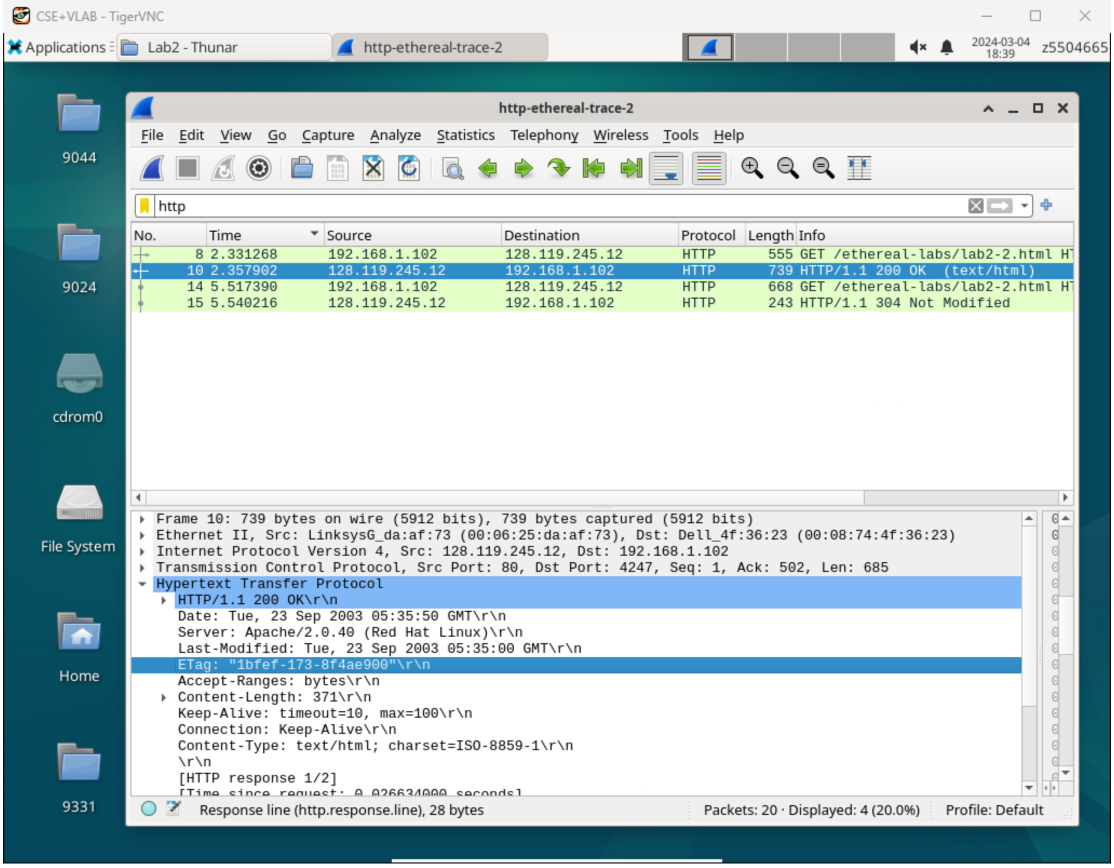


http

```
No.  Time      Source          Destination     Protocol Length Info
   8 2.331268  192.168.1.102   128.119.245.12  HTTP     555 GET /ethereal-labs/lab2-2.html HT
  10 2.357902  128.119.245.12  192.168.1.102   HTTP     739 HTTP/1.1 200 OK  (text/html)
  14 5.517390  192.168.1.102   128.119.245.12  HTTP     668 GET /ethereal-labs/lab2-2.html HT
  15 5.540216  128.119.245.12  192.168.1.102   HTTP     243 HTTP/1.1 304 Not Modified
```

```
› Frame 15: 243 bytes on wire (1944 bits), 243 bytes captured (1944 bits)
› Ethernet II, Src: LinksysG_da:af:73 (00:06:25:da:af:73), Dst: Dell_4f:36:23 (00:08:74:4f:36:23)
› Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.102
› Transmission Control Protocol, Src Port: 80, Dst Port: 4247, Seq: 686, Ack: 1116, Len: 189
⌄ Hypertext Transfer Protocol
  › HTTP/1.1 304 Not Modified\r\n
    Date: Tue, 23 Sep 2003 05:35:53 GMT\r\n
    Server: Apache/2.0.40 (Red Hat Linux)\r\n
    Connection: Keep-Alive\r\n
    Keep-Alive: timeout=10, max=99\r\n
    ETag: "1bfef-173-8f4ae900"\r\n
    \r\n
    [HTTP response 2/2]
    [Time since request: 0.022826000 seconds]
    [Prev request in frame: 8]
    [Prev response in frame: 10]
    [Request in frame: 14]
    [Request URI: http://gaia.cs.umass.edu/ethereal-labs/lab2-2.html]
```

Response line (http.response.line), 28 bytes   Packets: 20 · Displayed: 4 (20.0%)   Profile: Default



http

```
No.  Time      Source          Destination     Protocol Length Info
   8 2.331268  192.168.1.102   128.119.245.12  HTTP     555 GET /ethereal-labs/lab2-2.html HT
  10 2.357902  128.119.245.12  192.168.1.102   HTTP     739 HTTP/1.1 200 OK  (text/html)
  14 5.517390  192.168.1.102   128.119.245.12  HTTP     668 GET /ethereal-labs/lab2-2.html HT
  15 5.540216  128.119.245.12  192.168.1.102   HTTP     243 HTTP/1.1 304 Not Modified
```

```
› Frame 10: 739 bytes on wire (5912 bits), 739 bytes captured (5912 bits)
› Ethernet II, Src: LinksysG_da:af:73 (00:06:25:da:af:73), Dst: Dell_4f:36:23 (00:08:74:4f:36:23)
› Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.102
› Transmission Control Protocol, Src Port: 80, Dst Port: 4247, Seq: 1, Ack: 502, Len: 685
⌄ Hypertext Transfer Protocol
  › HTTP/1.1 200 OK\r\n
    Date: Tue, 23 Sep 2003 05:35:50 GMT\r\n
    Server: Apache/2.0.40 (Red Hat Linux)\r\n
    Last-Modified: Tue, 23 Sep 2003 05:35:00 GMT\r\n
    ETag: "1bfef-173-8f4ae900"\r\n
    Accept-Ranges: bytes\r\n
  › Content-Length: 371\r\n
    Keep-Alive: timeout=10, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=ISO-8859-1\r\n
    \r\n
    [HTTP response 1/2]
    [Time since request: 0.026634000 seconds]
```

Response line (http.response.line), 28 bytes   Packets: 20 · Displayed: 4 (20.0%)   Profile: Default

1) ETag: "1bfef-173-8f4ae900" By comparing the two etag information, you can determine whether the file content of the two requests has changed and decide whether to send the file content again

2) They are the same.

Exercise 5

Code:

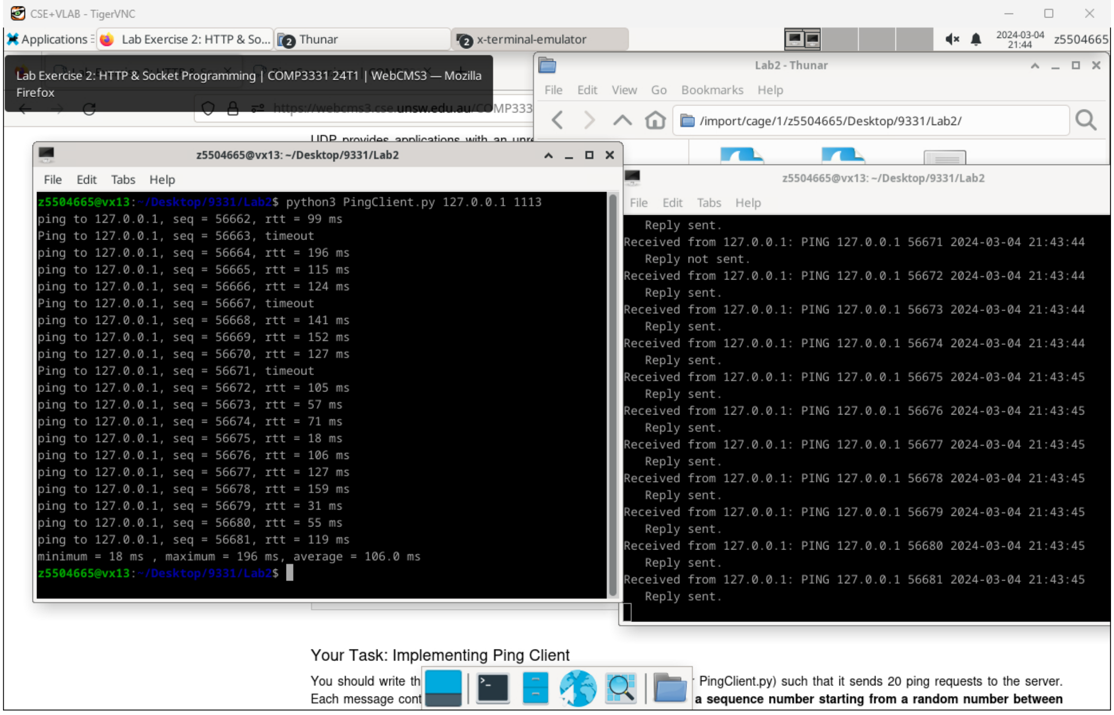
```
import socket
import time
import datetime
import random
import sys

def main():
    args = sys.argv
    all_rtt=[]
    ip=args[1]
    port=int(args[2])
    udp_socket=socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
    udp_socket.settimeout(0.6)
    n=random.randint(50000, 60000)
    for i in range(20):
        date=datetime.datetime.now()
        try:
            sp=time.time()
            text="PING "+ip+" "+str(n)+" "+date.strftime("%Y-%m-%d %H:%M:%S")
            udp_socket.sendto(text.encode('utf-8'), (ip, port))
            recieve_msg=udp_socket.recvfrom(2048)
            fp=time.time()
            all_rtt.append(int((fp-sp)*1000))
            print("ping to "+ip+", seq = "+str(n)+", rtt = "+str(int((fp-sp)*1000))+" ms")

        except:
            print("ping to "+ip+", seq = "+str(n)+", "+"timeout")
        n+=1
    print("minimum = "+str(min(all_rtt))+" ms , maximum = "+str(max(all_rtt))+" ms, average = "+str(sum(all_rtt) / len(all_rtt))+" ms")
    udp_socket.close()

if __name__ == "__main__":
    main()
```

Test result:


CSE+VLAB - TigerVNC
Applications
Lab Exercise 2: HTTP & So...
Thunar
x-terminal-emulator
2024-03-04 21:44
z5504665
Lab Exercise 2: HTTP & Socket Programming | COMP3331 24T1 | WebCMS3 — Mozilla Firefox
https://webcms3.cse.unsw.edu.au/COMP333
UDP provides applications with an unre
Lab2 - Thunar
File Edit View Go Bookmarks Help
/import/cage/1/z5504665/Desktop/9331/Lab2/
z5504665@vx13: ~/Desktop/9331/Lab2
File Edit Tabs Help
z5504665@vx13: ~/Desktop/9331/Lab2
File Edit Tabs Help
Your Task: Implementing Ping Client
You should write th
Each message cont
PingClient.py) such that it sends 20 ping requests to the server.
a sequence number starting from a random number between

```
z5504665@vx13:~/Desktop/9331/Lab2$ python3 PingClient.py 127.0.0.1 1113
ping to 127.0.0.1, seq = 56662, rtt = 99 ms
Ping to 127.0.0.1, seq = 56663, timeout
ping to 127.0.0.1, seq = 56664, rtt = 196 ms
ping to 127.0.0.1, seq = 56665, rtt = 115 ms
ping to 127.0.0.1, seq = 56666, rtt = 124 ms
Ping to 127.0.0.1, seq = 56667, timeout
ping to 127.0.0.1, seq = 56668, rtt = 141 ms
ping to 127.0.0.1, seq = 56669, rtt = 152 ms
ping to 127.0.0.1, seq = 56670, rtt = 127 ms
Ping to 127.0.0.1, seq = 56671, timeout
ping to 127.0.0.1, seq = 56672, rtt = 105 ms
ping to 127.0.0.1, seq = 56673, rtt = 57 ms
ping to 127.0.0.1, seq = 56674, rtt = 71 ms
ping to 127.0.0.1, seq = 56675, rtt = 18 ms
ping to 127.0.0.1, seq = 56676, rtt = 106 ms
ping to 127.0.0.1, seq = 56677, rtt = 127 ms
ping to 127.0.0.1, seq = 56678, rtt = 159 ms
ping to 127.0.0.1, seq = 56679, rtt = 31 ms
ping to 127.0.0.1, seq = 56680, rtt = 55 ms
ping to 127.0.0.1, seq = 56681, rtt = 119 ms
minimum = 18 ms , maximum = 196 ms, average = 106.0 ms
z5504665@vx13:~/Desktop/9331/Lab2$
```

```
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56671 2024-03-04 21:43:44
   Reply not sent.
Received from 127.0.0.1: PING 127.0.0.1 56672 2024-03-04 21:43:44
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56673 2024-03-04 21:43:44
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56674 2024-03-04 21:43:44
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56675 2024-03-04 21:43:45
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56676 2024-03-04 21:43:45
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56677 2024-03-04 21:43:45
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56678 2024-03-04 21:43:45
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56679 2024-03-04 21:43:45
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56680 2024-03-04 21:43:45
   Reply sent.
Received from 127.0.0.1: PING 127.0.0.1 56681 2024-03-04 21:43:45
   Reply sent.
```