WSA2

2448025

1. Both Request Version: HTTP/1.1

```
> Frame 9487: 545 bytes on wire (4360 bits), 545 bytes captured (4360 bits) on interface \Device\NPF_{D44AB792-8D3B-45CA-97FB-74FDD8DFB64D}, id 0
> Ethernet II, Src: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2), Dst: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc)
> Internet Protocol Version 4, Src: 192.168.1.96, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 51821, Dst Port: 80, Seq: 1, Ack: 1, Len: 491
v Hypertext Transfer Protocol
  v GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
    > [Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n]
      Request Method: GET
      Request URI: /wireshark-labs/HTTP-wireshark-file1.html
      Request Version: HTTP/1.1
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
    Upgrade-Insecure-Requests: 1\r\n
    User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/118.0.0.0 Safari/537.36 Edg/118.0.2088.61\r\n
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: en-GB,en;q=0.9,en-US;q=0.8\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
    [HTTP request 1/1]
    [Response in frame: 9983]
```

```
> Frame 9983: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 51821, Seq: 1, Ack: 492, Len: 486
v Hypertext Transfer Protocol
  v HTTP/1.1 200 OK\r\n
    > [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
      Response Version: HTTP/1.1
      Status Code: 200
      [Status Code Description: OK]
      Response Phrase: OK
    Date: Wed, 25 Oct 2023 15:54:02 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
```

2. Accept-Language: en-GB,en;q=0.9,en-US;

```
> Frame 9487: 545 bytes on wire (4360 bits), 545 bytes captured (4360 bits)
> Ethernet II, Src: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2), Dst: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc)
> Internet Protocol Version 4, Src: 192.168.1.96, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 51821, Dst Port: 80, Seq: 1, Ack: 1, Len: 491
v Hypertext Transfer Protocol
  v GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n
    > [Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n]
      Request Method: GET
      Request URI: /wireshark-labs/HTTP-wireshark-file1.html
      Request Version: HTTP/1.1
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
    Upgrade-Insecure-Requests: 1\r\n
    User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/118.0.0.0 Safari/537.36 Edg/118.0.2088.61\r\n
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: en-GB,en;q=0.9,en-US;q=0.8\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
    [HTTP request 1/1]
    [Response in frame: 9983]
```

3. Source Address: 192.168.1.96, Destination Address: 128.119.245.12

```
> Frame 9487: 545 bytes on wire (4360 bits), 545 bytes captured (4360 bits)
> Ethernet II, Src: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2), Dst: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc)
∨ Internet Protocol Version 4, Src: 192.168.1.96, Dst: 128.119.245.12
      0100 .... = Version: 4
      .... 0101 = Header Length: 20 bytes (5)
   > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
      Total Length: 531
      Identification: 0xccea (52458)
   > 010. .... = Flags: 0x2, Don't fragment
      ...0 0000 0000 0000 = Fragment Offset: 0
      Time to Live: 128
      Protocol: TCP (6)
      Header Checksum: 0x0000 [validation disabled]
      [Header checksum status: Unverified]
      Source Address: 192.168.1.96
      Destination Address: 128.119.245.12
> Transmission Control Protocol, Src Port: 51821, Dst Port: 80, Seq: 1, Ack: 1, Len: 491
> Hypertext Transfer Protocol
```

4. Status Code: 200 OK

```
> Frame 9983: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 51821, Seq: 1, Ack: 492, Len: 486
∨ Hypertext Transfer Protocol
   ∨ HTTP/1.1 200 OK\r\n
      > [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
         Response Version: HTTP/1.1
         Status Code: 200
         [Status Code Description: OK]
         Response Phrase: OK
      Date: Wed, 25 Oct 2023 15:54:02 GMT\r\n
      Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
      Last-Modified: Wed, 25 Oct 2023 05:59:01 GMT\r\n
      ETag: "80-6088426e74faf"\r\n
      Accept-Ranges: bytes\r\n
   > Content-Length: 128\r\n
      Keep-Alive: timeout=5, max=100\r\n
      Connection: Keep-Alive\r\n
      Content-Type: text/html; charset=UTF-8\r\n
      \r\n
      [HTTP response 1/1]
      [Time since request: 0.164317000 seconds]
      [Request in frame: 9487]
      [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
      File Data: 128 bytes
```

5. Last-Modified: Wed, 25 Oct 2023 05:59:01 GMT

```
> Frame 9983: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 51821, Seq: 1, Ack: 492, Len: 486
∨ Hypertext Transfer Protocol
   ∨ HTTP/1.1 200 OK\r\n
      > [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
         Response Version: HTTP/1.1
         Status Code: 200
         [Status Code Description: OK]
         Response Phrase: OK
      Date: Wed, 25 Oct 2023 15:54:02 GMT\r\n
      Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
      Last-Modified: Wed, 25 Oct 2023 05:59:01 GMT\r\n
      ETag: "80-6088426e74faf"\r\n
      Accept-Ranges: bytes\r\n
```

6.   Content-Length: 128

```
> Frame 9983: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 51821, Seq: 1, Ack: 492, Len: 486
v Hypertext Transfer Protocol
  v HTTP/1.1 200 OK\r\n
    > [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
       Response Version: HTTP/1.1
       Status Code: 200
       [Status Code Description: OK]
       Response Phrase: OK
     Date: Wed, 25 Oct 2023 15:54:02 GMT\r\n
     Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
     Last-Modified: Wed, 25 Oct 2023 05:59:01 GMT\r\n
     ETag: "80-6088426e74faf"\r\n
     Accept-Ranges: bytes\r\n
   > Content-Length: 128\r\n
     Keep-Alive: timeout=5, max=100\r\n
     Connection: Keep-Alive\r\n
     Content-Type: text/html; charset=UTF-8\r\n
     \r\n
     [HTTP response 1/1]
     [Time since request: 0.164317000 seconds]
     [Request in frame: 9487]
     [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
     File Data: 128 bytes
> Line-based text data: text/html (4 lines)
```

7.   No, I don't see any in the HTTP Message below

8.   In the first GET Message , there is no IF-MODIFIED-SINCE

```
> Frame 131: 545 bytes on wire (4360 bits), 545 bytes captured (4360 bits) on interface \Device\NPF_{D44AB792-8D3B-45CA-97FB-74FDD8DFB64D}, id 0
> Ethernet II, Src: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2), Dst: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc)
> Internet Protocol Version 4, Src: 192.168.1.96, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 52113, Dst Port: 80, Seq: 1, Ack: 1, Len: 491
v Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
     Host: gaia.cs.umass.edu\r\n
     Connection: keep-alive\r\n
     Upgrade-Insecure-Requests: 1\r\n
     User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/118.0.0.0 Safari/537.36 Edg/118.0.2088.61\r\n
     Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
     Accept-Encoding: gzip, deflate\r\n
     Accept-Language: en-GB,en;q=0.9,en-US;q=0.8\r\n
     \r\n
     [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
     [HTTP request 1/1]
```

9.   In response of the first GET text has been returned and same with the website.

```
> Frame 165: 784 bytes on wire (6272 bits), 784 bytes captured (6272 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 52113, Seq: 1, Ack: 492, Len: 730
v Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
     Date: Wed, 25 Oct 2023 16:21:40 GMT\r\n
     Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
     Last-Modified: Wed, 25 Oct 2023 05:59:01 GMT\r\n
     ETag: "173-6088426e743f7"\r\n
     Accept-Ranges: bytes\r\n
   > Content-Length: 371\r\n
     Keep-Alive: timeout=5, max=100\r\n
     Connection: Keep-Alive\r\n
     Content-Type: text/html; charset=UTF-8\r\n
     \r\n
     [HTTP response 1/1]
     [Time since request: 0.153607000 seconds]
     [Request in frame: 131]
     [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
     File Data: 371 bytes
v 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
```

10. If-Modified-Since: Wed, 25 Oct 2023 05:59:01 GMT

```
> Frame 245: 657 bytes on wire (5256 bits), 657 bytes captured (5256 bits)
> Ethernet II, Src: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2), Dst: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc)
> Internet Protocol Version 4, Src: 192.168.1.96, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 52114, Dst Port: 80, Seq: 1, Ack: 1, Len: 603
v Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
    Cache-Control: max-age=0\r\n
    Upgrade-Insecure-Requests: 1\r\n
    User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/118.0.0.0 Safari/537.36 Edg/118.0.2088.61\r\n
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: en-GB,en;q=0.9,en-US;q=0.8\r\n
    If-None-Match: "173-6088426e743f7"\r\n
    If-Modified-Since: Wed, 25 Oct 2023 05:59:01 GMT\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
    [HTTP request 1/1]
    [Response in frame: 250]
```

11. Status Code: 304, [Status Code Description: Not Modified]. So, text of the file not returned.

```
> Frame 250: 294 bytes on wire (2352 bits), 294 bytes captured (2352 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 52114, Seq: 1, Ack: 604, Len: 240
v Hypertext Transfer Protocol
  v 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: Wed, 25 Oct 2023 16:21:54 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Connection: Keep-Alive\r\n
    Keep-Alive: timeout=5, max=100\r\n
    ETag: "173-6088426e743f7"\r\n
    \r\n
    [HTTP response 1/1]
    [Time since request: 0.154644000 seconds]
    [Request in frame: 245]
    [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
```

12. Browser sent 1 HTTP GET request. Packet No:6089 contains GET message for the Bill or Rights.

```
  6089 14.620364    192.168.1.96      128.119.245.12    HTTP    545 GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1
  6116 14.778868    128.119.245.12    192.168.1.96      HTTP    559 HTTP/1.1 200 OK  (text/html)
```

```
> Frame 6089: 545 bytes on wire (4360 bits), 545 bytes captured (4360 bits) on interface \Device\NPF_{D44AB792-8D3B-45CA-97FB-74FDD8DFB64D}, id 0
> Ethernet II, Src: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2), Dst: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc)
> Internet Protocol Version 4, Src: 192.168.1.96, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 52421, Dst Port: 80, Seq: 1, Ack: 1, Len: 491
v Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1\r\n
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
    Upgrade-Insecure-Requests: 1\r\n
    User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/118.0.0.0 Safari/537.36 Edg/118.0.2088.61\r\n
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: en-GB,en;q=0.9,en-US;q=0.8\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html]
    [HTTP request 1/1]
    [Response in frame: 6116]
```

13. Packet 6116

```
> Frame 6116: 559 bytes on wire (4472 bits), 559 bytes captured (4472 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 52421, Seq: 4357, Ack: 492, Len: 505
> [4 Reassembled TCP Segments (4861 bytes): #6112(1452), #6113(1452), #6115(1452), #6116(505)]
v Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    Date: Wed, 25 Oct 2023 16:51:04 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Wed, 25 Oct 2023 05:59:01 GMT\r\n
    ETag: "1194-6088426e7018f"\r\n
    Accept-Ranges: bytes\r\n
  > Content-Length: 4500\r\n
    Keep-Alive: timeout=5, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=UTF-8\r\n
    \r\n
    [HTTP response 1/1]
    [Time since request: 0.158504000 seconds]
    [Request in frame: 6089]
    [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html]
    File Data: 4500 bytes
> Line-based text data: text/html (98 lines)
```

14. Status Code: 200

```
> Frame 6116: 559 bytes on wire (4472 bits), 559 bytes captured (4472 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 52421, Seq: 4357, Ack: 492, Len: 505
> [4 Reassembled TCP Segments (4861 bytes): #6112(1452), #6113(1452), #6115(1452), #6116(505)]
∨ Hypertext Transfer Protocol
  ∨ HTTP/1.1 200 OK\r\n
    > [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
      Response Version: HTTP/1.1
      Status Code: 200
      [Status Code Description: OK]
      Response Phrase: OK
    Date: Wed, 25 Oct 2023 16:51:04 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Wed, 25 Oct 2023 05:59:01 GMT\r\n
    ETag: "1194-6088426e7018f"\r\n
    Accept-Ranges: bytes\r\n
    > Content-Length: 4500\r\n
    Keep-Alive: timeout=5, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=UTF-8\r\n
    \r\n
    [HTTP response 1/1]
    [Time since request: 0.158504000 seconds]
    [Request in frame: 6089]
    [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html]
    File Data: 4500 bytes
> Line-based text data: text/html (98 lines)
```

15. 4 Reassembled TCP Segments (4861 bytes): #6112(1452), #6113(1452), #6115(1452), #6116(505)

```
> Frame 6116: 559 bytes on wire (4472 bits), 559 bytes captured (4472 bits)
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 52421, Seq: 4357, Ack: 492, Len: 505
∨ [4 Reassembled TCP Segments (4861 bytes): #6112(1452), #6113(1452), #6115(1452), #6116(505)]
    [Frame: 6112, payload: 0-1451 (1452 bytes)]
    [Frame: 6113, payload: 1452-2903 (1452 bytes)]
    [Frame: 6115, payload: 2904-4355 (1452 bytes)]
    [Frame: 6116, payload: 4356-4860 (505 bytes)]
    [Segment count: 4]
    [Reassembled TCP length: 4861]
    [Reassembled TCP Data: 485454502f312e3120323030204f4b0d0a446174653a205765642c203235204f63742032…]
> Hypertext Transfer Protocol
> Line-based text data: text/html (98 lines)
```

16. My browser sent 3 http GET message requests. One each to each for each of the following: The initial page, pearson.png, and 8E_cover_small.jpg.

   Initial Page Destination Address: 128.119.245.12

   Pearson.png Destination Address: 128.119.245.12

   8E_cover_small.jpg Destination Address: 178.79.137.164

```
 74 4.531423     192.168.1.96      128.119.245.12    HTTP    545 GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
 91 4.688065     128.119.245.12    192.168.1.96      HTTP    1355 HTTP/1.1 200 OK  (text/html)
 92 4.698187     192.168.1.96      128.119.245.12    HTTP    491 GET /pearson.png HTTP/1.1
119 4.855597     128.119.245.12    192.168.1.96      HTTP    761 HTTP/1.1 200 OK  (PNG)
138 5.007182     192.168.1.96      178.79.137.164    HTTP    458 GET /8E_cover_small.jpg HTTP/1.1
145 5.079391     178.79.137.164    192.168.1.96      HTTP    225 HTTP/1.1 301 Moved Permanently
168 5.297669     192.168.1.96      193.192.103.242   HTTP    363 GET /roots/dstrootcax3.p7c HTTP/1.1
170 5.312122     193.192.103.242   192.168.1.96      HTTP    1460 HTTP/1.1 200 OK
```

17. I think the downloads occurred in serial because the first image was requested and sent before the second image was requested by the browser. Had they been running in parallel, both files would have been requested then would have returned in the same time period.

18. Status Code: 401, Response Phrase: Unauthorized

```
> Frame 13: 771 bytes on wire (6168 bits), 771 bytes captured (6168 bits) on interface \Device\NPF_{D44AB792-8D3B-45CA-97FB-74FDD8DFB64D}, id 0
> Ethernet II, Src: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc), Dst: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.96
> Transmission Control Protocol, Src Port: 80, Dst Port: 53314, Seq: 1, Ack: 524, Len: 717
v Hypertext Transfer Protocol
  v HTTP/1.1 401 Unauthorized\r\n
    > [Expert Info (Chat/Sequence): HTTP/1.1 401 Unauthorized\r\n]
      Response Version: HTTP/1.1
      Status Code: 401
      [Status Code Description: Unauthorized]
      Response Phrase: Unauthorized
    Date: Wed, 25 Oct 2023 18:08:38 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
    WWW-Authenticate: Basic realm="wireshark-students only"\r\n
  > Content-Length: 381\r\n
    Keep-Alive: timeout=5, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=iso-8859-1\r\n
    \r\n
    [HTTP response 1/1]
    [Time since request: 0.156332000 seconds]
    [Request in frame: 10]
    [Request URI: http://gaia.cs.umass.edu/wireshark-labs/protected_pages/HTTP-wireshark-file5.html]
    File Data: 381 bytes
> Line-based text data: text/html (12 lines)
```

19. Authorization: Basic d2lyZXNoYXJrLXN0dWRlbnRzOm5ldHdvcms=

```
> Frame 91: 662 bytes on wire (5296 bits), 662 bytes captured (5296 bits) on interface \Device\NPF_{D44AB792-8D3B-45CA-97FB-74FDD8DFB64D}, id 0
> Ethernet II, Src: Micro-St_ce:f3:b2 (2c:f0:5d:ce:f3:b2), Dst: ZyxelCom_28:d7:dc (e4:18:6b:28:d7:dc)
> Internet Protocol Version 4, Src: 192.168.1.96, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 53315, Dst Port: 80, Seq: 1, Ack: 1, Len: 608
v Hypertext Transfer Protocol
  v GET /wireshark-labs/protected_pages/HTTP-wireshark-file5.html HTTP/1.1\r\n
    > [Expert Info (Chat/Sequence): GET /wireshark-labs/protected_pages/HTTP-wireshark-file5.html HTTP/1.1\r\n]
      Request Method: GET
      Request URI: /wireshark-labs/protected_pages/HTTP-wireshark-file5.html
      Request Version: HTTP/1.1
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
    Cache-Control: max-age=0\r\n
  v Authorization: Basic d2lyZXNoYXJrLXN0dWRlbnRzOm5ldHdvcms=\r\n
      Credentials: wireshark-students:network
    Upgrade-Insecure-Requests: 1\r\n
    User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/116.0.0.0 Safari/537.36 OPR/102.0.0.0\r\n
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\n
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: tr-TR,tr;q=0.9,en-US;q=0.8,en;q=0.7\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/protected_pages/HTTP-wireshark-file5.html]
    [HTTP request 1/1]
    [Response in frame: 93]
```