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?
2. What languages (if any) does your browser indicate that it can accept to the server?
3. What is the IP address of your computer? Of the gaia.cs.umass.edu server?
4. What is the status code returned from the server to your browser?
5. When was the HTML file that you are retrieving last modified at the server?
6. How many bytes of content are being returned to your browser?
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.

1. Answers:

- **My browser running HTTP version 1.1**

```
 8307 12:26:30.677133 222.16.62.151      128.119.245.12      HTTP     568 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
 8337 12:26:30.949725 128.119.245.12     222.16.62.151       HTTP     539 HTTP/1.1 200 OK  (text/html)
 8344 12:26:31.056022 222.16.62.151      128.119.245.12      HTTP     500 GET /favicon.ico HTTP/1.1
 8358 12:26:31.333001 128.119.245.12     222.16.62.151       HTTP     537 HTTP/1.1 404 Not Found  (text/html)
10877 12:27:53.286759 222.16.62.151      220.249.244.33      HTTP    1199 POST /q.cgi HTTP/1.1
10880 12:27:53.294761 220.249.244.33     222.16.62.151       HTTP     292 HTTP/1.1 200 OK
10882 12:27:53.304296 220.249.244.33     222.16.62.151       HTTP     453 HTTP/1.1 200 OK
10885 12:27:53.306381 222.16.62.151      220.249.244.33      HTTP     508 POST /q.cgi HTTP/1.1
```

```
> Frame 8307: 568 bytes on wire (4544 bits), 568 bytes captured (4544 bits) on interface \Device\NPF_{F4F6F9D4-FAEC-4D22-ACE7-746265CB46EA}, id 0
> Ethernet II, Src: LCFCHeFe_54:b0:06 (54:e1:ad:54:b0:06), Dst: Hangzhou_49:1d:00 (0c:da:41:49:1d:00)
> Internet Protocol Version 4, Src: 222.16.62.151, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 6760, Dst Port: 80, Seq: 1, Ack: 1, Len: 514
v Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n          My broswer
    Host: gaia.cs.umass.edu\r\n
    Connection: keep-alive\r\n
```

- **the server running HTTP version 1.1**

```
 8337 12:26:30.949725 128.119.245.12     222.16.62.151       HTTP     539 HTTP/1.1 200 OK  (text/html)
 8344 12:26:31.056022 222.16.62.151      128.119.245.12      HTTP     500 GET /favicon.ico HTTP/1.1
 8358 12:26:31.333001 128.119.245.12     222.16.62.151       HTTP     537 HTTP/1.1 404 Not Found  (text/html)
10877 12:27:53.286759 222.16.62.151      220.249.244.33      HTTP    1199 POST /q.cgi HTTP/1.1
10880 12:27:53.294761 220.249.244.33     222.16.62.151       HTTP     292 HTTP/1.1 200 OK
10882 12:27:53.304296 220.249.244.33     222.16.62.151       HTTP     453 HTTP/1.1 200 OK
10885 12:27:53.306381 222.16.62.151      220.249.244.33      HTTP     508 POST /q.cgi HTTP/1.1
```

```
> Frame 8337: 539 bytes on wire (4312 bits), 539 bytes captured (4312 bits) on interface \Device\NPF_{F4F6F9D4-FAEC-4D22-ACE7
> Ethernet II, Src: Hangzhou_49:1d:00 (0c:da:41:49:1d:00), Dst: LCFCHeFe_54:b0:06 (54:e1:ad:54:b0:06)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 222.16.62.151
> Transmission Control Protocol, Src Port: 80, Dst Port: 6760, Seq: 1, Ack: 515, Len: 485
v Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n          The server
    Date: Sun, 16 Aug 2020 04:26:30 GMT\r\n
```

2. Answer: languages in the picture

```
 8307 12:26:30.677133 222.16.62.151      128.119.245.12      HTTP     568 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
 8337 12:26:30.949725 128.119.245.12     222.16.62.151       HTTP     539 HTTP/1.1 200 OK  (text/html)
 8344 12:26:31.056022 222.16.62.151      128.119.245.12      HTTP     500 GET /favicon.ico HTTP/1.1
 8358 12:26:31.333001 128.119.245.12     222.16.62.151       HTTP     537 HTTP/1.1 404 Not Found  (text/html)
10877 12:27:53.286759 222.16.62.151      220.249.244.33      HTTP    1199 POST /q.cgi HTTP/1.1
10880 12:27:53.294761 220.249.244.33     222.16.62.151       HTTP     292 HTTP/1.1 200 OK
10882 12:27:53.304296 220.249.244.33     222.16.62.151       HTTP     453 HTTP/1.1 200 OK
10885 12:27:53.306381 222.16.62.151      220.249.244.33      HTTP     508 POST /q.cgi HTTP/1.1
```

```
> Frame 8307: 568 bytes on wire (4544 bits), 568 bytes captured (4544 bits) on interface \Device\NPF_{F4F6F9D4-FAEC-4D22-ACE7-746265CB46E/
> Ethernet II, Src: LCFCHeFe_54:b0:06 (54:e1:ad:54:b0:06), Dst: Hangzhou_49:1d:00 (0c:da:41:49:1d:00)
> Internet Protocol Version 4, Src: 222.16.62.151, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 6760, Dst Port: 80, Seq: 1, Ack: 1, Len: 514
v Hypertext Transfer Protocol
  > GET /wireshark-labs/HTTP-wireshark-file1.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/84.0.4147.125 Safari/537.36 Edg/8
    Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\
    Accept-Encoding: gzip, deflate\r\n
    Accept-Language: zh-CN,zh;q=0.9,en;q=0.8,en-GB;q=0.7,en-US;q=0.6\r\n
    \r\n
```

3. Answer:

- **my IP adress: 222.16.62.151**
- **server's IP address: 128.119.245.12**

5528 12:25:55.812253 222.16.62.151	163.177.89.194	HTTP	469 POST /q.cgi HTTP/1.1
5533 12:25:55.819888 163.177.89.194	222.16.62.151	HTTP	473 HTTP/1.1 200 OK
8307 12:26:30.677133 222.16.62.151	128.119.245.12	HTTP	568 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
8337 12:26:30.949725 128.119.245.12	222.16.62.151	HTTP	539 HTTP/1.1 200 OK (text/html)
8344 12:26:31.056022 222.16.62.151	128.119.245.12	HTTP	500 GET /favicon.ico HTTP/1.1

4. Answer:

- **status code: 200 OK**

8307 12:26:30.677133 222.16.62.151	128.119.245.12	HTTP	568 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
8337 12:26:30.949725 128.119.245.12	222.16.62.151	HTTP	539 HTTP/1.1 200 OK (text/html)
8344 12:26:31.056022 222.16.62.151	128.119.245.12	HTTP	500 GET /favicon.ico HTTP/1.1
8358 12:26:31.333001 128.119.245.12	222.16.62.151	HTTP	537 HTTP/1.1 404 Not Found (text/html)
10877 12:27:53.286759 222.16.62.151	220.249.244.33	HTTP	1199 POST /q.cgi HTTP/1.1
10880 12:27:53.294761 220.249.244.33	222.16.62.151	HTTP	292 HTTP/1.1 200 OK
10882 12:27:53.304296 220.249.244.33	222.16.62.151	HTTP	453 HTTP/1.1 200 OK
10885 12:27:53.306381 222.16.62.151	220.249.244.33	HTTP	508 POST /q.cgi HTTP/1.1

> Frame 8337: 539 bytes on wire (4312 bits), 539 bytes captured (4312 bits) on interface \Device\NPF_{F4F6F9D4-FAEC-4D22-ACE7-746265CB46EA
> Ethernet II, Src: Hangzhou_49:1d:00 (0c:da:41:49:1d:00), Dst: LCFCHeFe_54:b0:06 (54:e1:ad:54:b0:06)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 222.16.62.151
> Transmission Control Protocol, Src Port: 80, Dst Port: 6760, Seq: 1, Ack: 515, Len: 485
∨ Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n ← status code
    Date: Sun, 16 Aug 2020 04:26:30 GMT\r\n

5. Answer: time in the picture

8307 12:26:30.677133 222.16.62.151	128.119.245.12	HTTP	568 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
8337 12:26:30.949725 128.119.245.12	222.16.62.151	HTTP	539 HTTP/1.1 200 OK (text/html)
8344 12:26:31.056022 222.16.62.151	128.119.245.12	HTTP	500 GET /favicon.ico HTTP/1.1
8358 12:26:31.333001 128.119.245.12	222.16.62.151	HTTP	537 HTTP/1.1 404 Not Found (text/html)
10877 12:27:53.286759 222.16.62.151	220.249.244.33	HTTP	1199 POST /q.cgi HTTP/1.1
10880 12:27:53.294761 220.249.244.33	222.16.62.151	HTTP	292 HTTP/1.1 200 OK
10882 12:27:53.304296 220.249.244.33	222.16.62.151	HTTP	453 HTTP/1.1 200 OK
10885 12:27:53.306381 222.16.62.151	220.249.244.33	HTTP	508 POST /q.cgi HTTP/1.1

> Frame 8337: 539 bytes on wire (4312 bits), 539 bytes captured (4312 bits) on interface \Device\NPF_{F4F6F9D4-FAEC-4D22-ACE7-746265CB46EA}
> Ethernet II, Src: Hangzhou_49:1d:00 (0c:da:41:49:1d:00), Dst: LCFCHeFe_54:b0:06 (54:e1:ad:54:b0:06)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 222.16.62.151
> Transmission Control Protocol, Src Port: 80, Dst Port: 6760, Seq: 1, Ack: 515, Len: 485
∨ Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    Date: Sun, 16 Aug 2020 04:26:30 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.9 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Sat, 15 Aug 2020 05:59:01 GMT\r\n ← Last-Modified
    ETag: "80-5ace43bef22cb"\r\n

6. Answer: 128 bytes

8307 12:26:30.677133 222.16.62.151	128.119.245.12	HTTP	568 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
8337 12:26:30.949725 128.119.245.12	222.16.62.151	HTTP	539 HTTP/1.1 200 OK (text/html)
8344 12:26:31.056022 222.16.62.151	128.119.245.12	HTTP	500 GET /favicon.ico HTTP/1.1
8358 12:26:31.333001 128.119.245.12	222.16.62.151	HTTP	537 HTTP/1.1 404 Not Found (text/html)
10877 12:27:53.286759 222.16.62.151	220.249.244.33	HTTP	1199 POST /q.cgi HTTP/1.1
10880 12:27:53.294761 220.249.244.33	222.16.62.151	HTTP	292 HTTP/1.1 200 OK
10882 12:27:53.304296 220.249.244.33	222.16.62.151	HTTP	453 HTTP/1.1 200 OK
10885 12:27:53.306381 222.16.62.151	220.249.244.33	HTTP	508 POST /q.cgi HTTP/1.1

    Accept-Ranges: bytes\r\n
∨ Content-Length: 128\r\n
    [Content length: 128]
    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 1/2]
    [Time since request: 0.272592000 seconds]
    [Request in frame: 8307]
    [Next request in frame: 8344]
    [Next response in frame: 8358]
    [Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
    File Data: 128 bytes

7. Answer: Time since request

8307 12:26:30.677133	222.16.62.151	128.119.245.12	HTTP	568	GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
8337 12:26:30.949725	128.119.245.12	222.16.62.151	HTTP	539	HTTP/1.1 200 OK (text/html)
8344 12:26:31.056022	222.16.62.151	128.119.245.12	HTTP	500	GET /favicon.ico HTTP/1.1
8358 12:26:31.333001	128.119.245.12	222.16.62.151	HTTP	537	HTTP/1.1 404 Not Found (text/html)
10877 12:27:53.286759	222.16.62.151	220.249.244.33	HTTP	1199	POST /q.cgi HTTP/1.1
10880 12:27:53.294761	220.249.244.33	222.16.62.151	HTTP	292	HTTP/1.1 200 OK
10882 12:27:53.304296	220.249.244.33	222.16.62.151	HTTP	453	HTTP/1.1 200 OK
10885 12:27:53.306381	222.16.62.151	220.249.244.33	HTTP	508	POST /q.cgi HTTP/1.1

> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 222.16.62.151
> Transmission Control Protocol, Src Port: 80, Dst Port: 6760, Seq: 1, Ack: 515, Len: 485
∨ Hypertext Transfer Protocol
   > HTTP/1.1 200 OK\r\n
    Date: Sun, 16 Aug 2020 04:26:30 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.9 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Sat, 15 Aug 2020 05:59:01 GMT\r\n
    ETag: "80-5ace43bef22cb"\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 1/2]
    [Time since request: 0.272592000 seconds]
    [Request in frame: 8307]
    [Next request in frame: 8344]
    [Next response in frame: 8358]
    [Request URI: http://gaia.cs.umass.edu/favicon.ico]
    File Data: 128 bytes