

Atividade – AV2

Questão 1:

Código python do servidor:

```
# Importa o módulo socket
from socket import *
import sys # Necessário para encerrar o programa
# Cria o socket TCP (orientado à conexão)
serverSocket = socket(AF_INET, SOCK_STREAM)
# Prepara o socket do servidor
#Fill in start

serverPort = 6789
serverSocket.bind(('', serverPort))
serverSocket.listen(1)

#Fill in end

while True:
    # Estabelece a conexão
    print('Ready to serve...')
    connectionSocket, addr = serverSocket.accept()#Fill in start #Fill in end

    try: # Recebe a mensagem do cliente (requisição HTTP)
        message = connectionSocket.recv(1024).decode()#Fill in start #Fill in end
        filename = message.split()[1]
        f = open(filename[1:])
        outputdata = f.read()

        # Envia a linha de status do cabeçalho HTTP
        #Fill in start
        connectionSocket.send("HTTP/1.1 200 OK\r\n".encode())
        connectionSocket.send("Content-Type: text/html\r\n\r\n".encode())
        #Fill in end

        # Envia o conteúdo do arquivo ao cliente
        for i in range(0, len(outputdata)):
            connectionSocket.send(outputdata[i].encode())
            connectionSocket.send("\r\n".encode())

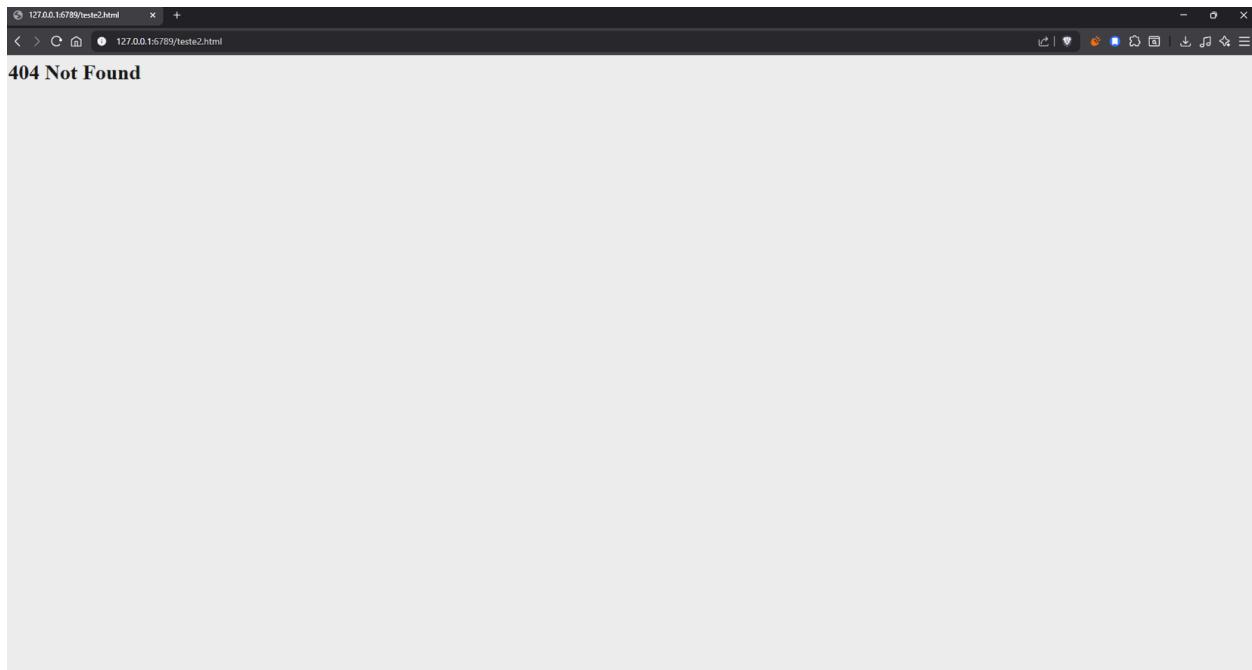
        # Fecha a conexão com o cliente
        connectionSocket.close()

    except IOError:
        # Envia mensagem de erro 404 se o arquivo não for encontrado
        #Fill in start
        connectionSocket.send("HTTP/1.1 404 Not Found\r\n".encode())
        connectionSocket.send("Content-Type: text/html\r\n\r\n".encode())
        connectionSocket.send("<html><body><h1>404 Not Found</h1></body></html>\r\n".encode())
        connectionSocket.close()# Fecha o socket do cliente
        #Fill in end

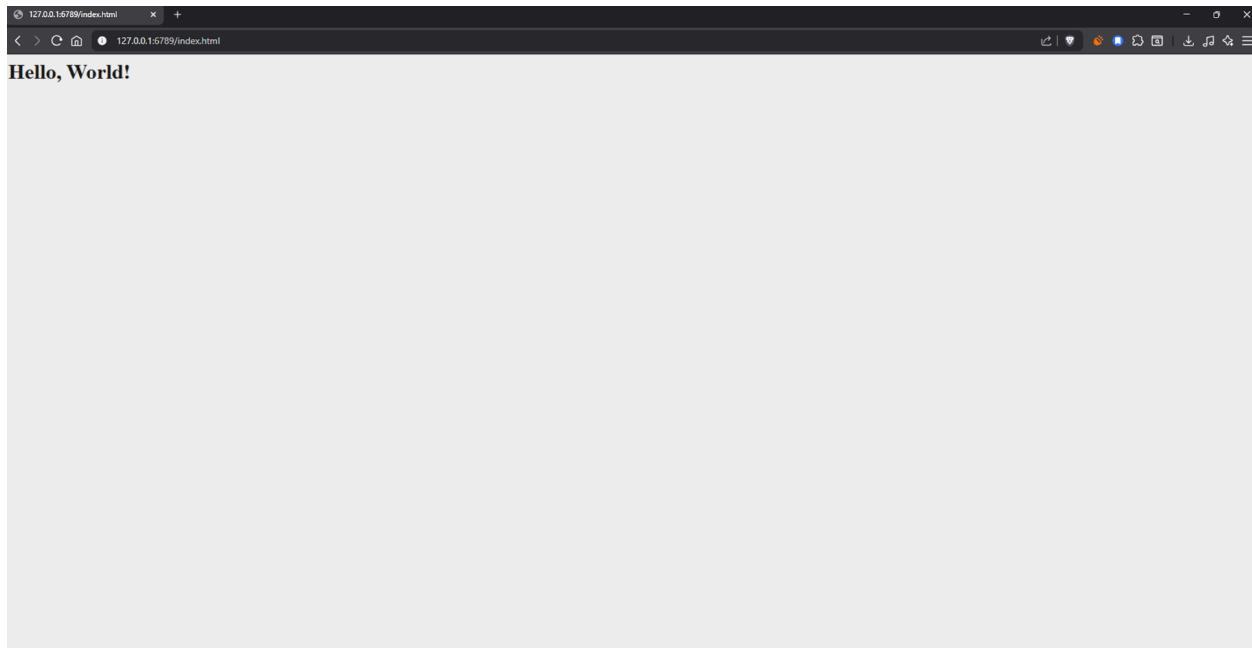
    serverSocket.close()
    sys.exit() # Encerra o programa
```

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Erro da pagina



Tudo de certo com a pagina:

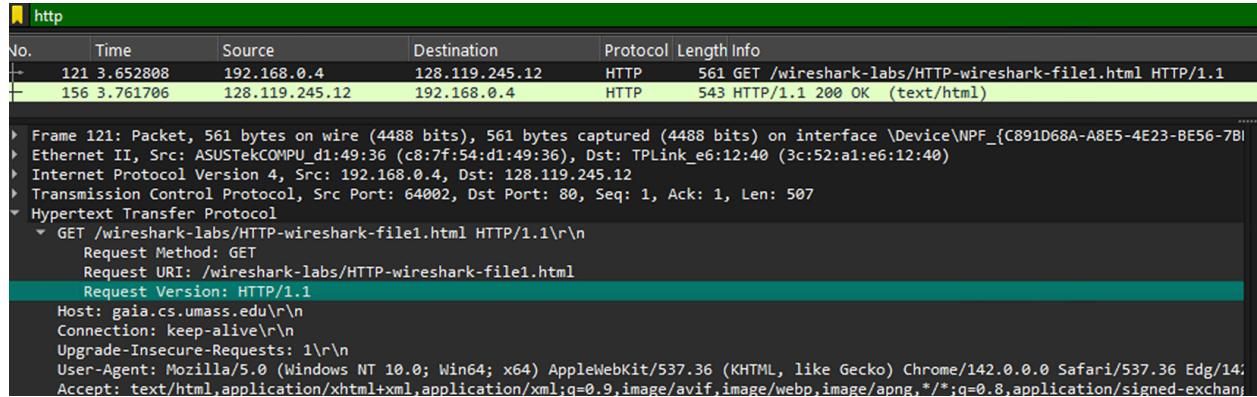


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Questão 2:

a. O seu navegador está rodando a versão 1.0 ou 1.1 do HTTP? Que versão do HTTP está sendo rodada no servidor?

R: 1.1

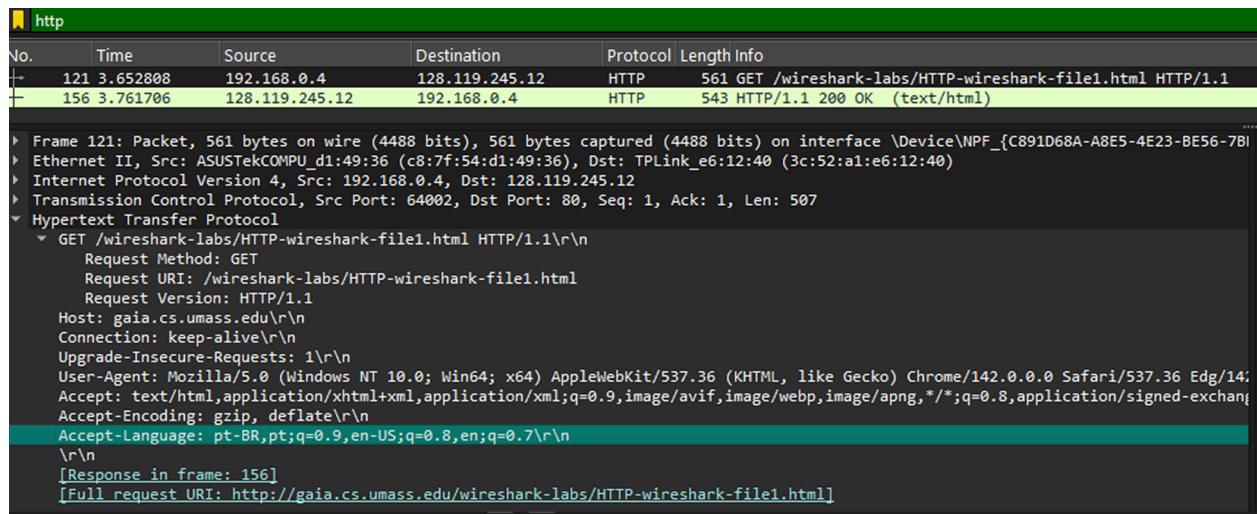


No.	Time	Source	Destination	Protocol	Length Info
+ 121	3.652808	192.168.0.4	128.119.245.12	HTTP	561 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
+ 156	3.761706	128.119.245.12	192.168.0.4	HTTP	543 HTTP/1.1 200 OK (text/html)

Frame 121: Packet, 561 bytes on wire (4488 bits), 561 bytes captured (4488 bits) on interface \Device\NPF_{C891D68A-A8E5-4E23-BE56-7B1...
Ethernet II, Src: ASUSTekCOMPU_d1:49:36 (c8:7f:54:d1:49:36), Dst: TPLink_e6:12:40 (3c:52:a1:e6:12:40)
Internet Protocol Version 4, Src: 192.168.0.4, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 64002, Dst Port: 80, Seq: 1, Ack: 1, Len: 507
Hypertext Transfer Protocol
 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/142.0.0.0 Safari/537.36 Edg/14:
 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchan...

b. Que linguagem (se tiver) o seu navegador indica que ele pode aceitar do servidor?

R: pt-BR, pt;q=0.9,en-us;Q=0.8,en;q=0.7\r\n



No.	Time	Source	Destination	Protocol	Length Info
+ 121	3.652808	192.168.0.4	128.119.245.12	HTTP	561 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
+ 156	3.761706	128.119.245.12	192.168.0.4	HTTP	543 HTTP/1.1 200 OK (text/html)

Frame 121: Packet, 561 bytes on wire (4488 bits), 561 bytes captured (4488 bits) on interface \Device\NPF_{C891D68A-A8E5-4E23-BE56-7B1...
Ethernet II, Src: ASUSTekCOMPU_d1:49:36 (c8:7f:54:d1:49:36), Dst: TPLink_e6:12:40 (3c:52:a1:e6:12:40)
Internet Protocol Version 4, Src: 192.168.0.4, Dst: 128.119.245.12
Transmission Control Protocol, Src Port: 64002, Dst Port: 80, Seq: 1, Ack: 1, Len: 507
Hypertext Transfer Protocol
 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/142.0.0.0 Safari/537.36 Edg/14:
 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchan...

Accept-Language: pt-BR,pt;q=0.9,en-US;q=0.8,en;q=0.7\r\n\r\n[Response in frame: 156]
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]

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c. Qual é o endereço IP do seu computador? E do servidor gaia.cs.umass.edu?

R: cliente 192.168.0.4
servidor 128.119.245.12

Frame 121: Packet, 561 bytes on wire (4488 bits), 561 bytes captured (4488 bits) on interface \Device\NPF_{C891D68A-A8E5-4E23-BE56-7B1
Ethernet II, Src: ASUSTekCOMPU_d1:49:36 (c8:7f:54:d1:49:36), Dst: TPLink_e6:12:40 (3c:52:a1:e6:12:40)
Internet Protocol Version 4, Src: 192.168.0.4, 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: 547
 Identification: 0x5d6d (23917)
 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: 192.168.0.4
 Destination Address: 128.119.245.12
 [Stream index: 51]

d. Qual é o código de estado retornado pelo servidor para o seu navegador?

R: 200 OK

Frame 156: Packet, 543 bytes on wire (4344 bits), 543 bytes captured (4344 bits) on interface \Device\NPF_{C891D68A-A8E5-4E23-BE56-7B1
Ethernet II, Src: TPLink_e6:12:40 (3c:52:a1:e6:12:40), Dst: ASUSTekCOMPU_d1:49:36 (c8:7f:54:d1:49:36)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.4
Transmission Control Protocol, Src Port: 80, Dst Port: 64002, Seq: 1, Ack: 508, Len: 489
Hypertext Transfer Protocol
 HTTP/1.1 200 OK\r\n Response Version: HTTP/1.1
 Status Code: 200
 [Status Code Description: OK]

e. Quando foi a última alteração feita no arquivo HTML?

R: TUE 23 SEP 2003 05:29:00 GMT\r\n

Frame 156: Packet, 543 bytes on wire (4344 bits), 543 bytes captured (4344 bits) on interface \Device\NPF_{C891D68A-A8E5-4E23-BE56-7B1
Ethernet II, Src: TPLink_e6:12:40 (3c:52:a1:e6:12:40), Dst: ASUSTekCOMPU_d1:49:36 (c8:7f:54:d1:49:36)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.4
Transmission Control Protocol, Src Port: 80, Dst Port: 64002, Seq: 1, Ack: 508, Len: 489
Hypertext Transfer Protocol
 HTTP/1.1 200 OK\r\n Response Version: HTTP/1.1
 Status Code: 200
 [Status Code Description: OK]
 Response Phrase: OK
 Date: Mon, 17 Nov 2025 22:22:32 GMT\r\n Server: Apache/2.4.62 (AlmaLinux) OpenSSL/3.2.2 mod_fcgid/2.3.9 mod_perl/2.0.12 Perl/v5.32.1\r\n Last-Modified: Tue, 28 Oct 2025 05:59:01 GMT\r\n ETag: "80-64231b671e87"\r\n Accept-Ranges: bytes=0-1

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f. Quantos bytes de conteúdo são retornados para o seu navegador?

R: 128

The screenshot shows a Wireshark capture of an HTTP session. The packet list shows two frames: a GET request from 192.168.0.4 to 128.119.245.12, and a response from 128.119.245.12 to 192.168.0.4. The response details pane is expanded to show the HTTP headers. The 'Content-Length' header is highlighted in green, with its value '128' being the 128th byte of the response body.

g. Inspecione o conteúdo da primeira requisição GET do HTTP de seu navegador para o servidor. Você viu uma linha com "IF-MODIFIED-SINCE" no GET do HTTP?

R: Como observado na questão I, a linha "IF-MODIFIED-SINCE" se existisse apareceria logo abaixo da linha "Accept-Language" o que é possível ver no gráfico abaixo que não ocorre.

The screenshot shows a Wireshark capture of an HTTP session. The packet list shows several frames, including a GET request from 192.168.0.4 to 128.119.245.12. The request details pane is expanded to show the HTTP headers. The 'Accept-Language' header is highlighted in green. There is no 'IF-MODIFIED-SINCE' header present in the request.

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h. Inspecione o conteúdo da resposta do servidor. O servidor retornou o conteúdo do arquivo explicitamente? Como isso se observou?

R: Sim, é possível ver no gráfico abaixo que foi retornado todo o arquivo de texto em formato HTML

The screenshot shows an Wireshark capture of an HTTP session. The packet list pane shows several frames, with frame 341 being expanded to show its details and bytes. The details pane shows the following response:

```
HTTP/1.1 200 OK (text/html)
Content-Type: text/html; charset=UTF-8
Content-Length: 733
Last-Modified: Tue, 28 Oct 2020 05:59:01 GMT
ETag: "173-64231b67176b7"
Date: Tue, 28 Oct 2020 05:59:01 GMT
Server: Apache/2.4.42 (Ubuntu)
```

The bytes pane shows the raw HTML content of the file 'lab2-2.html'.

i. Agora investigue o conteúdo da segunda requisição GET do HTTP de seu navegador para o servidor. Você viu uma linha com "IF-MODIFIED-SINCE" no GET do HTTP? Se sim, que informação segue o cabeçalho "IF-MODIFIED-SINCE"?

R: Sim é possível ser visto pois agora o navegador guardou esse site em cache, por isso a segunda requisição tem esse atributo.

The screenshot shows an Wireshark capture of an HTTP session. The packet list pane shows several frames, with frame 341 being expanded to show its details and bytes. The details pane shows the following request:

```
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/142.0.0.0 Safari/537.36 Edg/142.0.0.0\r\n
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8,application/signed-exchange;v=b3;q=1\r\n
Accept-Encoding: gzip, deflate\r\n
Accept-Language: pt-BR,pt;q=0.9,en-US;q=0.8,en;q=0.7\r\n
If-None-Match: "173-64231b67176b7"\r\n
If-Modified-Since: Tue, 28 Oct 2020 05:59:01 GMT\r\n
```

The bytes pane shows the raw HTTP request message.

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j. Qual é o código de estado do HTTP e a frase retornada do servidor em resposta ao segundo GET do HTTP? O servidor explicitamente retornou o conteúdo do arquivo?

Explique

R: Agora que o navegador guardou o cache depois da primeira requisição, é possível ver que a "Response Phrase" não foi modificada, ou seja, puxou a mesma resposta que já foi guardada.

No.	Time	Source	Destination	Protocol	Length	Info
183	6.274615	192.168.0.4	128.119.245.12	HTTP	561	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
202	6.382219	128.119.245.12	192.168.0.4	HTTP	787	HTTP/1.1 200 OK (text/html)
243	6.505839	192.168.0.4	128.119.245.12	HTTP	507	GET /favicon.ico HTTP/1.1
247	6.612760	128.119.245.12	192.168.0.4	HTTP	636	HTTP/1.1 301 Moved Permanently (text/html)
→ 341	8.672641	192.168.0.4	128.119.245.12	HTTP	673	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1
350	8.779722	128.119.245.12	192.168.0.4	HTTP	364	HTTP/1.1 304 Not Modified

Frame 350: Packet, 364 bytes on wire (2912 bits), 364 bytes captured (2912 bits) on interface \Device\NPF_{C891D68A-A8E5-4E23-BE56-7B1
Ethernet II, Src: TP Link_e6:12:40 (3c:52:a1:e6:12:40), Dst: ASUSTekCOMPU_d1:49:36 (c8:7f:54:d1:49:36)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.0.4
Transmission Control Protocol, Src Port: 80, Dst Port: 62262, Seq: 1316, Ack: 1580, Len: 310
Hypertext Transfer Protocol
 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: Mon, 17 Nov 2025 22:49:10 GMT\r\n