# 

## КАФЕДРА МАТЕМАТИЧНИХ МЕТОДІВ СИСТЕМНОГО АНАЛІЗУ

## Лабораторна робота №2

3 дисципліни «Комп'ютерні мережі»

Виконала: студентка 3-го курсу

гр. КА-77

П'ятецька А.А

Прийняв: Кухарєв С.О

http					
lo. ^	Time	Source	Destination	Protocol	Length Info
	201 39.577494	192.168.1.8	149.154.167.51	НТТР	320 POST /api HTTP/1.1 (application/x-www-form-urlencoded)
	216 39.723983	149.154.167.51	192.168.1.8	HTTP	284 HTTP/1.1 200 OK
- 3	303 40.398134	192.168.1.8	128.119.245.12	HTTP	583 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1
	322 40.542883	128.119.245.12	192.168.1.8	HTTP	540 HTTP/1.1 200 OK (text/html)
F 7	322 40.542883	128.119.245.12	192.168.1.8	HTTP	540 HTTP/1.1 200 OK (text/html)
Eth	ernet II, Src: ernet Protocol		c:a0:67:12:30:a6) 168.1.8, Dst: 128	, Dst: HuaweiT .119.245.12	ts) on interface \Device\NPF_{28914AD0-AFA8-4C04-9620-4068D19AC601}, id 0 e_70:0d:6c (bc:76:70:70:0d:6c)
	ertext Transfer		c. 50775, D3C 101	c. 00, 5cq. 1,	No. 1, Ec. 525
		labs/HTTP-wireshark-	file1.html HTTP/1.	.1\r\n	
					<pre>c-file1.html HTTP/1.1\r\n]</pre>
		shark-labs/HTTP-wire			
	[Severity	level: Chat]			
	[Severity [Group: Se				
	[Group: Se	quence]			
	[Group: Se Request Metho	equence] od: GET	P-wireshark-file1.	html	
	[Group: Se Request Metho	equence] od: GET /wireshark-labs/HTTI	P-wireshark-file1.	html	
	[Group: Se Request Metho Request URI: Request Vers	quence] od: GET /wireshark-labs/HTTI ion: HTTP/1.1			
	[Group: Se Request Metho Request URI: Request Versi	equence] od: GET /wireshark-labs/HTTI ion: HTTP/1.1	77 69 72 65 73	GE T /wi	
9040	[Group: Se Request Methor Request URI: Request Vers: 01 01 2d 16 00 68 61 72 6b 2d	equence] od: GET /wireshark-labs/HTTI ion: HTTP/1.1  00 47 45 54 20 2f 6c 61 62 73 2f 48	77 69 72 65 73 54 54 50 2d 77	GE T /wi hark-lab s/HTT	P-W
9040 9050	[Group: Se Request Methor Request URI: Request Versi 01 01 2d 16 00 68 61 72 6b 2d 69 72 65 73 68	quence] od: GET /wireshark-labs/HTTI ion: HTTP/1.1  00 47 45 54 20 2f 6c 61 62 73 2f 48 61 72 6b 2d 66 69	77 69 72 65 73 54 54 50 2d 77   6c 65 31 2e 68	·····GE T /wi hark-lab s/HTT ireshark -file	P-w 1.h
0040 0050 0060	[Group: Se Request Methor Request URI: Request Vers: 01 01 2d 16 00 68 61 72 6b 2d 69 72 65 73 68 74 6d 6c 20 48	equence] od: GET /wireshark-labs/HTTI ion: HTTP/1.1  00 47 45 54 20 2f 6c 61 62 73 2f 48 61 72 6b 2d 66 69 54 54 50 2f 31 2e	77 69 72 65 73 54 54 50 2d 77 I 6c 65 31 2e 68 : 31 0d 0a 48 6f	·····GE T /wi hark-lab s/HTT ireshark -file tml HTTP /1.1·	Р-ы 1. h Но
0040 0050 0060 0070	[Group: Se Request Methor Request URI: Request Vers: 01 01 2d 16 00 68 61 72 65 73 68 74 6d 6c 20 48 73 74 3a 20 67	equence] od: GET /wireshark-labs/HTTI on: HTTP/1.1  00 47 45 54 20 2f 6c 61 62 73 2f 48 61 72 6b 2d 66 69 54 54 50 2f 31 2e 61 69 61 2e 63 73	77 69 72 65 73 54 54 50 2d 77   6c 65 31 2e 68 31 0d 0a 48 6f 2e 75 6d 61 73	·····GE T /wi hark-lab s/HTT ireshark -file tml HTTP /1.1 st: gaia .cs.u	P-w 1. h -Ho mas
0040 0050 0060 0070	[Group: Se Request Methor Request URI: Request Versi 01 01 2d 16 06 68 61 72 6b 2d 69 72 65 73 68 74 6d 6c 20 48 73 74 3a 20 67 73 2e 65 64 75	equence] od: GET od: G	77 69 72 65 73 54 54 50 2d 77   6c 65 31 2e 68 : 31 0d 0a 48 6f 2e 75 6d 61 73 : 65 63 74 69 6f :	nark-lab s/HTT ireshark -file tml HTTP /1.1- st: gaia .cs.u s.edu .C onnec	P-W 1.h Ho mas tio
0040 0050 0060 0070 0080 0090	[Group: Se Request Methor Request URI: Request Versi 01 01 2d 16 00 68 61 72 6b 2d 69 72 65 73 68 74 6d 6c 20 48 73 74 3a 20 67 73 2e 65 64 75 6e 3a 20 6b 65	equence] od: GET /wireshark-labs/HTTI ton: HTTP/1.1  00 47 45 54 20 2f 6c 61 62 73 2f 48 61 72 6b 2d 66 69 54 54 50 2f 31 2e 61 69 61 2e 63 73 0d 0a 43 6f 6e 6e 65 70 2d 61 6c 69	77 69 72 65 73 54 54 50 2d 77 1 6c 65 31 2e 68 31 0d 0a 48 6f 2e 75 6d 61 73 26 65 63 74 69 6f 76 65 0d 0a 43 3	GE T /wi nark-lab s/HTT ireshark -file tml HTTP /1.1. st: gaia .cs.u s.edu .C onnec n: keep- alive	P-w 1.h Ho mas tio ···C
0040 0050 0060 0070 0080 0090	[Group: Se Request Meth Request URI: Request Vers: 01 01 2d 16 00 68 61 72 6b 2d 69 72 65 73 68 74 6d 6c 20 48 73 74 3a 20 67 73 2e 65 64 75 6e 3a 20 6b 65 61 63 68 65 2d	quence] dd: 6ET wisreshark-labs/HTTI ion: HTTP/1.1  00 47 45 54 20 2f 6c 61 62 73 2f 46 6 61 72 6b 2d 66 69 54 54 50 2f 31 2e 61 69 61 2e 63 73 0d 0a 43 6f 6e 6e 65 70 2d 61 6c 6e 65 70 2d 61 6c 67 4 72 6f	77 69 72 65 73 54 54 50 2d 77 16c 65 31 2e 68 31 0d 0a 48 6f 2e 75 6d 61 73 65 63 74 69 6f 66 50 0d 0a 43 6c 3a 20 6d 61	nark-lab s/HTT ireshark -file tml HTTP /1.1- st: gaia .cs.u s.edu-C onnec n: keep- alive ache-Con trol:	P-W 1.h Ho mas tio ·C ma
0040 0050 0060 0070 0080 0090 00a0	[Group: Se Request Meth Request VRI: Request Vrs: 01 01 2d 16 00 68 61 72 6b 2d 69 72 65 73 68 74 6d 6c 20 48 73 74 3a 20 67 73 2e 65 64 75 6e 3a 20 6b 65 61 63 68 65 2d 78 2d 61 67 65	quence]  dd: GET  //wireshark-labs/HTTI  on: HTTP/1.1  00 47 45 54 20 2f  6c 61 62 73 2f 48  61 72 6b 2d 66 69  45 45 50 2f 31 2e  61 69 61 2e 63 73  0d 8a 43 6f 6e  76 70 2d 61 6c 69  43 6f 6e 74 72 6f  43 6f 6e 74 72 6f  43 67 40 85 570  43 43 80 40 86 55 70  44 36 76 60 85 570	77 69 72 65 73 54 54 50 2d 77 16c 65 31 2e 68 31 10d 0a 48 6f 2e 75 6d 61 73 65 63 74 69 6f 76 65 0d 0a 43 16c 3a 20 6d 61 67 72 61 64 65 3	GE T /wi nark-lab s/HTT ireshark -file tml HTTP /1.1- st: gaia .cs.u s.edu .C onnec n: keep- alive ache-Con trol: k-age=0 ·Upgr	P-W 1.h Ho mas t-C ma ade
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0040 0050 0060 0070 0080 0090 00a0 00b0 00c0	Group: Se Request Meth: Request Vers: Request Vers: 01 01 2d 16 00 68 61 72 6b 2d 69 72 65 73 68 73 74 6d 6c 20 48 73 74 3a 20 67 73 2e 65 64 75 6e 3a 20 6b 65 16 36 86 52 2d 78 2d 61 67 65 2d 49 6e 73 65 47 47 33 a 20 31	quence]  dd: GET  wireshark-labs/HTTI  on: HTTP/1.1  00 47 45 54 20 2f  6c 61 62 73 2f 48  61 72 6b 2d 66 69  45 45 50 2f 31 2e  61 69 61 2e 63 73  0d 0a 43 6f 6e 6e  65 70 2d 61 6c 69  43 6f 6e 74 72 6f  63 75 72 65 2d 63 57	77 69 72 65 73   54 54 50 24 77   1 66 65 31 26 68 31 0d 0a 48 6f 26 76 65 0d 0a 43 67 66 50 40 66 17 75 65 71 75 65 71 75 65 72 41 41 67 65 66	GE T /winark-lab s/HIT ireshark -file file HITP /1.1 st: gaia .cs.u s.edu .C onnec i: keep-alive ache-Con trol: k-age=0 .Uggr Insecur e-Req ss: 1 U ser-A	P-W 1.h Ho mas tio
0040 0050 0060 0070 0080 0090 00a0 00b0 00c0 <b>00d0</b>	Group: Se Request Meth Request VRT: Request VRT: 81 01 2d 16 09 68 61 72 65 73 68 74 6d 6c 20 48 73 74 3a 20 67 73 26 65 64 75 66 3a 20 66 56 61 63 68 65 2d 78 2d 61 67 65 2d 49 6e 73 65 74 73 3a 20 81	quence] did: GET /wireshark-labs/HTTI /wireshark-la	77 69 72 65 73 54 54 50 2d 77 66 55 31 2e 68 31 0d 0a 48 6f 2e 75 6d 61 73 65 63 74 69 6f 76 65 0d 0a 43 66 3a 20 6d 61 77 26 1 64 65 65 71 75 65 73 2d 41 67 65 6e 35 2e 30 20 28	mark-lab s/HTT ireshark -file trieshark -file trieshark -file tst: gaia .cs.u s.edu · C onnec n: keep- alive k-age=0 · Upgr -Insecur e-Req ts: 1U ser-A t: Mozil la/5.	P-w 1.h -Ho mas tioC ma ade ues gen 0 {
0040 0050 0060 0070 0080 0090 00a0 00b0 00c0	[Group: Se Request Meth Request URI: Request Versi 01 01 2d 16 06 69 72 65 73 68 73 74 6d 6c 20 48 73 74 3a 20 67 37 3 2e 65 64 75 6e 3a 20 6b 65 2d 49 6e 73 65 2d 49 6e 73 65 74 73 3a 20 40 67 75 769 6e 64 67	quence]  dd: GET  wireshark-labs/HTTI  on: HTTP/1.1  00 47 45 54 20 2f  6c 61 62 73 2f 48  61 72 6b 2d 66 69  45 45 50 2f 31 2e  61 69 61 2e 63 73  0d 0a 43 6f 6e 6e  65 70 2d 61 6c 69  43 6f 6e 74 72 6f  63 75 72 65 2d 63 57	77 69 72 65 73 54 54 50 2d 77 16 65 31 2e 68 31 0d 0a 48 6f 27 56 d 61 73 65 63 74 69 6f 63 a 20 6d 61 67 72 61 64 65 65 71 75 65 73 2d 41 67 65 6e 35 2e 30 20 28 13 30 2e 30 3b	GE T /winark-lab s/HIT ireshark -file file HITP /1.1 st: gaia .cs.u s.edu .C onnec i: keep-alive ache-Con trol: k-age=0 .Uggr Insecur e-Req ss: 1 U ser-A	P-W 1.h 1-h 1-h 1-h 1-h 1-h 1-h 1-h 1-h 1-h 1-

### Запит:

# 303 40.398134 192.168.1.8 128.119.245.12 HTTP 583 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 303: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits) on interface  $\Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}$ , id 0

Ethernet II, Src: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 58773, Dst Port: 80, Seq: 1, Ack: 1, Len: 529

**Hypertext Transfer Protocol** 

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]

[GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1 $\r\n$ ]

[Severity level: Chat]

[Group: Sequence]

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

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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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=0.9\r\n

Accept-Encoding: gzip, deflate\r\n

Accept-Language: uk-UA,uk;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/HTTP-wireshark-file1.html]

[HTTP request 1/1]

[Response in frame: 322]

### Відповідь:

322 40.542883 128.119.245.12192.168.1.8 HTTP 540 HTTP/1.1 200 OK (text/html)

Frame 322: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF\_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 58773, Seq: 1, Ack: 530, Len: 486

**Hypertext Transfer Protocol** 

HTTP/1.1 200 OK\r\n

[Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]

[HTTP/1.1 200 OK\r\n]

[Severity level: Chat]

[Group: Sequence]

Response Version: HTTP/1.1

Status Code: 200

[Status Code Description: OK]

Response Phrase: OK

Date: Sun, 22 Mar 2020 16:47:20 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Sun, 22 Mar 2020 05:59:02 GMT\r\n

ETag: "80-5a16b37295267"\r\n

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 1/1]

[Time since request: 0.144749000 seconds]

[Request in frame: 303]

[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]

File Data: 128 bytes

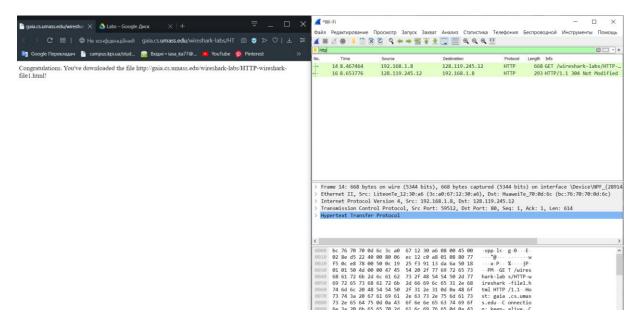
Line-based text data: text/html (4 lines)

### Відповіді на контрольні запитання:

- 1. Яку версію протоколу HTTP використовує ваш браузер (1.0 чи 1.1)? GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1\r\n Яку версію протоколу використовує сервер? HTTP/1.1 200 OK\r\n
- **2.** Які мови (якщо вказано) браузер може прийняти від сервера? Accept-Language: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7
- **3.** Які ІР-адреси вашого комп'ютера та цільового веб-сервера? Адреса комп'ютера 192.168.1.8 цільова адреса веб-сервера 128.119.245.12
- **4.** Який статусний код сервер повернув у відповіді вашому браузеру? 200
- **5.** Коли на сервері в останній раз був модифікований файл, який запитується браузером?

Last-Modified: Sun, 22 Mar 2020 05:59:02 GMT

- **6.** Скільки байт контенту повертається сервером? 128 (Content-Length: 128\r\n)
- 7. Переглядаючи нерозібраний байтовий потік пакету, чи бачите ви деякі заголовки в потоці, які не відображаються у вікні деталей пакету? Якщо так, назвіть один з них. Ні



#### Запит:

# 14 8.467464 192.168.1.8 128.119.245.12 HTTP 668 GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1

Frame 14: 668 bytes on wire (5344 bits), 668 bytes captured (5344 bits) on interface \Device\NPF\_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59512, Dst Port: 80, Seq: 1, Ack: 1, Len: 614

**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

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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\r\n

#### Accept:

 $text/html, application/xhtml+xml, application/xml; q=0.9, image/webp, image/apng, */*; q=0.8, application/signed-exchange; v=b3; q=0.9 \ r\ n$ 

Accept-Encoding: gzip, deflate\r\n

Accept-Language: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

If-None-Match: "80-5a16b37295267"\r\n

If-Modified-Since: Sun, 22 Mar 2020 05:59:02 GMT\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: 16]

### Відповідь:

16 8.653776 128.119.245.12192.168.1.8 HTTP 293 HTTP/1.1 304 Not Modified

Frame 16: 293 bytes on wire (2344 bits), 293 bytes captured (2344 bits) on interface \Device\NPF {28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59512, Seq: 1, Ack: 615, Len: 239

**Hypertext Transfer Protocol** 

HTTP/1.1 304 Not Modified\r\n

Date: Sun, 22 Mar 2020 18:21:03 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 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: "80-5a16b37295267"\r\n

 $r\n$ 

[HTTP response 1/1]

[Time since request: 0.186312000 seconds]

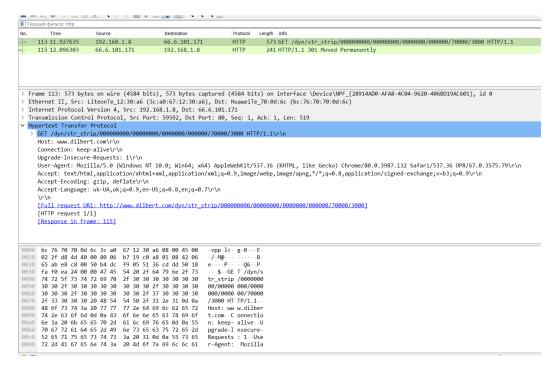
[Request in frame: 14]

[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]

- **8.** Перевірте вміст першого запиту HTTP GET від вашого браузера до сервера. Чи є в ньому заголовок IF-MODIFIED-SINCE? Ні
- **9.** Перевірте вміст першої відповіді сервера. Чи повернув сервер вміст файлу безпосередньо у відповіді? Так
- **10.** Перевірте вміст другого запиту HTTP GET. Чи  $\epsilon$  в ньому заголовок IF-MODIFIED-SINCE? Якщо так, яке значення йому відповіда $\epsilon$ ? Так

If-Modified-Since: Sun, 22 Mar 2020 05:59:02 GMT\r\n

**11.** Який код та опис статусу другої відповіді сервера? Чи повернув сервер вміст файлу безпосередньо у відповіді? 304 Not Modified, ні



# 113 11.927635 192.168.1.8 66.6.101.171 HTTP 573 GET /dyn/str\_strip/00000000/0000000/0000000/70000/3000 HTTP/1.1

Frame 113: 573 bytes on wire (4584 bits), 573 bytes captured (4584 bits) on interface \Device\NPF\_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 66.6.101.171

Transmission Control Protocol, Src Port: 59592, Dst Port: 80, Seq: 1, Ack: 1, Len: 519

**Hypertext Transfer Protocol** 

Host: www.dilbert.com\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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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=0.9\r\n

Accept-Encoding: gzip, deflate\r\n

Accept-Language:  $uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n$ 

 $r\n$ 

[Full request URI:

http://www.dilbert.com/dyn/str\_strip/000000000/0000000/000000/00000/70000/3000]

[HTTP request 1/1] [Response in frame: 115]

115 12.096303 66.6.101.171 192.168.1.8 HTTP 241 HTTP/1.1 301 Moved Permanently

Frame 115: 241 bytes on wire (1928 bits), 241 bytes captured (1928 bits) on interface \Device\NPF {28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0 Ethernet II, Src: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6) Internet Protocol Version 4, Src: 66.6.101.171, Dst: 192.168.1.8 Transmission Control Protocol, Src Port: 80, Dst Port: 59592, Seq: 1, Ack: 520, Len: 187 **Hypertext Transfer Protocol** HTTP/1.1 301 Moved Permanently\r\n Content-Type: text/html\r\n Content-length: 0\r\n Connection: Close\r\n Location: https://dilbert.com/dyn/str strip/000000000/0000000/000000/000000/70000/3000\r\n  $r\n$ [HTTP response 1/1] [Time since request: 0.168668000 seconds] [Request in frame: 113] [Request URI: http://www.dilbert.com/dyn/str\_strip/00000000/0000000/000000/000000/70000/3000] **12.** Скільки повідомлень HTTP GET було відправлено вашим браузером? 1 13. Скільки пакетів ТСР було необхідно для доставки одної відповіді НТТР-сервера? 1 14. Який код та опис статусу був у відповіді сервера? 301 Moved Permanently 15. Чи зустрічаються у даних пакетів-продовжень протоколу ТСР стрічки з кодом та описом статусу відповіді, або ж якісь заголовки протоколу HTTP?

Hi

0.	Time	Source	Destination	Protocol	Length Info
b.	150 34.379642	192.168.1.8	128.119.245.12	HTTP	557 GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1
	152 34.525621	128.119.245.12	192.168.1.8	HTTP	1127 HTTP/1.1 200 OK (text/html)
	155 35.247708	192.168.1.8	128.119.245.12	HTTP	489 GET /pearson.png HTTP/1.1
	158 35.396482	128.119.245.12	192.168.1.8	HTTP	865 HTTP/1.1 200 OK (PNG)
	164 35.774593	192.168.1.8	128.119.245.12	HTTP	503 GET /~kurose/cover 5th ed.jpg HTTP/1.1
	267 36.551782	128.119.245.12	192.168.1.8	HTTP	572 HTTP/1.1 200 OK (JPEG JFIF image)
En	22ma 150 557 huta	s on wine (1156 hit	s) 557 butos cantum	ad (1156 hi	its) on interface \Device\NPF {28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0
					Te 70:0d:6c (bc:76:70:70:0d:6c)
			168.1.8, Dst: 128.11		1E_/0:00:0C (DC:/0:/0:00:0C)
			t: 59682, Dst Port:		Ack: 1 Jan: 503
	pertext Transfer		c. 55002, DSC POPC.	oo, ocq. 1,	, nek. 1, Len. 303
			file4.html HTTP/1.1\r	r\n	
	Host: gaia.cs.um		1110-1.110111 11111/1.11	VII.	
	Connection: keep				
	Upgrade-Insecure	-Requests: 1\r\n	10 0: Win64: v64) Ar	nleWehKit/	/537 36 (KHTML like Gerko) (hrome/80 0 3987 132 Safari/537 36 OPR/67 0 3575 79\r\n
	Upgrade-Insecure User-Agent: Mozi	-Requests: 1\r\n lla/5.0 (Windows NT			/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\r\n pe/wehn image/anng */*:g_0 & annlication/signed-exchange:y_h3:g_0 0\r\n
	Upgrade-Insecure User-Agent: Mozi Accept: text/html	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml-			/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\r\n ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n
	Upgrade-Insecure User-Agent: Mozi Accept: text/htm Accept-Encoding:	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml- gzip, deflate\r\n	⊦xml,application/xml	q=0.9,imag	
	Upgrade-Insecure User-Agent: Mozi Accept: text/htm Accept-Encoding:	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml- gzip, deflate\r\n		q=0.9,imag	
	Upgrade-Insecure User-Agent: Mozi Accept: text/htm Accept-Encoding: Accept-Language: \r\n	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml- gzip, deflate\r\n uk-UA,uk;q=0.9,en-U	xml,application/xml; JS;q=0.8,en;q=0.7\r\r	q=0.9,imag	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n $$$
	Upgrade-Insecure User-Agent: Mozi Accept: text/htm Accept-Encoding: Accept-Language: \r\n	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml- gzip, deflate\r\n uk-UA,uk;q=0.9,en-U	xml,application/xml; JS;q=0.8,en;q=0.7\r\r	q=0.9,imag	
	Upgrade-Insecure User-Agent: Mozi Accept: text/htm Accept-Encoding: Accept-Language: \r\n  [Full request UR:	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml- gzip, deflate\r\n uk-UA,uk;q=0.9,en-l I: http://gaia.cs.um 2]	xml,application/xml; JS;q=0.8,en;q=0.7\r\r	q=0.9,imag	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n $$$
000	Upgrade-Insecure User-Agent: Mozi Accept: text/htm Accept-Encoding: Accept-Language: \r\n  [Full request UR] [HTTP request IR] [Response in frame	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml- gzip, deflate\r\n uk-UA,uk;q=0.9,en-l I: http://gaia.cs.um 2]	⊦xml,application/xml JS;q=0.8,en;q=0.7\r\r mass.edu/wireshark-la	q=0.9,imag n abs/HTTP-wi	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html]
	Upgrade-Insecure User-Agent: Mozi Accept: text/htm. Accept-Encoding: Accept-Language: \r\n [Full request UR: [HTTP request 1/: IResponse in frai bc 76 70 70 0d	-Requests: 1\r\n lla/5.0 (Windows NT l,application/xhtml- gzip, deflate\r\n uk-UA,uk;q=0.9,en-l I: http://gaia.cs.um 2] me: 1521	+xml,application/xml; JS;q=0.8,en;q=0.7\r\r mass.edu/wireshark-la a6 08 00 45 00 -vp	q=0.9,imag	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html]
10	Upgrade-Insecure User-Agent: Mozi: Accept: text/htmi Accept-Encoding: Accept-Language: \r\n [Full request UR: [HTTP request in Frau bc 76 70 70 0d 0 02 1f d5 2a 40	-Requests: 1\r\n 1la/5.0 (Windows NT 1,application/shtml- gzip, deflate\r\n uk-UA,uk;q=0.9,en-L I: http://gaia.cs.um 2] me: 1521 6c 3c a0 67 12 30 a	+xml, application/xml; JS;q=0.8,en;q=0.7\r\r mass.edu/wireshark-l; a6 08 00 45 00 -vp; a8 01 08 80 77	q=0.9,imag n abs/HTTP-wi	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html]
10 20 30	Upgrade-Insecure User-Agent: Mozi: Accept: text/itmi Accept-Encoding: Accept-Language: \r\n  [HTIP request UR: HTIP request IR: Accept-Language: De 76 70 70 0d De 21 f d5 2a 40 De 56 0c e9 22 00 De 10 17 cb 00	-Requests: 1\r\n 1,3pplication/shtml gzip, deflate\r\n uk-UA,uk;q=0.9,en-l 1; http://gaia.cs.um 2; 6c 3c a0 67 12 30 80 80 6c c79 c0 80 80 80 c c79 c0 80 80 87 cb b8 aa 2 60 47 45 5 42 02 f 7	+xml,application/xml;  J5;q=0.8,en;q=0.7\r\r  mass.edu/wireshark-l;  a6 08 00 45 00 -vp;  80 01 08 80 77  76 1c 6d 50 18  77 69 72 65 73	n abs/HTTP-wi	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] Esypp. ires
910 920 930 940	Upgrade-Insecure User-Agent: Mozi: Accept: Accept: Ext/htm Accept-Language: In\n Full request UR [HTTP request UR [EXTRA T6 76 70 70 0d 0 22 If dS 24 40 0 55 0c e9 22 00 0 10 10 17 cb 00 0 68 61 72 65 26 42	-Requests: 1\r\n 11a/5.0 (Windows NT 11a/5.0 (Windows NT 1,application/xhtml gzip, deflate\r\n uk-UA,uk;q=0.9,en-L  1: http://gaia.cs.um 22 me: 1521 6c 3c a0 67 12 30 08 80 86 ec 79 c0 58 8b a7 eb b8 aa 300 47 45 54 20 27 6c 6f 66 27 32 48	xxml,application/xml; JS;q=0.8,en;q=0.7\r\n mass.edu/wireshark-la a6 08 00 45 00 a8 01 08 80 77 76 1c 6d 50 18 77 69 72 65 73 45 45 60 20 477 hard	abs/HTTP-wi	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] E
10 20 30 40 50	Upgrade-Insecure User-Agent: Mozil Accept: Extr/htm: Accept-Encoding: Accept-Language: \r\n   Full request UR:   HTTP request 1/:   Resoonse in frat   bc 76 70 70 6d   92 1f d5 2a 40   91 1f 7 cb 90 6   93 68 61 72 6b 2d   96 72 65 73 68 8	-Requests: 1\r\n 1,application/s\tau 1,applica	xml,application/xml; U5;q=0.8,en;q=0.7\r\r mass.edu/wireshark-la m	abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  color g.o.  abs/HTTP-wi  shark -file	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] E
910 920 930 940 950 960	Upgrade-Insecure User-Agent: Mozi: Accept: Extr/htm. Accept-Encoding: Accept-Encoding: Cr\n [Full request UR [HTIP request UR [HTIP request 1/: IResponse in frai b to 76 70 70 0d 0 21 fd 52 a 40 0 21 fd 52 a 40 0 15 0c e9 22 00 0 10 11 f7 cb 00 0 68 61 72 6b 2d 0 9 72 65 73 68	-Requests: 1\r\n 11a/5.0 (Windows NT 1,application/Axtmal gzip, deflate\r\n uk-UA,uk;q=0.9,en-L 1; http://gaia.cs.um 2] ne: 1521 66 3c a0 67 12 30 60 80 86 ec 79 c0 50 8b 07 eb b8 aa 0 47 45 56 20 27 f 66 61 62 73 2f 48 8 61 72 0b 2d 66 69 6 61 50 b 2d 66 69 45 45 50 67 51 20 8	JS;q=0.8,en;q=0.7\r\r\r mass.edu/wireshark-li m6 08 00 45 00 m8 00 10 88 00 77 m7 05 73 m7 05 73 m6 05 04 05 04 m6 05 05 04 m7 05 73 m7 05 73 m7 05 73 m7 05 73 m8 05 05 05 05 m8 05 05 05 m8 05 m8 05 05 m8 05 m8 05 05 m8	abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP  bas/HTTP  bas/HTTP	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html]  ireshark-file4.html]  ireshark-file4.html
900 910 930 930 950 950 960 970	Upgrade-Insecure User-Agent: Mozil Accept: Extr/htmi Accept-Encoding: Accept-Language: Arch [Full request UR: HTTP request II: Response in frad bc 76 70 70 80 90 21 f d5 2a 40 91 65 0c 92 20 80 91 65 0c 36 57 36 88 97 4 64 6c 20 48 77 3 74 3a 20 67	Requests: 1\r\n 11/5.0 (Windows NT 1,application/xhtml- gzip, deflate\r\n ut-UA_uk;q=0.9,en-t 1: http://gaia.cs.um 22 13: http://gaia.cs.um 24 26: 3c a0 67 12 30 28 80 66 e7 9c 60 28 80 67 e7 9c 60 29 80 67 e7 9c 60 30 67 45 54 20 27 30 67 61 67 73 24 68 8 30 47 45 54 20 37 31 72 69 43 11 2e 31 69 61 63 73 31	xxml,application/xml; US;q=0.8,en;q=0.7\r\r\r aass.edu/wireshark-li a6 08 00 45 00 a8 01 08 00 77 76 1c 64 56 18 77 66 72 65 73 77 69 72 65 73 10 04 08 48 6f thl 27 56 d6 17 3 st:	abs/HTTP-wi abs/HTTP-wi abs/HTTP-wi abs/HTTP-wi abs/HTTP-wi abs/HTTP /1.1- gaia .cs.u	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] E
910 930 940 950 960 970	Upgrade-Insecure User-Agent: Mozi. Accept: Extr/htm. Accept-Encoding: Accept-Language: Ln'n Full request UR HTTP request 1/1 Response in frai 0 bc 76 70 70 00 dd 0 21 fd 52 a 40 0 55 0c e9 22 00 0 10 11 77 cb 00 0 68 61 72 6b 2d 0 69 72 65 73 68 0 74 6d 6c 20 48 0 73 74 3a 20 67 7 73 2e 55 64 75	-Requests: 1\r\n 11a/5.0 (Windows NT 1,application/Attnal- gzip, deflate\r\n uk-UA,uk;q=0.9,en-l 1: http://gaia.cs.um 2] me: 1521 66 3c a0 67 12 30 a 08 80 66 ec 79 c0 a 06 80 80 ec 79 c0 a 06 80 ec 79 c0 a 06 60 ec 60 e	xxnl,application/xxl;  15;q=0.8,en;q=0.7\r\r\r  1655.edu/wireshark-16  16 08 08 45 00	abs/HTTP-winabs/HTTP-winabs/HTTP-winabs/HTTP-winabs/HTTP-winabs/HTTP-winabs/HTTP-y1.1-gaia.cs.u	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] E
910 920 930 940 950 960 970 980 990	Upgrade-Insecure User-Agent: Mozil Accept: Extr/htm: Accept-Encoding: Accept-Inaguage: Acce	Requests: 1\r\n 11a/5.0 (Windows NT 1,application/xhtml· gzip, deflate\r\n ut-UA_uk;q=0.9,en-t 1: http://gaia.cs.um 22 108: 1521 66: 3c a0 67: 12: 30: 008: 80 66: e7: 9c 60 88: 80 76: b8 80 a7: 80: 80: 80: 80: 80: 80: 80: 80: 80: 80	xxml,application/xml; US;q=0.8,en;q=0.7\r\nt aass.edu/wireshark-li a6 08 00 45 00 a8 01 08 00 77 76 77 65 73 45 45 95 24 77 bare 65 56 03 45 65 a 173 st: 55 63 74 69 65 a 18 citory of 5	ads/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  c-lab s/HTT saia .cs.u duC onnec  kep- alive cep- alive	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] E
910 920 930 940 950 960 970 980 990	Upgrade-Insecure User-Agent: Mozi Accept: ext/htm. Accept-Encoding: Accept-Language: \r\n  Full request UR  HTIP request UR  HTIP request UR  HTIP request UR  HTIP request UR  0 to 76 70 70 0d  0 02 1f d5 2a 40  0 10 1f 77 cb 00  0 10 1f 77 cb 00  0 68 61 72 6b 2d  0 69 72 65 73 68  0 74 d6 6c 20 48  0 73 74 3a 20 67  0 73 2e 65 64 75  0 6e 3a 20 6b 65  0 76 67 72 61 64	-Requests: 1\r\n 11a/5.0 (Windows NT 1,application/Attnal gzip, deflate\r\n uk-UA,uk;q=0.9,en-t 1: http://gaia.cs.um 21 1521 6c 3c a0 67 12 30 a 08 80 0c c 79 c0 a 08 6c 3c 3c 6c 3c 6c 3c 6c	xxnl,application/xxnl;  15;q=0.8,en;q=0.7\r\r\r  mass.edu/wireshark-li  mass.edu/wireshark-	ole general state of the state	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] E
910 920 930 940 950 960 970 980	Upgrade-Insecure User-Agent: Mozil Accept: text/htmi Accept-Encoding: Accept-Inaguage: Vn\n [Full request UR: [HTTP request II/: IResponse in fras bc 76 70 9 0d 90 21 f d5 2a 40 91 10 17 cb 00 96 86 17 cb 25 0d 97 2 55 73 68 74 66 6c 20 48 97 3 73 as 20 67 97 3 66 3a 20 66 65 97 66 72 26 16 64 52 65 77 6 16 64 52 65 77 65	Requests: 1\r\n 11a/5.0 (Windows NT 1,application/xhtml· gzip, deflate\r\n ut-UA_uk;q=0.9,en-t 1: http://gaia.cs.um 22 108: 1521 66: 3c a0 67: 12: 30: 008: 80 66: e7: 9c 60 88: 80 76: b8 80 a7: 80: 80: 80: 80: 80: 80: 80: 80: 80: 80	xxml,application/xml; US;q=0.8,en;q=0.7\r\nr uass.edu/wireshark-la	ads/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  abs/HTTP-wi  c-lab s/HTT saia .cs.u duC onnec  kep- alive cep- alive	ge/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n ireshark-file4.html] E

# 15034.379642 192.168.1.8 128.119.245.12 HTTP 557 GET /wireshark-labs/HTTP-wireshark-file4.html HTTP/1.1

Frame 150: 557 bytes on wire (4456 bits), 557 bytes captured (4456 bits) on interface  $\Device\NPF_{28914AD0-AFA8-4C04-9620-406BD19AC601}$ , id 0

Ethernet II, Src: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59682, Dst Port: 80, Seq: 1, Ack: 1, Len: 503

Hypertext Transfer Protocol

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/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\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=0.9\r\n

Accept-Encoding: gzip, deflate\r\n

Accept-Language: uk-UA,uk;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/HTTP-wireshark-file4.html]

[HTTP request 1/2]

[Response in frame: 152]

[Next request in frame: 155]

15234.525621 128.119.245.12192.168.1.8 HTTP 1127 HTTP/1.1 200 OK (text/html)

Frame 152: 1127 bytes on wire (9016 bits), 1127 bytes captured (9016 bits) on interface \Device\NPF\_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59682, Seq: 1, Ack: 504, Len: 1073

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 18:54:20 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Sun, 22 Mar 2020 05:59:02 GMT\r\n

ETag: "2ca-5a16b3728d17e"\r\n

Accept-Ranges: bytes\r\n

Content-Length: 714\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: 0.145979000 seconds]

[Request in frame: 150]

[Next request in frame: 155]

[Next response in frame: 158]

[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file4.html]

File Data: 714 bytes

Line-based text data: text/html (17 lines)

15535.247708 192.168.1.8 128.119.245.12 HTTP 489 GET /pearson.png HTTP/1.1

Frame 155: 489 bytes on wire (3912 bits), 489 bytes captured (3912 bits) on interface \Device\NPF {28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59682, Dst Port: 80, Seq: 504, Ack: 1074, Len: 435

**Hypertext Transfer Protocol** 

GET /pearson.png HTTP/1.1\r\n

Host: gaia.cs.umass.edu\r\n

Connection: keep-alive\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\r\n

Accept: image/webp,image/apng,image/\*,\*/\*;q=0.8\r\n

Accept-Encoding: gzip, deflate\r\n

Accept-Language: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

 $r\n$ 

[Full request URI: http://gaia.cs.umass.edu/pearson.png]

[HTTP request 2/2]

[Prev request in frame: 150]

[Response in frame: 158]

15835.396482 128.119.245.12192.168.1.8 HTTP 865 HTTP/1.1 200 OK (PNG)

Frame 158: 865 bytes on wire (6920 bits), 865 bytes captured (6920 bits) on interface

\Device\NPF\_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59682, Seq: 3874, Ack: 939, Len: 811

[3 Reassembled TCP Segments (3611 bytes): #156(1400), #157(1400), #158(811)]

**Hypertext Transfer Protocol** 

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 18:54:21 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Sat, 06 Aug 2016 10:08:14 GMT\r\n

ETag: "cc3-539645c7f1ee7"\r\n

Accept-Ranges: bytes\r\n
Content-Length: 3267\r\n

Keep-Alive: timeout=5, max=99\r\n

Connection: Keep-Alive\r\n

Content-Type: image/png\r\n

 $r\n$ 

[HTTP response 2/2]

[Time since request: 0.148774000 seconds]

[Prev request in frame: 150]

[Prev response in frame: 152]

[Request in frame: 155]

[Request URI: http://gaia.cs.umass.edu/pearson.png]

File Data: 3267 bytes

**Portable Network Graphics** 

16435.774593 192.168.1.8 128.119.245.12 HTTP 503 GET /~kurose/cover\_5th\_ed.jpg

Frame 164: 503 bytes on wire (4024 bits), 503 bytes captured (4024 bits) on interface \Device\NPF\_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: LiteonTe\_12:30:a6 (3c:a0:67:12:30:a6), Dst: HuaweiTe\_70:0d:6c (bc:76:70:70:0d:6c)

Internet Protocol Version 4, Src: 192.168.1.8, Dst: 128.119.245.12

Transmission Control Protocol, Src Port: 59683, Dst Port: 80, Seq: 1, Ack: 1, Len: 449

**Hypertext Transfer Protocol** 

GET /~kurose/cover\_5th\_ed.jpg HTTP/1.1\r\n

Host: manic.cs.umass.edu\r\n

Connection: keep-alive\r\n

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/80.0.3987.132 Safari/537.36 OPR/67.0.3575.79\r\n

Accept: image/webp,image/apng,image/\*,\*/\*;q=0.8\r\n

Accept-Encoding: gzip, deflate\r\n

Accept-Language: uk-UA,uk;q=0.9,en-US;q=0.8,en;q=0.7\r\n

 $r\n$ 

[Full request URI: http://manic.cs.umass.edu/~kurose/cover\_5th\_ed.jpg]

[HTTP request 1/1]

[Response in frame: 267]

26736.551782 128.119.245.12192.168.1.8 HTTP 572 HTTP/1.1 200 OK (JPEG JFIF image)

Frame 267: 572 bytes on wire (4576 bits), 572 bytes captured (4576 bits) on interface \Device\NPF\_{28914AD0-AFA8-4C04-9620-406BD19AC601}, id 0

Ethernet II, Src: HuaweiTe 70:0d:6c (bc:76:70:70:0d:6c), Dst: LiteonTe 12:30:a6 (3c:a0:67:12:30:a6)

Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.1.8

Transmission Control Protocol, Src Port: 80, Dst Port: 59683, Seq: 100801, Ack: 450, Len: 518

[73 Reassembled TCP Segments (101318 bytes): #166(1400), #167(1400), #168(1400), #170(1400), #171(1400), #173(1400), #174(1400), #176(1400), #178(1400), #179(1400), #181(1400), #182(1400), #183(1400), #184(1400), #185(1400), #187(1400), #18]

**Hypertext Transfer Protocol** 

HTTP/1.1 200 OK\r\n

Date: Sun, 22 Mar 2020 18:54:22 GMT\r\n

Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod\_perl/2.0.11 Perl/v5.16.3\r\n

Last-Modified: Tue, 15 Sep 2009 18:23:27 GMT\r\n

ETag: "18a68-473a1e0e6e5c0"\r\n

Accept-Ranges: bytes\r\n

Content-Length: 100968\r\n

Keep-Alive: timeout=5, max=100\r\n

Connection: Keep-Alive\r\n

Content-Type: image/jpeg\r\n

 $r\n$ 

[HTTP response 1/1]

[Time since request: 0.777189000 seconds]

[Request in frame: 164]

[Request URI: http://manic.cs.umass.edu/~kurose/cover 5th ed.jpg]

File Data: 100968 bytes

JPEG File Interchange Format

**16.** Скільки запитів HTTP GET було відправлено вашим браузером?

3

Якими були цільові ІР-адреси запитів?

128.119.245.12

**17.** Чи можете ви встановити, чи були ресурси отримані паралельно чи послідовно? Яким чином?

Так, послідовно, за часом

**Висновки:** Я ознайомилась з середовищем Wireshark, його інтерфейсом та оволоділа базовими методами перехоплення та аналізу пакетів,

використовуваними для дослідження мережевих протоколів а також зрозумів як саме передається різноманітний контент.