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EE4013 Lab 4
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Q1:
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Client computer: IP address: 192.168.1.121
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TCP port number: 49624

```
299 13.40.41.700001733 120.119.243.12
300 13:46:41.796625961 128.119.245.12
                                                                             192.100.1.121
                                                                                                                                       66 80 - 49624 [ACK]
                                                                                                                                                                          Seq=1 Ack=139648 Win=189056 Len=0 TS...
301 13:46:41.806734110 128.119.245.12
302 13:46:41.821118178 128.119.245.12
                                                                             192.168.1.121
192.168.1.121
                                                                                                                                                                          Seq=1 Ack=141096 Win=191872 Len=0 TS...
Seq=1 Ack=142544 Win=194816 Len=0 TS...
                                                                                                                    TCP
                                                                                                                    TCP
303 13:46:41.827075664 128.119.245.12
304 13:46:41.841077925 128.119.245.12
                                                                             192.168.1.121
192.168.1.121
                                                                                                                   TCP
TCP
                                                                                                                                        66 80 → 49624 [ACK]
66 80 → 49624 [ACK]
                                                                                                                                                                          Seq=1 Ack=143992 Win=197760 Len=0 TS..
Seq=1 Ack=145440 Win=200576 Len=0 TS..
305 13:46:41.850809896 128.119.245.12
306 13:46:41.861904022 128.119.245.12
                                                                             192.168.1.121
192.168.1.121
                                                                                                                                        66 80 → 49624 [ACK]
66 80 → 49624 [ACK]
                                                                                                                                                                          Seq=1 Ack=146888 Win=203520 Len=0 TS...
Seq=1 Ack=148336 Win=206464 Len=0 TS...
                                                                                                                    ТСР
                                                                                                                    TCP
307 13:46:41.869737588 128.119.245.12
                                                                             192.168.1.121
                                                                                                                    TCP
                                                                                                                                        66 80 → 49624 [ACK] Seq=1 Ack=149784 Win=209280 Len=0 TS...
309 13:46:41.897225737 128.119.245.12
310 13:46:41.902937926 128.119.245.12
                                                                                                                                        66 80 - 49624 [ACK] Seq=1 Ack=152680 Win=215040 Len=0 TS...
66 80 - 49624 [ACK] Seq=1 Ack=152961 Win=217984 Len=0 TS...
                                                                              192.168.1.121
                                                                              192.168.1.121
                                                                                                                    ТСР
311 13:46:41.903696079 128.119.245.12
312 13:46:41.903718711 192.168.1.121
                                                                                                                                      843 HTTP/1.1 200 OK (text/html) 66 49624 \rightarrow 80 [ACK] Seq=152961 Ack=778 Win=30848 Len=0 T.
                                                                             192.168.1.121
                                                                                                                   HTTP
                                                                             128.119.245.12
                                                                                                                    TCP
```

### Q2:

IP address: 128.119.245.12

TCP port number: 80

```
▶ Ethernet II, Src: IntelCor_db:89:3b (e4:f8:9c:db:89:3b), Dst: Tp-LinkT_75:a0:5f (a0:f3:c1:75:a0:5f)
▶ Internet Protocol Version 4, Src: 192.168.1.121, Dst: 128.119.245.12
```

Transmission Control Protocol, Src Port: 49624, Dst Port: 80, Seq: 151232, Ack: 1, Len: 1448

Q3:

Same as Q1

Q4:

Syn set to 0

```
.... 0... = Congestion window Reduced (CWR): Not set
.... 0... = ECN-Echo: Not set
.... 1... = Urgent: Not set
.... 2... = Acknowledgment: Set
.... 0... = Push: Not set
.... 0... = Reset: Not set
```

.... .... ..0. = Syn: Not set .... .... ...0 = Fin: Not set

Q5:

Sequence number: 0 Value of ACK: 1

```
.... 0... - Congestion window Reduced (CWK). Not set
.... 0... = ECN-Echo: Not set
.... 1... = Acknowledgment: Set
.... 0... = Push: Not set
.... 0... = Reset: Not set
```

### Q6:

#### Sequence number: 1

THANSHIESSEUN CONTINUE PROTOCOLE, STO PORT, OU, DST PORT, 49024, Seq. I, ACK: 10000, Len. U Source Port: 80 Destination Port: 49624 [Stream index: 15] [TCP Segment Len: 0] Sequence number: 1 (relative sequence number) Acknowledgment number: 16568 (relative ack number) Header Length: 32 bytes ▼ Flags: 0x010 (ACK)

# Q7:

Segment 1 sequence number: 1 Segment 2 sequence number: 566 Segment 3 sequence number: 2026 Segment 4 sequence number: 3486 Segment 5 sequence number: 4946 Segment 6 sequence number: 6406

#### 08:

Length of first: 347 Length of others:

270 13:46:41.360774944 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
272 13:46:41.370996254 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
274 13:46:41.383169993 192.168.1.121	128.119.245.12	HTTP	347 POST /wireshark-labs/lab3-1-reply.htm HTTP/1.1 (text
312 13:46:41.903718711 192.168.1.121	128.119.245.12	TCP	66 49624 → 80 [ACK] Seq=152961 Ack=778 Win=30848 Len=0 T
226 12:46:46 076624206 102 160 1 121	120 110 245 12	TCD	66 49624 - 90 [ACK] Sog=152961 Ack=770 Win=20949 Lon=0 T

## Q9:

## 5840 bytes

	204 13.40.41.323301143 132.100.1.121	120.113.243.12	105	1014 [TOP Segment of a reassempted roof
	266 13:46:41.341946443 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
	268 13:46:41.350459831 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
	270 13:46:41.360774944 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
	272 13:46:41.370996254 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
-	274 13:46:41.383169993 192.168.1.121	128.119.245.12	HTTP	347 POST /wireshark-labs/lab3-1-reply.htm HTTP/1.1 (text 💌
	312 13:46:41.903718711 192.168.1.121	128.119.245.12	TCP	66 49624 → 80 [ACK] Seq=152961 Ack=778 Win=30848 Len=0 T
	326 13:46:46.976634286 192.168.1.121	128.119.245.12	TCP	66 49624 → 80 [ACK] Seq=152961 Ack=779 Win=30848 Len=0 T
	344 13:46:52.662990734 192.168.1.121	128.119.245.12	TCP	66 49624 → 80 [FIN, ACK] Seq=152961 Ack=779 Win=30848 Le
	109 13:46:38.104580923 192.168.1.121	151.101.16.193	TCP	66 33888 → 443 [ACK] Seq=1 Ack=1 Win=1670 Len=0 TSval=92
	104 13:46:33.752569909 192.168.1.121	151.101.193.69	TCP	66 45792 → 443 [ACK] Seq=1 Ack=1 Win=1444 Len=0 TSval=91
	319 13:46:45.528656261 192.168.1.121	151.101.65.140	TCP	66 38854 → 443 [ACK] Seq=1 Ack=1 Win=1981 Len=0 TSval=94
	1 13:46:07.214647530 216.58.212.161	192.168.1.121	TCP	66 80 → 60510 [FIN, ACK] Seq=1 Ack=1 Win=340 Len=0 TSval
	8 13:46:12.644545426 128.119.245.12	192.168.1.121	TCP	74 80 → 48044 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS
	11 13:46:13.045450424 216.58.212.174	192.168.1.121	TCP	66 [TCP ACKed unseen segment] 443 → 57542 [ACK] Seq=1 Ac
	14 13:46:15.816396763 216.58.212.168	192.168.1.121	TLSv1.2	129 Application Data
	15 13:46:15.816410286 216.58.212.168	192.168.1.121	TCP	66 443 → 41372 [FIN, ACK] Seq=64 Ack=1 Win=357 Len=0 TSv
	17 13:46:15 810611536 216 58 212 168	192 168 1 121	TCD	66 [TCD Spurious Patransmission] 443 - 41372 [ETN ACK]

- Frame 274: 347 bytes on wire (2776 bits), 347 bytes captured (2776 bits) on interface 0

  Ethernet II, Src: IntelCor\_db:89:3b (e4:f8:9c:db:89:3b), Dst: Tp-LinkT\_75:a0:5f (a0:f3:c1:75:a0:5f)

  Internet Protocol Version 4, Src: 192.168.1.121, Dst: 128.119.245.12

  Transmission Control Protocol, Src Port: 49624, Dst Port: 80, Seq: 152680, Ack: 1, Len: 281

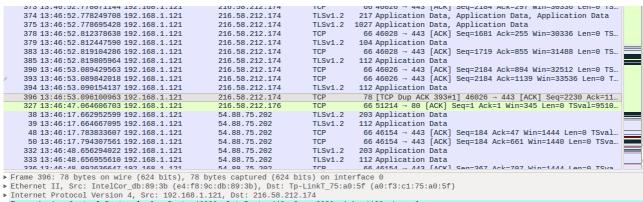
  [107 Reassembled TCP Segments (152960 bytes): #111(639), #112(1448), #113(1448), #114(1448), #115(1448), #116(1448), #117(1448), #118(1448),

  Hypertext Transfer Protocol

  MIME Multipart Media Encapsulation, Type: multipart/form-data, Boundary: "----WebKitFormBoundaryKXuSE4AaSDgGxoiK"

## Q10:

No retransmitted segments in the trace file as the sequence numbers of the TCP segments in the trace file increase with respect to time.



- ▶ Transmission Control Protocol, Src Port: 46026, Dst Port: 443, Seq: 2230, Ack: 1139, Len: 0

### Q11:

ACK typically acknowleges 66 bytes of data

1	00 10.40.01.704007200 102.100.1.121	104.244.42.130	101	00 04100 / 440 [NOK] 3CY-1 NCK-1 WIN-320 ECH-0 13VAI-312
	9 13:46:12.644566403 192.168.1.121	128.119.245.12	TCP	66 48044 → 80 [ACK] Seq=1 Ack=1 Win=229 Len=0 TSval=8649
	26 13:46:17.448859279 192.168.1.121	128.119.245.12	TCP	66 48044 → 80 [FIN, ACK] Seq=1 Ack=1 Win=229 Len=0 TSval
	28 13:46:17.449014588 192.168.1.121	128.119.245.12	TCP	74 49210 → 80 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK
	35 13:46:17.548724122 192.168.1.121	128.119.245.12	TCP	66 49210 → 80 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=87
	37 13:46:17.550143596 192.168.1.121	128.119.245.12	TCP	66 48044 → 80 [ACK] Seq=2 Ack=2 Win=229 Len=0 TSval=8772
	87 13:46:31.159096729 192.168.1.121	128.119.245.12	TCP	66 49210 → 80 [FIN, ACK] Seq=1 Ack=1 Win=29312 Len=0 TSv
	88 13:46:31.159208252 192.168.1.121	128.119.245.12	TCP	74 49624 → 80 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK
	90 13:46:31.277926326 192.168.1.121	128.119.245.12	TCP	66 49624 → 80 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=91
	92 13:46:31.278398094 192.168.1.121	128.119.245.12	TCP	66 49210 → 80 [ACK] Seq=2 Ack=2 Win=29312 Len=0 TSval=91
	111 13:46:40.585922920 192.168.1.121	128.119.245.12	TCP	705 [TCP segment of a reassembled PDU]
	112 13:46:40.586079883 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
	113 13:46:40.586835691 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
	114 13:46:40.587401721 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
	115 13:46:40.587908953 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]
	116 13:46:40.588393298 192.168.1.121	128.119.245.12	TCP	1514 [TCP segment of a reassembled PDU]