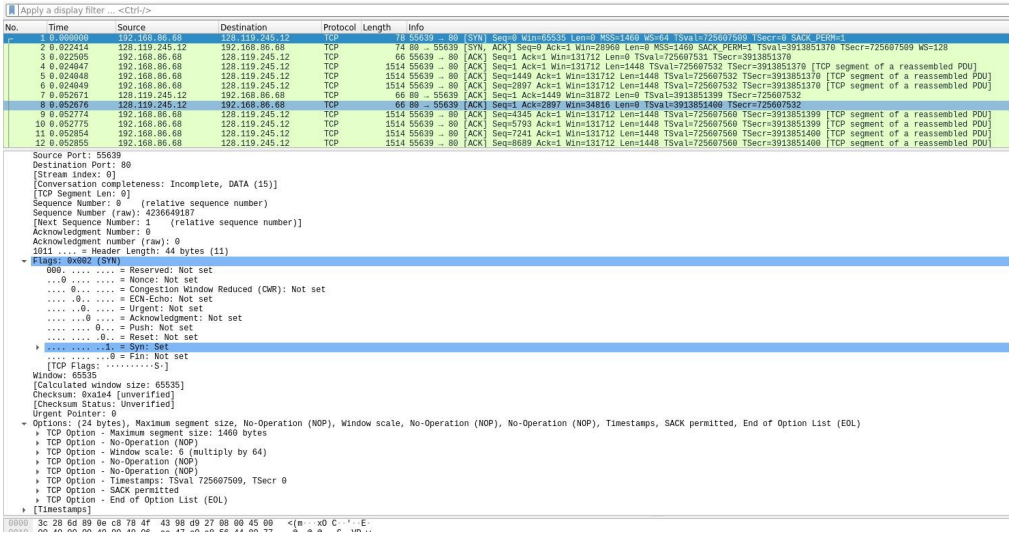
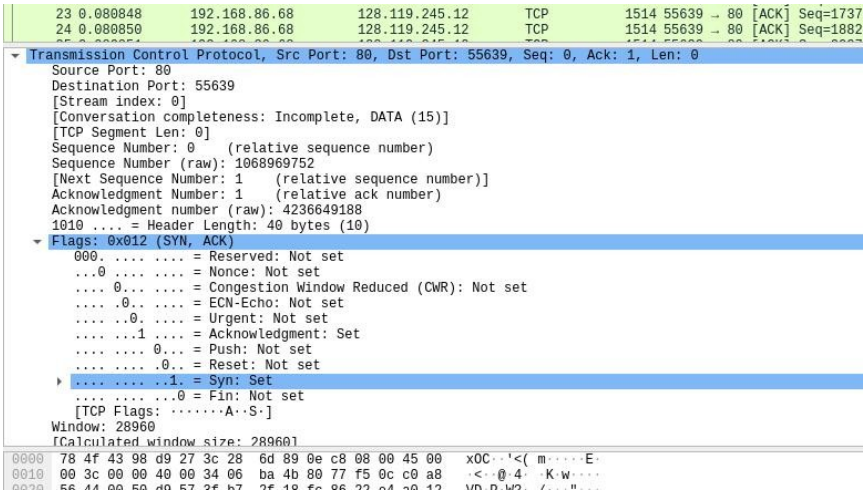
Marc Soda
Lab 5

1: 192.168.86.68:55639
2: 128.119.245.12:80

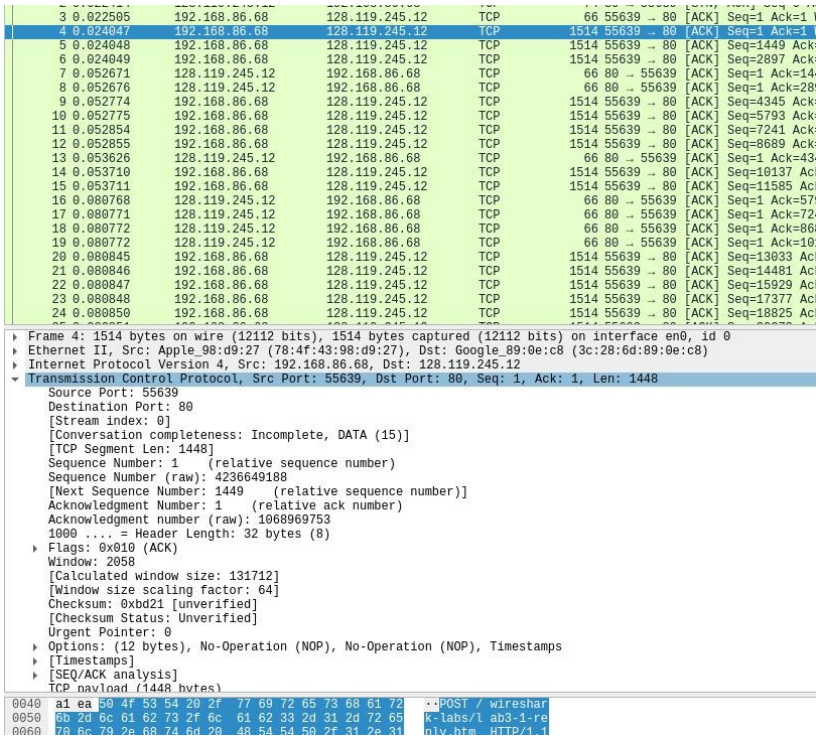
3: Seq number: 0
The SYN flag being set to 1 is what identifies the segment as a SYN segment
The TCP receiver will be able to use Selective Acknowledgments. SACK permitted option is enabled



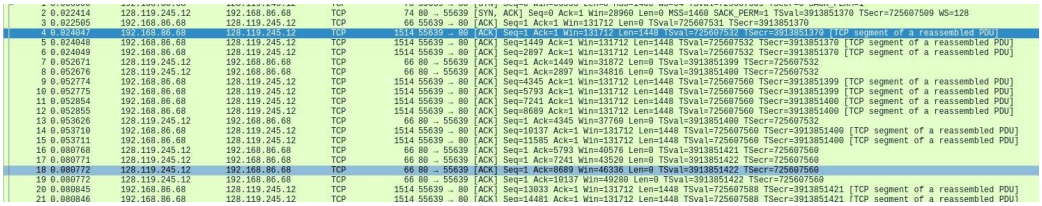
4: Seq num: 0
SYN and ACK flags are set
Value of ACK is 1
The server adds 1 to the sequence number which was 0



5: Seq Number: 1
1448 Bytes
It did not all fit



6: .024047
.052671
.052671 - .024047 = .028624
.052676 - .024048 = .028628
.0875 * .028624 + .125 * .028624 = .0060826



2	0.022414	128.119.245.12	192.168.86.68	TCP	74 80 → 55639 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3913851370 TSecr=725607509 WS=128
3	0.022505	192.168.86.68	128.119.245.12	TCP	66 55639 → 80 [ACK] Seq=1 Ack=1 Win=131712 Len=0 TSval=725607531 TSecr=3913851370
4	0.024047	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=1 Ack=1 Win=131712 Len=1448 TSval=725607532 TSecr=3913851370 [TCP segment of a reassembled PDU]
5	0.024048	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=1449 Ack=1 Win=131712 Len=1448 TSval=725607532 TSecr=3913851370 [TCP segment of a reassembled PDU]
6	0.024049	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=2897 Ack=1 Win=131712 Len=1448 TSval=725607532 TSecr=3913851370 [TCP segment of a reassembled PDU]
7	0.052671	128.119.245.12	192.168.86.68	TCP	66 80 → 55639 [ACK] Seq=1 Ack=1449 Win=31872 Len=0 TSval=3913851399 TSecr=725607532
8	0.052676	128.119.245.12	192.168.86.68	TCP	66 80 → 55639 [ACK] Seq=1 Ack=2897 Win=34816 Len=0 TSval=3913851400 TSecr=725607532
9	0.052774	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=4345 Ack=1 Win=131712 Len=1448 TSval=725607560 TSecr=3913851399 [TCP segment of a reassembled PDU]
10	0.052775	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=5793 Ack=1 Win=131712 Len=1448 TSval=725607560 TSecr=3913851399 [TCP segment of a reassembled PDU]
11	0.052854	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=7241 Ack=1 Win=131712 Len=1448 TSval=725607560 TSecr=3913851400 [TCP segment of a reassembled PDU]
12	0.052855	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=8689 Ack=1 Win=131712 Len=1448 TSval=725607560 TSecr=3913851400 [TCP segment of a reassembled PDU]
13	0.053626	128.119.245.12	192.168.86.68	TCP	66 80 → 55639 [ACK] Seq=1 Ack=4345 Win=37760 Len=0 TSval=3913851400 TSecr=725607532
14	0.053710	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=10137 Ack=1 Win=131712 Len=1448 TSval=725607560 TSecr=3913851400 [TCP segment of a reassembled PDU]
15	0.053711	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=11585 Ack=1 Win=131712 Len=1448 TSval=725607560 TSecr=3913851400 [TCP segment of a reassembled PDU]
16	0.080768	128.119.245.12	192.168.86.68	TCP	66 80 → 55639 [ACK] Seq=1 Ack=5793 Win=40576 Len=0 TSval=3913851421 TSecr=725607560
17	0.080771	128.119.245.12	192.168.86.68	TCP	66 80 → 55639 [ACK] Seq=1 Ack=7241 Win=43520 Len=0 TSval=3913851422 TSecr=725607560
18	0.080772	128.119.245.12	192.168.86.68	TCP	66 80 → 55639 [ACK] Seq=1 Ack=8689 Win=46336 Len=0 TSval=3913851422 TSecr=725607560
19	0.080772	128.119.245.12	192.168.86.68	TCP	66 80 → 55639 [ACK] Seq=1 Ack=10137 Win=49200 Len=0 TSval=3913851422 TSecr=725607560
20	0.080845	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=13033 Ack=1 Win=131712 Len=1448 TSval=725607588 TSecr=3913851421 [TCP segment of a reassembled PDU]
21	0.080846	192.168.86.68	128.119.245.12	TCP	1514 55639 → 80 [ACK] Seq=14481 Ack=1 Win=131712 Len=1448 TSval=725607588 TSecr=3913851421 [TCP segment of a reassembled PDU]

7: 1448 bytes
8: 131712
Sender is not throttled
Found in screenshot for Q5
9: No. Verified by analyzing sequence numbers. Since the sequence numbers never go down over time, there were no retransmissions.
10: Receiver typically acknowledges 1448 bytes.
There are cases where the receiver is ACKing every other segment.
See screenshot for Q6
11: I am not sure