Lab 6 Report
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Exercise 1:

1. 192.168.1.100

2. IP source = 192.168.1.100 destination = 64.233.169.104
   TCP source = 4335 destination = 80

3. the 200 OK HTTP message is received at 7.158797. IP source = 63.233.169.104 destination = 192.168.1.100 TCP source = 80 destination = 4335.

4. The client-to-server TCP SYN segment is sent at 7.075657. IP source = 192.168.1.100 destination = 64.233.169.104 TCP source = 4335 destination = 80

5. The SYN ACK was received at 7.108986. The IP source = 64.233.169.104 destination = 192.168.1.100 TCP source = 80 destination = 4335.

6. The message appears at 6.069168 in the ISP side trace.

7. IP source = 71.192.34.104 destination = 63.233.169.164 TCP source = 4335 destination = 80 The IP source has changed from the client side trace however the rest are the same.

8. The fields in the HTTP GET are exactly the same

9. The checksum is different between the ISP side and client side traces. All checksums need to be different in order to ensure their validity.

10. The first 200 OK HTTP message is received at 6.308118 from the google server

11. IP source = 63.233.169.164 destination = 71.192.34.104 TCP source = 80 destination = 4335. The destination IP address is different from the client side trace.

12. The SYN was sent at 6.035475 and the SYN ACK was received at 6.067775

13. SYN IP source = 71.192.34.104 destination = 64.233.169.104 TCP source = 4335 destination = 80. SYN ACK IP source = 64.233.169.104 destination = 71.192.34.104 TCP source = 80 destination = 4335. The only fields that are different is the SYN IP source and SYN ACK IP destination.

14.

NAT translation table	
WAN side addr	LAN side addr
71.192.34.104, 4335	192.168.1.100, 4335

Exercise 2:

1. 0 communicates with 1, 1 communicates with 4 and 4 communicates with 5. The path goes from 0 to 1 to 4 to 5. The route doesn't change over time.

2. At 1.0 the line between 1 and 4 is red. At 1.2 the red line between 1 and 4 goes black again. As a result of this from 1.0 to 1.2 the route is only from 0 to 1. 1 doesn't communicate with 4

3. Between 1.0 and 1.2 the network changes routes from (0 to 1 to 4 to 5) to (0 to 1 to 2 to 3 to 5).

4. The route now goes from 0 to 1 to 2 to 3 to 5. This is because the cost of 1 to 4 is higher than the cost from 1 to 2. Therefore, the route now goes via node 2.

5. Once the route reaches 3, there is a new path that starts from 0 again although the last node is 5. Therefore the effect of the command is fairly self explanatory in terms of it allows for multiple paths on the same route.