Ceng 435 - Wireshark Assignment 2

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Answer 1

YouTube uses TCP. There are several reasons behind this choice: (i) reliability: since YouTube videos are not real-time videos and after buffering, users can pause, replay, rewind, fast-forward etc, packet loss is not tolerable (because losing a packet most probably means skipping a frame and this might disturb users); (ii) adjusting video quality: YouTube adjusts video quality based on network congestion, i.e., if the network is busy, video quality is decreased; and (iii) using network efficiently while being fair: since video streaming is costly in terms of data, using network efficiently while being fair to others is crucial. TCP satisfies all these reasons, i.e., (i) TCP is reliable, (ii-iii) TCP offers bandwidth probing and congestion control.

Answer 2

My computer's IP address = 192.168.5.58
YouTube's IP address = 172.217.169.130
ceng.metu.edu.tr's IP address = 144.122.145.146

Answer 3

	Source Port	Destination Port
First GET request	52115	80
Second GET request	52116	80
Third GET request	52116	80
Forth GET request	52116	80
Fifth GET request	52117	80
Sixth GET request	52118	80

Answer 4

	Numbers of packet	Sequence Number	Acknowledgement Number
Client -> Server	11580	0	0
Server -> Client	11613	0	1
Client -> Server	11622	1	1

Answer 5

	Packet Number	Sequence Number	Length
First Packet	11684	4813	1506
Second Packet	11685	6253	1506
Third Packet	11686	7693	1506
Forth Packet	11689	9133	1506
Fifth Packet	11690	10573	1506

Answer 6

(i) If I assume the question is asked for the communication between ceng.metu.edu.tr and my computer: for packet #11613, which is the first packet sent from ceng.metu.edu.tr, window size is 28960; hence the minimum amount of available buffer space advertised at the receiver is 28960. Then, it goes up to 30720 and never drops. Therefore, the lack of receiver buffer space never throttles the sender. (ii) If I assume the question is asked for the communication between YouTube and my computer: for packet #1, which is the first packet sent from YouTube, window size is 248; hence the minimum amount of available buffer space advertised at the receiver is 248. Then, it goes up to 78848 but never drops. Therefore, the lack of receiver buffer space never throttles the sender.