Homework #8

1. TCP Congestion Control. Suppose that in TCP, the sender window is of segment size N = 200, the base of the window is at sequence number 600, and the sender has just sent a complete window size of segments. Let RTT be the sender-to-receiver-to-sender round trip time of 200 ms and Maximum Segment Size MSS = 1 000 bytes.
    a. Assuming no loss, what is the throughput (in terms of MSS and RTT and in terms of Megabit/s) of this message exchange?
    b. Suppose TCP is in its congestion avoidance phase. Assuming no loss, what is the window size (in terms of segment) after the N = 200 segments are acknowledged?

2. What is the difference between the two congestion control algorithms TCP-Tahoe and TCP-Reno?

3. Please explain the selective repeat dilemma and name a solution to prevent its occurrence.

4. Please name at least three differences between UDP and TCP.

5. If you would like to transfer a file, which transport protocol would you use? Which protocol would you use for voice traffic?

6. Please explain TCP fast retransmit.

7. What is the difference between flow control and congestion control?

8. Why is an EstimatedRTT used to calculate the TCP timeout instead of the recently sampled RTT?