Report for Lab 4

First test was done using a local host. In this testing I noticed a high number of retransmissions which was due to unstable RTT values. On running the system of 2 different machines the RTT values stabilized and showed lesser retransmissions.

On increasing the random packet drop probability, I noticed that the chances of the Sender exiting due to Max retransmissions increased. It increased at a much higher rate if the window size was large due to retransmissions of the packets near the end of the window.

TABLES:

RANDOM_DROP_PROB = 1e-4

PACKET_LENGTH = 128	PACKET_LENGTH = 1024
Complete Transmission	Few retransmit terminations
Average RTT = 5:830	Average RTT = 6:029
Retransmission Ratio = 1.03794	Retransmission Ratio = 1.14124

RANDOM_DROP_PROB = 1e-8

PACKET_LENGTH = 128	PACKET_LENGTH = 1024
Complete Transmission	Complete Transmission
Average RTT = 5:967	Average RTT = 6:631
Retransmission Ratio = 1.01172	Retransmission Ratio = 1.07031

Inferences from tables:

1. Higher Packet length leads to higher RTT values. (Increased T_{trans})
2. High Packet length and low drop probability has very high transmissions. This is due to fluctuating RTT values which causes higher retransmissions.
3. High Packet length and low error rate had a few runs where the Sender terminated due to max_retransmit due to fluctuating RTT values.

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