CS456/A2 Example Sheet

1. Successfully transmit a file without delay and loss. Test SeqNum and window

1.1 a file less than 10 packets (6 packets) without delay and loss.
exp result: logs: #0 -- #5 + #6 (EOT) & correct transmitted file
1.2 a file larger than 32 packets (43 packets) without delay and loss.
exp result: log: #0 -- #31 -- #10 + #11 (EOT) & correct transmitted file

2. Timer

Data: send #0 - #6 + EOT (discard #3 data packet twice)
exp result: retransmit packets 3,4,5,6 twice & correct transmitted file

3. GBN behavior

3.1 first #0 data get lost,
Data: send # 0,1,2,3,4(EOT) (discard #0 data packet)
exp result: SeqNum.log 0,1,2,3,0,1,2,3,4
Arrival.log 1,2,3,0,1,2,3,4
ack.log 0,1,2,3
3.2 data with delay and loss, test receiver side behavior.
Data: send # 0,1,2,3,4,5,6,7(EOT) (#2 arrive after #3, and #5 get lost)
exp result: SeqNum.log 0,1,2,3,4,5,6,3,4,5,6,7
Arrival.log 0,1,3,2,4,6,3,4,5,6,7
Ack.log 0,1,1,2,2,2,3,4,5,6
3.3 data with delay and loss, test window sliding.
Data: send # 0,1,2,3,4,5,6,...,16,17(EOT) (data #5 get lost)
exp result: SeqNum.log 0,...,9,...,14,5,...,14,15,16,17
Arrival.log 0,...,4,6,...14,5,...,14,15,16,17
Ack.log 0,...,4,...,4(9),5,...,14,15,16
3.4 ACK with delay and loss, test cumulative ACK (all data received)
ACK: ack # 0,1,2,3,4,5,6 (ack #1 arrive after #2,#4,#6 get lost)
exp result: SeqNum.log 0,1,2,3,4,5,6,6,7
Arrival.log 0,1,2,3,4,5,6,6,7
Ack.log 0,2,1,3,5,6
3.5 Both Data and ACK get delay and loss (file size = 43 packets)
data: send #0,…,43(EOT) discard 11^{th}(#10),36^{th}(#25) arrive after 37^{th}(#26)
ACK: ack 6^{th}(#5) get lost and 47^{th}(#27) arrive after 48^{th}(#28)
Exp: SeqNum.log 0,…,19,10,…,19,20,…,31,0,…,3,26,…,31,0,…,10,11
Arrival.log 0,…9,11,…,19,10,…,19,20,…,24,26,25,27,…,3,26,…,10,11
Ack.log 0,…4,6,…,9,9(×9),10,…,24,24,25,25(×9),26,28,27,29,…,10