

COMP3331/9331 Assignment Marking Sheet

S2/2018

[Full marks will only be awarded if the component to be marked works satisfactorily and is implemented satisfactorily]

[If the program from the student doesn't work, please don't give 0 mark right away. You can ask the student to come in to give you a demo and explain to you how the program works]

Name of Student: _____ Student ID: _____

Marking Criterion	Max score	Actual score
Part 1 [5 marks] [Please run the code and check the log files to verify the functioning of the PLD module and the reliability of STP] Test1: (check stop-and-wait) Set MWS = 100 bytes, MSS = 100 bytes, gamma = 4, seed=300 (rest all parameters assumed as 0) and test file: test0.pdf <ul style="list-style-type: none">○ File at receiver side is identical to that at the transmission side○ Stop-and-wait behaviour (alternate send and receive), correct MSS○ No segment is dropped and no segment re-transmission occurs	1 0.5 0.5	
Test 2: (check segments drops for S&W) Set pDrop = 0.5, MWS = 100 bytes, MSS = 100 bytes, gamma = 4, seed=300 (rest all parameters assumed as zero) and test file: test0.pdf <ul style="list-style-type: none">○ File at receiver side is identical to that at the transmission side○ Drop probability is correct (around 50% of segments handled by PLD are dropped, no other error)○ Segments are retransmitted after timeout (no fast retransmit in summary and no rcv/DUP in sender log)○ The RTO values should decrease as the test runs. Check the difference between drop and snd/RXT segments.	0.5 0.25 0.5 0.25	
Test 3: (check more segments drops for S&W) Set pDrop = 0.9, MWS = 100 bytes, MSS = 100 bytes, gamma = 4, seed=300 (rest all parameters assumed as 0) and test file: test0.pdf <ul style="list-style-type: none">○ File at receiver side is identical to that at the transmission side○ Drop probability is correct (around 90% of segments handled by PLD are dropped, no other error)○ Packets are retransmitted after timeout (no fast retransmit)	0.5 0.5 0.5	
Total for Part 1	5	

<p>Part 2 [10 marks]</p> <p><i>[Please run the programs and check the log files created by the Sender, Receiver to verify the functioning of the programs]</i></p> <p>Test 1: (check for Window size)</p> <p>Set MWS = 200 bytes, MSS = 40 bytes, gamma = 4, seed = 300 (rest all parameters assumed as 0) and use test0.pdf</p> <ul style="list-style-type: none"> File at receiver side is identical to that at the transmission side The sender should send no more than 5 segments at a time. Moreover, there should not be more than 5 un-Acked segments at a time. 	<p>1</p> <p>1</p>	
<p>Test 2: (check for segment drops and Duplicate Acks)</p> <p>Set pDrop = 0.5, MWS = 200 bytes, MSS = 40 bytes, gamma = 4, seed = 300 (rest all parameters assumed as 0) and use test0.pdf</p> <ul style="list-style-type: none"> File received correctly Look for drop messages and Summary of drop messages (should be about 50% of total handled by PLD) in Sender.log Look for duplicate acks being sent from the receiver, rcv/DA at sender, retransmissions at sender and summary of duplicate messages received in Sender.log 	<p>0.5</p> <p>1</p> <p>0.5</p>	
<p>Test 3: (check for segment corruption)</p> <p>Set pCorrupt = 0.1, MWS = 200 bytes, MSS = 40 bytes, gamma = 4, seed = 300 (rest all parameters assumed as 0) and use test0.pdf</p> <ul style="list-style-type: none"> File received correctly. Look for actual send/corr messages and summary of all corrupted segments in the log files Look for actual code used for corrupting messages in PLD at sender and re-checking (Checksum, Message Digest, Hash etc) at receiver 	<p>0.5</p> <p>1</p> <p>1</p>	
<p>Test 4: (check for segments re-ordering)</p> <p>Set pOrder = 0.1, maxOrder = 5, MWS = 200 bytes, MSS = 40 bytes, gamma = 4, seed = 300 (rest all parameters assumed as 0) and use test0.pdf</p> <ul style="list-style-type: none"> File received correctly. Correct re-ordering/maxOrder implementation. Look for actual send/rord and summary of all such pkts in the log file, maxOrder is a constant value and maximum 1 segment gets reordered at a time 	<p>0.5</p> <p>1.0</p>	

<p>Test 5: (check for segments delays)</p> <p>Set pDelay = 0.5, maxDelay = 1000, MWS = 200 bytes, MSS = 40 bytes, gamma = 4, seed = 300 (rest all parameters assumed as 0) and use test0.pdf</p> <ul style="list-style-type: none"> File received correctly. Correct maxDelay implementation (random number between 0 and maxDelay). Look for actual send/dely and summary of all such pkts in the log file Delay is non-blocking. When a segment is being delayed, other segments should get transmitted (if MWS permits). Check that delay also causes reordering 		
	0.5	
	0.5	
	1	
Total for Part 2	10	
<p>Part 3 Report [5 marks]</p> <p>You should read the report to see whether the answers make sense. You should also check that their answers are indeed based on the log files/snippets of the summary statistics attached with the report. The actual tests would take a long time to run especially 7b so do not run the actual tests unless essentially required.</p> <p>Experiment (7a)</p> <p>The key point to note here is that the number of re-transmissions will be higher for a larger drop probability (0.3 as compared with 0.1). This would result in delay in total transmission time for file test0.pdf. The drops and retransmissions results in gaps in sequence numbers received at the Receiver. The summary statistics should show the difference in drop probability and increase in transfer time (through sender/receiver last entry in segment transfer).</p> <p>Experiment (7b)</p> <p>For low value of gamma (resulting in lower value of timeout), you may see pre-mature retransmission and the number of re-transmissions may be high. For high value of gamma, it will take longer time for the whole transmission to be completed. In our test runs we found that gamma value for 4 takes the longest time as compared to values of 2 and 6. See if a table has been</p>	1	
	1	

<p>presented with required values of total segments and total time taken for transfer.</p> <p>Experiment (7c)</p> <p>The file should be successfully transferred. Note the file transfer time may be lower than all cases in 7(b). If implemented correctly, the number of drops as compared with other errors should be the highest (we are using conditional probability for all other errors) thus contributing most in the overall transfer time. Check Drops > Duplicate > Corrupted > Reordered by observing the summary statistics for the transfer.</p> <p>Report structure</p> <p>Description of program implementation / header / segment design / trade-offs/possible improvements. You should give the students their marks, if their description is reasonably complete.</p>	1	
	2	
Total for Part 3	5	
Total (Part 1 + Part 2 + Part 3)	20	
<p>Version: Standard or Early bird (circle one)</p> <p>For early bird submission (submitted before midnight 12th October 2018), marks awarded are to be increased by 10% to the max of 20.</p>	20	
<p>Late Penalty (if any)</p> <p>Number of days late after deadline of midnight 19th October 2018 (if any). Note: Assume a grace period of 2 hours past the deadline</p> <ul style="list-style-type: none"> ○ 1 day after deadline: 15% reduction ○ 2 days after deadline: 30% reduction ○ 3 days after deadline: 45% reduction 		
Final Marks	20	
Tutor Name:		