COMP3331/9331 Assignment 2 Marking Sheet (CSE Version)
S2/2017

Programming Assignment Assessment Sheet

[Full marks will only be awarded if the component to be marked works satisfactorily, and if the student can explain and justify the way it is implemented satisfactorily]

Name of Student: _____ Student ID: _____

Marking Criterion	Max score	Actual score

Part 1 [4 marks]
 	
We will first run STP with the drop probability set to zero and the window size set to 1 MSS. This should result in a simple stop-and-wait protocol. We will transfer a sample text file (similar to the ones on the assignment webpage) using STP. We will then test if the stop-and-wait version can tolerate packet loss, by varying the drop probability. In all tests we will also check your log files to verify the functioning of the PLD module and the reliability of STP.
 	
• Test1: Set pdrop = 0, MWS = 40 bytes, MSS = 40 bytes, timeout = 1000ms (gamma = 4, pdelay = 1, MaxDelay = 1000ms instead of timeout for extended version) (test file: test1.txt)
  ○ File at receiver side is identical to that at the transmission side
  ○ MSS is correct
  ○ MWS is correct
  ○ No packet dropped and no packet re-transmission
  ○ Stop-and-wait behavior
 	
• Test 2: Set pdrop = 0.5, MWS = 40 bytes, MSS = 40 bytes, timeout = 1000ms (gamma = 4, pdelay = 1, MaxDelay = 1000ms instead of timeout for extended version) (test file: test2.txt)
  ○ drop probability is correct
  ○ Packets are retransmitted after timeout
 	
• Test 2: Set pdrop = 0.9, MWS = 40 bytes, MSS = 40 bytes, timeout = 1000ms (gamma = 4, pdelay = 1, MaxDelay = 1000ms instead of timeout for extended version) (test file: test1.txt)
  ○ drop probability is correct
  ○ Packets are retransmitted after timeout
 	
Total for Part 1
	
	1
	0.25
	0.25
	0.25
	0.25
	
	0.5
	0.5
	
	0.5
	0.5	

Part 2 [8 marks, standard version] Successful operation of the STP protocol. This will involve a number of tests as indicated below: • Initially we will set the drop probability for the PLD to zero, and transfer a file using STP. • We will then test how reliable your protocol is by gradually increasing the drop probability. Your protocol should be able to deal with lost packets successfully. • In the above tests we will also check the log files created by your Sender, Receiver to verify the functioning of your programs.		

• We will thoroughly test the operation for a wide range of parameters: window size, drop probability, timeout, etc. • Test 1: Set pdrop = 0, MWS = 200 bytes, MSS = 40 bytes, timeout = 1000ms (test file: test1.txt) o File at receiver side is identical to that at the transmission side o The sender should send 5 segments at a time. o Then window advances when an ACK is received. • Test 2: Set pdrop = 0.5, MWS = 120 bytes, MSS = 40 bytes, timeout = 1000ms (test file: test2.txt) o Correct retransmission at timeout and file received correctly • Test 3: Set pdrop = 0.2, MWS = 400 bytes, MSS = 40 bytes, timeout = 1000ms (test file: test1.txt) o Hopefully we observe triplicate ACKs, otherwise change the parameters, e.g. reduce the pdrop to 0.1 and make MSS smaller. Please check the log file to see that the triplicate ACKs situation does arise. File received correctly. **Total for Part 2 (standard version)**	0.5 1 1 2.75 2.75	
Part 2 [10 marks, extended version] **Note: If you observe that the code does not show expected behaviour, we can treat this submission as a regular assignment (i.e. out of 8 marks instead of 10 marks for this test). So run Tests 1, 2 and 3 as above but set pdelay = 0, MaxDelay to any value and gamma to 4.** • Test 1: Set pdrop = 0, MWS = 200 bytes, MSS = 40 bytes, gamma = 4, pdelay = 1, MaxDelay = 1000ms (test file: test1.txt) o File at receiver side is identical to that at the transmission side o The sender should send 5 segments at a time. o Then window advances when an ACK is received. • Test 2: Set pdrop = 0.5, MWS = 120 bytes, MSS = 40 bytes, gamma = 4, pdelay = 1, MaxDelay = 1000ms (test file: test2.txt) o Correct retransmission at timeout. o There may also be packet re-ordering at the receive end • Test 3: Set pdrop = 0.2, MWS = 400 bytes, MSS = 40 bytes, gamma = 4, pdelay = 1, MaxDelay = 1000ms (test file: test1.txt) o Hopefully we observe triplicate ACKs, otherwise change the parameters, e.g. reduce the pdrop to 0.1 and make MSS smaller. Please check the log file to see that the triplicate ACKs situation does arise. • Test 4: Set pdrop = 0.2, MWS = 400 bytes, MSS = 40 bytes, gamma = 4, pdelay = 1, MaxDelay = 1000ms (test file: test2.txt) o Observe that a longer timeout is used. **Total for Part 2 (extended version)**	0.6 1 1 1.3 1.3 2.4 2.4	
Part 3 Report [3 marks] 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 that they have		

submitted. • Experiment (a) o The key point to note here is that the number of re-transmissions will be higher for a larger drop probability. • Experiment (b) o The answers should be similar for the standard and extended versions. For low value of timeout or gamma, you may see pre-mature retransmission and the number of re-transmissions may be high. For high value of timeout or gamma, it will take longer time for the whole transmission to be completed. • Description of program implementation / header / packet design. You should give the students their marks if their description is reasonably complete. **Total for Part 3**	1 1 1	

Standard version: 15 marks in total. Scale mark to 10 and fill the table below:
Extended version: 17 marks in total. Scale mark to 12 and fill the table below:

Mark out of 15	
Mark out of 10	

Version: Standard or Extended (please select one)

Number of days late (if any, Note: Assume a grace period of 4 hours past the deadline):
Also, if you apply any penalty, please apply this to the scaled mark (i.e. after scaling mark to 10 or 12)

Total (before penalty)	
Late penalty (if any)	
Total (after penalty, if any)	