Computer Networks-1 Project Testcases

.ini Intializations :

```
seed-set= 100

**.WS = 4
**.TO = 10.0
**.PT = 0.5
**.TD = 1.0
**.ED = 4.0
**.DD = 0.1
**.LP = 10
```

Node 0 starts at t = 0

In node.cc for ack LP the uniform is (0,100) and if the generated number < 10 ack will be lost

Don’t call int(uniform(0,100)) every time you receive a frame but call it when you are in the position of sending correct ack or correct NACK

If you handled getting NACK by ignoring or retransmitting the window both will be accepted.

This is the second version of testcases with WS = MAXSEQ same as the protocol in the lecture

Input File :

0000 aaaa

0000 b$bbb

0000 ccc$$c

0000 d/$ddd

0000 $eeee$

0100 aa

1000 bb

0000 cc

0001 dd

0100 ee

0000 ta

0000 tb

0000 tc

0011 fa

1010 fb

1100 fc

Note : If the format of printing is a little bit different from yours Dw this is just for you to be able to track.

The Parity bit here is represented as bitset <4> (it was calculated as bitset <8> but printed as bitset<4>)

SEQ 0

SEQ 1

SEQ 2

SEQ 3

SEQ 4

Duplicate

Loss

Delay

Modification / NACK

At : 0 , Node : 0 , Introducing channel error with code = 0000

At : 0.5 , Node : 0 [sent] frame with seq_number : 0 and payload = $aaaa$ and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 0.5 , Node : 0 , Introducing channel error with code = 0000

At : 1 , Node : 0 [sent] frame with seq_number : 1 and payload = $b/$bbb$ and trailer =1011, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 1 , Node : 0 , Introducing channel error with code = 0000

At : 1.5 , Node : 0 [sent] frame with seq_number : 2 and payload = $ccc/$/c and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 1.5 , Node : 0 , Introducing channel error with code = 0000

At : 2 , Node : 0 [sent] frame with seq_number : 3 and payload = $d///$ddd$ and trailer =1011, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At time : 2 Node : 1 Sending ACK with number : 0 , loss : NO

At time : 2.5 Node : 1 Sending ACK with number : 1 , loss : NO

At time : 3 Node : 1 Sending ACK with number : 2 , loss : NO

At : 3 , Node : 0 , Introducing channel error with code = 0000

At : 3.5 , Node : 0 [sent] frame with seq_number : 4 and payload = $/$eeee/$$ and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At time : 3.5 Node : 1 Sending ACK with number : 3 , loss : NO

At : 3.5 , Node : 0 , Introducing channel error with code = 0100

At : 4 , Node : 0 [sent] frame with seq_number : 0 and payload = aa and trailer =0000, Modefied = -1 , Lost = YES , Duplicate = 0, Delay = 0

At : 4 , Node : 0 , Introducing channel error with code = 1000

At : 4.5 , Node : 0 [sent] frame with seq_number : 1 and payload = $`b$ and trailer =0000, Modefied = 1 , Lost = NO , Duplicate = 0, Delay = 0

At : 4.5 , Node : 0 , Introducing channel error with code = 0000

At : 5 , Node : 0 [sent] frame with seq_number : 2 and payload = cc and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At time : 5 Node : 1 Sending ACK with number : 4 , loss : NO

At : 6 , Node : 0 , Introducing channel error with code = 0001

At : 6.5 , Node : 0 [sent] frame with seq_number : 3 and payload = dd and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 4

Time out event at time : 14 , Node : 0 for frame with seq_num= 0 (send it again without errors but the rest of the window with errors)
At : 14.5 , Node : 0 [sent] frame with seq_number : 0 and payload = aa and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 15 , Node : 0 [sent] frame with seq_number : 1 and payload = $`b$ and trailer =0000, Modefied = 1 , Lost = 0 , Duplicate = 0, Delay = 0

At : 15.5 , Node : 0 [sent] frame with seq_number : 2 and payload = cc and trailer =0000, Modefied = -1 , Lost = 0 , Duplicate = 0, Delay = 0

At : 16 , Node : 0 [sent] frame with seq_number : 3 and payload = dd and trailer =0000, Modefied = -1 , Lost = 0 , Duplicate = 0, Delay = 4

At time : 16 Node : 1 Sending ACK with number : 0 , loss : NO

At time : 16.5 Node : 1 Sending NACK with number : 1 , loss : YES (receiver won't accept frame with seq_number 2 because it is NACK)

At : 17 , Node : 0 , Introducing channel error with code = 0100

At : 17.5 , Node : 0 [sent] frame with seq_number : 4 and payload = ee and trailer =0000, Modefied = -1 , Lost = YES , Duplicate = 0, Delay = 0

Time out event at time : 25 , Node : 0 for frame with seq_num= 1

At : 25.5 , Node : 0 [sent] frame with seq_number : 1 and payload = bb and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 26 , Node : 0 [sent] frame with seq_number : 2 and payload = cc and trailer =0000, Modefied = -1 , Lost = 0 , Duplicate = 0, Delay = 0

At : 26.5 , Node : 0 [sent] frame with seq_number : 3 and payload = dd and trailer =0000, Modefied = -1 , Lost = 0 , Duplicate = 0, Delay = 4

At : 27 , Node : 0 [sent] frame with seq_number : 4 and payload = ee and trailer =0000, Modefied = -1 , Lost = 1 , Duplicate = 0, Delay = 0

At time : 27 Node : 1 Sending ACK with number : 1 , loss : NO

At time : 27.5 Node : 1 Sending ACK with number : 2 , loss : NO

At : 28 , Node : 0 , Introducing channel error with code = 0000

At : 28.5 , Node : 0 [sent] frame with seq_number : 0 and payload = ta and trailer =0101, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 28.5 , Node : 0 , Introducing channel error with code = 0000

At : 29 , Node : 0 [sent] frame with seq_number : 1 and payload = tb and trailer =0110, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At time : 32 Node : 1 Sending ACK with number : 3 , loss : NO

At : 33 , Node : 0 , Introducing channel error with code = 0000

At : 33.5 , Node : 0 [sent] frame with seq_number : 2 and payload = tc and trailer =0111, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

Time out event at time : 37 , Node : 0 for frame with seq_num= 4

At : 37.5 , Node : 0 [sent] frame with seq_number : 4 and payload = ee and trailer =0000, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 38 , Node : 0 [sent] frame with seq_number : 0 and payload = ta and trailer =0101, Modefied = -1 , Lost = 0 , Duplicate = 0, Delay = 0

At : 38.5 , Node : 0 [sent] frame with seq_number : 1 and payload = tb and trailer =0110, Modefied = -1 , Lost = 0 , Duplicate = 0, Delay = 0

At : 39 , Node : 0 [sent] frame with seq_number : 2 and payload = tc and trailer =0111, Modefied = -1 , Lost = 0 , Duplicate = 0, Delay = 0

At time : 39 Node : 1 Sending ACK with number : 4 , loss : NO

At time : 39.5 Node : 1 Sending ACK with number : 0 , loss : NO

At time : 40 Node : 1 Sending ACK with number : 1 , loss : NO

At : 40 , Node : 0 , Introducing channel error with code = 0011

At : 40.5 , Node : 0 [sent] frame with seq_number : 3 and payload = fa and trailer =0111, Modefied = -1 , Lost = NO , Duplicate = 1, Delay = 4

At : 40.6 , Node : 0 [sent] frame with seq_number : 3 and payload = fa and trailer =0111, Modefied = -1 , Lost = NO , Duplicate = 2, Delay = 4 (as timing it's not here but just to simplify tracking)

At time : 40.5 Node : 1 Sending ACK with number : 2 , loss : NO

At : 40.5 , Node : 0 , Introducing channel error with code = 1010

At : 41 , Node : 0 [sent] frame with seq_number : 4 and payload = db and trailer =0100, Modefied = 1 , Lost = NO , Duplicate = 1, Delay = 0 (it will be received to the receiver before frame 3 because of delay so it will neglect)

At : 41.1 , Node : 0 [sent] frame with seq_number : 4 and payload = db and trailer =0100, Modefied = 1 , Lost = NO , Duplicate = 2, Delay = 0

At : 41 , Node : 0 , Introducing channel error with code = 1100

At : 41.5 , Node : 0 [sent] frame with seq_number : 0 and payload = dc and trailer =0101, Modefied = 1 , Lost = YES , Duplicate = 0, Delay = 0

At time : 46 Node : 1 Sending ACK with number : 3 , loss : NO

Time out event at time : 51 , Node : 0 for frame with seq_num= 4 (this frame timed out because it was dropped at the reciever due to the delay of the frame before)

At : 51.5 , Node : 0 [sent] frame with seq_number : 4 and payload = fb and trailer =0100, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At : 52 , Node : 0 [sent] frame with seq_number : 0 and payload = dc and trailer =0101, Modefied = 1 , Lost = 1 , Duplicate = 0, Delay = 0

At time : 53 Node : 1 Sending ACK with number : 4 , loss : NO

Time out event at time : 62 , Node : 0 for frame with seq_num= 0

At : 62.5 , Node : 0 [sent] frame with seq_number : 0 and payload = fc and trailer =0101, Modefied = -1 , Lost = NO , Duplicate = 0, Delay = 0

At time : 64 Node : 1 Sending ACK with number : 0 , loss : NO

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