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PS C:\Users\Kareem\Downloads\Networks Protocol 5> cd "c:\Users\Kareem\Downloads\Networks
Protocol 5\" ; if ($?) { g++ Main.cpp protocol.cpp print_func.cpp -o program } ; if ($?) { .\program }
packet 0: AB
packet 1: BC
packet 2: CD
packet 3: DE
packet 4: EF
packet 5: FG
packet 6: GH
packet 7: HI
packet 8: IJ
packet 9: JK
packet 10: KL
packet 11: LM
packet 12: MN
packet 13: NO
packet 14: OP
packet 15: PQ
packet 16: QR
packet 17: RS
packet 18: ST
packet 19: TU
```

Enabling network layer...
Starting protocol5 with 20 packets.

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: AB fetched successfully
Sending frame to physical layer...
Frame sent Seq: 0, Ack: 7
Starting timer for sequence number 0...
Sent frame with seq: 0 and ack: 7 data: AB

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... AB
Stopping timer for sequence number 0...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: BC fetched successfully
Sending frame to physical layer...
Frame sent Seq: 1, Ack: 0
Starting timer for sequence number 1...
Sent frame with seq: 1 and ack: 0 data: BC

FrameArrival Event occurred!

Fetching frame from physical layer...

Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... BC
Stopping timer for sequence number 1...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: CD fetched successfully
Sending frame to physical layer...
Frame sent Seq: 2, Ack: 1
Starting timer for sequence number 2...
Sent frame with seq: 2 and ack: 1 data: CD

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: DE fetched successfully
Sending frame to physical layer...
Frame sent Seq: 3, Ack: 1
Starting timer for sequence number 3...
Sent frame with seq: 3 and ack: 1 data: DE

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: EF fetched successfully
Sending frame to physical layer...
Frame sent Seq: 4, Ack: 1
Starting timer for sequence number 4...
Sent frame with seq: 4 and ack: 1 data: EF

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: FG fetched successfully
Sending frame to physical layer...
Frame sent Seq: 5, Ack: 1
Starting timer for sequence number 5...
Sent frame with seq: 5 and ack: 1 data: FG

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... CD
Stopping timer for sequence number 2...

Timeout Event occurred!

Fetching packet from network layer...
packet of value: DE fetched successfully
Sending frame to physical layer...
Frame sent Seq: 3, Ack: 2

Starting timer for sequence number 3...
Sent frame with seq: 3 and ack: 2 data: DE
Fetching packet from network layer...
packet of value: EF fetched successfully
Sending frame to physical layer...
Frame sent Seq: 4, Ack: 2
Starting timer for sequence number 4...
Sent frame with seq: 4 and ack: 2 data: EF
Fetching packet from network layer...
packet of value: FG fetched successfully
Sending frame to physical layer...
Frame sent Seq: 5, Ack: 2
Starting timer for sequence number 5...
Sent frame with seq: 5 and ack: 2 data: FG

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... DE
Stopping timer for sequence number 3...

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... EF
Stopping timer for sequence number 4...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: GH fetched successfully
Sending frame to physical layer...
Frame sent Seq: 6, Ack: 4
Starting timer for sequence number 6...
Sent frame with seq: 6 and ack: 4 data: GH

CksumErr Event occurred!

Error is ignored

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: HI fetched successfully
Sending frame to physical layer...
Frame sent Seq: 7, Ack: 4
Starting timer for sequence number 7...
Sent frame with seq: 7 and ack: 4 data: HI

Timeout Event occurred!

Fetching packet from network layer...
packet of value: FG fetched successfully
Sending frame to physical layer...
Frame sent Seq: 5, Ack: 4
Starting timer for sequence number 5...
Sent frame with seq: 5 and ack: 4 data: FG
Fetching packet from network layer...
packet of value: GH fetched successfully
Sending frame to physical layer...
Frame sent Seq: 6, Ack: 4
Starting timer for sequence number 6...
Sent frame with seq: 6 and ack: 4 data: GH
Fetching packet from network layer...
packet of value: HI fetched successfully
Sending frame to physical layer...
Frame sent Seq: 7, Ack: 4
Starting timer for sequence number 7...
Sent frame with seq: 7 and ack: 4 data: HI

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... FG
Stopping timer for sequence number 5...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: IJ fetched successfully
Sending frame to physical layer...
Frame sent Seq: 0, Ack: 5
Starting timer for sequence number 0...
Sent frame with seq: 0 and ack: 5 data: IJ

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... GH
Stopping timer for sequence number 6...

Timeout Event occurred!

Fetching packet from network layer...
packet of value: HI fetched successfully
Sending frame to physical layer...
Frame sent Seq: 7, Ack: 6
Starting timer for sequence number 7...
Sent frame with seq: 7 and ack: 6 data: HI
Fetching packet from network layer...
packet of value: IJ fetched successfully
Sending frame to physical layer...

Frame sent Seq: 0, Ack: 6
Starting timer for sequence number 0...
Sent frame with seq: 0 and ack: 6 data: IJ

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: JK fetched successfully
Sending frame to physical layer...
Frame sent Seq: 1, Ack: 6
Starting timer for sequence number 1...
Sent frame with seq: 1 and ack: 6 data: JK

CksumErr Event occurred!

Error is ignored

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: KL fetched successfully
Sending frame to physical layer...
Frame sent Seq: 2, Ack: 6
Starting timer for sequence number 2...
Sent frame with seq: 2 and ack: 6 data: KL

FrameArrival Event occurred!

Error is ignored

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: KL fetched successfully
Sending frame to physical layer...
Frame sent Seq: 2, Ack: 6
Starting timer for sequence number 2...
Sent frame with seq: 2 and ack: 6 data: KL

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Frame sent Seq: 2, Ack: 6
Starting timer for sequence number 2...
Sent frame with seq: 2 and ack: 6 data: KL

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... HI
Stopping timer for sequence number 7...

NetworkLayerReady Event occurred!

Packet Received: ... HI
Stopping timer for sequence number 7...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: LM fetched successfully
Sending frame to physical layer...

Fetching packet from network layer...
packet of value: LM fetched successfully
Sending frame to physical layer...
Frame sent Seq: 3, Ack: 7
Starting timer for sequence number 3...
Frame sent Seq: 3, Ack: 7
Starting timer for sequence number 3...
Sent frame with seq: 3 and ack: 7 data: LM

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... IJ
Packet Received: ... IJ
Stopping timer for sequence number 0...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: MN fetched successfully
Sending frame to physical layer...
Frame sent Seq: 4, Ack: 0
Starting timer for sequence number 4...
Sent frame with seq: 4 and ack: 0 data: MN

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... JK
Stopping timer for sequence number 1...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: NO fetched successfully
Sending frame to physical layer...
Frame sent Seq: 5, Ack: 1
Starting timer for sequence number 5...
Sent frame with seq: 5 and ack: 1 data: NO

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: OP fetched successfully
Sending frame to physical layer...
Frame sent Seq: 6, Ack: 1
Starting timer for sequence number 6...
Sent frame with seq: 6 and ack: 1 data: OP

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: PQ fetched successfully
Sending frame to physical layer...
Frame sent Seq: 7, Ack: 1
Starting timer for sequence number 7...
Sent frame with seq: 7 and ack: 1 data: PQ

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: QR fetched successfully
Sending frame to physical layer...
Frame sent Seq: 0, Ack: 1
Starting timer for sequence number 0...
Sent frame with seq: 0 and ack: 1 data: QR

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... KL
Stopping timer for sequence number 2...

Timeout Event occurred!

Fetching packet from network layer...
packet of value: LM fetched successfully
Sending frame to physical layer...
Frame sent Seq: 3, Ack: 2
Starting timer for sequence number 3...
Sent frame with seq: 3 and ack: 2 data: LM
Fetching packet from network layer...
packet of value: MN fetched successfully
Sending frame to physical layer...
Frame sent Seq: 4, Ack: 2
Starting timer for sequence number 4...
Sent frame with seq: 4 and ack: 2 data: MN
Fetching packet from network layer...
packet of value: NO fetched successfully
Sending frame to physical layer...
Frame sent Seq: 5, Ack: 2
Starting timer for sequence number 5...
Sent frame with seq: 5 and ack: 2 data: NO

Fetching packet from network layer...
packet of value: OP fetched successfully
Sending frame to physical layer...
Frame sent Seq: 6, Ack: 2
Starting timer for sequence number 6...
Sent frame with seq: 6 and ack: 2 data: OP
Fetching packet from network layer...
packet of value: PQ fetched successfully
Sending frame to physical layer...
Frame sent Seq: 7, Ack: 2
Starting timer for sequence number 7...
Sent frame with seq: 7 and ack: 2 data: PQ
Fetching packet from network layer...
packet of value: QR fetched successfully
Sending frame to physical layer...
Frame sent Seq: 0, Ack: 2
Starting timer for sequence number 0...
Sent frame with seq: 0 and ack: 2 data: QR

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... LM
Stopping timer for sequence number 3...

FrameArrival Event occurred!

Fetching frame from physical layer...
Frame fetched successfully.
Delivering packet to network layer...
Packet Received: ... MN
Stopping timer for sequence number 4...

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: RS fetched successfully
Sending frame to physical layer...
Frame sent Seq: 1, Ack: 4
Starting timer for sequence number 1...
Sent frame with seq: 1 and ack: 4 data: RS

CksumErr Event occurred!

Error is ignored

NetworkLayerReady Event occurred!

Fetching packet from network layer...
packet of value: ST fetched successfully
Sending frame to physical layer...
Frame sent Seq: 2, Ack: 4
Starting timer for sequence number 2...

Sent frame with seq: 2 and ack: 4 data: ST

Timeout Event occurred!

Fetching packet from network layer...

packet of value: NO fetched successfully

Sending frame to physical layer...

Frame sent Seq: 5, Ack: 4

Starting timer for sequence number 5...

Sent frame with seq: 5 and ack: 4 data: NO

Fetching packet from network layer...

packet of value: OP fetched successfully

Sending frame to physical layer...

Frame sent Seq: 6, Ack: 4

Starting timer for sequence number 6...

Sent frame with seq: 6 and ack: 4 data: OP

Fetching packet from network layer...

packet of value: PQ fetched successfully

Sending frame to physical layer...

Frame sent Seq: 7, Ack: 4

Starting timer for sequence number 7...

Sent frame with seq: 7 and ack: 4 data: PQ

Fetching packet from network layer...

packet of value: QR fetched successfully

Sending frame to physical layer...

Frame sent Seq: 0, Ack: 4

Starting timer for sequence number 0...

Sent frame with seq: 0 and ack: 4 data: QR

Fetching packet from network layer...

packet of value: RS fetched successfully

Sending frame to physical layer...

Frame sent Seq: 1, Ack: 4

Starting timer for sequence number 1...

Sent frame with seq: 1 and ack: 4 data: RS

Fetching packet from network layer...

packet of value: ST fetched successfully

Sending frame to physical layer...

Frame sent Seq: 2, Ack: 4

Starting timer for sequence number 2...

Sent frame with seq: 2 and ack: 4 data: ST

FrameArrival Event occurred!

Fetching frame from physical layer...

Frame fetched successfully.

Delivering packet to network layer...

Packet Received: ... NO

Stopping timer for sequence number 5...

NetworkLayerReady Event occurred!

Fetching packet from network layer...

packet of value: TU fetched successfully

Sending frame to physical layer...

Frame sent Seq: 3, Ack: 5

Starting timer for sequence number 3...
Sent frame with seq: 3 and ack: 5 data: TU
Simulation Has Ended

Simulation Complete!