4,5,6,7,8,9  
**4.RING TOPOLOGY**# 4)To Create scenario and study the performance of token ring protocols through

# simulation (Using Ring topology)

-->

set ns [ new Simulator ]

$ns color 1 blue

set nam [ open out.nam w ]

$ns namtrace-all $nam

set tr [ open out.tr w ]

$ns trace-all $tr

set n0 [ $ns node ]

set n1 [ $ns node ]

set n2 [ $ns node ]

set n3 [ $ns node ]

set n4 [ $ns node ]

$ns duplex-link $n0 $n1 10Mb 10ms DropTail

$ns duplex-link $n1 $n2 10Mb 10ms DropTail

$ns duplex-link $n2 $n3 10Mb 10ms DropTail

$ns duplex-link $n3 $n4 10Mb 10ms DropTail

$ns duplex-link $n4 $n0 10Mb 10ms DropTail

set tcp [ new Agent/TCP ]

set sink [new Agent/TCPSink ]

$tcp set fid\_ 1

$ns attach-agent $n0 $tcp

$ns attach-agent $n3 $sink

$ns connect $tcp $sink

set cbr [ new Application/Traffic/CBR ]

$cbr attach-agent $tcp

proc finish {} {

global ns nam tr

$ns flush-trace

close $nam

close $tr

exec nam out.nam &

exit 0

}

$ns at 0.1 "$cbr start"

$ns at 1.0 "$cbr stop"

$ns at 1.5 "finish"

$ns run

**5.STAR TOPLOGY**# 5)To Create scenario and study the performance of token ring protocols through

# simulation (Using Star Topology)

-->

set ns [ new Simulator ]

$ns color 1 blue

set nam [ open out.nam w ]

$ns namtrace-all $nam

set tr [ open out.tr w ]

$ns trace-all $tr

set n0 [ $ns node ]

set n1 [ $ns node ]

set n2 [ $ns node ]

set n3 [ $ns node ]

set n4 [ $ns node ]

set n5 [ $ns node ]

$n0 shape square

$ns duplex-link $n0 $n1 10Mb 10ms DropTail

$ns duplex-link $n0 $n2 10Mb 10ms DropTail

$ns duplex-link $n0 $n3 10Mb 10ms DropTail

$ns duplex-link $n0 $n4 10Mb 10ms DropTail

$ns duplex-link $n0 $n5 10Mb 10ms DropTail

set tcp [ new Agent/TCP ]

set sink [ new Agent/TCPSink ]

$tcp set fid\_ 1

$ns attach-agent $n1 $tcp

$ns attach-agent $n5 $sink

$ns connect $tcp $sink

set cbr [ new Application/Traffic/CBR ]

$cbr attach-agent $tcp

proc finish {} {

global ns nam tr

$ns flush-trace

close $tr

close $nam

exec nam out.nam &

exit 0

}

$ns at 0.1 "$cbr start"

$ns at 1.0 "$cbr stop"

$ns at 1.5 "finish"

$ns run

**6.BUS TOPOLOGY**# 6)To create scenario & study the performance of token bus protocol through simulator

# (Bus topology)

-->

set ns [ new Simulator ]

$ns color 1 blue

$ns color 2 red

set tr [ open out.tr w ]

$ns trace-all $tr

set nam [ open out.nam w ]

$ns namtrace-all $nam

set n0 [ $ns node ]

set n1 [ $ns node ]

set n2 [ $ns node ]

set n3 [ $ns node ]

set n4 [ $ns node ]

set n5 [ $ns node ]

$ns make-lan "$n0 $n1 $n2 $n3 $n4 $n5" 5Mb 10ms LL Queue/DropTail Mac/802\_3

set tcp [ new Agent/TCP ]

set sink [ new Agent/TCPSink ]

$ns attach-agent $n1 $tcp

$ns attach-agent $n5 $sink

$ns connect $tcp $sink

set cbr [ new Application/Traffic/CBR ]

$cbr attach-agent $tcp

$tcp set fid\_ 1

$sink set fid\_ 2

proc finish {} {

global ns tr nam

$ns flush-trace

close $tr

close $nam

exec nam out.nam &

exit 0

}

$ns at 0.0 "$cbr start"

$ns at 10.0 "finish"

$ns run

**7.STOP AND WAIT PROTOCOL**# 7)To simulate and study stop and wait protocol

-->

set ns [ new Simulator ]

set tr [ open out.tr w ]

$ns trace-all $tr

set nam [ open out.nam w ]

$ns namtrace-all $nam

set n0 [ $ns node ]

set n1 [ $ns node ]

$ns at 0.0 "$n0 label Sender"

$ns at 0.0 "$n1 label Reciever"

Agent/TCP set nam\_tracevar\_ true

$ns duplex-link $n0 $n1 0.2Mb 200ms DropTail

set tcp [ new Agent/TCP ]

set sink [ new Agent/TCPSink ]

$tcp set window\_ 1

$tcp set maxcwnd\_ 1

$ns attach-agent $n0 $tcp

$ns attach-agent $n1 $sink

$ns connect $tcp $sink

set cbr [ new Application/Traffic/CBR ]

$cbr attach-agent $tcp

$ns add-agent-trace $tcp tcp

$ns monitor-agent-trace $tcp

$tcp set tracevar cwnd\_

proc finish {} {

global ns tr nam

$ns flush-trace

close $nam

close $tr

exec nam out.nam &

exit 0

}

$ns at 0.1 "$cbr start"

$ns at 3.5 "finish"

$ns run

**8.SLIDING WINDOW PROTOCOL**## 8) To simulate and study sliding window protocol

-->

set ns [ new Simulator ]

set tr [ open out.tr w ]

$ns trace-all $tr

set nam [ open out.nam w ]

$ns namtrace-all $nam

set n0 [ $ns node ]

set n1 [ $ns node ]

$ns at 0.0 "$n0 label Sender"

$ns at 0.0 "$n1 label Reciever"

Agent/TCP set nam\_tracevar\_ true

$ns duplex-link $n0 $n1 0.2Mb 200ms DropTail

set tcp [ new Agent/TCP ]

set sink [ new Agent/TCPSink ]

$tcp set window\_ 4

$tcp set maxcwnd\_ 4

$ns attach-agent $n0 $tcp

$ns attach-agent $n1 $sink

$ns connect $tcp $sink

set cbr [ new Application/Traffic/CBR ]

$cbr attach-agent $tcp

$ns add-agent-trace $tcp tcp

$ns monitor-agent-trace $tcp

$tcp set tracevar cwnd\_

proc finish {} {

global ns tr nam

$ns flush-trace

close $nam

close $tr

exec nam out.nam &

exit 0

}

$ns at 0.1 "$cbr start"

$ns at 3.5 "finish"

$ns run

**9.GO BACK N PROTOCOL**## 9)To Simulate and study of Go Back N Protocol

-->##if not necessary of multiple nodes,create using only 2 nodes

set ns [ new Simulator ]

set tr [ open out.tr w ]

$ns trace-all $tr

set nam [ open out.nam w ]

$ns namtrace-all $nam

set n0 [ $ns node ]

set n1 [ $ns node ]

set n2 [ $ns node ]

set n3 [ $ns node ]

set n4 [ $ns node ]

set n5 [ $ns node ]

$ns duplex-link $n0 $n1 1Mb 20ms DropTail

$ns queue-limit $n0 $n1 5

$ns duplex-link $n0 $n2 1Mb 20ms DropTail

$ns duplex-link $n0 $n3 1Mb 20ms DropTail

$ns duplex-link $n3 $n4 1Mb 20ms DropTail

$ns duplex-link $n3 $n5 1Mb 20ms DropTail

set tcp [ new Agent/TCP ]

set sink [ new Agent/TCPSink ]

set ftp [ new Application/FTP ]

$ns attach-agent $n1 $tcp

$ns attach-agent $n4 $sink

$ns connect $tcp $sink

$ftp attach-agent $tcp

proc finish {} {

global ns tr nam

$ns flush-trace

close $nam

close $tr

exec nam out.nam &

exit 0

}

$ns at 0.5 "$ftp start"

$ns at 0.25 "$ns queue-limit $n3 $n4 0"

$ns at 0.26 "$ns queue-limit $n3 $n4 5"

$ns at 1.5 "finish"

$ns run