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CLASS : TE (B) COMP
ROLL NO : 39055

CNL ASSIGNMENT 11 – (B2)

Problem Statement :

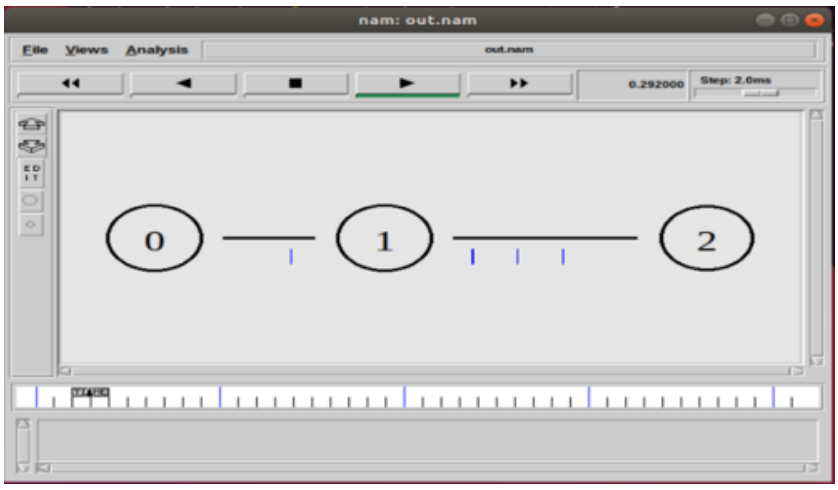
Using any network simulation tools create a network with three nodes and establish a TCP connection between node 0 and node 1 such that node 0 will send TCP packet to node 2 via node 1

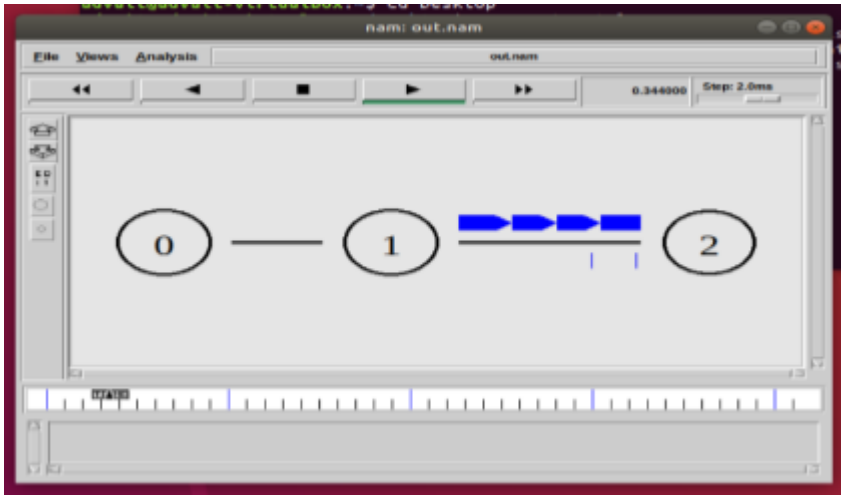
PROGRAM:

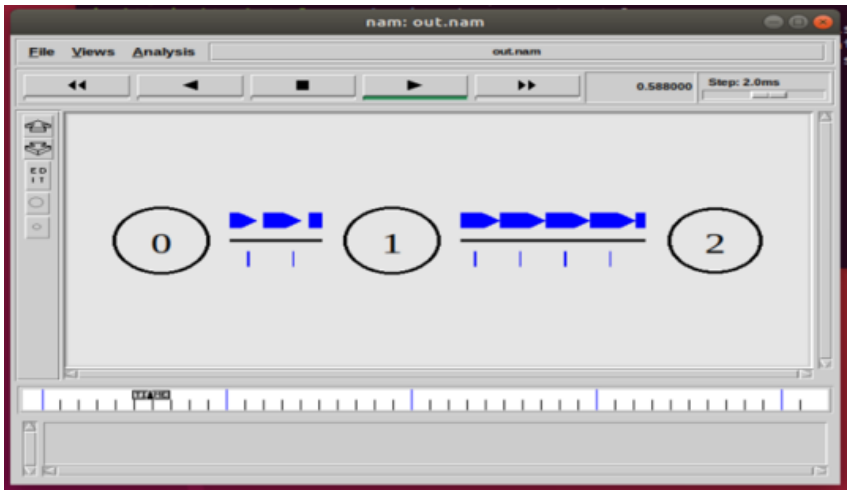
```
#Create a simulator object
set ns [new Simulator]

#Define different colors for data flows (for NAM)
$ns color 1 Blue

#Open the NAM trace file
set nf [open out.nam w]
$ns namtrace-all $nf

#Define a 'finish' procedure
proc finish {} {
    global ns nf
    $ns flush-trace
    #Close the NAM trace file
    close $nf
    #Execute NAM on the trace file
    exec nam out.nam &
    exit 0
}

#Create four nodes
set n0 [$ns node]
set n1 [$ns node]
set n2 [$ns node]

#Create links between the nodes
$ns duplex-link $n0 $n1 2Mb 10ms DropTail
$ns duplex-link $n1 $n2 1.7Mb 20ms DropTail

#Set Queue Size of link (n1-n2) to 10
$ns queue-limit $n1 $n2 10

#Give node position (for NAM)
$ns duplex-link-op $n0 $n1 orient right
$ns duplex-link-op $n1 $n2 orient right
```

```
#Setup a TCP connection
set tcp [new Agent/TCP]
$tcp set class_ 2
$ns attach-agent $n0 $tcp
set sink [new Agent/TCPSink]
$ns attach-agent $n2 $sink
$ns connect $tcp $sink
$tcp set fid_ 1

#Setup a FTP over TCP connection
set ftp [new Application/FTP]
$ftp attach-agent $tcp
$ftp set type_ FTP

#Schedule events for the FTP agents
$ns at 0.1 "$ftp start"
$ns at 4.0 "$ftp stop"

#Call the finish procedure after 5 seconds of simulation time
$ns at 4.2 "finish"

#Run the simulation
$ns run
```

OUTPUT:




nam: out.nam
File Views Analysis
out.nam
0.344000
Step: 2.0ms
0
1
2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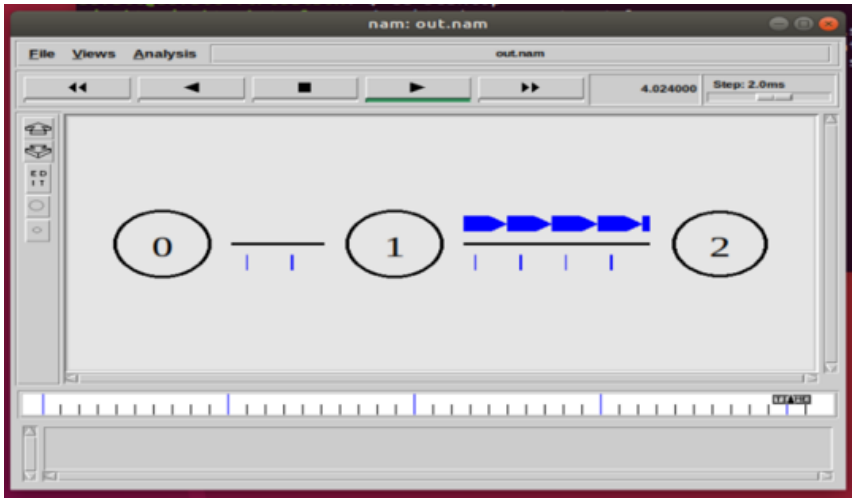
File Views Analysis
out.nam
0.588000
Step: 2.0ms
0
1
2


nam: out.nam
File Views Analysis
out.nam
4.024000
Step: 2.0ms
0
1
2