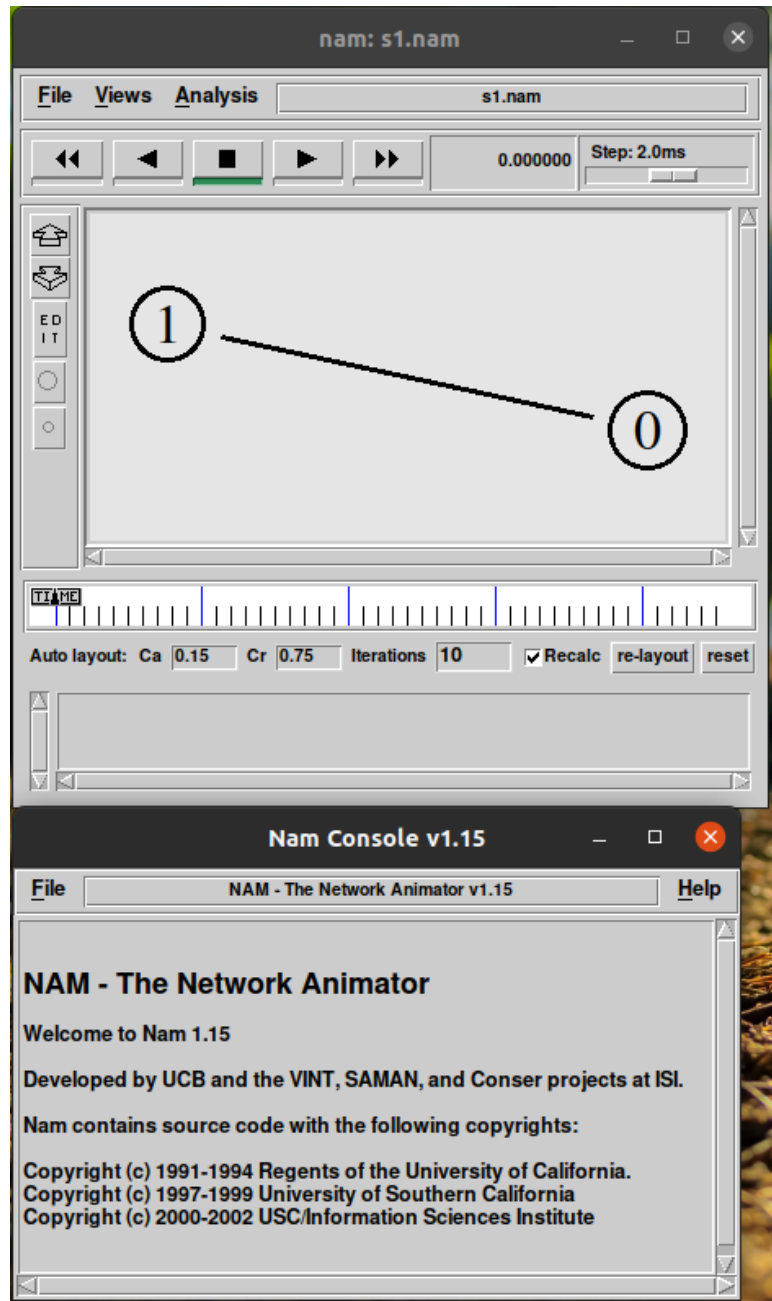
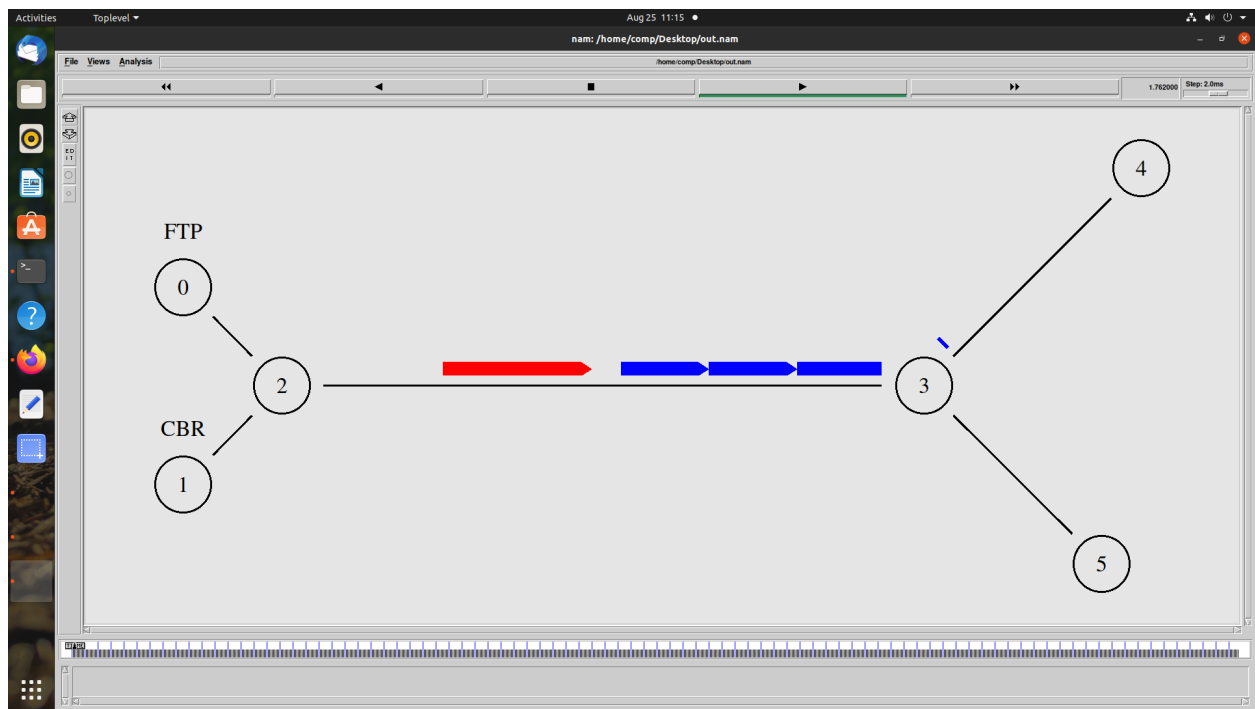
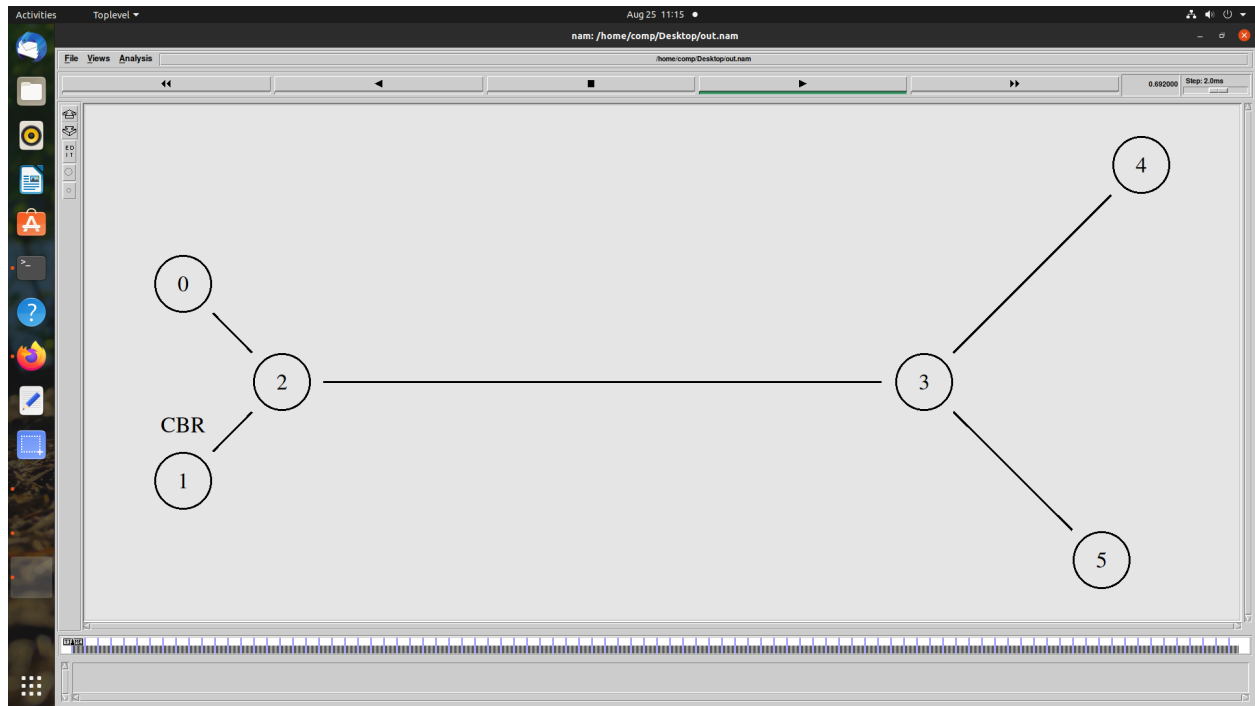


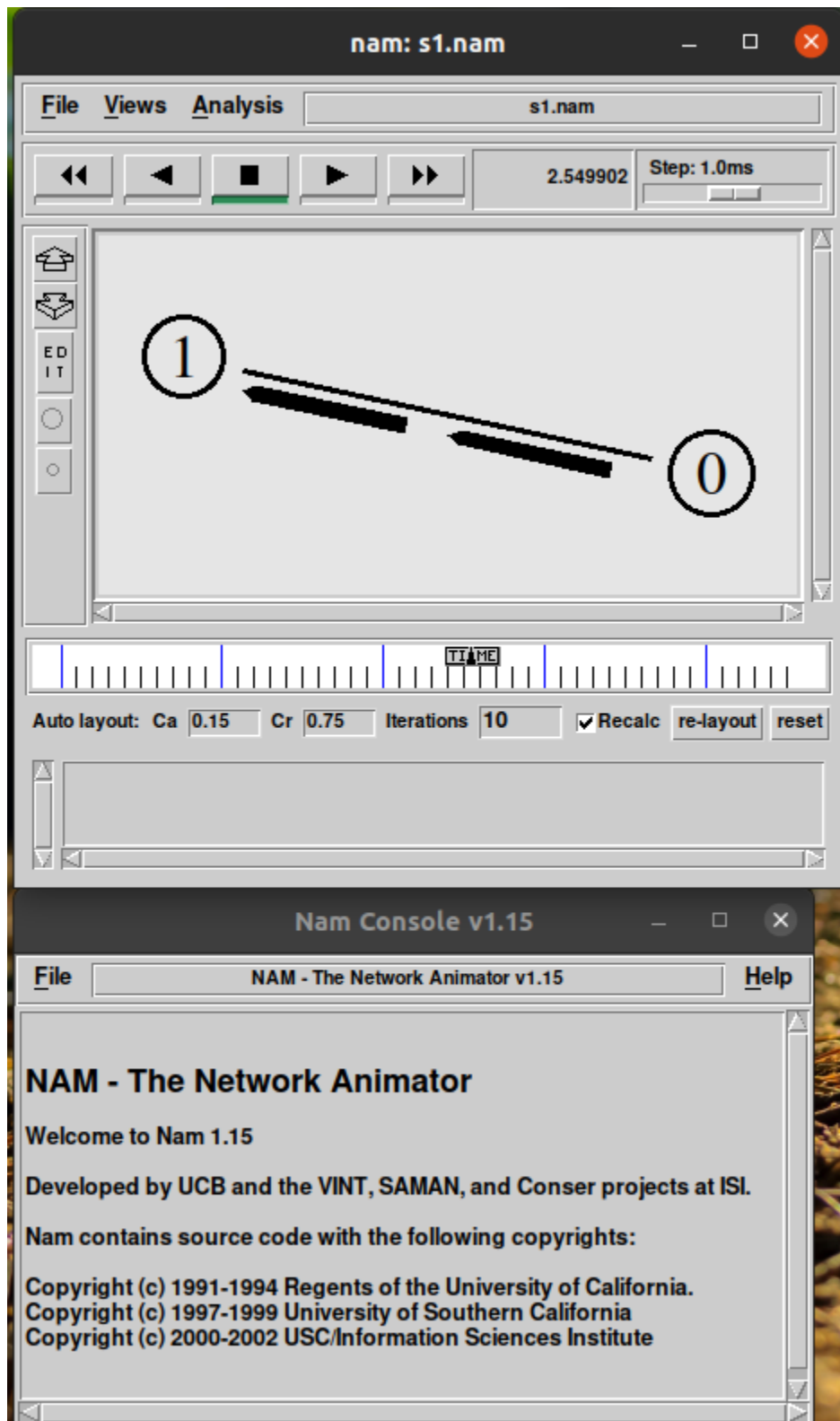
EXPERIMENT NO 5

First script -

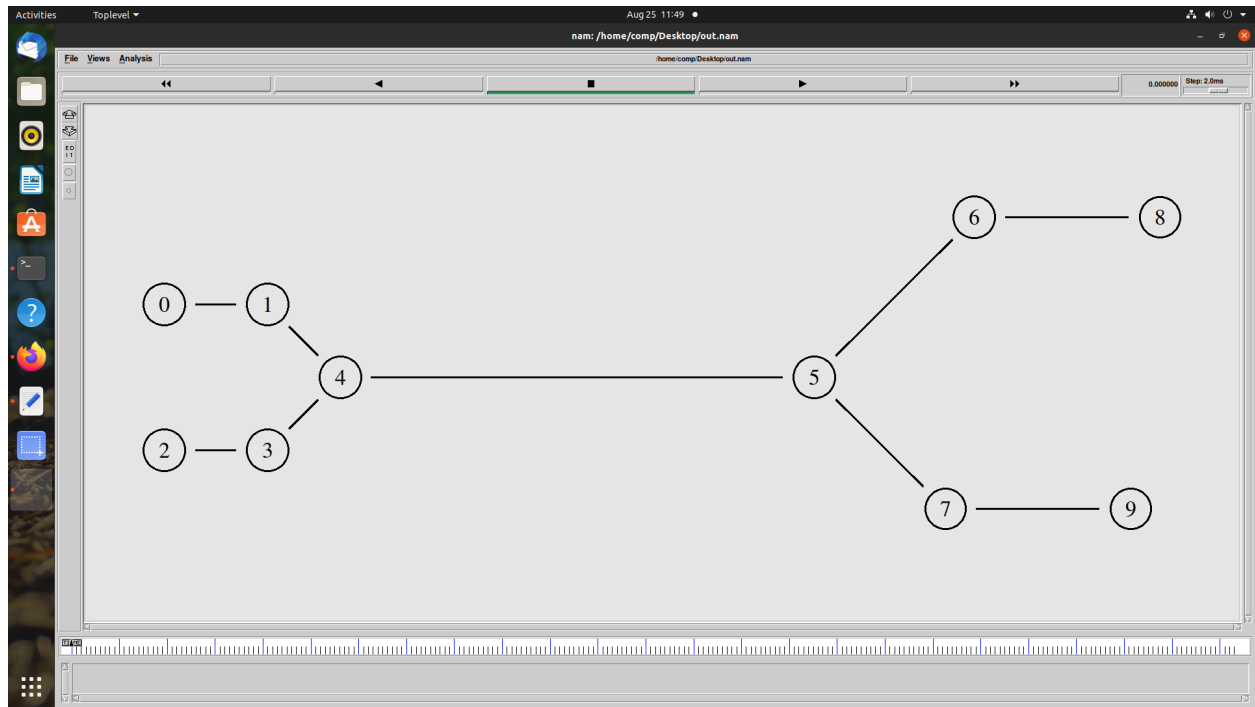




Second script -



Assignment 1-



Code -

```
set ns [new Simulator]
#Define different colors for data flows (for NAM)
$ns color 1 Blue
$ns color 2 Red
#Open the Trace files
set file1 [open out.tr w]
$ns trace-all $file1
#Open the NAM trace file
set file2 [open out.nam w]
$ns namtrace-all $file2
#Define a 'finish' procedure
proc finish {} {
    global ns file1 file2
    $ns flush-trace
    close $file1
    close $file2
    exec nam out.nam &
    exit 0
}
```

```
set n0 [$ns node]
set n1 [$ns node]
set n2 [$ns node]
set n3 [$ns node]
set n4 [$ns node]
set n5 [$ns node]
set n6 [$ns node]
set n7 [$ns node]
set n8 [$ns node]
set n9 [$ns node]
```

```
$ns at 0.1 "$n2 label \"CBR\""
$ns at 1.0 "$n0 label \"FTP\""
```

```
#links
```

```
$ns duplex-link $n0 $n1 2Mb 10ms DropTail
$ns duplex-link $n2 $n3 2Mb 10ms DropTail
$ns duplex-link $n1 $n4 2Mb 10ms DropTail
$ns duplex-link $n3 $n4 2Mb 10ms DropTail
$ns duplex-link $n4 $n5 0.3Mb 100ms DropTail
$ns duplex-link $n5 $n6 0.5Mb 40ms DropTail
$ns duplex-link $n5 $n7 0.5Mb 30ms DropTail
$ns duplex-link $n6 $n8 0.5Mb 30ms DropTail
$ns duplex-link $n7 $n9 0.5Mb 30ms DropTail
```

```
#position
```

```
$ns duplex-link-op $n0 $n1 orient right
$ns duplex-link-op $n1 $n4 orient right-down
$ns duplex-link-op $n2 $n3 orient right
$ns duplex-link-op $n3 $n4 orient right-up
$ns duplex-link-op $n4 $n5 orient right
$ns duplex-link-op $n5 $n6 orient right-up
$ns duplex-link-op $n5 $n7 orient right-down
$ns duplex-link-op $n6 $n8 orient right
$ns duplex-link-op $n7 $n9 orient right
```

```
$ns queue-limit $n4 $n5 10
```

```
set tcp [new Agent/TCP]
#for node 0
$ns attach-agent $n0 $tcp
set sink [new Agent/TCPSink]
# for node 8
```

```
$ns attach-agent $n8 $sink  
$ns connect $tcp $sink
```

```
$tcp set fid_ 1  
$tcp set window_ 8000  
$tcp set packetSize_ 552
```

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

```
set udp [new Agent/UDP]  
$ns attach-agent $n2 $udp  
set null [new Agent/Null]  
$ns attach-agent $n9 $null  
$ns connect $udp $null  
$udp set fid_ 2  
#CBR over UDP connection  
set cbr [new Application/Traffic/CBR]  
$cbr attach-agent $udp  
$cbr set type_ CBR  
$cbr set packet_size_ 1000  
$cbr set rate_ 0.01mb  
$cbr set random_ false  
$ns at 0.1 "$cbr start"  
$ns at 1.0 "$ftp start"  
$ns at 24.0 "$ftp stop"  
$ns at 24.5 "$cbr stop"  
# Trace  
set file [open cwnd_rtt.tr w]  
$tcp attach $file  
$tcp trace cwnd_  
$tcp trace rtt_  
$ns at 25.0 "finish"  
$ns run
```