```
#Create Simulator object
set ns [new Simulator]
#Open trace file
set nt [open lab1.tr w]
$ns trace-all $nt
#Open namtrace file
set nf [open lab1.nam w]
$ns namtrace-all $nf
#Create nodes
set n0 [$ns node]
set n1 [$ns node]
set n2 [$ns node]
set n3 [$ns node]
#Assign color to the packet
$ns color 1 Blue
$ns color 2 Red
#label nodes
$n0 label "Source/udp0"
$n1 label "Source/udp1"
$n2 label "Router"
$n3 label "Destination/null"
#create links, specify the type, nodes, bandwidth, delay and ARQ algorithm for it
$ns duplex-link $n0 $n2 10Mb 300ms DropTail
$ns duplex-link $n1 $n2 10Mb 300ms DropTail
$ns duplex-link $n2 $n3 100Kb 300ms DropTail
#set queue size between the nodes
$ns queue-limit $n0 $n2 10
$ns queue-limit $n1 $n2 10
$ns queue-limit $n2 $n3 5
#create and attach UDP agent to n0, n1 and Null agent to n3
set udp0 [new Agent/UDP]
$ns attach-agent $n0 $udp0
set udp1 [new Agent/UDP]
$ns attach-agent $n1 $udp1
set null3 [new Agent/Null]
$ns attach-agent $n3 $null3
#attach Application cbr to udp
```

```
set cbr0 [new Application/Traffic/CBR]
$cbr0 attach-agent $udp0
set cbr1 [new Application/Traffic/CBR]
$cbr1 attach-agent $udp1
#set udp0 packet to red color and udp1 packet to blue color
$udp0 set class_ 1
$udp1 set class_ 2
#connect the agents
$ns connect $udp0 $null3
$ns connect $udp1 $null3
#set packet size and interval for cbr1
$cbr1 set packetSize_ 500Mb
$cbr1 set interval_ 0.005
#finish procedure
proc finish { } {
global ns nf nt
$ns flush-trace
exec nam lab1.nam &
close $nt
close $nf
exit 0
}
$ns at 0.1 "$cbr0 start"
$ns at 0.1 "$cbr1 start"
$ns at 10.0 "finish"
$ns run
```

Awk file-

```
BEGIN {  count=0;  }
{   if($1=="d")
count++
}
END{
 printf("Number of packets dropped is = %d\n",count);   }
```

Output-

Trace file (lab1.tr) needs to checked to see the data transfer

$ns lab1.tcl

$awk -f numDrop.awk lab1.tr

Number of packets dropped due to congestion is = 714