```
#create Simulator object
 set ns [new Simulator]
#open trace file
set nt [open prac2.tr w]
$ns trace-all $nt
#open namtrace file
set nf [open prac2.nam w]
$ns namtrace-all $nf
#create nodes
set n0 [$ns node] set n1 [$ns node] set n2 [$ns node] set n3
[$ns node] set n4 [$ns node] set n5 [$ns node]
#label nodes
$n0 label "ping0"
$n1 label "ping1"
$n2 label "ping2"
$n3 label "ping3"
$n4 label "ping4"
$n5 label "router"
#create links, specify the type, nodes, bandwidth, delay
and ARQ algorithm for it
$ns duplex-link $n0 $n5 1Mb 10ms DropTail
$ns duplex-link $n1 $n5 1Mb 10ms DropTail
$ns duplex-link $n2 $n5 1Mb 10ms DropTail
$ns duplex-link $n3 $n5 1Mb 10ms DropTail
$ns duplex-link $n4 $n5 1Mb 10ms DropTail
#set queue length
$ns queue-limit $n0 $n5 5
$ns queue-limit $n1 $n5 5
$ns queue-limit $n2 $n5 2
$ns queue-limit $n3 $n5 5
$ns queue-limit $n4 $n5 2
$ns color 2 Red
$ns color 3 Blue
$ns color 4 Green
$ns color 5 Yellow
#define 'recv' function for class Agent/Ping
Agent/Ping instproc recv {from rtt} {
$self instvar node_
puts "node [$node_ id] received ping answer from $from
with round-trip time $rtt ms"
}
#create ping agent and attach them to node
set p0 [new Agent/Ping]
$ns attach-agent $n0 $p0
$p0 set class_ 1
set p1 [new Agent/Ping]
$ns attach-agent $n1 $p1
$p1 set class_ 2
set p2 [new Agent/Ping]
```

```
$ns attach-agent $n2 $p2
$p2 set class_ 3
set p3 [new Agent/Ping]
$ns attach-agent $n3 $p3
$p3 set class_ 4
set p4 [new Agent/Ping]
$ns attach-agent $n4 $p4
$p4 set class_ 5
#connect 2 agents
$ns connect $p2 $p4
$ns connect $p3 $p4
proc sendPingPacket { } {
global ns p2 p3
set intervalTime 0.001
 set now [$ns now]
$ns at [expr $now + $intervalTime] "$p2 send"
$ns at [expr $now + $intervalTime] "$p3 send"
$ns at [expr $now + $intervalTime] "sendPingPacket"
}
proc finish { } {
global ns nt nf
$ns flush-trace
close $nt
close $nf
exec nam prac2.nam &
exit 0     }
$ns at 0.1 "sendPingPacket"
$ns at 2.0 "finish"
$ns run
```

Awk file-

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

Output-

```
$ns lab2.tcl
node 3 received ping answer from 4 with round-trip time
66.3 ms   …….
```

$awk -f numDrop.awk prac2.tr

```
Number of packets dropped is = 41
```