```
#simulation parameters setup
set val(chan) Channel/WirelessChannel;
set val(prop) Propagation/TwoRayGround;
set val(netif) Phy/WirelessPhy;
set val(mac) Mac/802_11;
set val(ifq) CMUPriQueue;
set val(ll) LL;
set val(ant) Antenna/OmniAntenna;
set val(ifqlen) 50;
set val(nn) 6;
set val(rp) DSR;
set val(X) 700;
set val(Y) 700;
set val(stop) 60.0;

#create a ns simulator
set ns [new Simulator]

#setup topography object
set topo [new Topography]
$topo load_flatgrid $val(X) $val(Y)
create-god $val(nn)

#open the NS trace file
set tracefile [open lab6.tr w]
$ns trace-all $tracefile

#open the NS nam file
set namfile [open lab6.nam w]
$ns namtrace-all $namfile
$ns namtrace-all-wireless $namfile $val(X) $val(Y)

#create wireless channel
set chan [new $val(chan)];

$ns node-config -adhocRouting $val(rp) \
                -llType             $val(ll) \
```

```
                -macType      $val(mac) \
                -ifqType      $val(ifq) \
                -ifqLen               $val(ifqlen) \
                -antType      $val(ant) \
                -propType     $val(prop) \
                -phyType      $val(netif) \
                -channel      $chan\
                -topoInstance $topo\
                -agentTrace    ON \
                -routerTrace   ON \
                -macTrace      ON \
                -movementTrace ON

#create node with initial positions
set n0 [$ns node]
$n0 set X_ 150
$n0 set Y_ 300
$n0 set Z_ 0.0
$ns initial_node_pos $n0 20

set n1 [$ns node]
$n1 set X_ 300
$n1 set Y_ 500
$n1 set Z_ 0.0
$ns initial_node_pos $n1 20

set n2 [$ns node]
$n2 set X_ 500
$n2 set Y_ 500
$n2 set Z_ 0.0
$ns initial_node_pos $n2 20

set n3 [$ns node]
$n3 set X_ 300
$n3 set Y_ 100
$n3 set Z_ 0.0
$ns initial_node_pos $n3 20
```

```
set n4 [$ns node]
$n4 set X_ 500
$n4 set Y_ 100
$n4 set Z_ 0.0
$ns initial_node_pos $n4 20

set n5 [$ns node]
$n5 set X_ 650
$n5 set Y_ 300
$n5 set Z_ 0.0
$ns initial_node_pos $n5 20


set tcp0 [new Agent/TCP]
$ns attach-agent $n0 $tcp0

set sink5 [new Agent/TCPSink]
$ns attach-agent $n5 $sink5
$ns connect $tcp0 $sink5
$tcp0 set packetSize_ 1500

set  ftp0 [new Application/FTP]
$ftp0 attach-agent $tcp0

$ns at 3.0 "$ftp0 start"
$ns at 60.0 "$ftp0 stop"

#allow node n3 to  move towards node n1 with speed 5m/sec
$ns at 4.0 "$n3 setdest 300. 500.0 5,0"

#define a finish function
proc finish {} {
        global ns tracefile namfile
        $ns flush-trace
        close $tracefile
        close $namfile
```

```
                exec nam lab6.nam &
                exec awk -f  lab6.awk lab6.tr &
                exec xgraph lab.dat -geometry 800*400 -t "Packets received by each
wirless node" -x "Node Number" -y "Packet Received" &
                exit 0
}
for {set i 0} {$i < $val(nn)} {incr i} {
        $ns at $val(stop) "\$n$i reset"
}
$ns at $val(stop) "$ns nam-end-wireless $val(stop)"
$ns at $val(stop) "finish"
$ns at $val(stop) "puts\"done\";$ns halt"
$ns run
```

Awk file:

```
BEGIN{
        count1=0;
        count2=0;
        count3=0;
        count4=0;
        count5=0;
}
{
        if( $1=="r" && $3=="_1_" && $4=="RTR")
                count1++;
        if( $1=="r" && $4=="RTR" && $3=="_2_")
                count2++;
        if( $1=="r" && $4=="RTR" && $3=="_3_")
                count3++;
        if( $1=="r" && $4=="RTR" && $3=="_4_")
                count4++;
        if( $1=="r" && $4=="RTR" && $3=="_5_")
                count5++;
        if( $1=="SFESTs")
```

```
        printf("\n%lf\t%d\t%s\t%d\t%s\t%s\t%d\t%s\t%s",$2,$5,$6,$7,$11,$12,$1
3,$14,$15);
}
END{
        printf("\n Packets received by node 1 %d",count1);
        printf("\n Packets received by node 2 %d",count2);
        printf("\n Packets received by node 3 %d",count3);
        printf("\n Packets received by node 4 %d",count4);
        printf("\n Packets received by node 5 %d",count5);
}
```