ASSIGNMENT 8

simulate.tcl

```
# This script is created by NSG2 beta1
# <http://wushoupong.googlepages.com/nsg>

#===================================
#     Simulation parameters setup
#===================================
set val(chan)   Channel/WirelessChannel    ;# channel type
set val(prop)   Propagation/TwoRayGround   ;# radio-propagation model
set val(netif)  Phy/WirelessPhy            ;# network interface type
set val(mac)    Mac/802_11                 ;# MAC type
set val(ifq)    Queue/DropTail/PriQueue    ;# interface queue type
set val(ll)     LL                         ;# link layer type
set val(ant)    Antenna/OmniAntenna        ;# antenna model
set val(ifqlen) 50                         ;# max packet in ifq
set val(nn)     5                          ;# number of mobilenodes
set val(rp)     DSDV                       ;# routing protocol
set val(x)      1277                       ;# X dimension of topography
set val(y)      100                        ;# Y dimension of topography
set val(stop)   10.0                       ;# time of simulation end

#===================================
#        Initialization
#===================================
#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 out.tr w]
$ns trace-all $tracefile

#Open the NAM trace file
set namfile [open out.nam w]
$ns namtrace-all $namfile
$ns namtrace-all-wireless $namfile $val(x) $val(y)
set chan [new $val(chan)];#Create wireless channel

#===================================
#     Mobile node parameter setup
#===================================
$ns node-config -adhocRouting  $val(rp) \
                -llType        $val(ll) \
                -macType       $val(mac) \
```

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            -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

#===================================
#       Nodes Definition
#===================================
#Create 5 nodes
set n0 [$ns node]
$n0 set X_ 638
$n0 set Y_ 329
$n0 set Z_ 0.0
$ns initial_node_pos $n0 20
set n1 [$ns node]
$n1 set X_ 528
$n1 set Y_ 480
$n1 set Z_ 0.0
$ns initial_node_pos $n1 20
set n2 [$ns node]
$n2 set X_ 447
$n2 set Y_ 217
$n2 set Z_ 0.0
$ns initial_node_pos $n2 20
set n3 [$ns node]
$n3 set X_ 719
$n3 set Y_ 128
$n3 set Z_ 0.0
$ns initial_node_pos $n3 20
set n4 [$ns node]
$n4 set X_ 824
$n4 set Y_ 412
$n4 set Z_ 0.0
$ns initial_node_pos $n4 20

#===================================
#       Agents Definition
#===================================
#Setup a TCP connection
set tcp0 [new Agent/TCP]
$ns attach-agent $n1 $tcp0
set sink4 [new Agent/TCPSink]
$ns attach-agent $n0 $sink4
$ns connect $tcp0 $sink4
$tcp0 set packetSize_ 1500
```

```
#Setup a TCP connection
set tcp1 [new Agent/TCP]
$ns attach-agent $n2 $tcp1
set sink5 [new Agent/TCPSink]
$ns attach-agent $n0 $sink5
$ns connect $tcp1 $sink5
$tcp1 set packetSize_ 1500

#Setup a TCP connection
set tcp2 [new Agent/TCP]
$ns attach-agent $n3 $tcp2
set sink6 [new Agent/TCPSink]
$ns attach-agent $n0 $sink6
$ns connect $tcp2 $sink6
$tcp2 set packetSize_ 1500

#Setup a TCP connection
set tcp3 [new Agent/TCP]
$ns attach-agent $n4 $tcp3
set sink7 [new Agent/TCPSink]
$ns attach-agent $n0 $sink7
$ns connect $tcp3 $sink7
$tcp3 set packetSize_ 1500


#=================================
#       Applications Definition
#=================================
#Setup a FTP Application over TCP connection
set ftp0 [new Application/FTP]
$ftp0 attach-agent $tcp0
$ns at 1.0 "$ftp0 start"
$ns at 4.0 "$ftp0 stop"

#Setup a FTP Application over TCP connection
set ftp1 [new Application/FTP]
$ftp1 attach-agent $tcp1
$ns at 1.0 "$ftp1 start"
$ns at 4.0 "$ftp1 stop"

#Setup a FTP Application over TCP connection
set ftp2 [new Application/FTP]
$ftp2 attach-agent $tcp2
$ns at 1.0 "$ftp2 start"
$ns at 4.0 "$ftp2 stop"

#Setup a FTP Application over TCP connection
set ftp3 [new Application/FTP]
$ftp3 attach-agent $tcp3
$ns at 1.0 "$ftp3 start"
$ns at 4.0 "$ftp3 stop"
```

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#===================================
#        Termination
#===================================
#Define a 'finish' procedure
proc finish {} {
    global ns tracefile namfile
    $ns flush-trace
    close $tracefile
    close $namfile
    exec nam out.nam &
    exit 0
}
for {set i 0} {$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
```
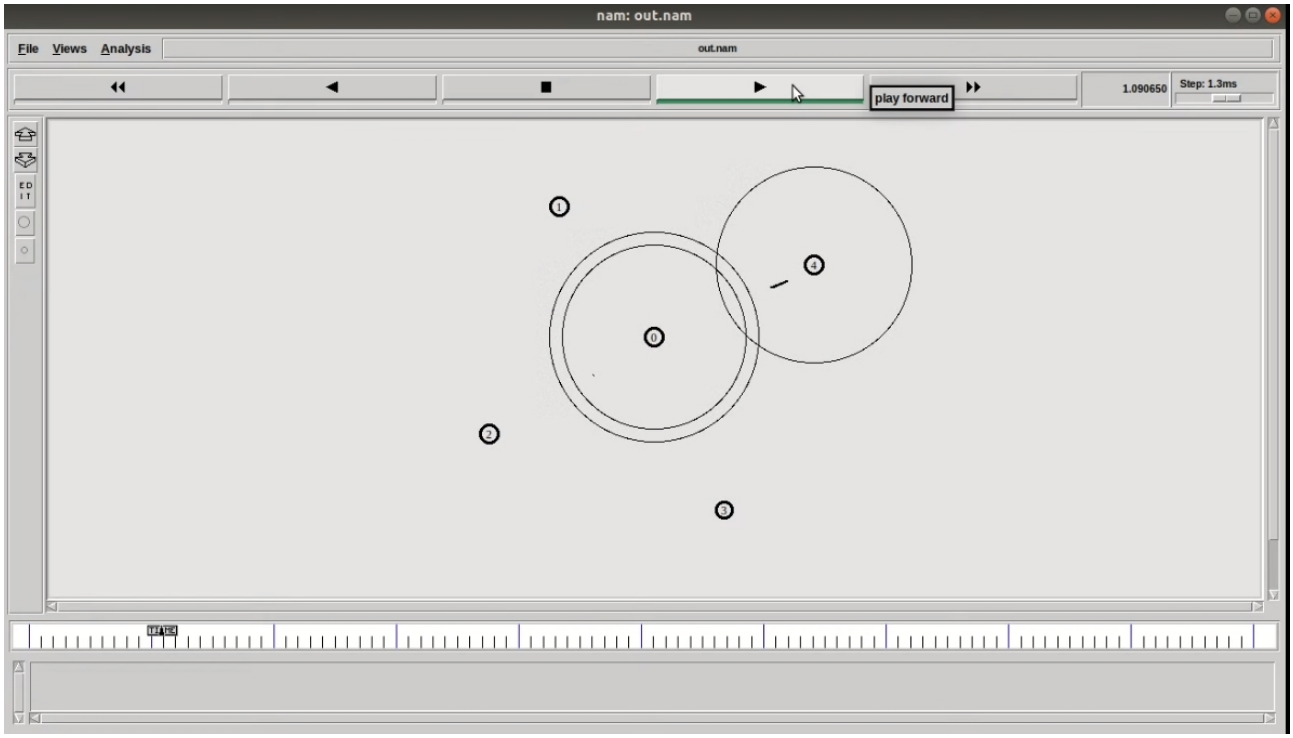
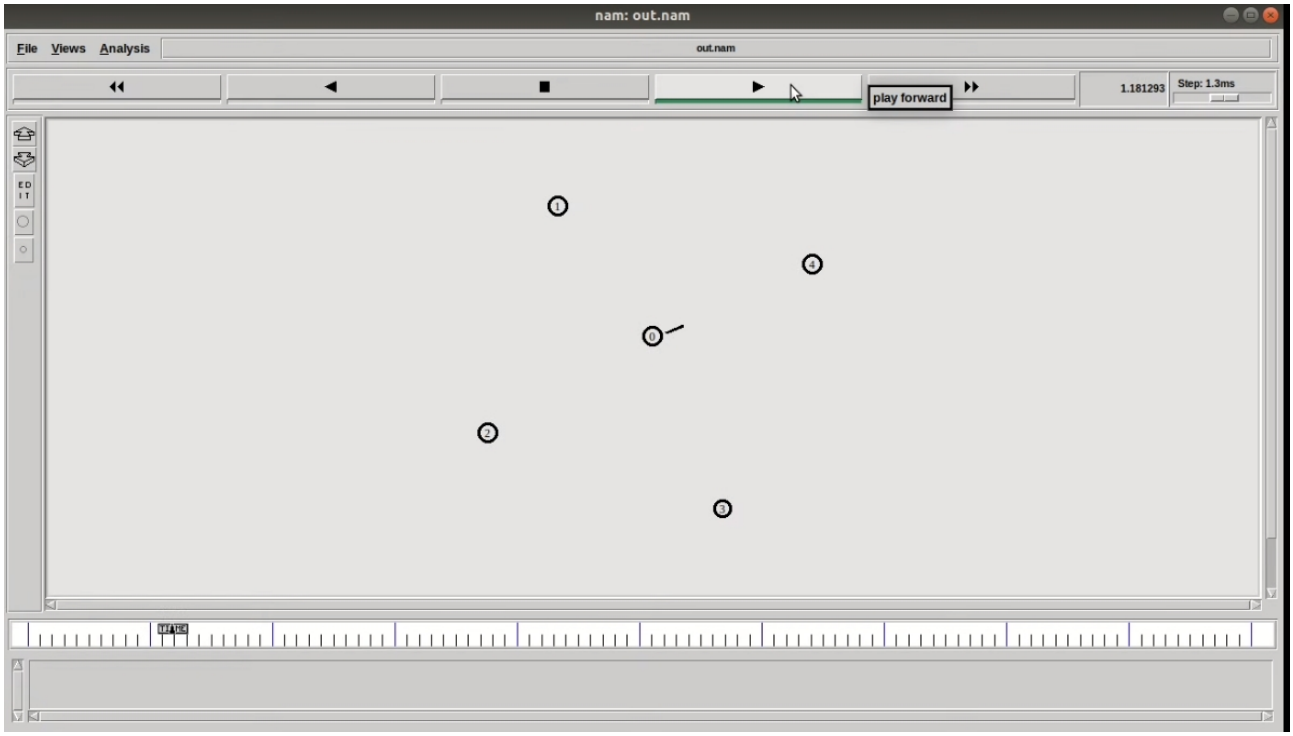
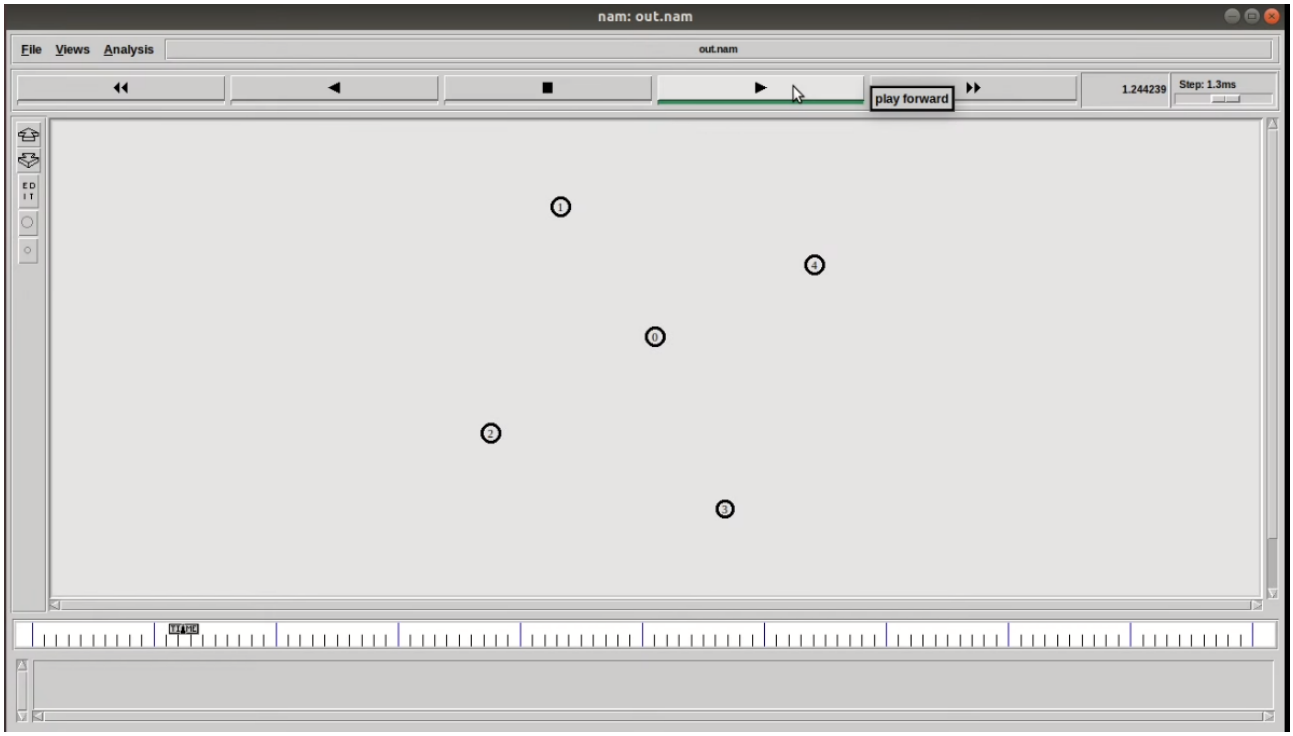
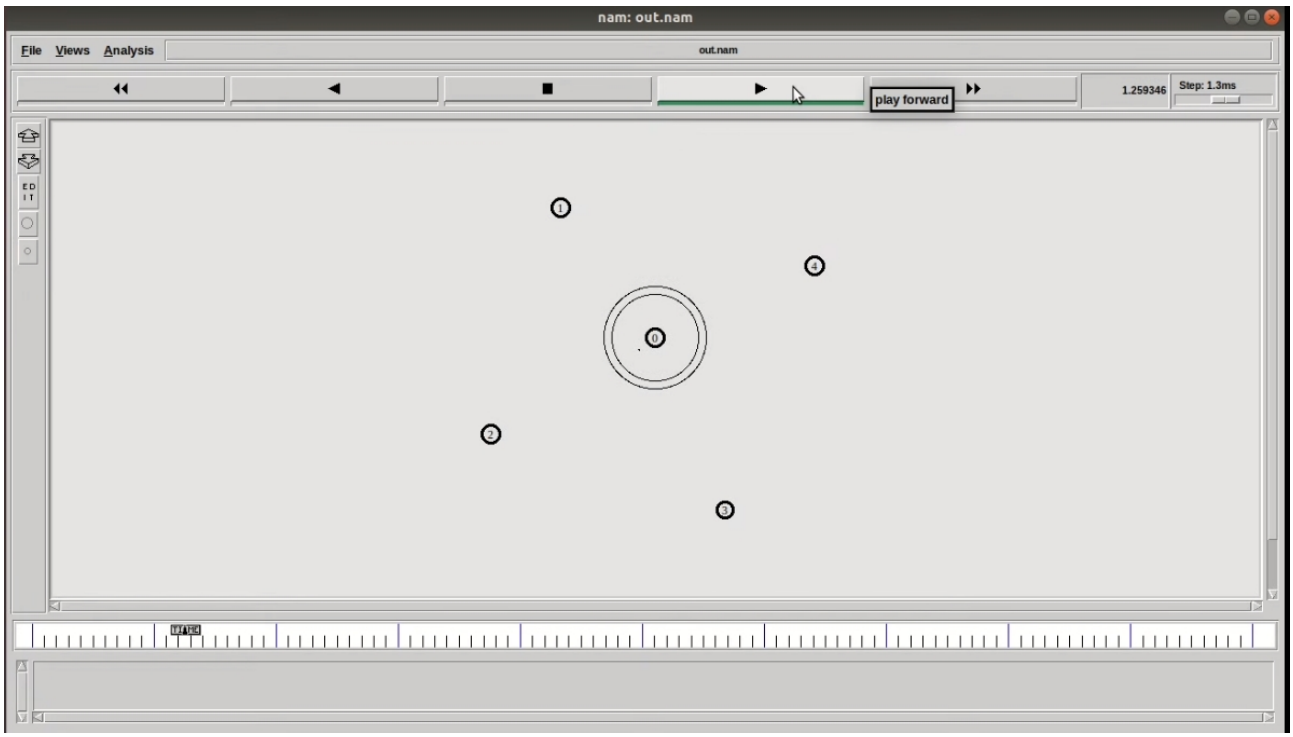

OUTPUT:-




nam: out.nam
File Views Analysis
out.nam
play forward
1.181293
Step: 1.3ms


nam: out.nam
File Views Analysis
out.nam
play forward
1.244239
Step: 1.3ms


nam: out.nam
File
Views
Analysis
out.nam
play forward
1.259346
Step: 1.3ms
0
1
2
3
4