**RollNo: 5117060**

**EXPERIMENT 12**

**PROBLEM DEFINITION:**

Three wireless nodes are created and they are configured with specific parameters of a mobile wireless node. After creating the nam file and trace file, we set up topography object. set node\_ ($i) [$ns node] is used to create the nodes. Location of the nodes is fixed by specifying X, Y coordinates. Z coordinate is always zero. Here we set the initial size for the every node by using initial\_node\_pos. AODV routing protocol is used here. $val(stop) specifies the end time of the simulation.

**Code:**

set ns [new Simulator]

# Creating trace file and nam file

set tracefd [open wireless1.tr w]

set namtrace [open wireless1.nam w]

# Define options

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) 3 ;# number of mobilenodes

set val(rp) AODV ;# routing protocol

set val(x) 500 ;# X dimension of topography

set val(y) 500 ;# Y dimension of topography

set val(stop) 10.0 ;# time of simulation end

$ns trace-all $tracefd

$ns namtrace-all-wireless $namtrace $val(x) $val(y)

# set up topography object

set topo [new Topography]

$topo load\_flatgrid $val(x) $val(y)

set god\_ [create-god $val(nn)]

# configure the nodes

$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) \

-channelType $val(chan) \

-topoInstance $topo \

-agentTrace ON \

-routerTrace ON \

-macTrace OFF \

-movementTrace ON

## Creating node objects...

for {set i 0} {$i < $val(nn) } { incr i } {

set node\_($i) [$ns node]

}

for {set i 0} {$i < $val(nn) } {incr i } {

$node\_($i) color black

$ns at 0.0 "$node\_($i) color black"

}

# Provide initial location of mobile nodes

$node\_(0) set X\_ 50.0

$node\_(0) set Y\_ 50.0

$node\_(0) set Z\_ 0.0

$node\_(1) set X\_ 200.0

$node\_(1) set Y\_ 250.0

$node\_(1) set Z\_ 0.0

$node\_(2) set X\_ 300.0

$node\_(2) set Y\_ 300.0

$node\_(2) set Z\_ 0.0

# Define node initial position in nam

for {set i 0} {$i < $val(nn)} { incr i } {

$ns initial\_node\_pos $node\_($i) 30

}

# Telling nodes when the simulation ends

for {set i 0} {$i < $val(nn) } { incr i } {

$ns at $val(stop) "$node\_($i) reset";

}

# Ending nam and the simulation

$ns at $val(stop) "$ns nam-end-wireless $val(stop)"

$ns at $val(stop) "stop"

$ns at 10.01 "puts \"end simulation\"; $ns halt"

#stop procedure:

proc stop {} {

global ns tracefd namtrace

$ns flush-trace

close $tracefd

close $namtrace

exec nam wireless1.nam &

}

$ns run

**Output:**

