**WEEK-12**

**AIM:** Implementation of wireless networks using NS2 Simulation Tool.

**SOFTWARE REQUIREMENTS:** NS-2 Simulator

**PROCEDURE:**

1. Create a simulator object

2. Define a setting options for wireless channel

3. Create trace file and name file

4. Setup topography object and nodes

5. Provide initial location of mobile nodes

6. Setup a UDP connection between nodes

7. Printing the window size

**PROGRAM IMPLEMENTATION:**

set ns [new Simulator]

set tracefile [open wireless.tr w]

$ns trace-all $tracefile

set namfile [open wireless.nam w]

$ns namtrace-all-wireless $namfile 500 500

set topo [new Topography]

$topo load\_flatgrid 500 500

create-god 6

#set specific parameters of a wireless node

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\_1! ;# MAC type

#set val(ifq) Queue/DropTail/PriQueue ;# interface queue type

#set val(ifqlen) 50 ;# max packet in ifq

#set val(ll) LL ;# link layer type

#set val(ant) Antenna/OmniAntenna ;# antenna model

#set val(rp) AODV ;# routing protocol

$ns node-config -adhocRouting AODV -llType LL \

-macType Mac/802\_11 -ifqType Queue/DropTail/PriQueue \

-ifqLen 50 -antType Antenna/OmniAntenna \

-propType Propagation/TwoRayGround -phyType Phy/WirelessPhy \

-channel [new $val(chan)] -topoInstance $topo \

-agentTrace ON -routerTrace OFF\

-macTrace ON \

-movementTrace OFF

set n0 [$ns node]

set n1 [$ns node]

set n2 [$ns node]

set n3 [$ns node]

set n4 [$ns node]

set n5 [$ns node]

$n0 random-motion 0

$n1 random-motion 0

$n2 random-motion 0

$n3 random-motion 0

$n4 random-motion 0

$n5 random-motion 0

$ns initial\_node\_pos $n0 20

$ns initial\_node\_pos $n1 20

$ns initial\_node\_pos $n2 20

$ns initial\_node\_pos $n3 20

$ns initial\_node\_pos $n4 20

$ns initial\_node\_pos $n5 50

$n0 set X\_ 10.0

$n0 set Y\_ 20.0

$n0 set Z\_ 0.0

$n1 set X\_ 210.0

$n1 set Y\_ 230.0

$n1 set Z\_ 0.0

$n2 set X\_ 100.0

$n2 set Y\_ 200.0

$n2 set Z\_ 0.0

$n3 set X\_ 150.0

$n3 set Y\_ 230.0

$n3 set Z\_ 0.0

$n4 set X\_ 430.0

$n4 set Y\_ 320.0

$n4 set Z\_ 0.0

$n5 set X\_ 270.0

$n5 set Y\_ 120.0

$n5 set Z\_ 0.0

and Y as 500,500

$ns at 1.0 “$n1 setdest 490.0 340.0 25.0”

$ns at 1.0 “$n4 setdest 300.0 130.0 5.0”

$ns at 1.0 “$n5 setdest 190.0 440.0 15.0”

simulation (runtime)

$ns at 5.0 “$n5 setdest 100.0 200.0 30.0”

set tcp [new Agent/TCP]

set sink [new Agent/TCPSink]

$ns attach-agent $n0 $tcp

$ns attach-agent $n5 $sink

$ns connect $tcp $sink

set ftp [new Application/FTP]

$ftp attach-agent $tcp

$ns at 1.0 “$ftp start”#event

set udp [new Agent/UDP]

set null [new Agent/Null]

$ns attach-agent $n2 $udp

$ns attach-agent $n3 $null

$ns connect $udp $null

set cbr [new Application/Traffic/CBR]

$cbr attach-agent $udp

$ns at 1.0 “$cbr start”;

$ns at 10.0 “finish”;

proc finish {} {

global ns tracefile namfile

$ns flush-trace

close $tracefile

close $namfile

exec nam wireless.nam &

exit 0

}

puts “Starting Simulation”

$ns run

**OUTPUT:**

