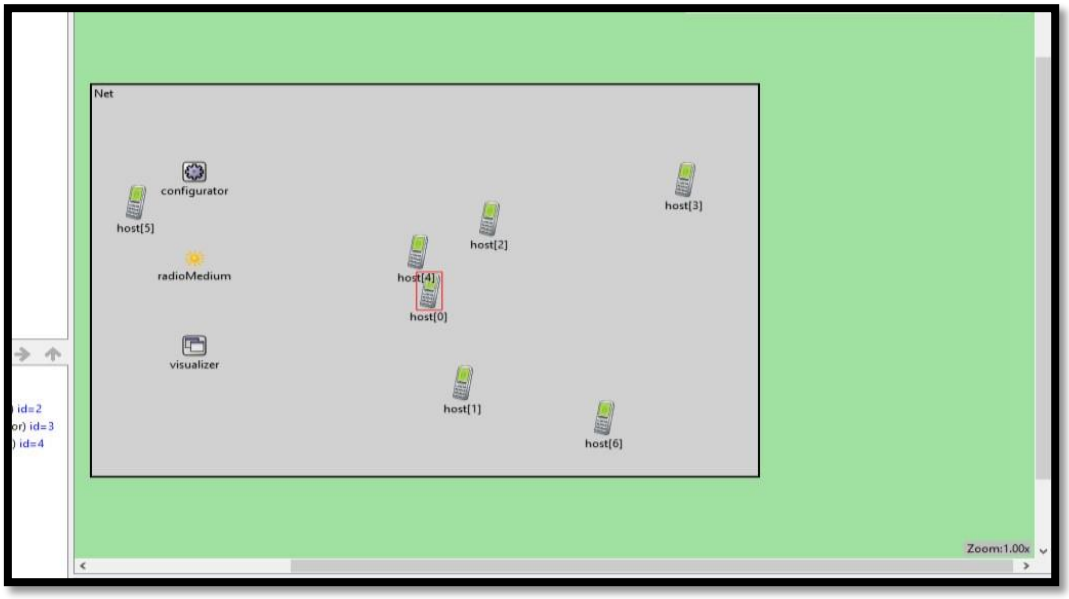
PRACTICAL NO. 4

AIM :-

THEORY :-

OUTPUT :-

The following simulation has 7 hosts

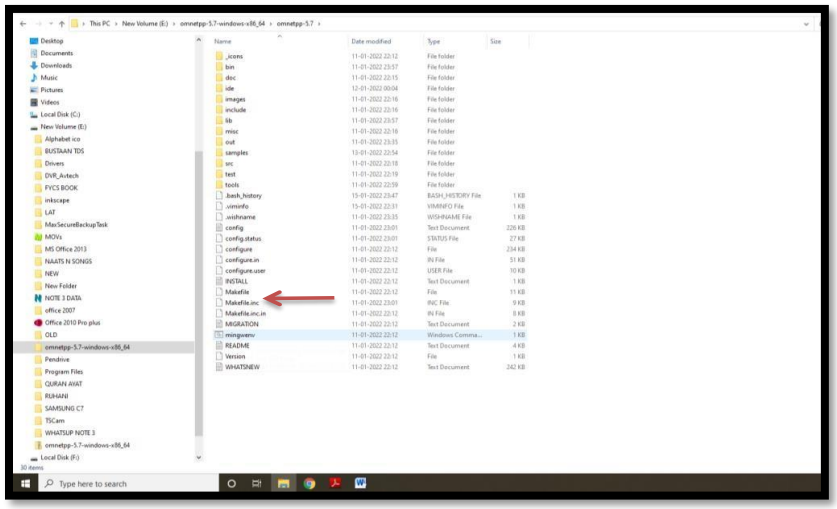


Create and simulate a simple ad hoc network

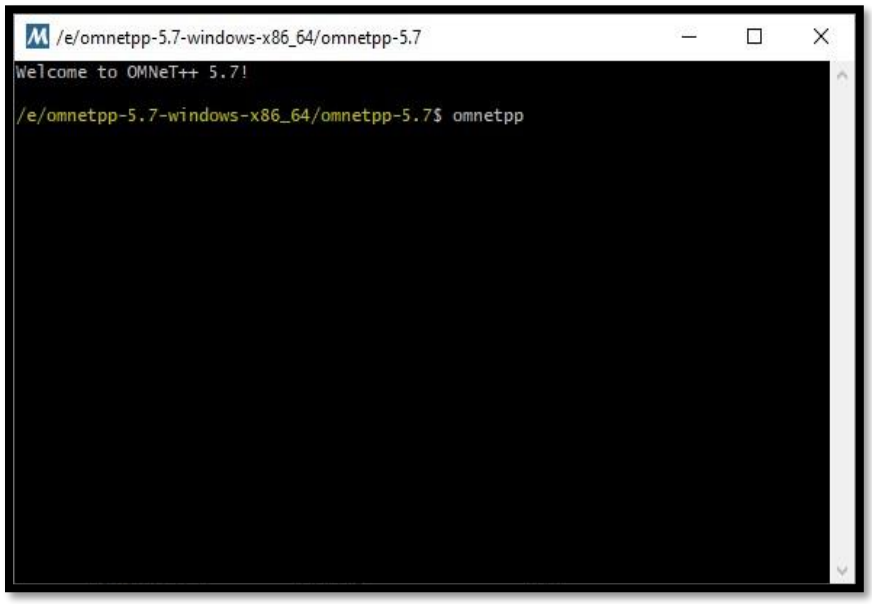
STEPS :

Step 1: Start the Omnetpp simulator through the following procedure

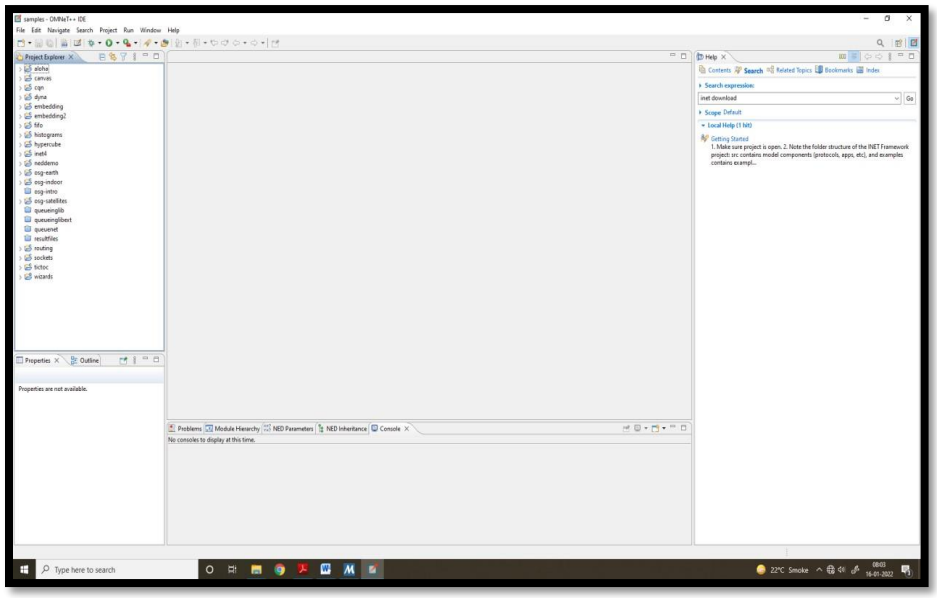
Click on the file mingw env



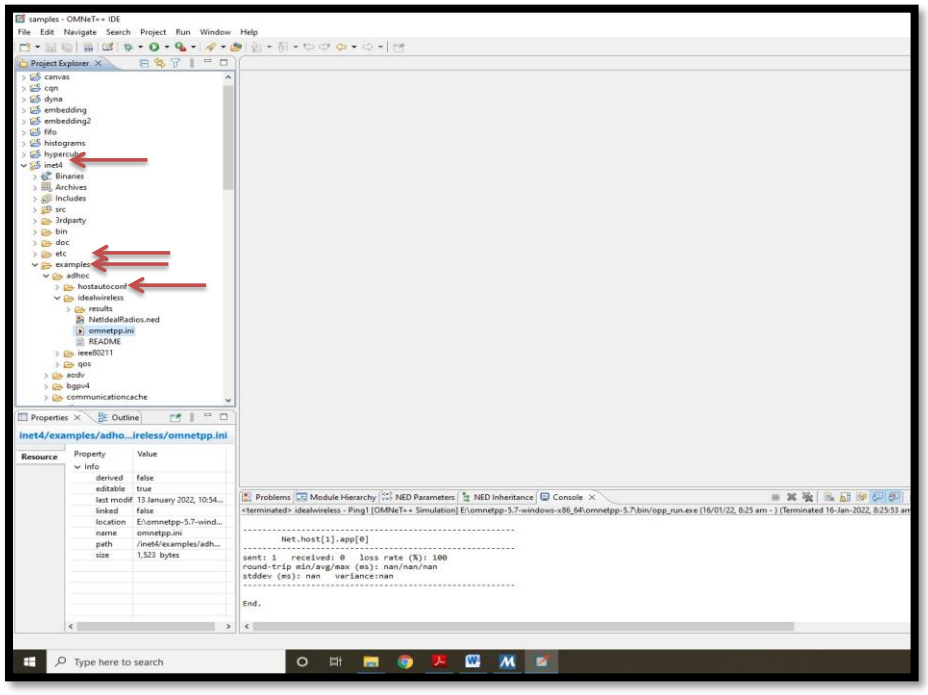
We will get the following $ prompt, type omnetpp and enter



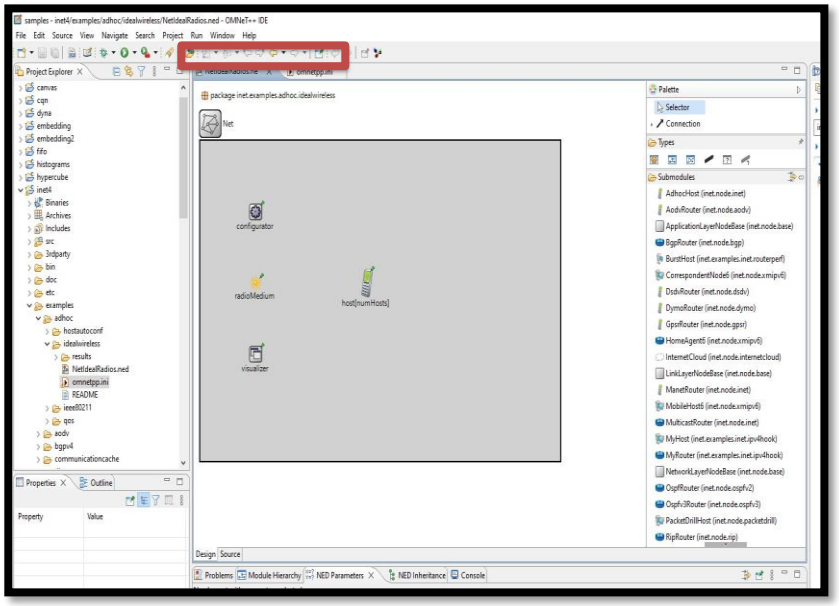
Step 2: The omnetpp simulator in now ready with the following user interface



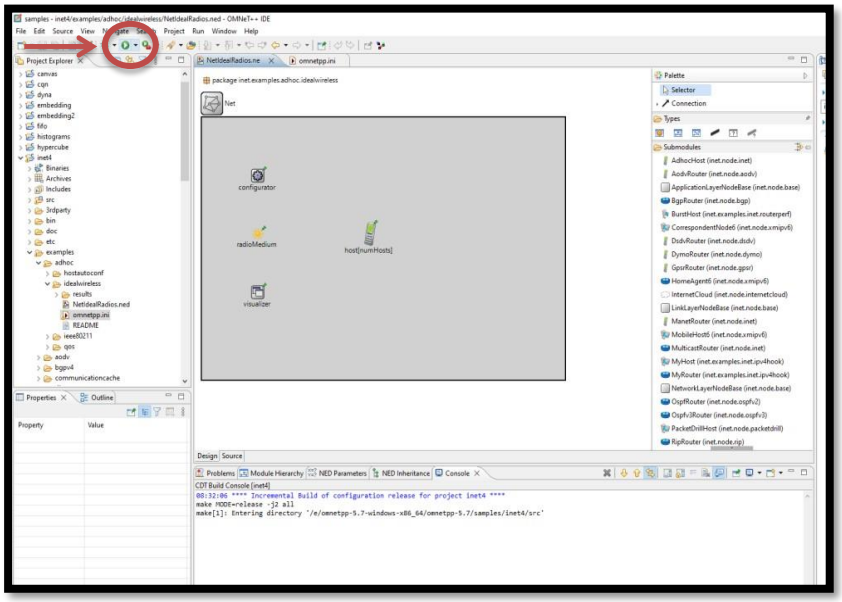
Click on inet folder, then in it click on examples, then on adhoc and then on idealwireless as given



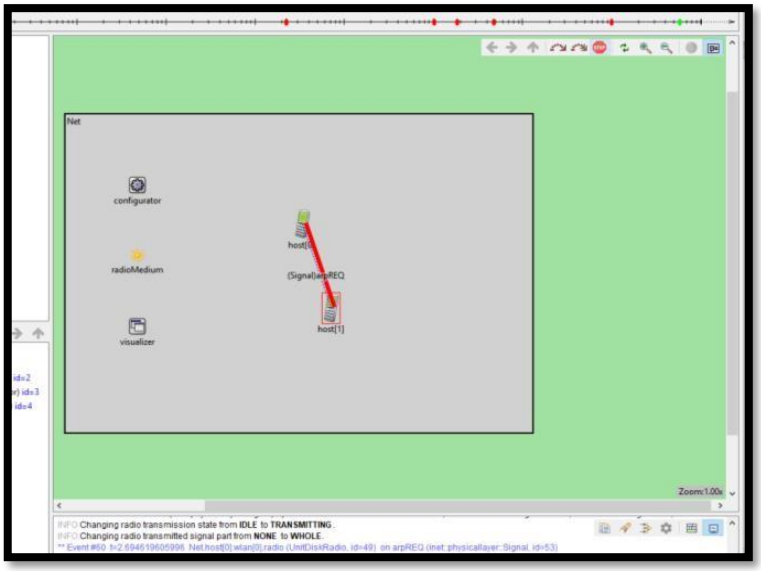
Step 3: In order to load the simulation, double click on two files NetIdealRadios.ned and omnetpp.ini



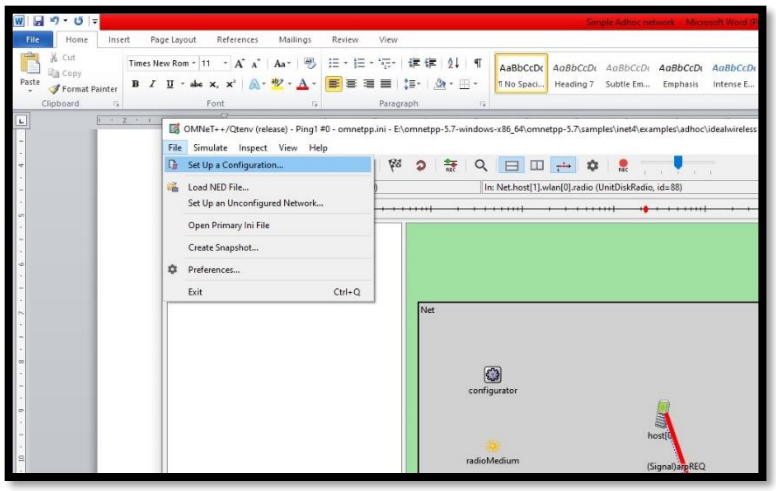
Step 4: Now we run the simulation



Step 5: After running the simulation we get the following



The number of hosts can be increased by the following



In this we get a dropdown menu, select n host option and enter the required hosts

CONCLUSION :-

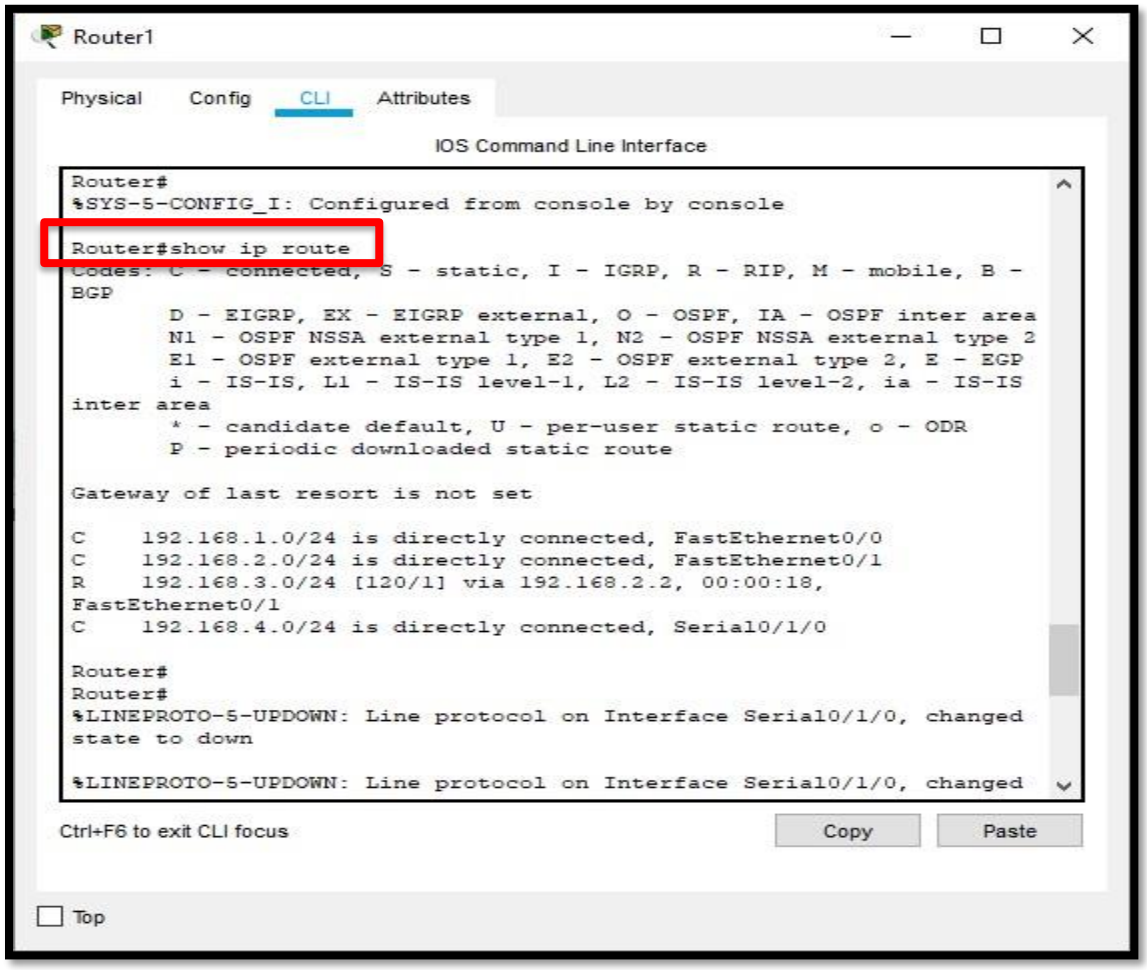
PRACTICAL NO. 5

AIM :-

THEORY :-

OUTPUT :-

The following command is executed in the CLI mode of Router1

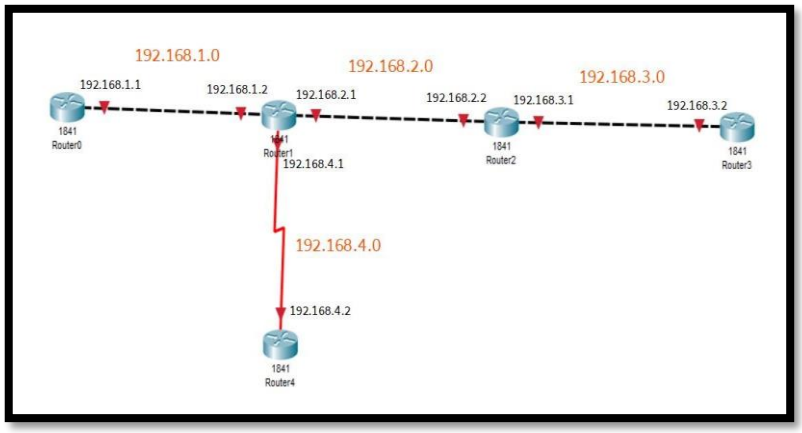


Reading and Analyzing Routing Table of a network

STEPS :-

Step 1 : Consider the following topology

Network destination	Netmask	Gateway	Interface	Metric
0.0.0.0	0.0.0.0	192.168.0.1	192.168.0.100	10
127.0.0.0	255.0.0.0	127.0.0.1	127.0.0.1	1
192.168.0.0	255.255.255.0	192.168.0.100	192.168.0.100	10
192.168.0.100	255.255.255.255	127.0.0.1	127.0.0.1	10
192.168.0.1	255.255.255.255	192.168.0.100	192.168.0.100	10



The ip addresses are configured on the given interfaces of the Routers.

The Routing path is also set using RIP.

We get the following Routing information from Router1
C 192.168.1.0/24 is directly connected, FastEthernet0/0
C 192.168.2.0/24 is directly connected, FastEthernet0/1

R 192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:18, FastEthernet0/1

C 192.168.4.0/24 is directly connected, Serial0/1/0

CONCLUSION :-

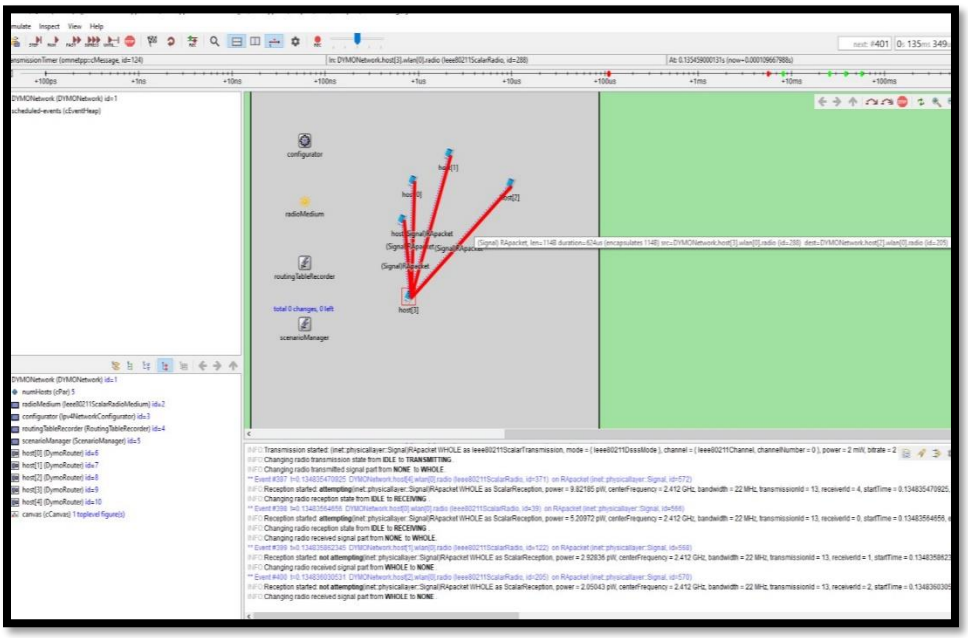
PRACTICAL NO. 6

AIM :-

THEORY :-

OUTPUT :-

Since the nodes have mobility, after sometime their positions would change and we get

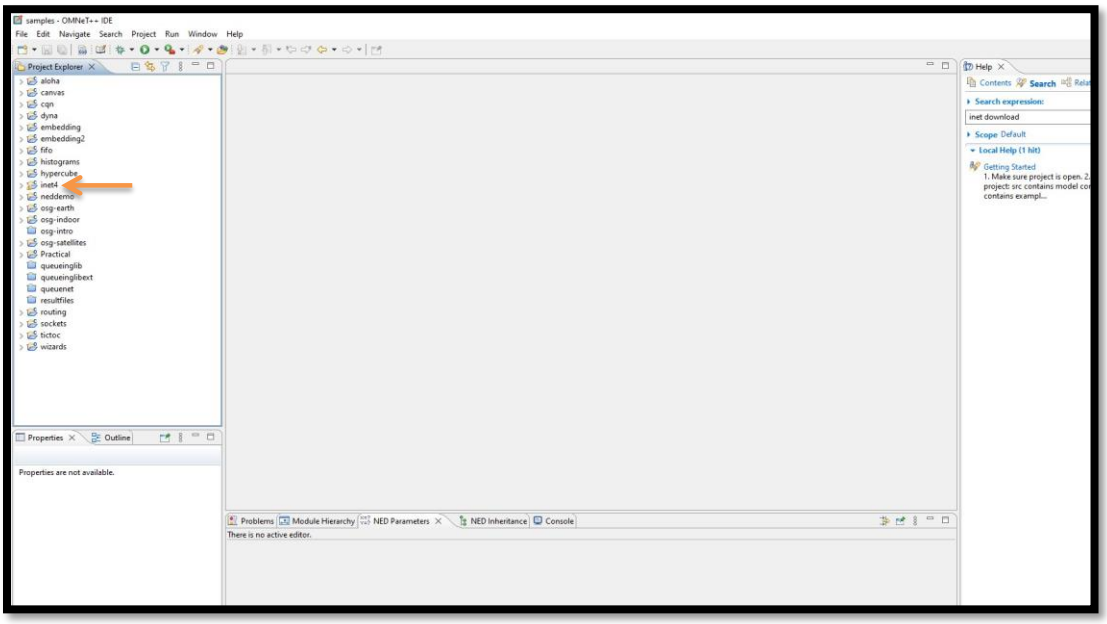


Hence the given MANET has been simulated with 5 hosts

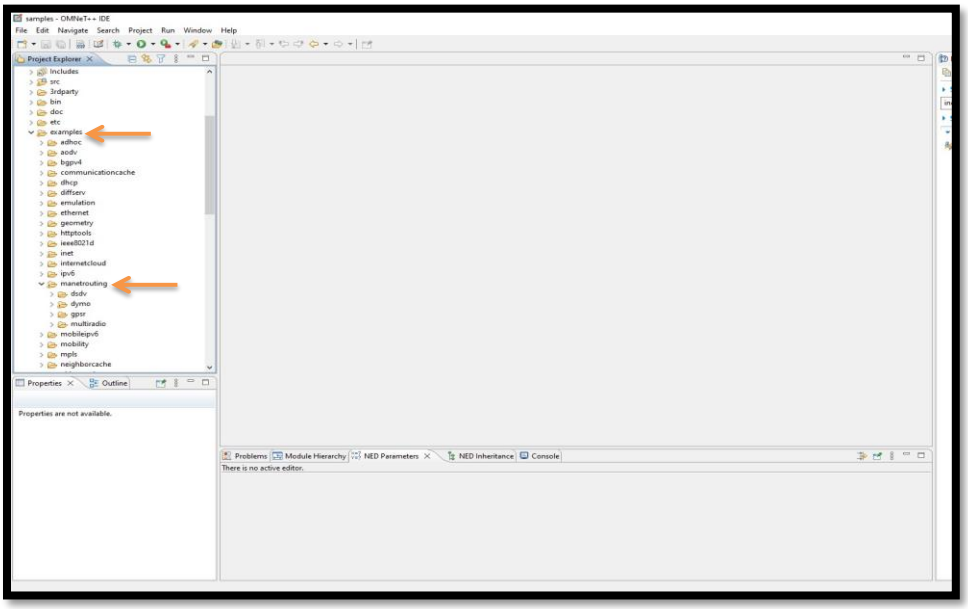
MANET implementation simulation

STEPS :-

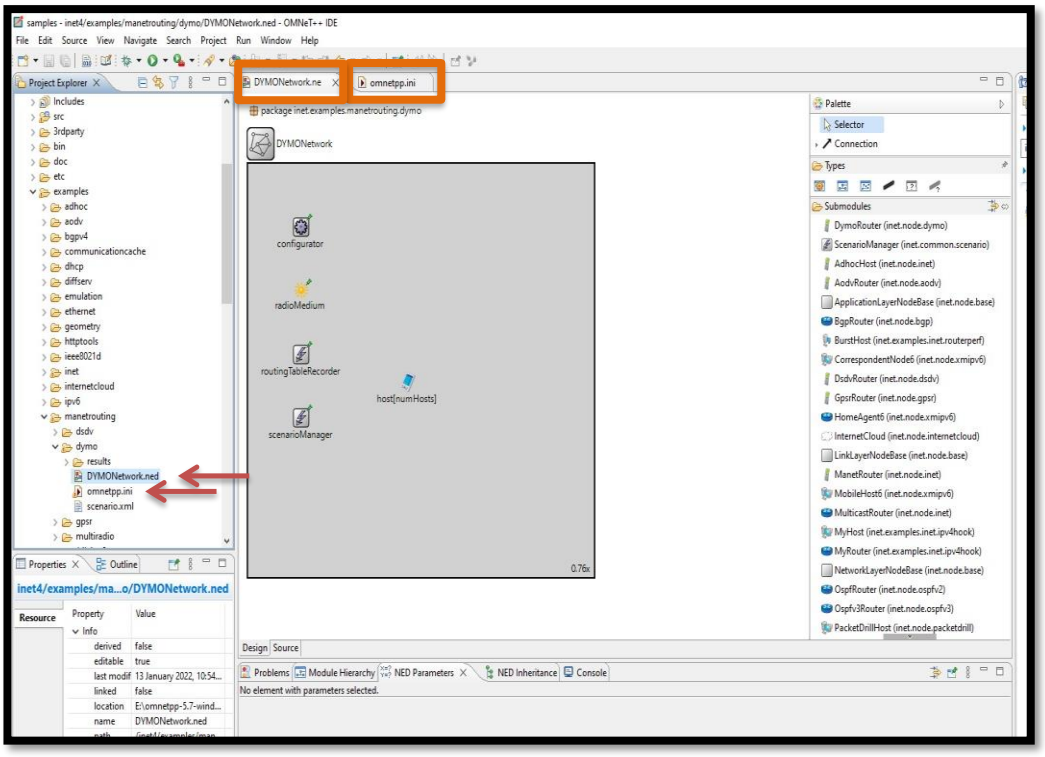
Step 1: Open the Omnet++ software and click on inet4 folder



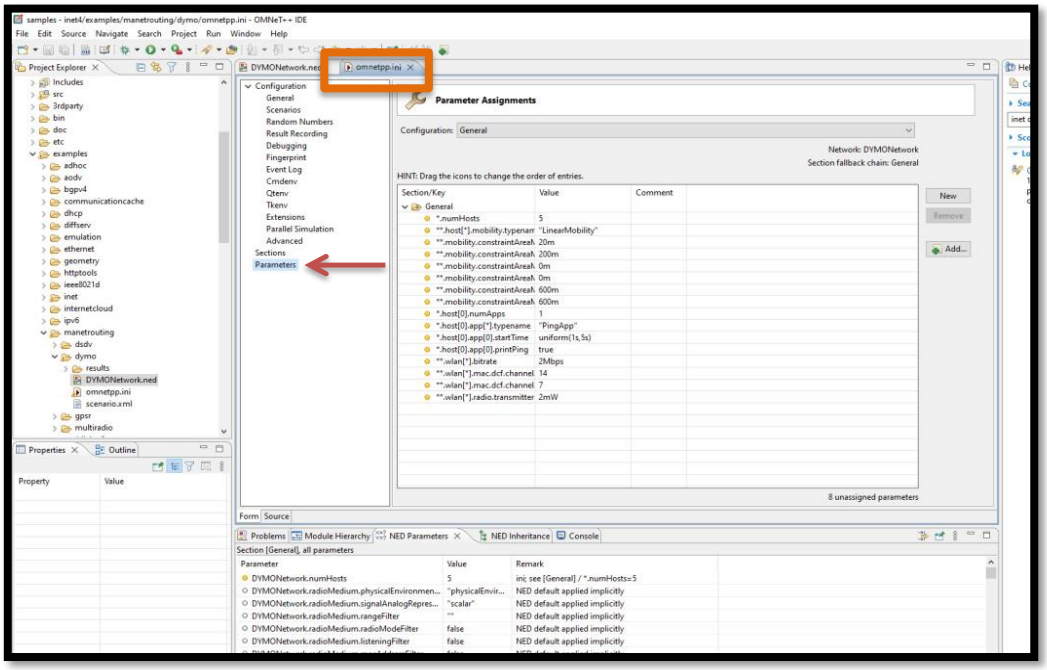
Step 2: Now select the examples folder and then in that folder select manetrouting folder



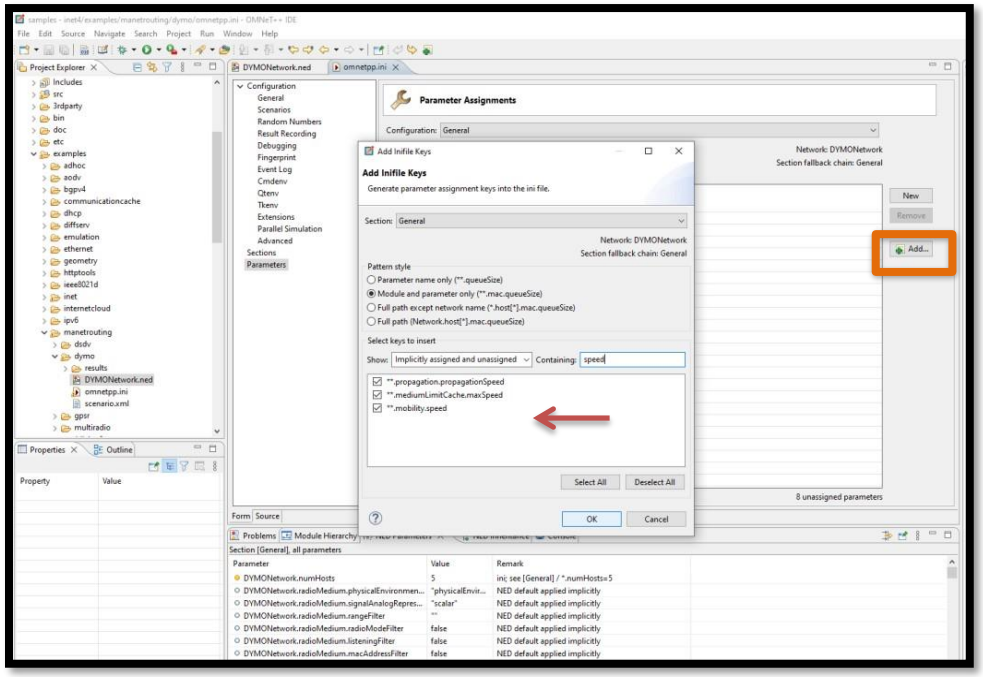
Step 3 : In manetrouting folder click dymo folder and then load the DYMONetwork.ned and omnetpp.ini files by double clicking



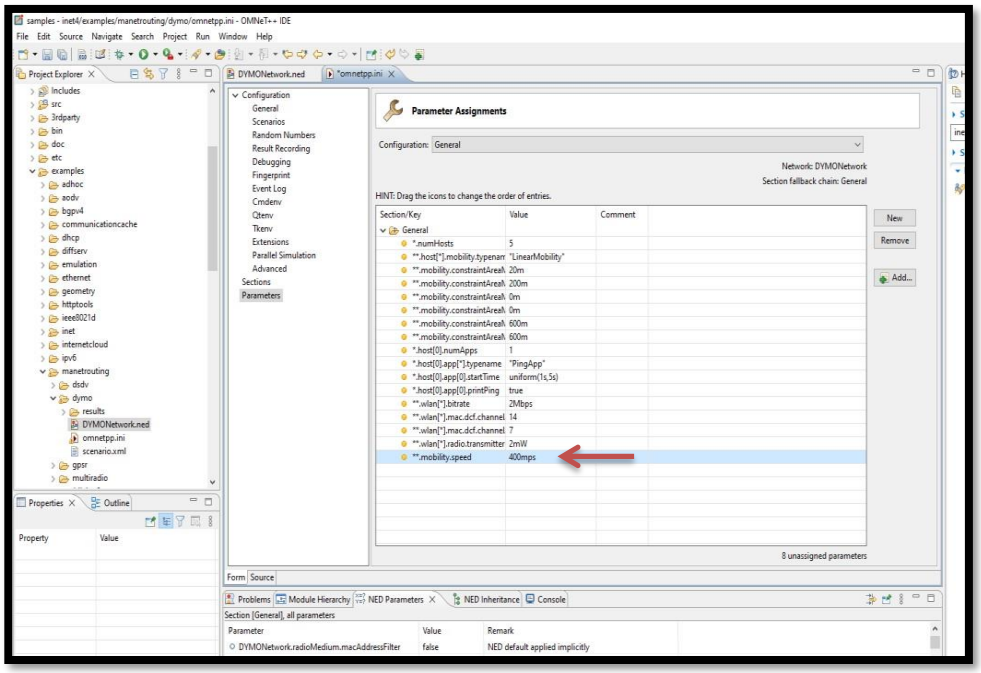
Step 4: Select omnetpp.ini file and click on parameters, we need to add mobility to the nodes



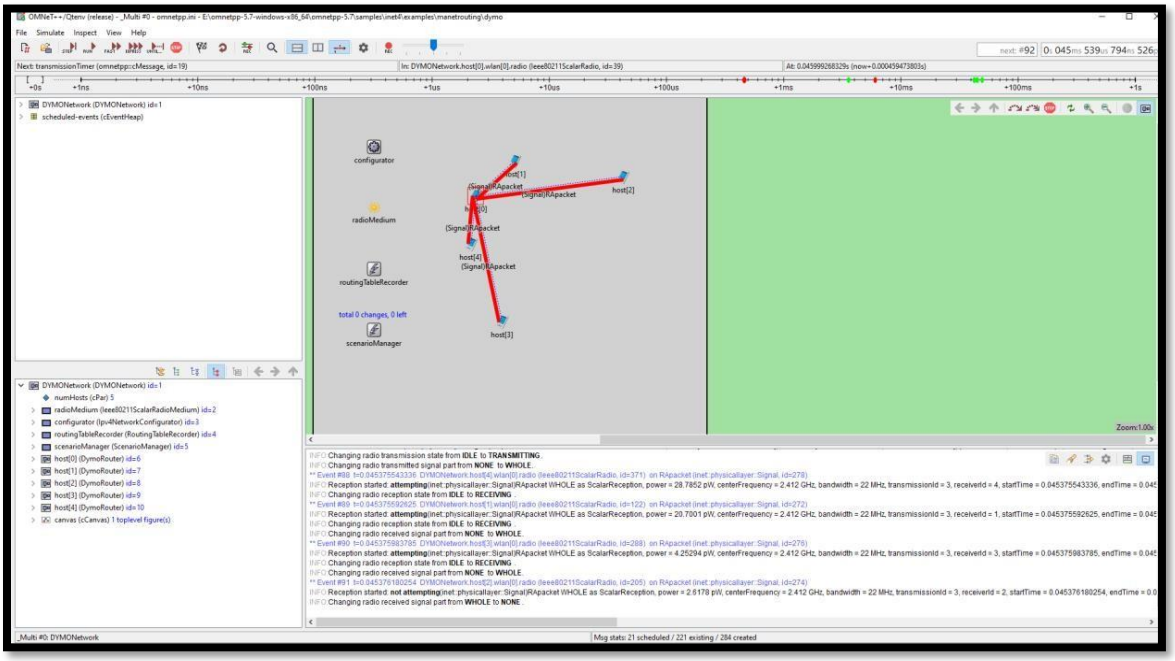
Step 5: For adding a new parameter click on add button and add the parameter **.mobility.speed



Step 6: Set the value for **.mobility.speed = 400mps



Step 7: Now we run the simulation with 5 mobile hosts forming MANET and get the following output



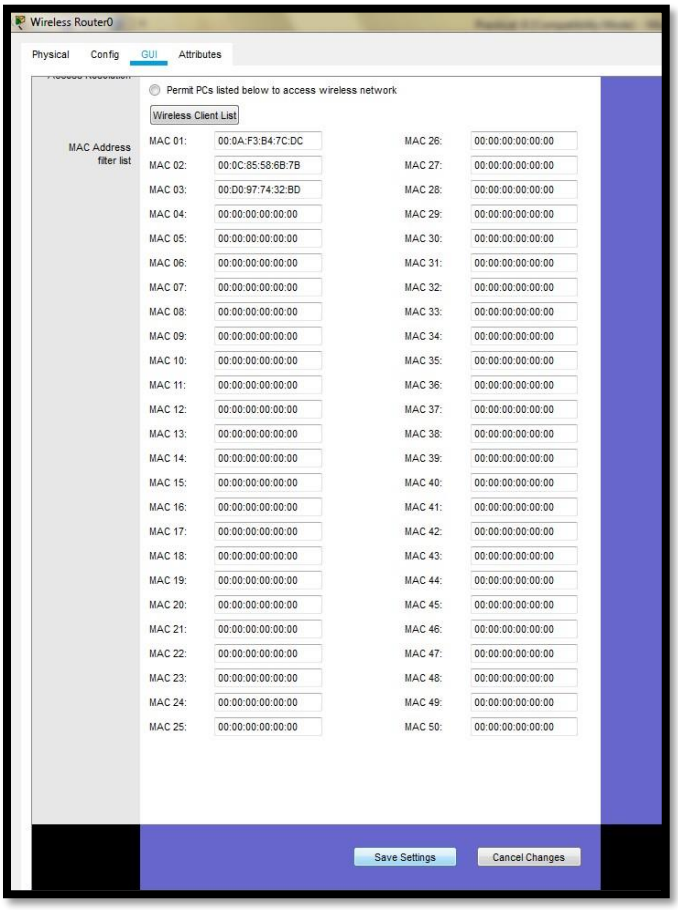
CONCLUSION :-

PRACTICAL NO. 7

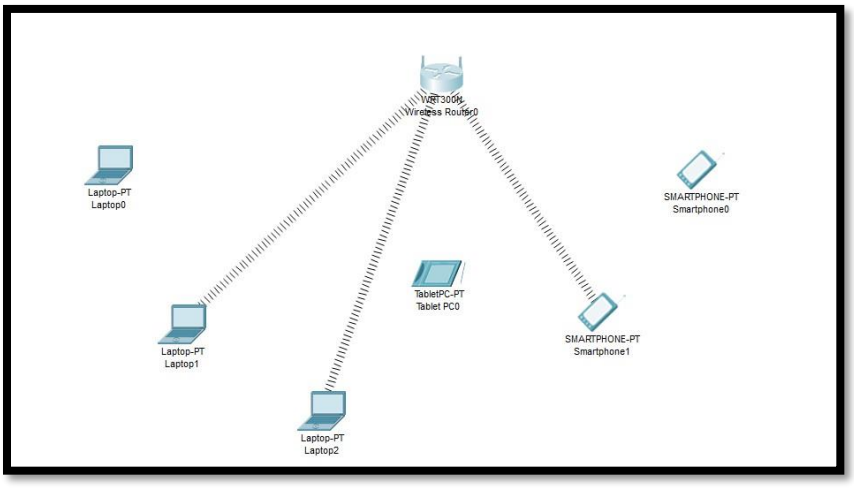
AIM :-

THEORY :-

OUTPUT :-



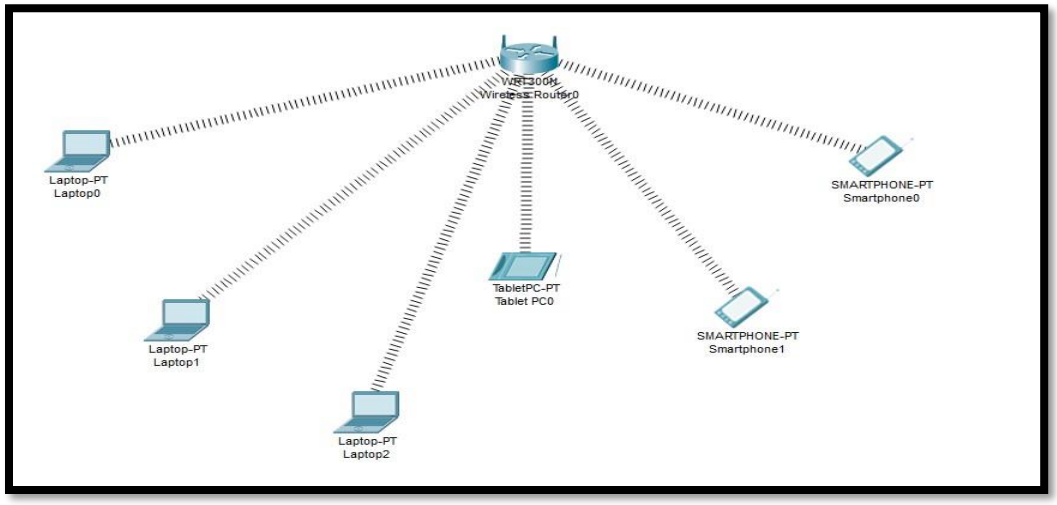
The result so obtained is as shown; the three devices denied any wireless connectivity

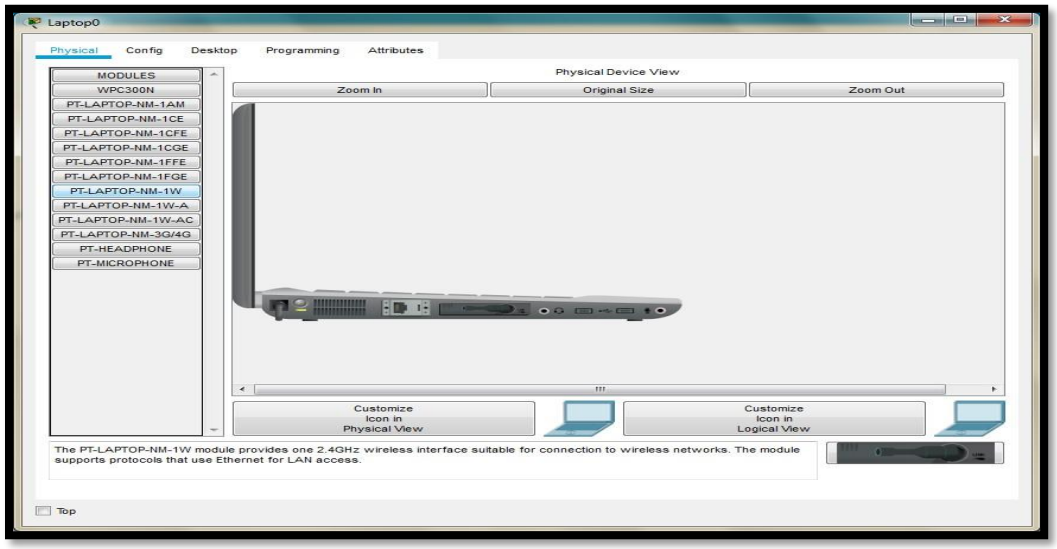


Create MAC protocol simulation implementation for wireless sensor Network.

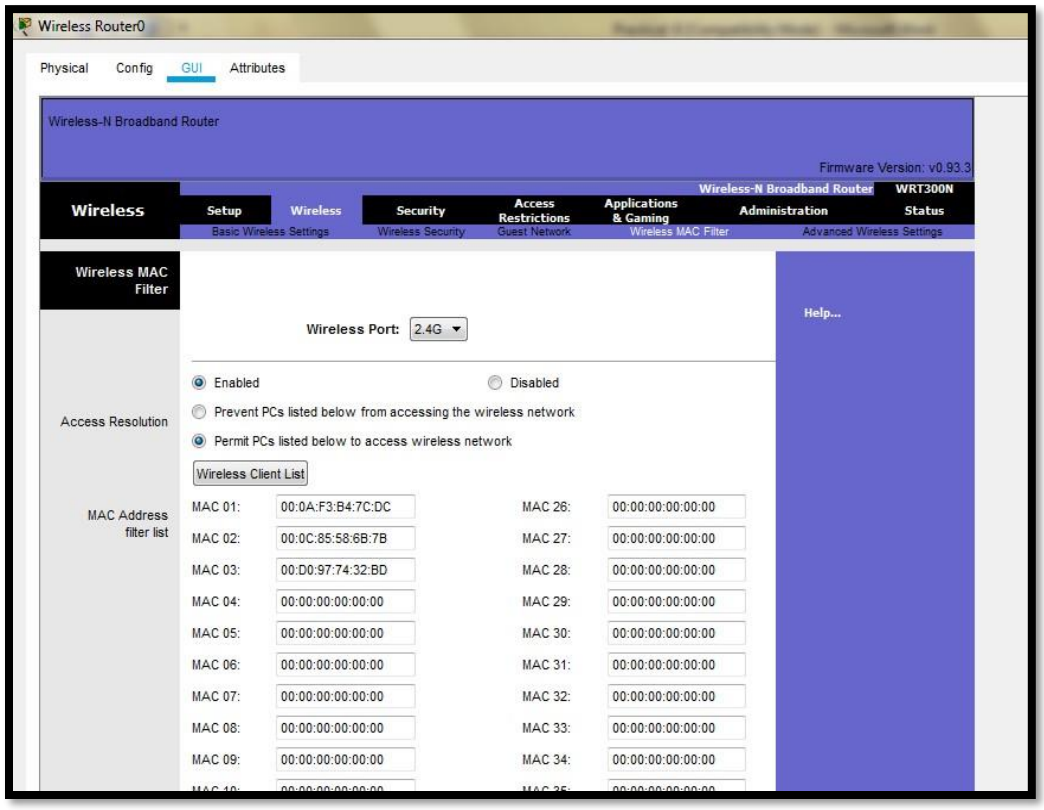
STEPS :-

Step 1: Smart phones and Tablet have a wireless interface by default, while the laptop does not has a wireless interface, we need to add the interface in all the laptops
Adding the wireless interface to each Laptops as follows

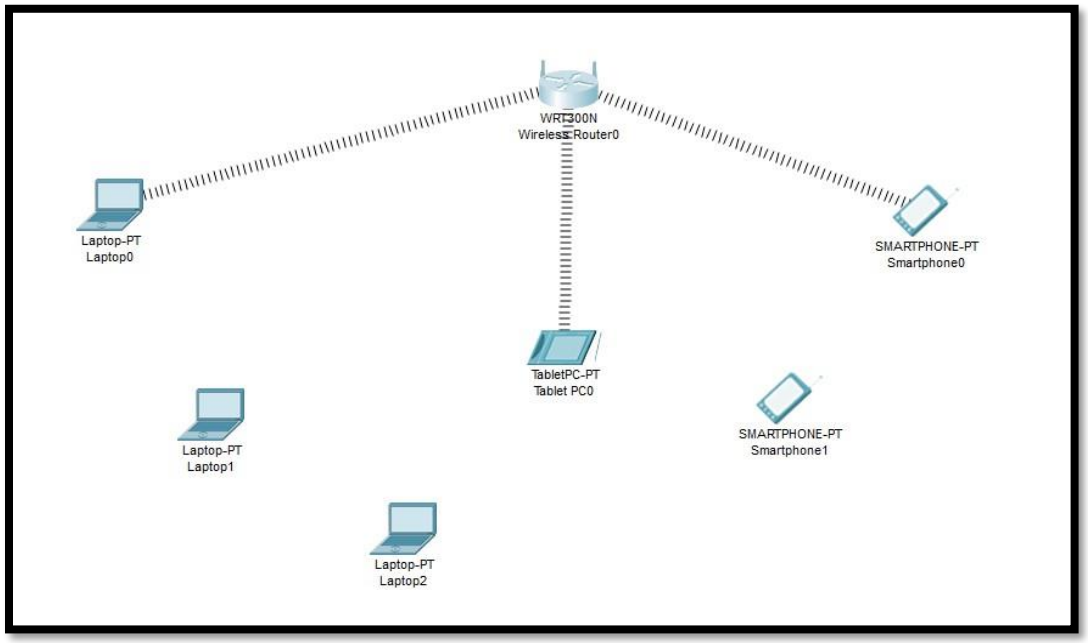




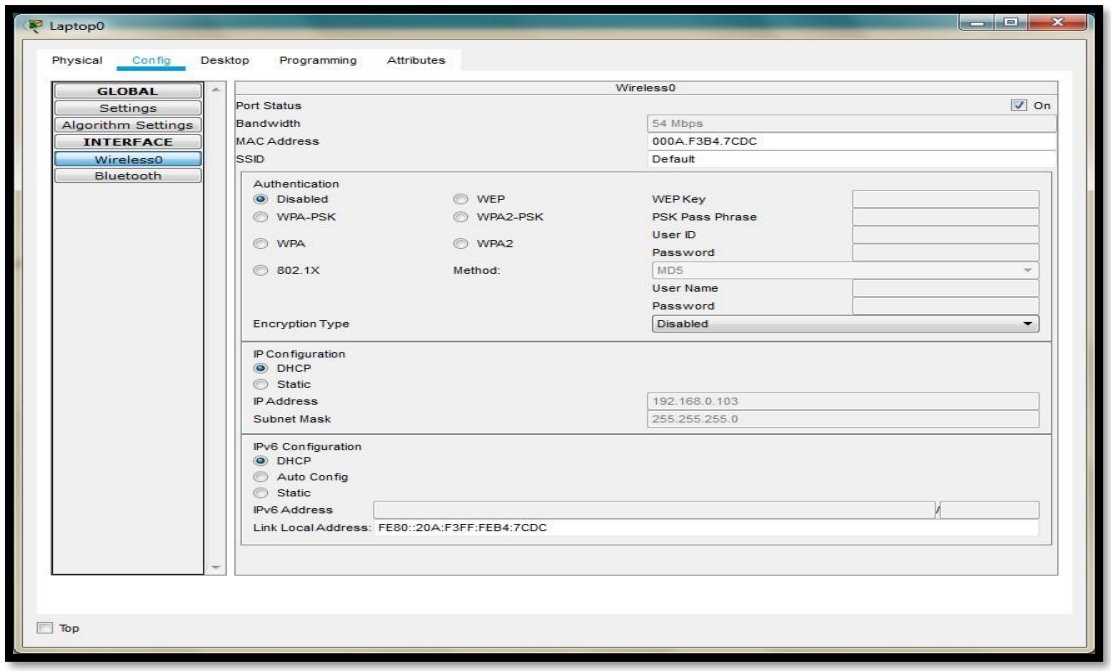
OUTPUT :-

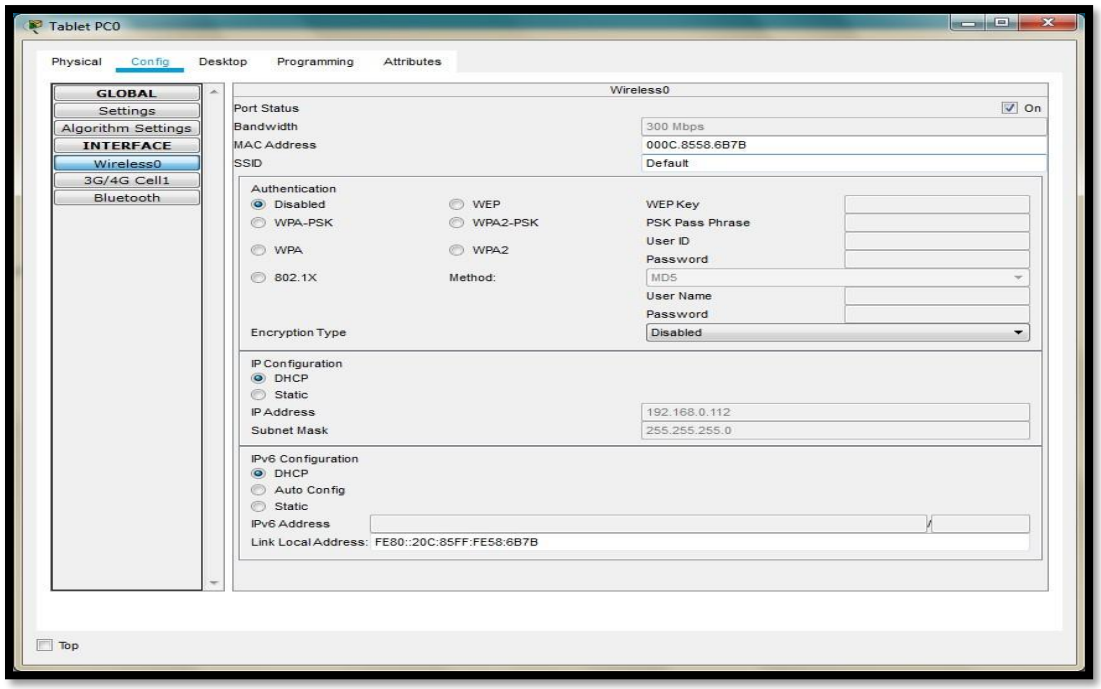


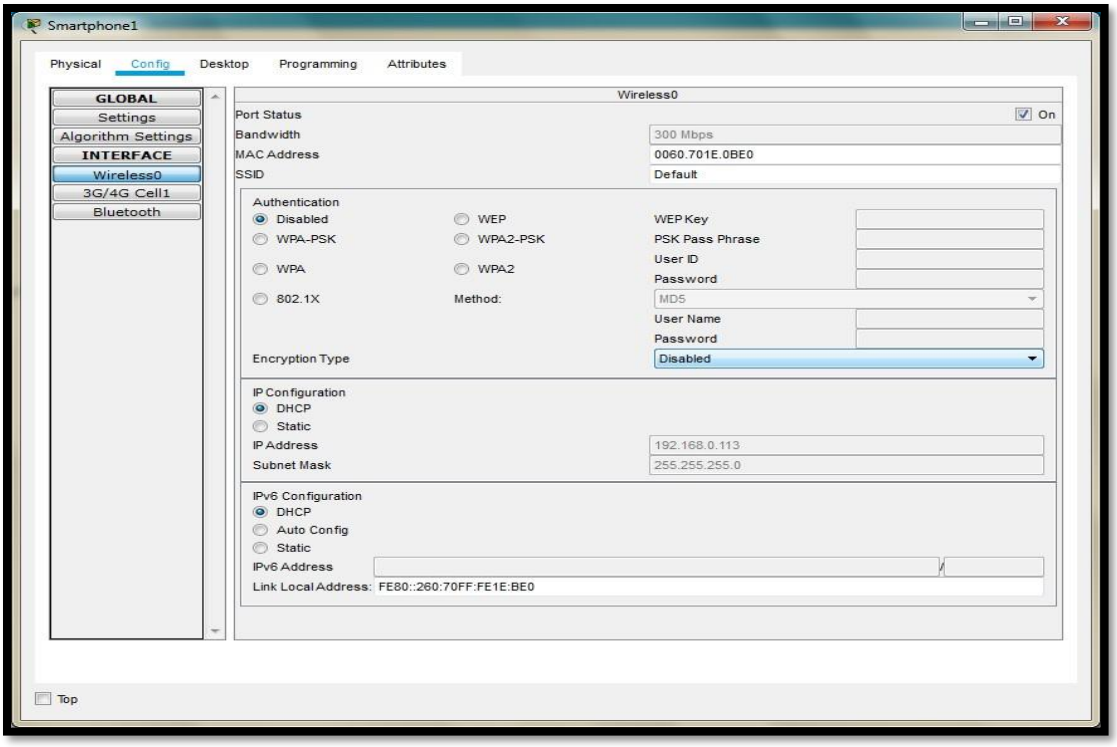
And save the setting and get the following



Copy the MAC address of each component as follows



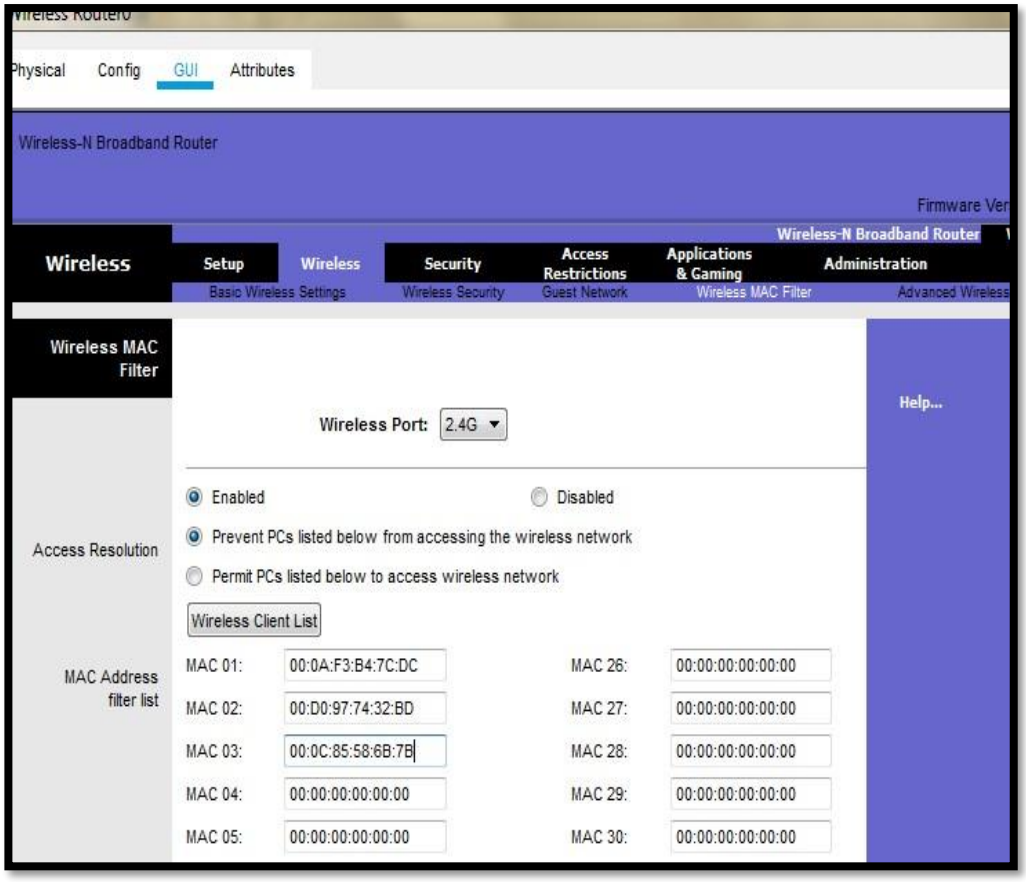




We note the following MAC addresses and convert them to the following form

Component	MAC Address	Converted MAC address
Laptop0	000A.F3B4.7CDC	00:0A:F3:B4:7C:DC
Laptop1	0001.4269.6539	00:01:42:69:65:39
Laptop2	0060.5CB8.B919	00:60:5C:B8:B9:19
TabletPC	000C.8558.6B7B	00:0C:85:58:6B:7B
SmartPhone0	00D0.9774.32BD	00:D0:97:74:32:BD
SmartPhone1	0060.701E.0BE0	00:60:70:1E:0B:E0

Now we add few addresses in the wireless MAC filter of the Wireless Router and then use the given options for either allow or deny the Wireless access



As seen in above screen shot we add the MAC address of Laptop0, TabletPC SmartPhone0 in the list so as to deny them accessing the Wireless network and then save the settings Similarly we can change the setting so that the above devices get wireless connectivity and the remaining devices do not get the wireless connectivity

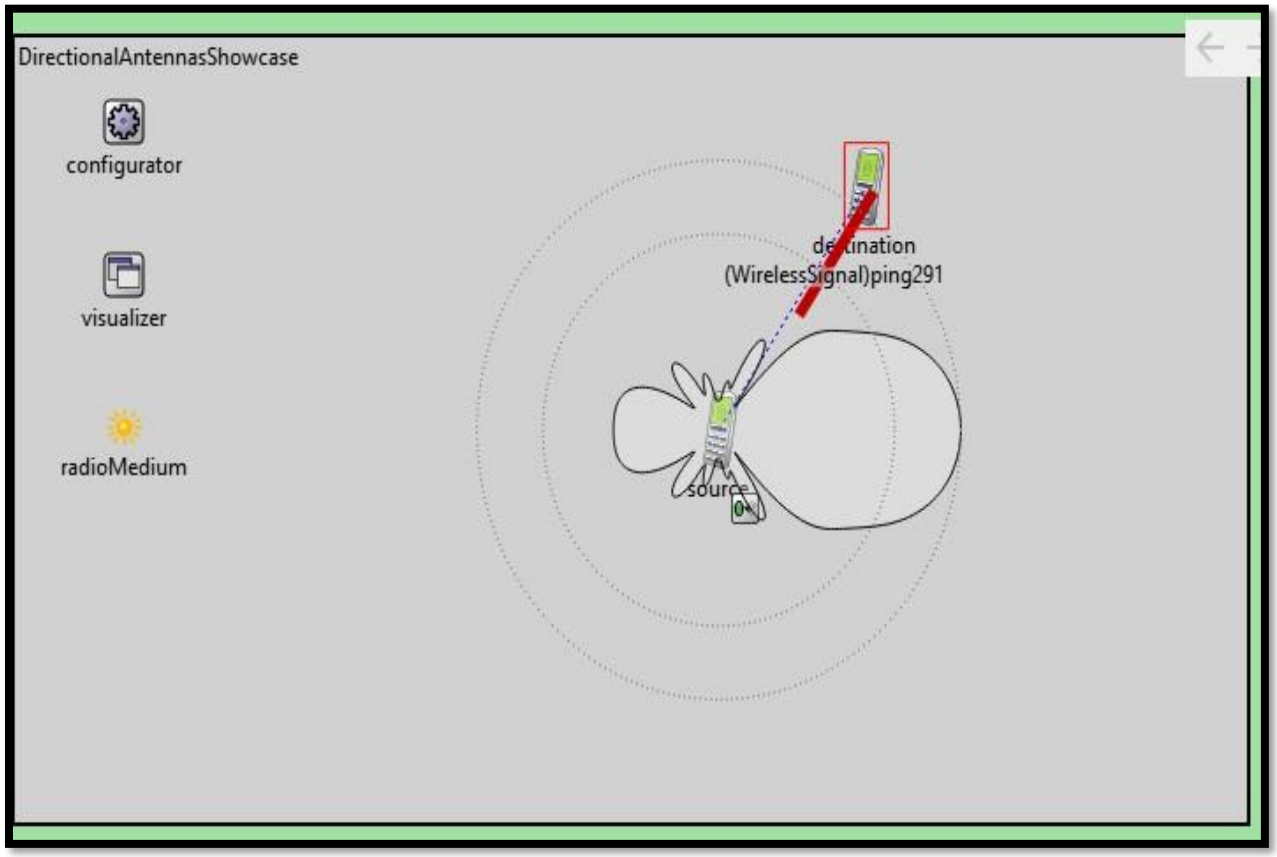
CONCLUSION :-

PRACTICAL NO. 8

AIM :-

THEORY :-

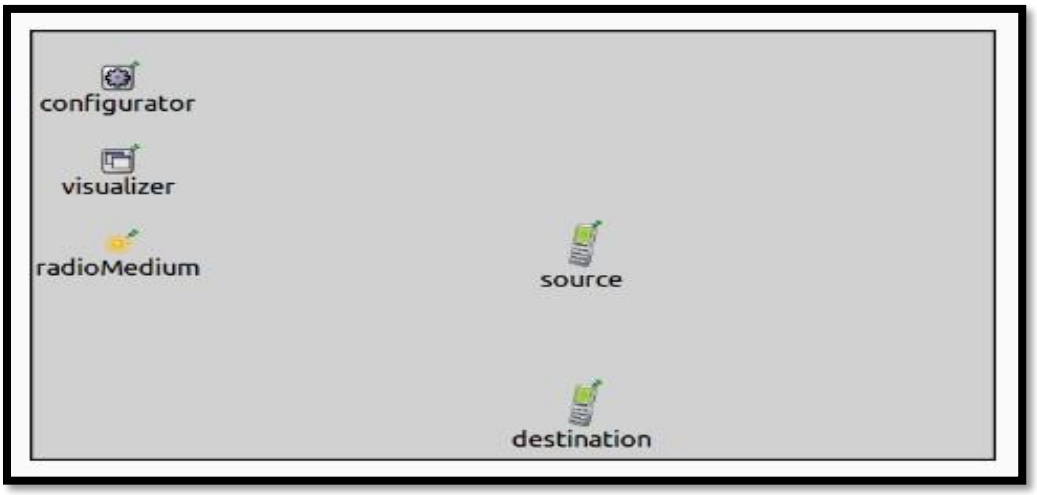
OUTPUT :-


DirectionalAntennasShowcase
configurator
visualizer
radioMedium
(WirelessSignal)ping291
source

Simulate Mobile Adhoc Network with Directional Antenna

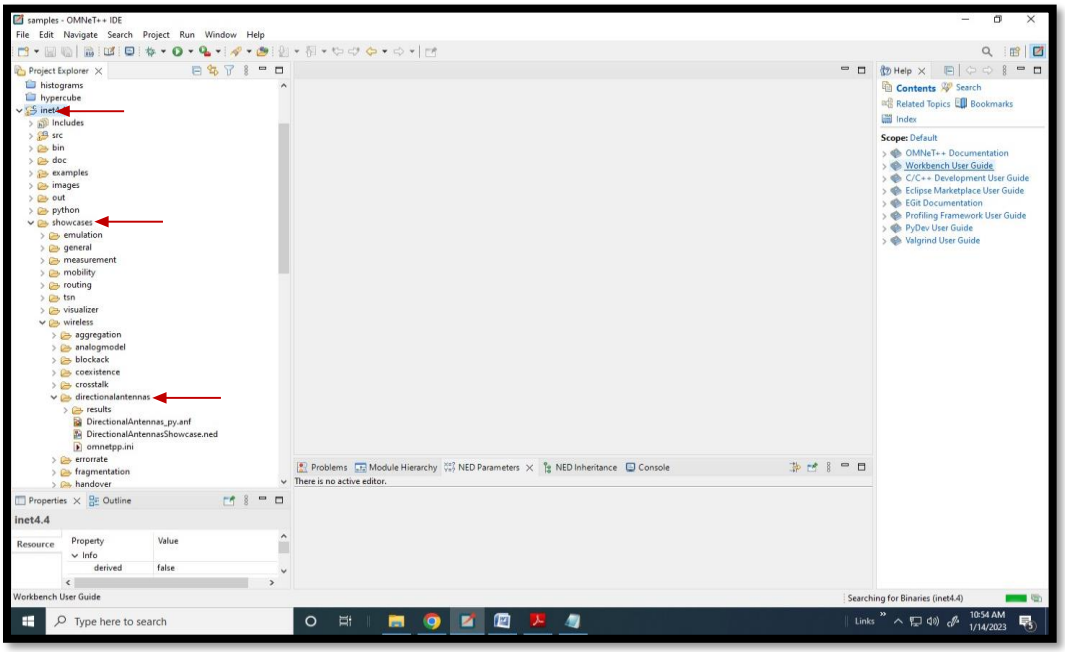
STEPS :-

We use the following network

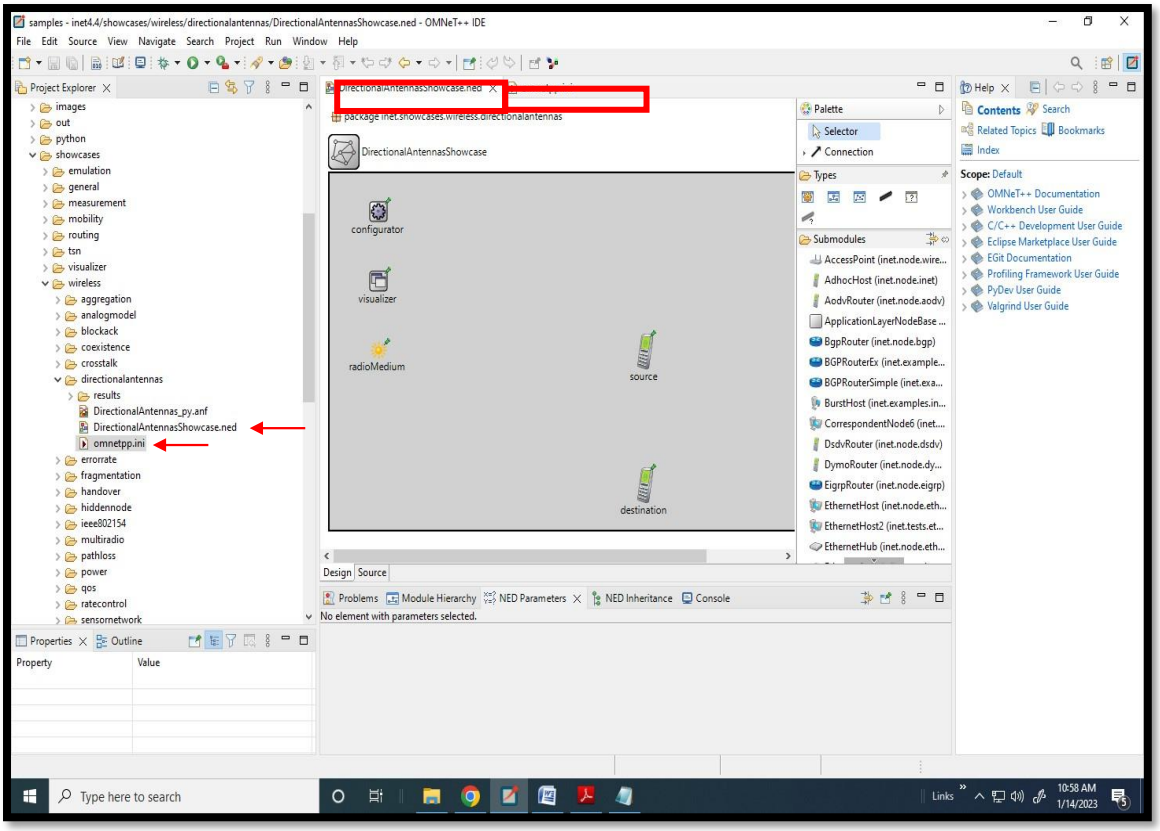


This simulation can be run by using the following steps

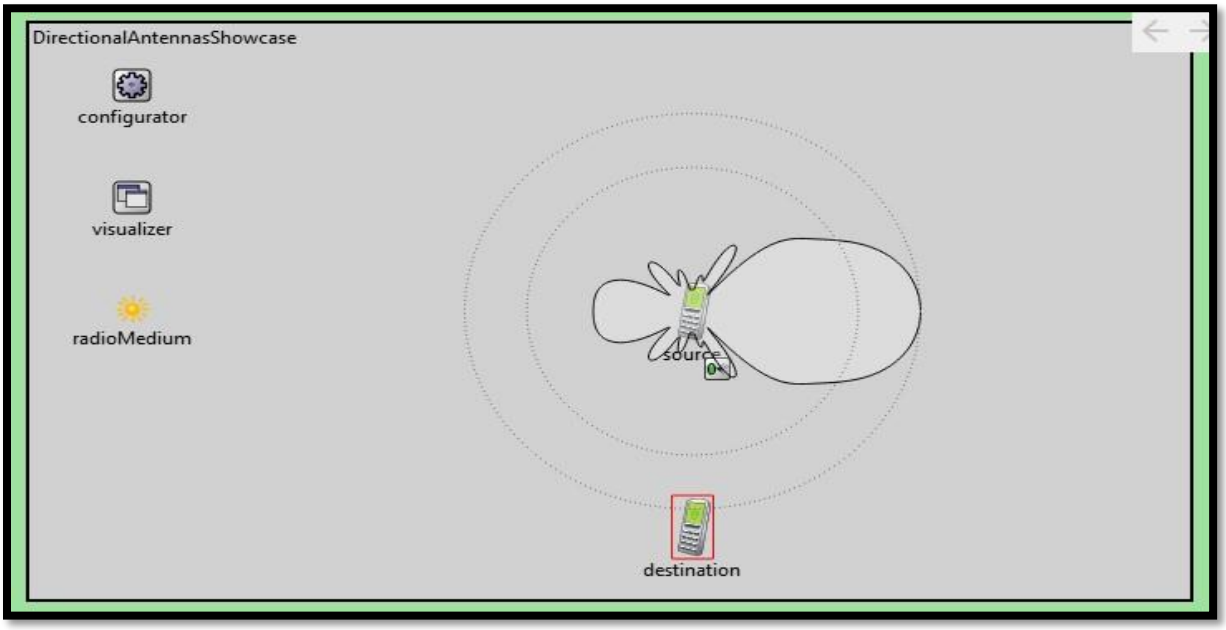
Step 1 : Start the Omnetpp IDE: (Open INET/showcases/directionalantenna)



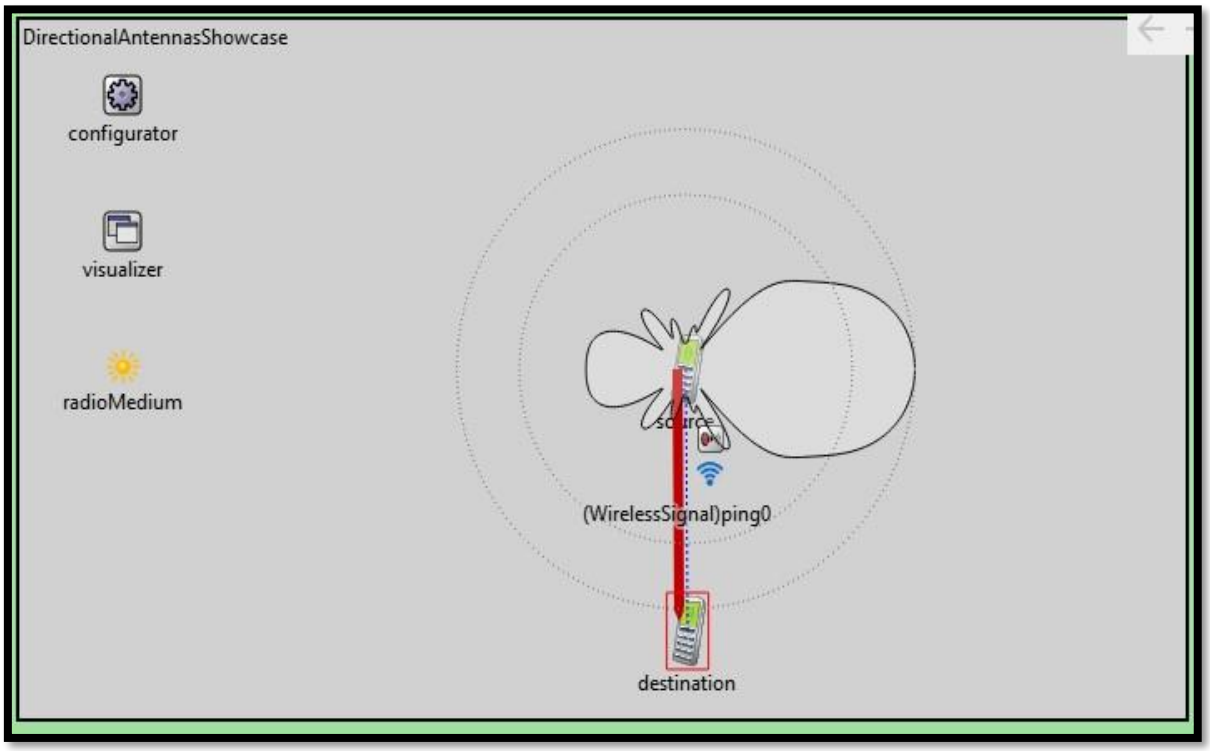
Step 2 : Load the files DirectionalAntennaShowcases.ned and omnett.ini



Step 3 : Start the simulation:



Step 4 : Run the Simulation:



CONCLUSION :-

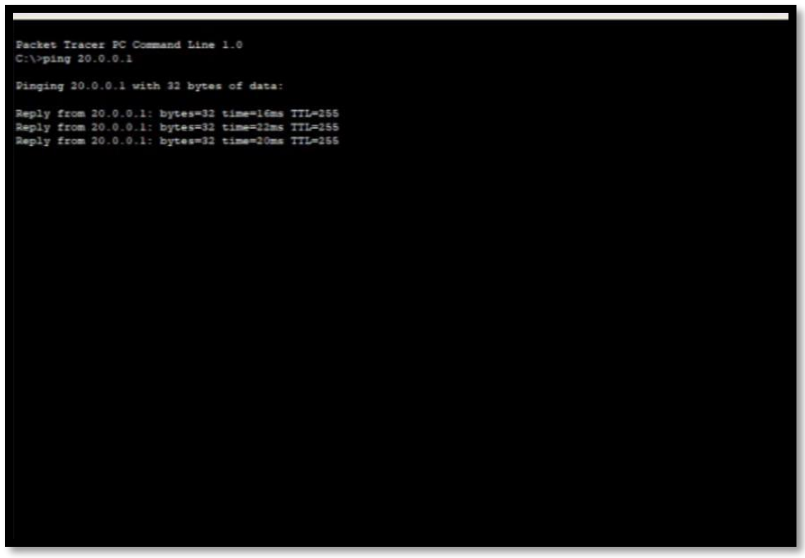
PRACTICAL NO. 9

AIM :-

THEORY :-

OUTPUT :-

1) Send a ping message from smartphone to server



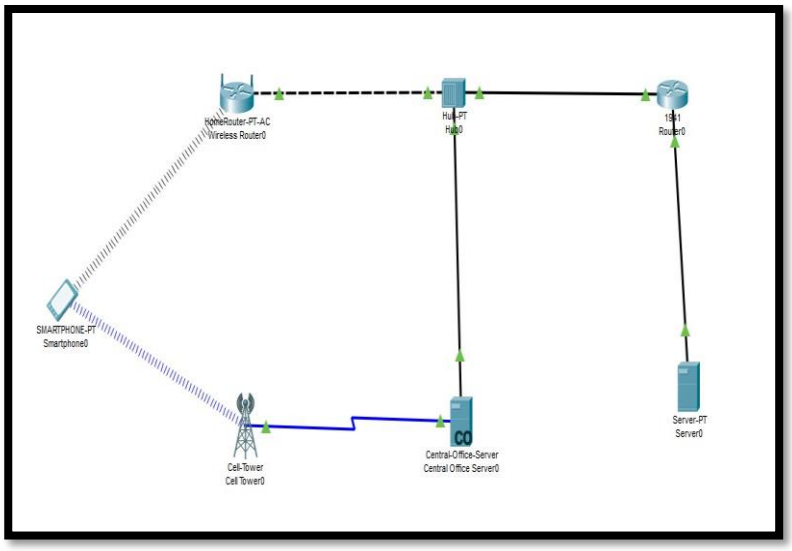
2) Access the web service from the server through the Smartphone

Hence the mobile network was created and connectivity was also verified

Create a mobile network using Cell Tower, Central Office Server, Web browser and Web Server. Simulate connection between them.

STEPS :-

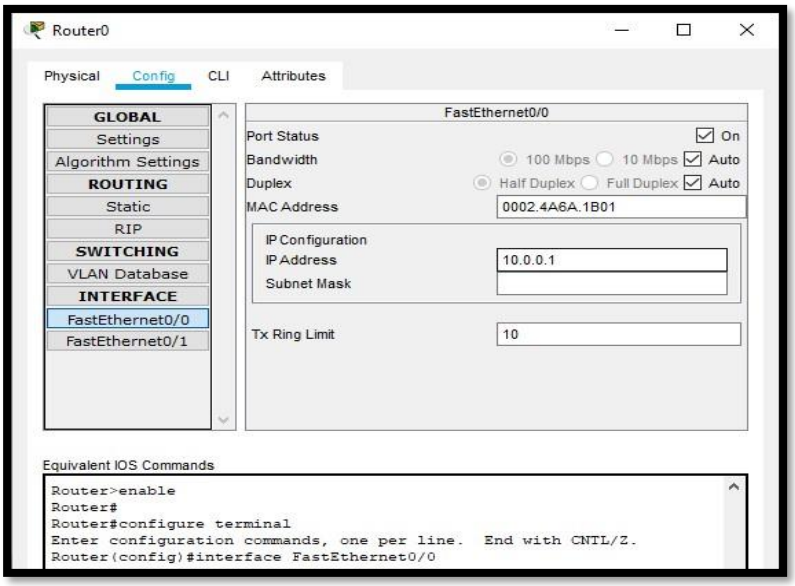
Step 1 : Consider the following topology



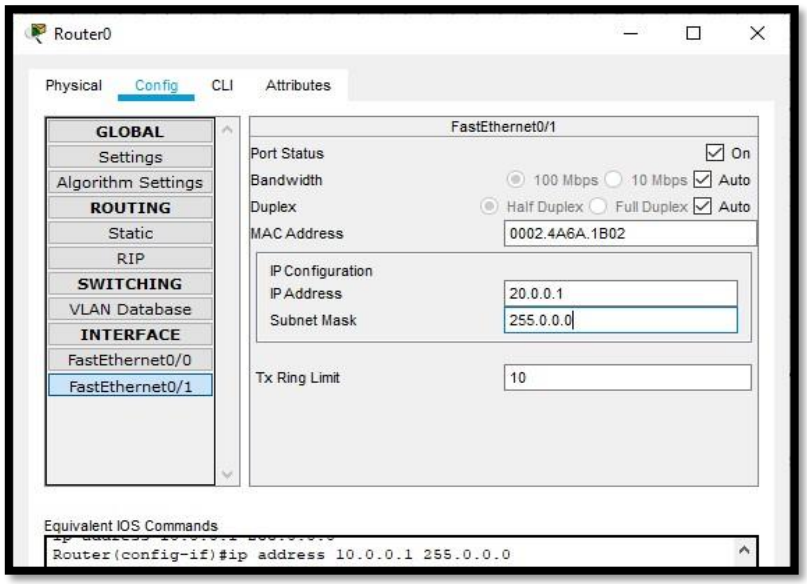
We create the above topology using the Cisco packet tracer

IP address configuration is done for the following devices

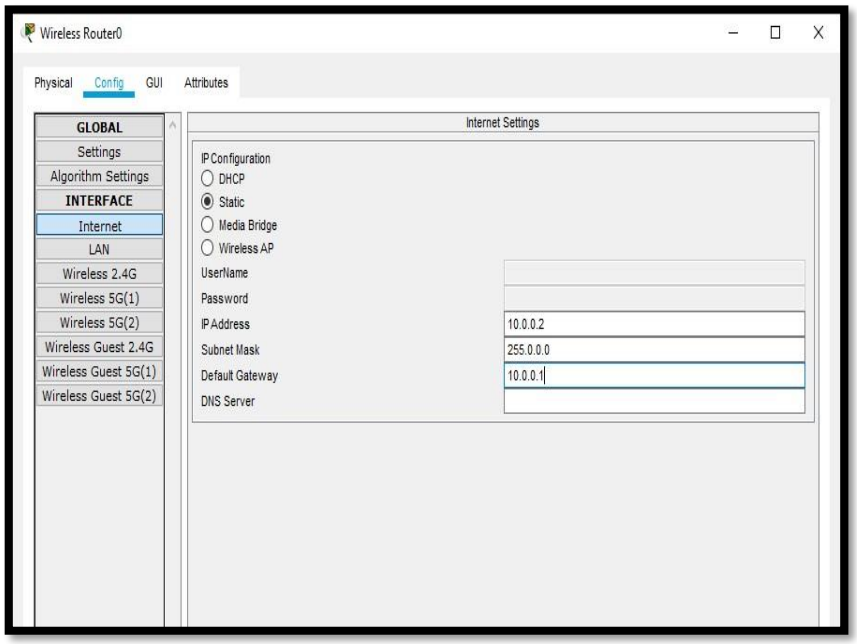
1) Router 0:
   i) Interface: FastEthernet 0/0:



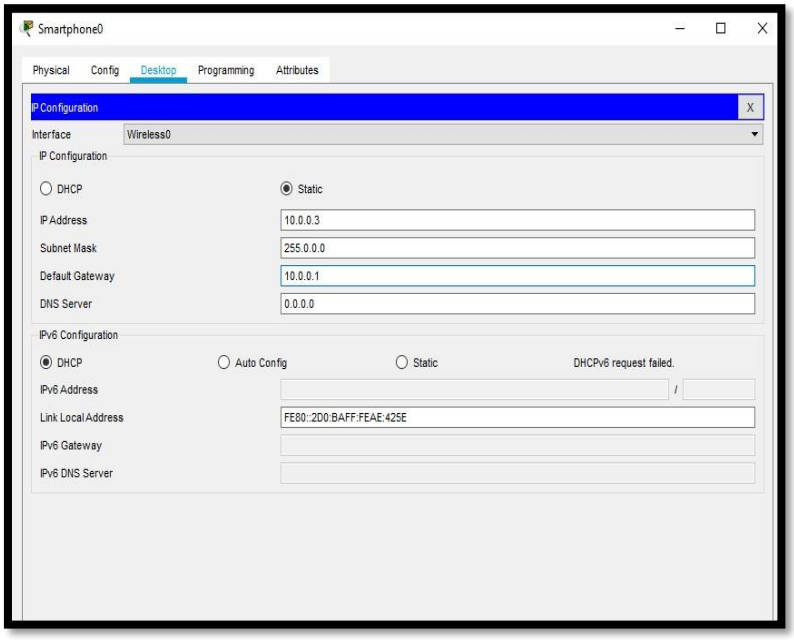
ii) Interface: FastEthernet0/1:



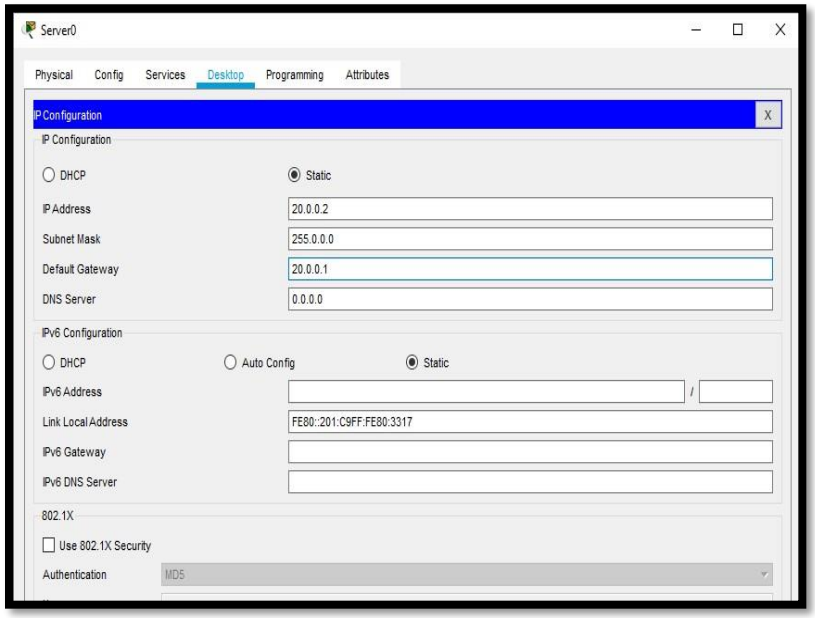
2) Wireless Router:



3) Smartphone:



4) Server:



CONCLUSION :-