Name: Bhavesh Kewalramani

Roll No.: A-25

Section: A

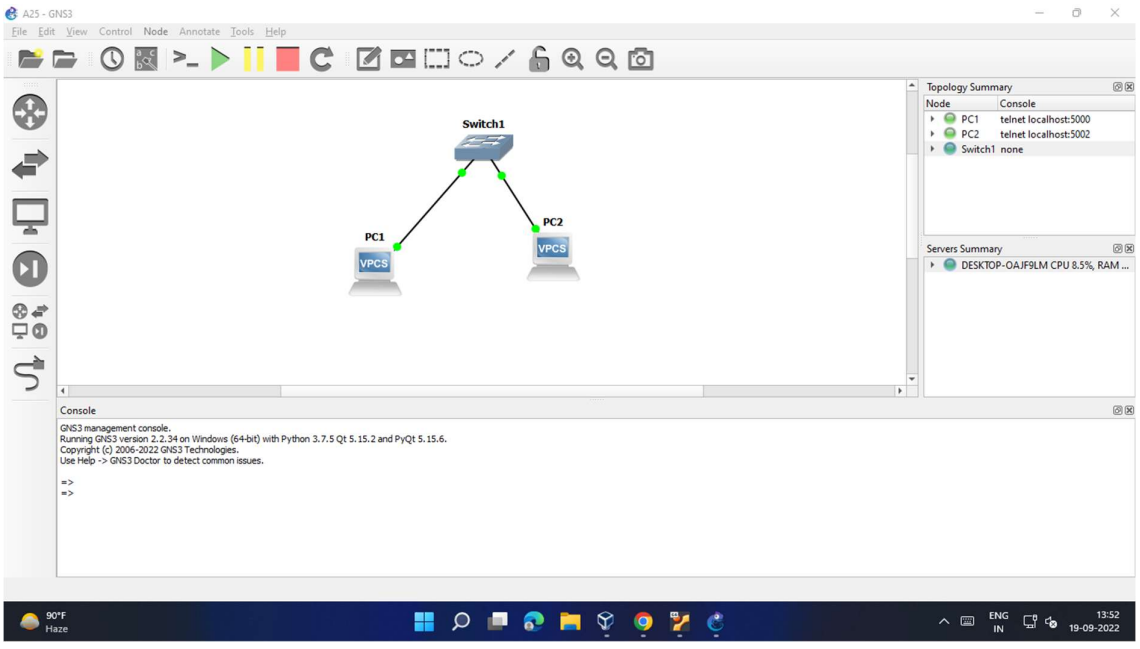
Semester: VII

Shift: I

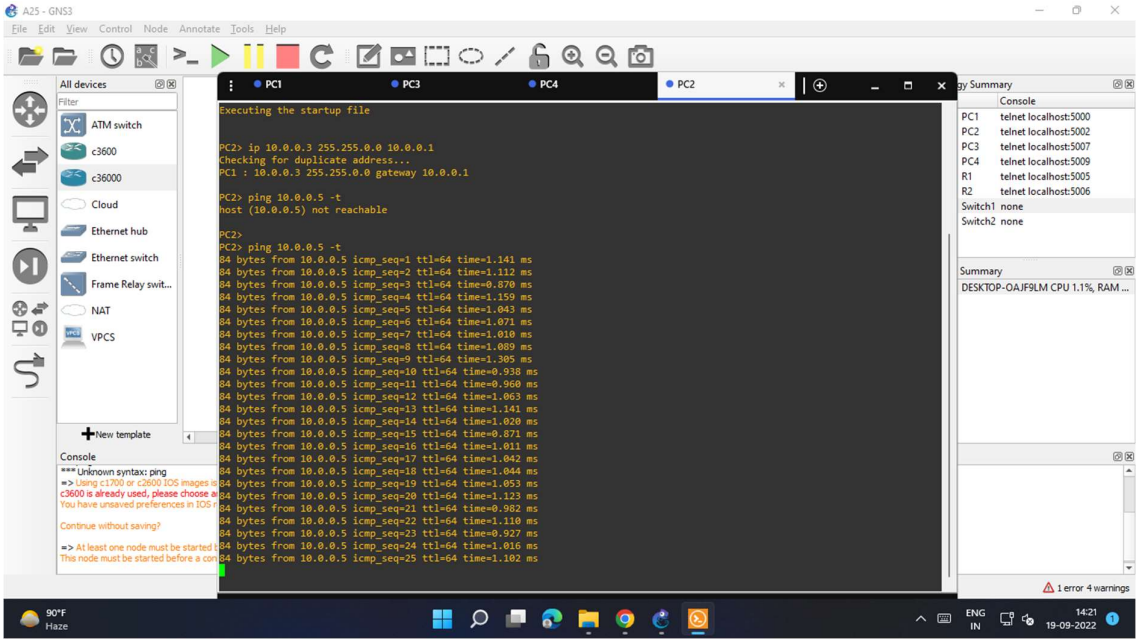
Batch: A1

Aim: Creation of simple network topology using open source network virtualization tool GNS3. Simulating basic network topologies (Tree and Ring) through the GN3 software.

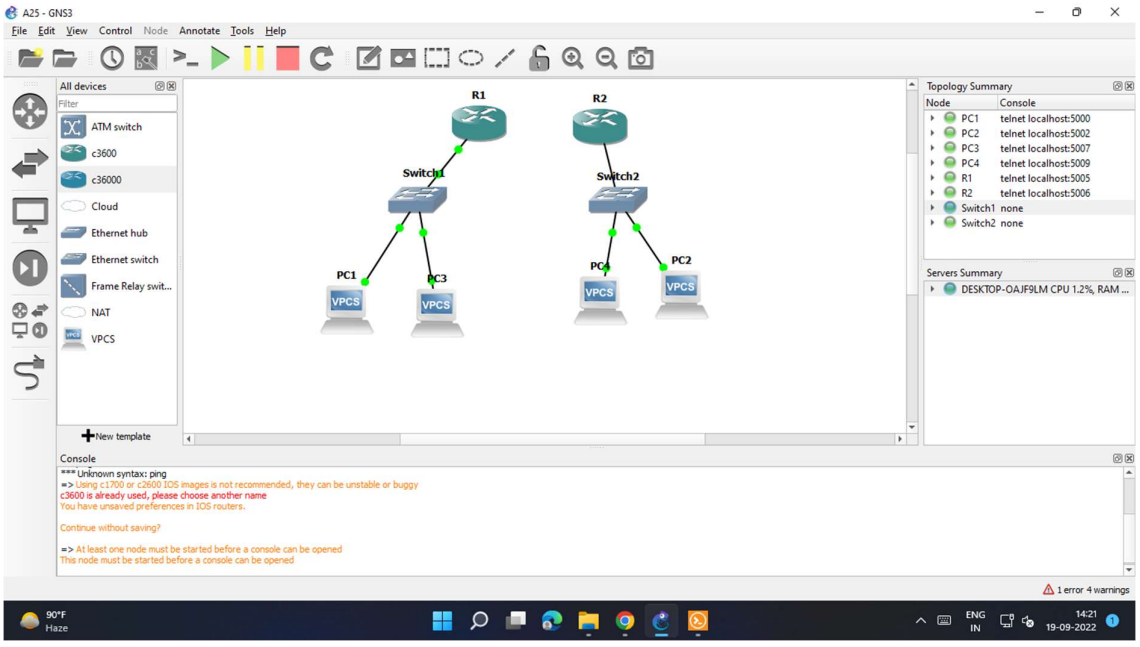
Outputs:



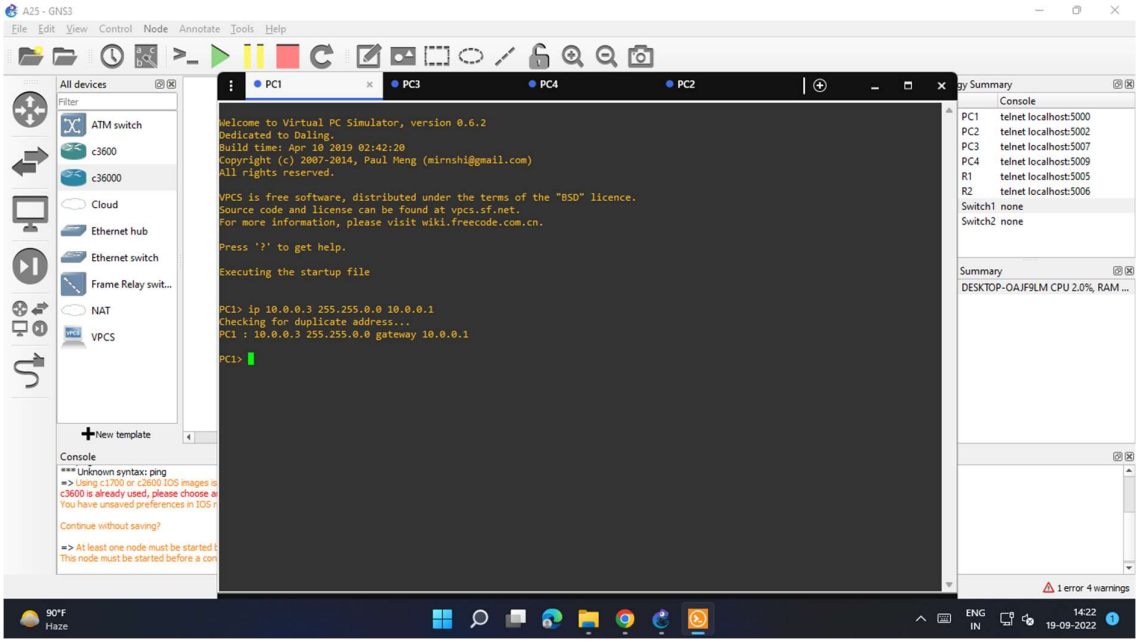
Using Switch to connect two Personal Computers. Here Switch1 is the Switch and PC1 and PC2 are Personal Computers

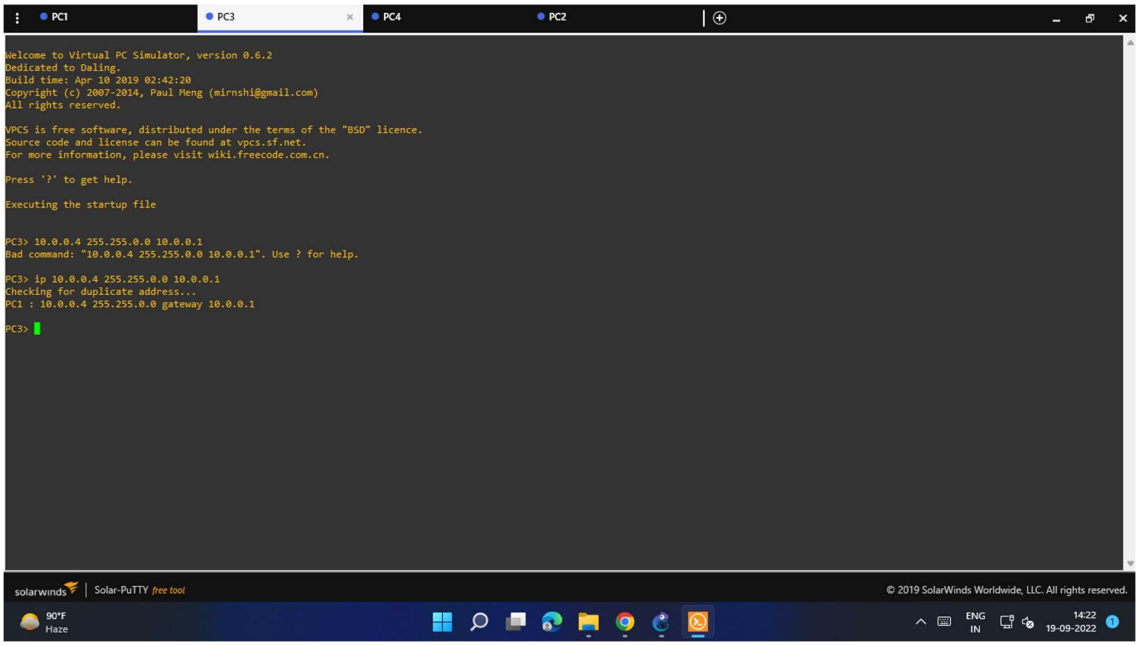


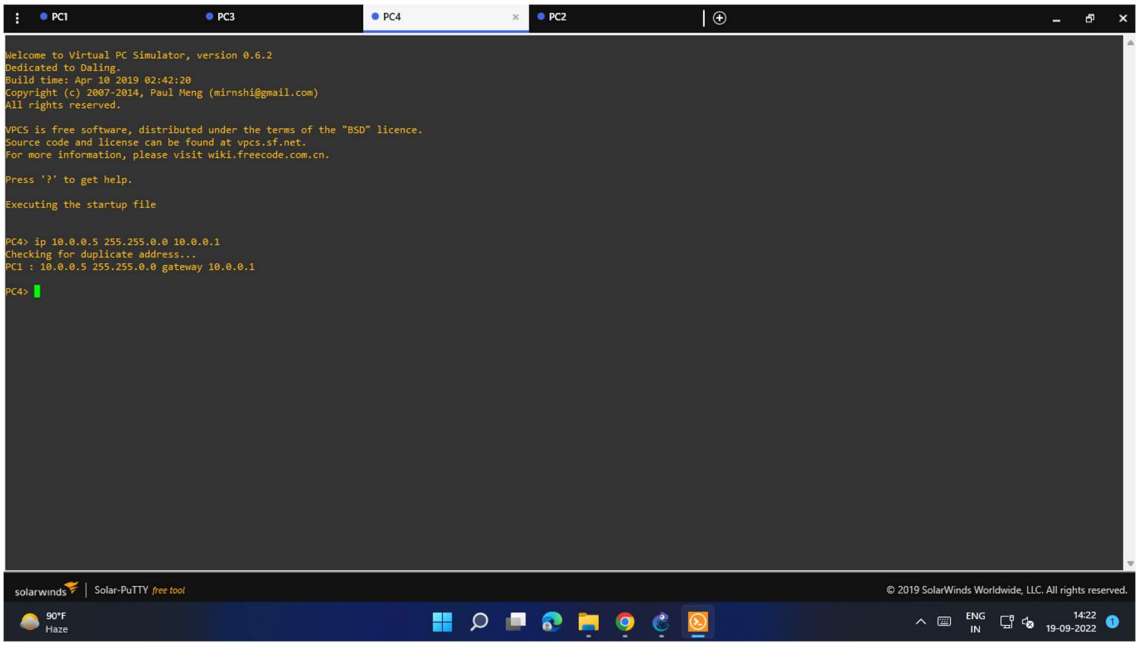
Assigning the IP address to each Personal Computer and using ping command to check if they are reachable or not



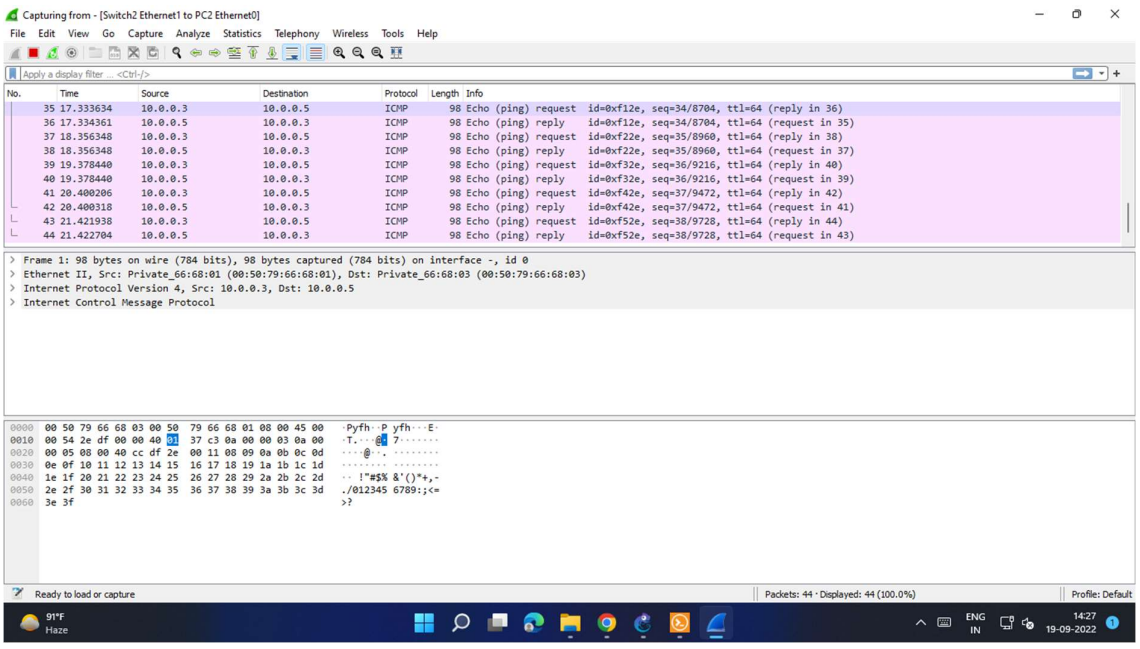
Using Router (R1and R2) to connect the two Personal Computers (PC1-PC3,PC2-PC4) with the help of Switch (Switch1, Switch2)


A25 - GNS3
File Edit View Control Node Annotate Tools Help
All devices
Filter
ATM switch
c3600
c36000
Cloud
Ethernet hub
Ethernet switch
Frame Relay swit...
NAT
VPCS
New template
Console
*** Unknown syntax: ping
PC1
PC3
PC4
PC2
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.
VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.
Press '?' to get help.
Executing the startup file
PC1> ip 10.0.0.3 255.255.0.0 10.0.0.1
Checking for duplicate address...
PC1 : 10.0.0.3 255.255.0.0 gateway 10.0.0.1
PC1>
gy Summary
Console
PC1 telnet localhost:5000
PC2 telnet localhost:5002
PC3 telnet localhost:5007
PC4 telnet localhost:5009
R1 telnet localhost:5005
R2 telnet localhost:5006
Switch1 none
Switch2 none
Summary
DESKTOP-OAJF9LM CPU 2.0%, RAM ...
1 error 4 warnings
90°F
Haze
ENG
IN
14:22
19-09-2022

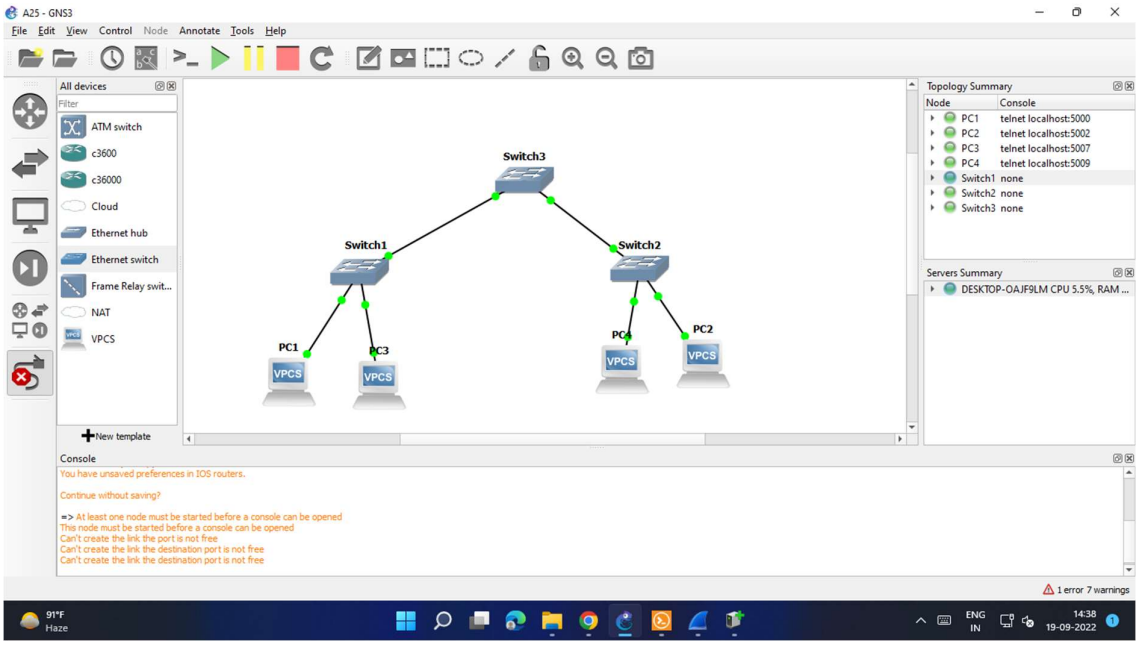

PC1
PC3
PC4
PC2
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.
VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.
Press '?' to get help.
Executing the startup file
PC3> 10.0.0.4 255.255.0.0 10.0.0.1
Bad command: "10.0.0.4 255.255.0.0 10.0.0.1". Use ? for help.
PC3> ip 10.0.0.4 255.255.0.0 10.0.0.1
Checking for duplicate address...
PC1 : 10.0.0.4 255.255.0.0 gateway 10.0.0.1
PC3>
solarwinds
Solar-PuTTY free tool
© 2019 SolarWinds Worldwide, LLC. All rights reserved.
90°F
Haze
ENG
IN
14:22
19-09-2022



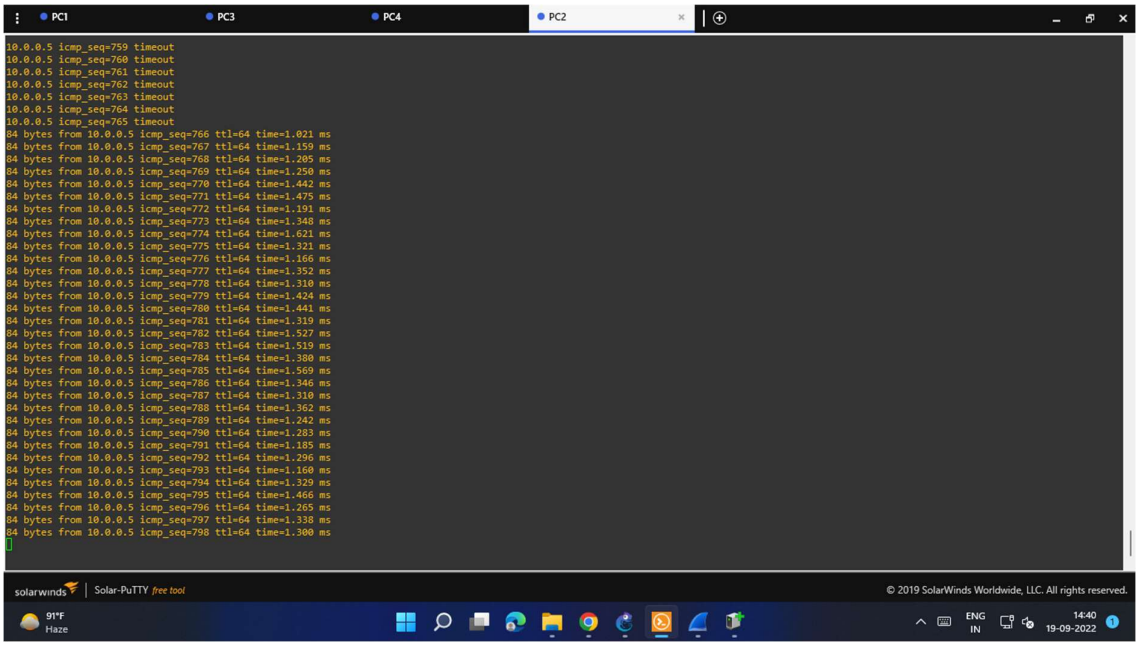
Assigning the IP address to each Personal Computer and using ping command to check if they are reachable or not



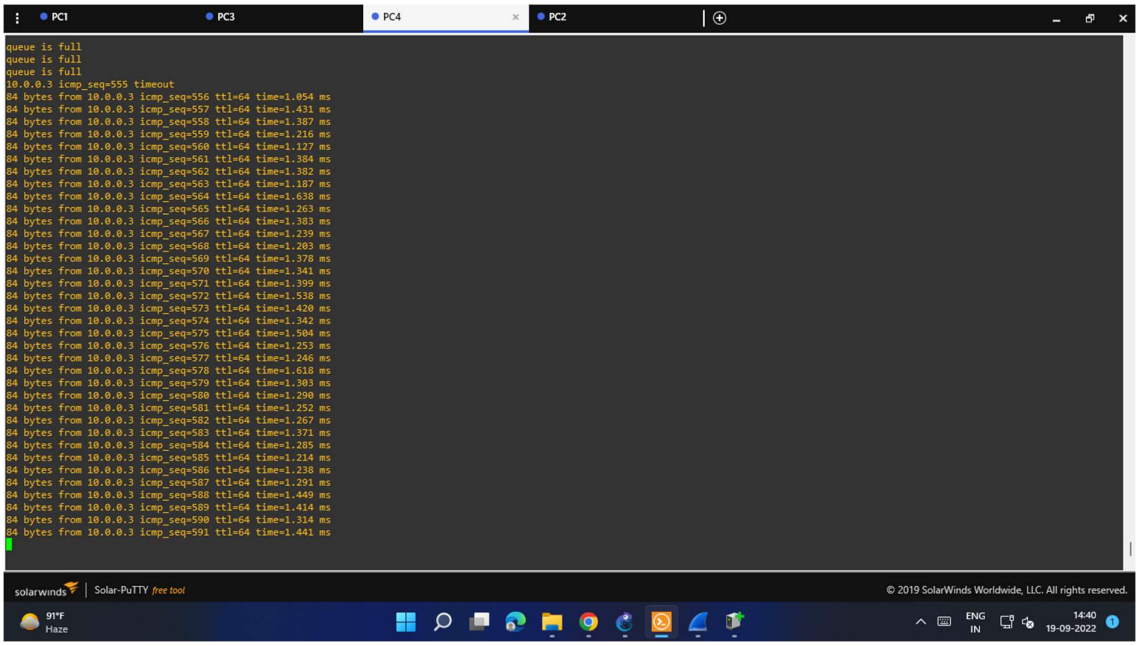
Using Wireshark Software to keep a check on the requests and replies made by one Personal Computer to Another



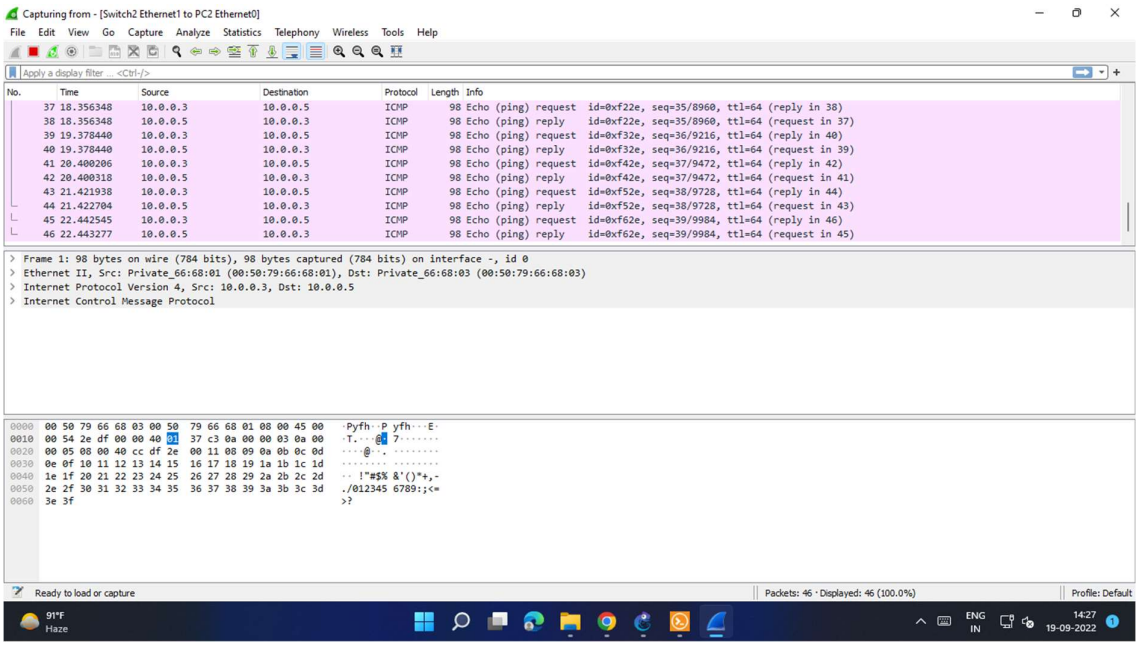
Creating a Tree Topology using Personal Computers and Switches



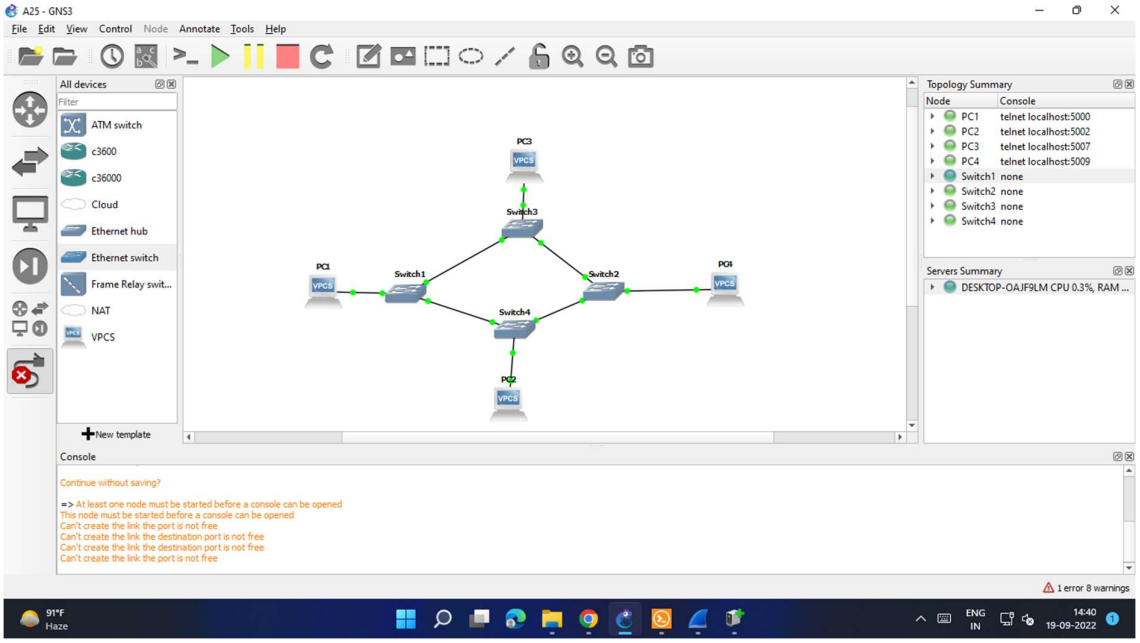
Assigning the IP address to each Personal Computer and using ping command to check if they are reachable or not. Here the ping command is used between PC1 and PC2.



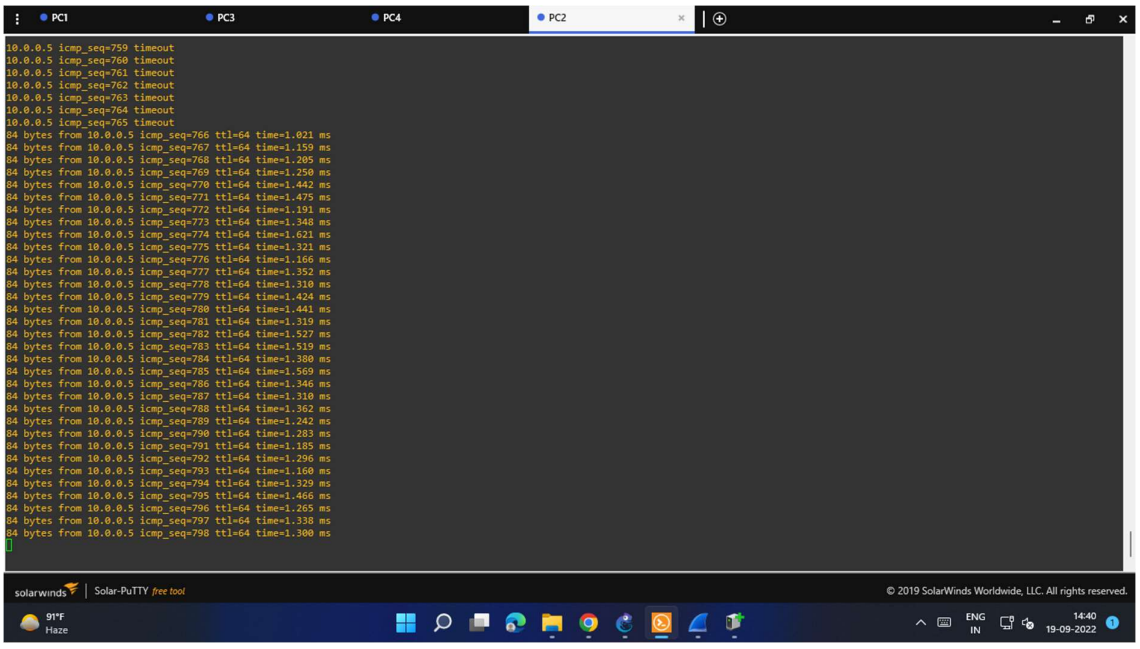
Here the ping command is used between PC3 and PC4



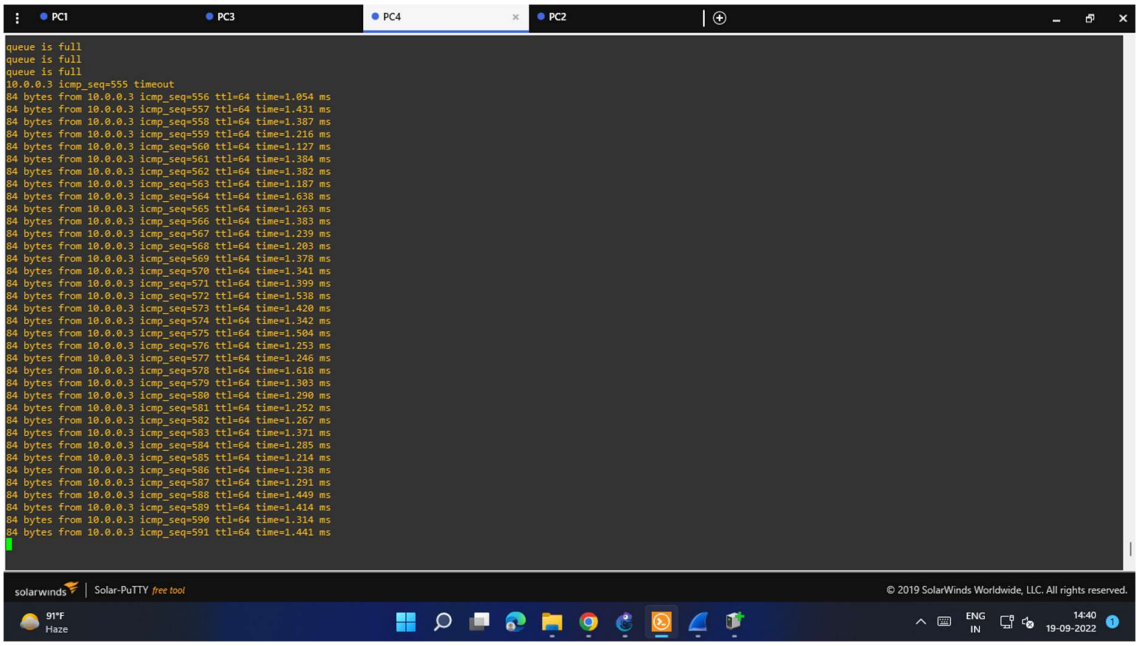
Again the Wireshark is used to keep a check on requests and replies made



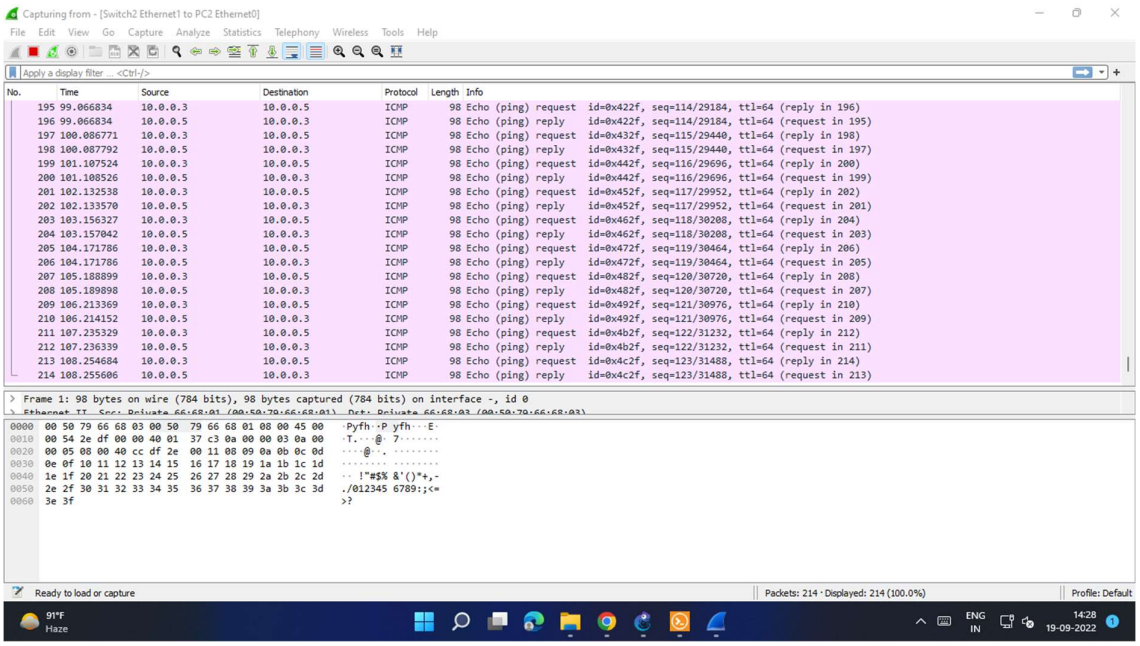
Here Ring Topology has been implemented using Personal Computers and Switches



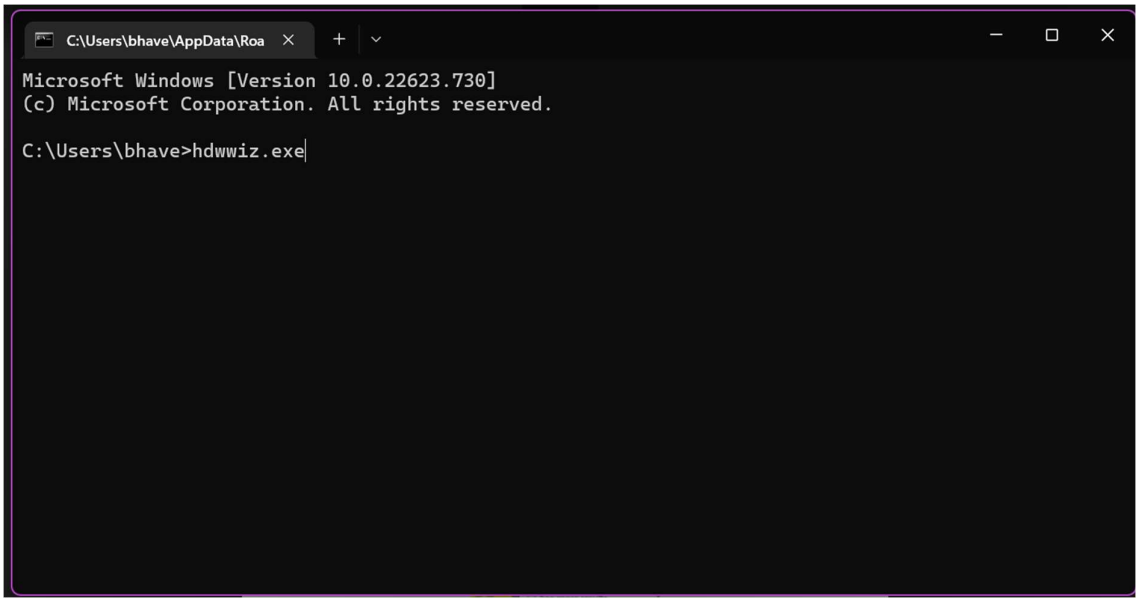
After assigning the IP address the ping command is used to connect two computers



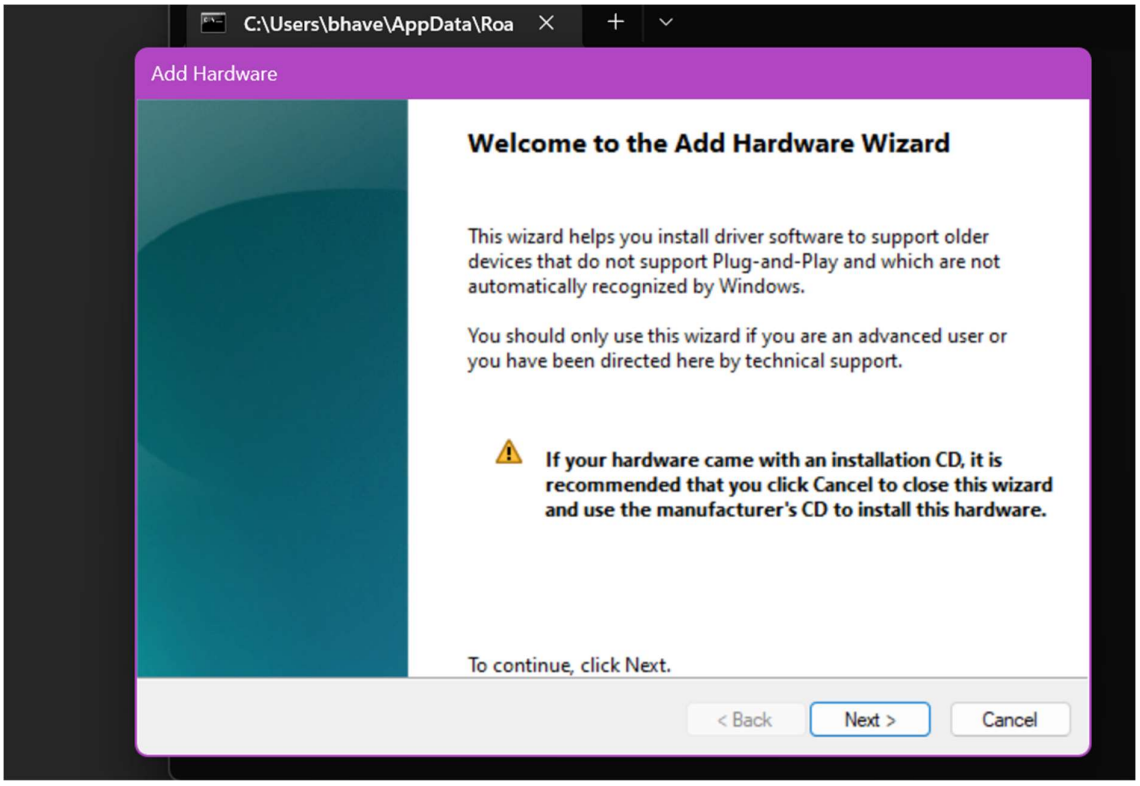
Here too ping command is used to connect two computers



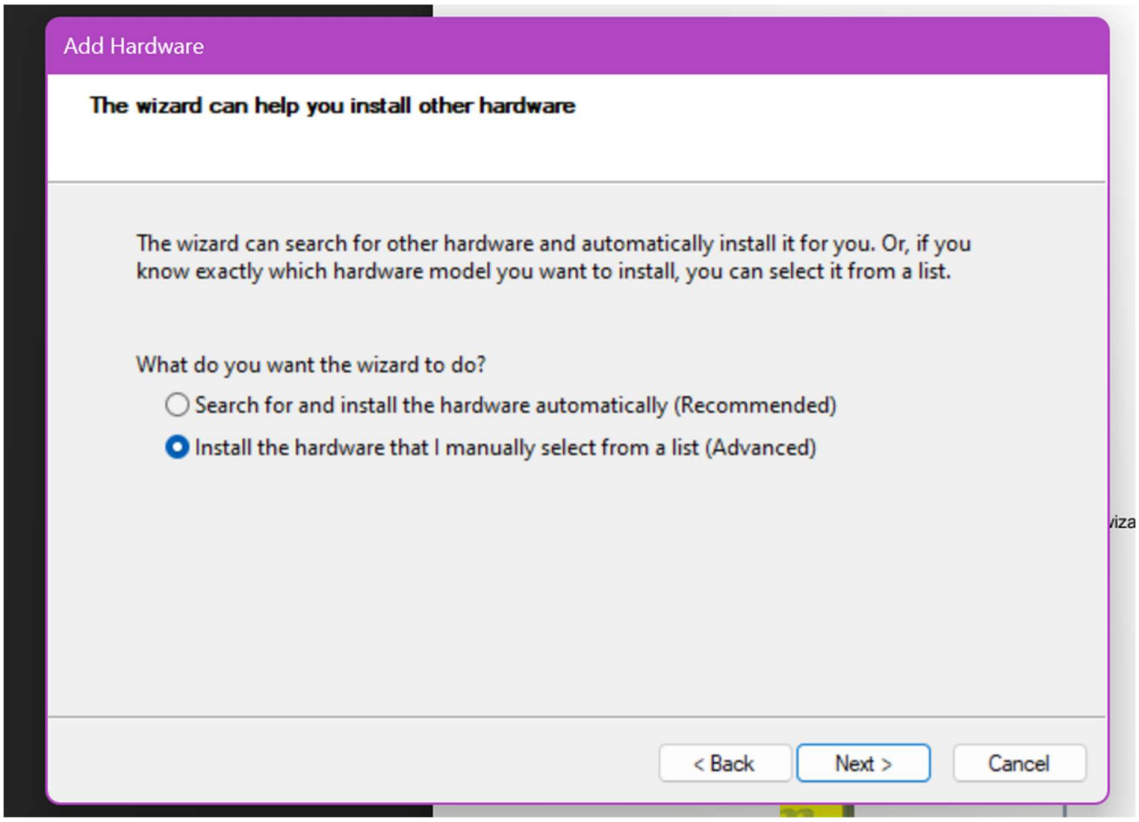
The Wireshark helps us to find check the requests and replies made



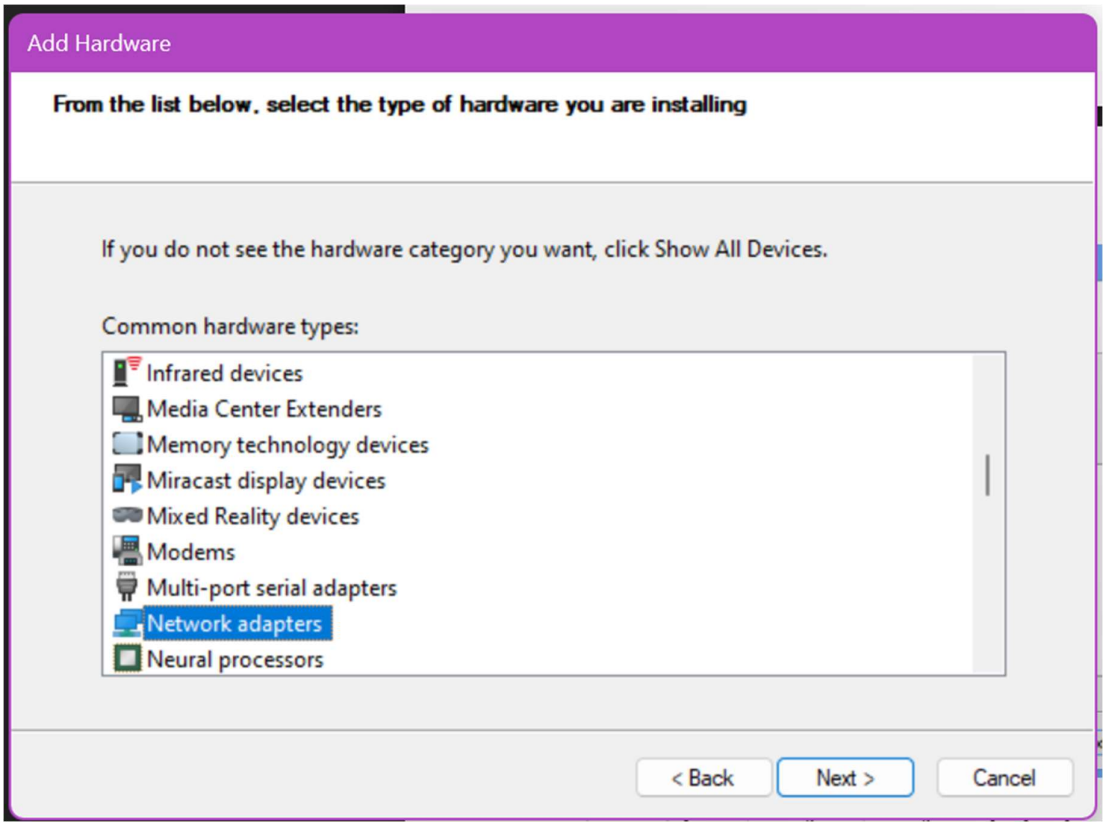
The command is used to access the hardware devices of the personal computers



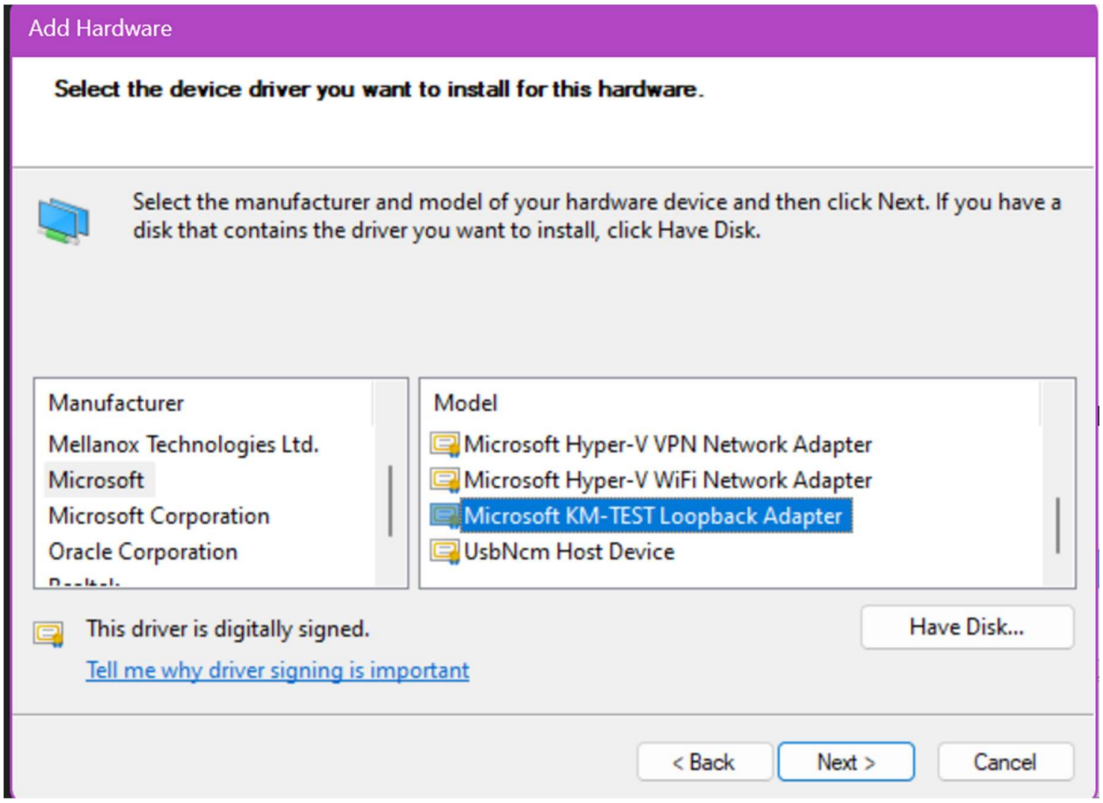
After the command is executed, it opens a hardware wizard



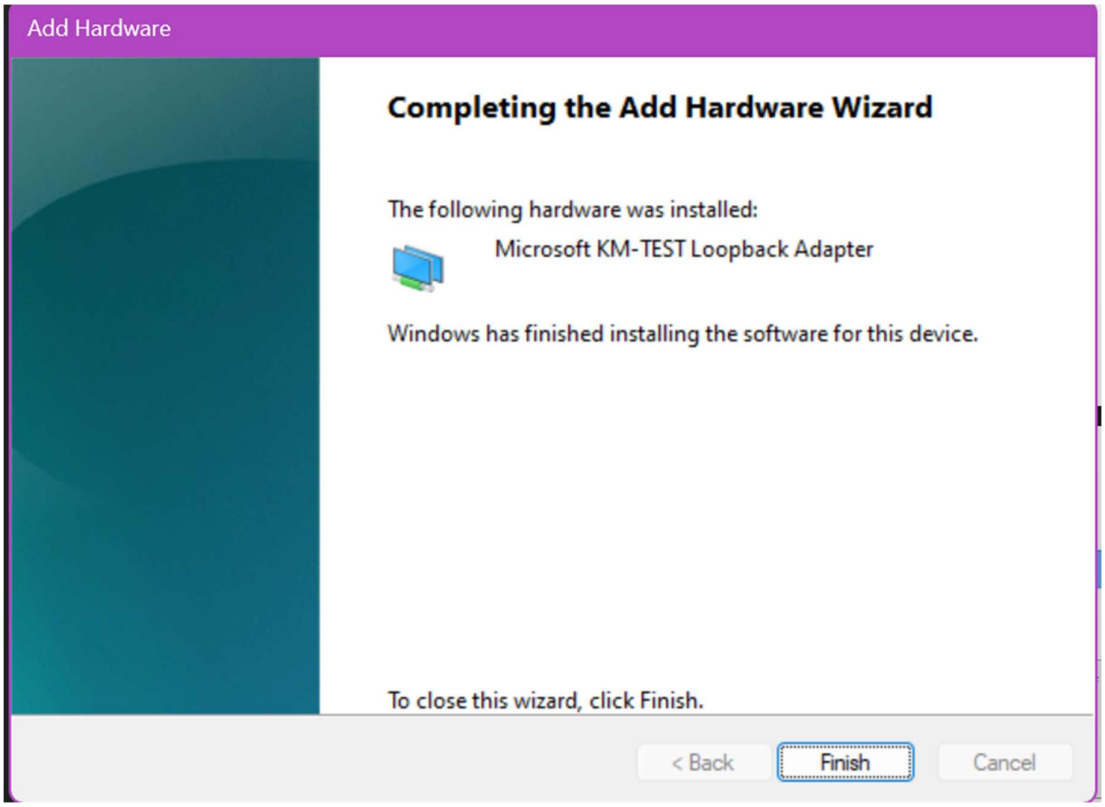
We want to install an external hardware so we choose the option to install it manually and press next



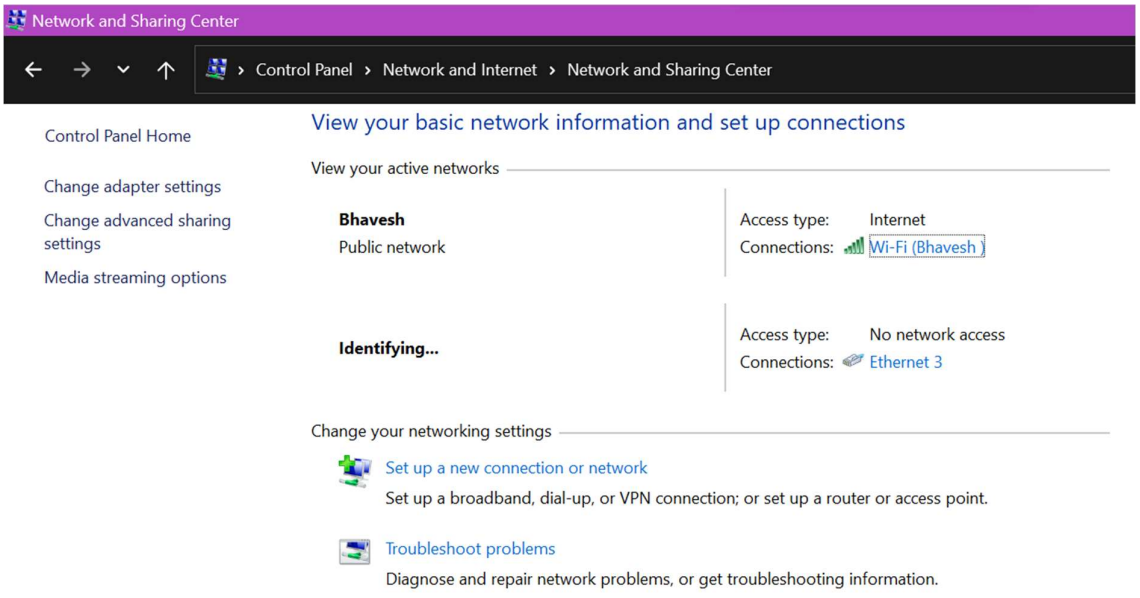
We then select network adapters options and click next



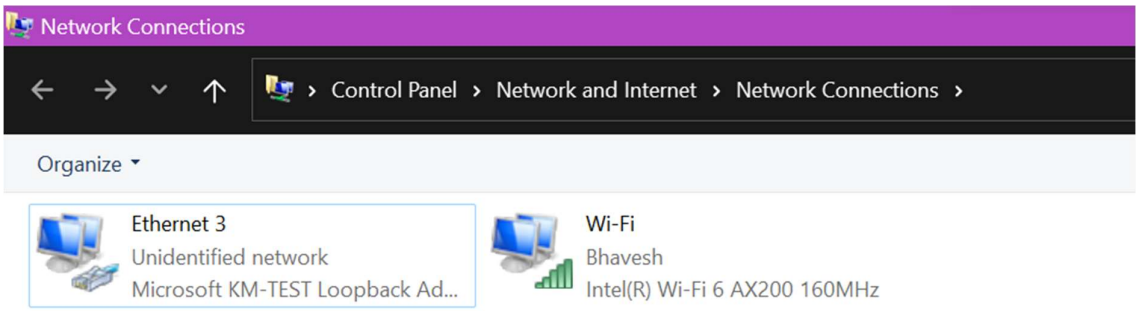
After that we select the manufacturer and then select Microsoft KM Test Loopback Adapter



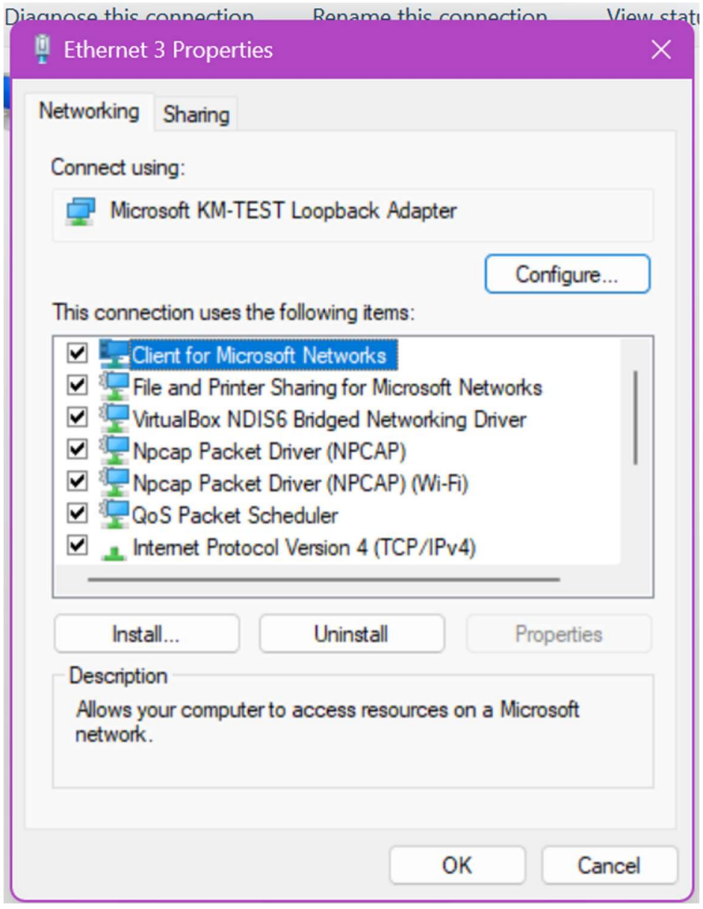
We then finish installing it on our computer



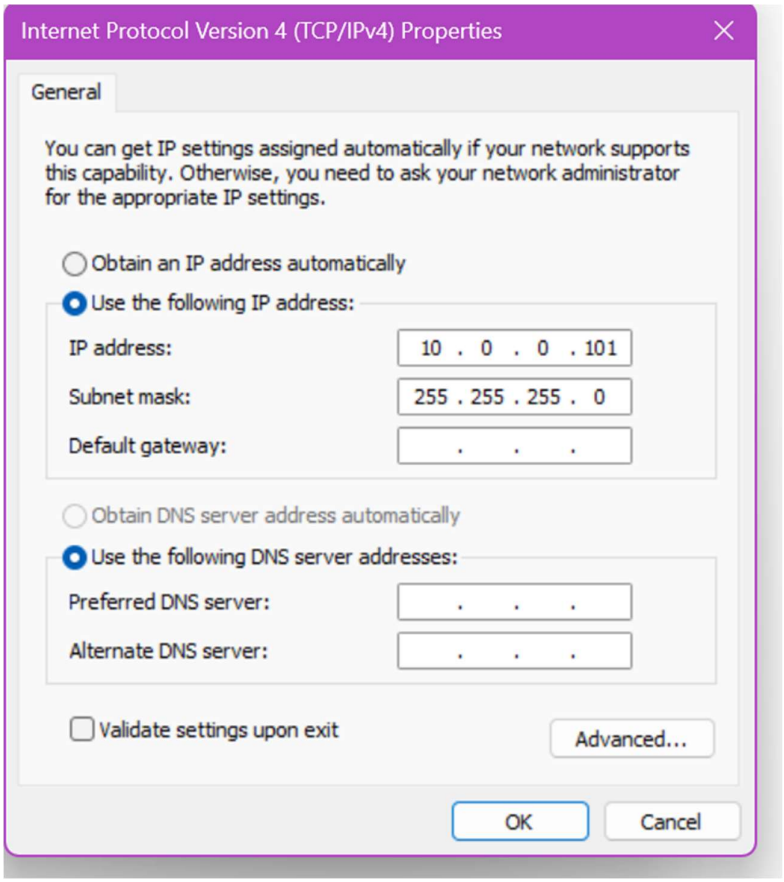
In the control panel, we navigate to Network and Sharing Center. There we can find this adapter



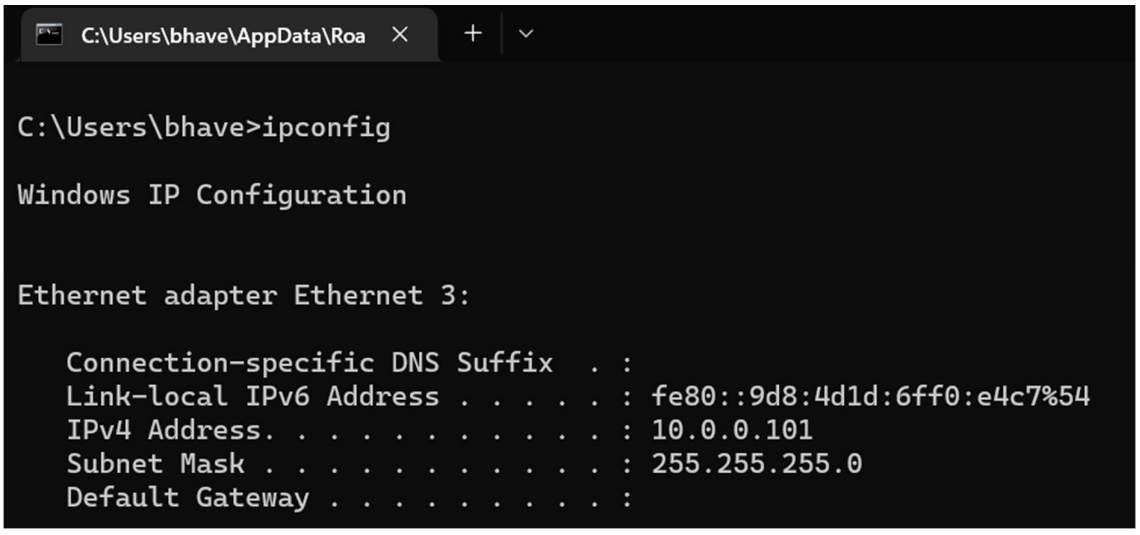
We then assign it an IP address to use it in GSN3



We can see the options provided then find the option of IP address



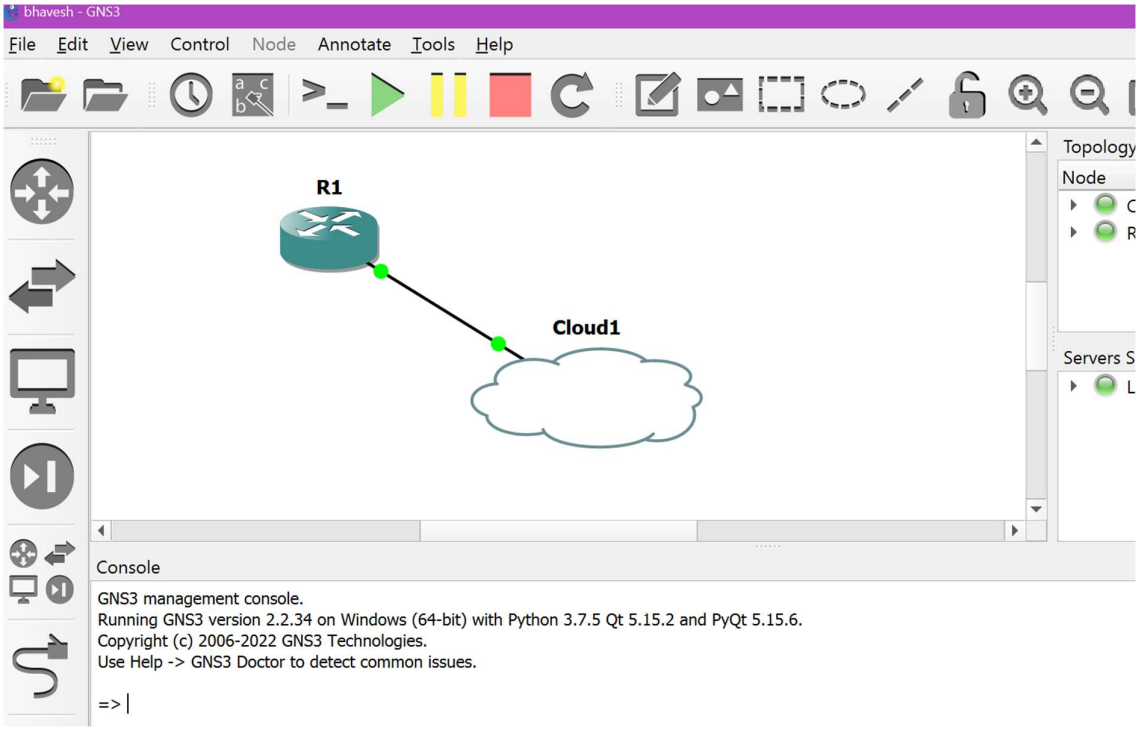
We then choose that option and then assign the IP address with all other required details



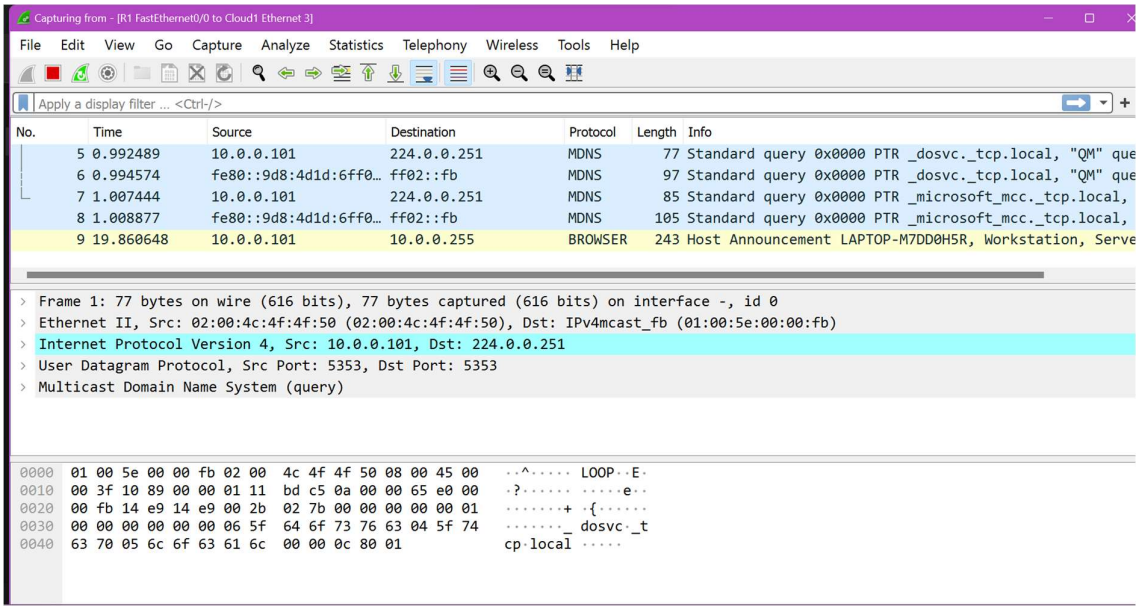
Using ipconfig command we can check the connections made by the computer to other networks

```
C:\Users\bhave>ping 10.0.0.101

Pinging 10.0.0.101 with 32 bytes of data:
Reply from 10.0.0.101: bytes=32 time<1ms TTL=128
Reply from 10.0.0.101: bytes=32 time<1ms TTL=128
Reply from 10.0.0.101: bytes=32 time<1ms TTL=128
Reply from 10.0.0.101: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.0.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\bhave>
```

We ping to that network to see if it is reachable or not



In GSN3, we now implement a cloud using that Ethernet with help of Router



Using Wireshark we can check the requests and replies and all other information

Conclusion:

In this practical, we implemented various network topologies like Tree and Ring using the GSN3 Software. We also saw their various applications in real life. We also added our own local PC in GSN3 through Microsoft Loopback Adapter.