RAMANUJAN COLLEGE

Academic Year: 2023-24

Department: Computer Science

Name of Assignment: Computer Networks

Full Name: Om krishna Gupta

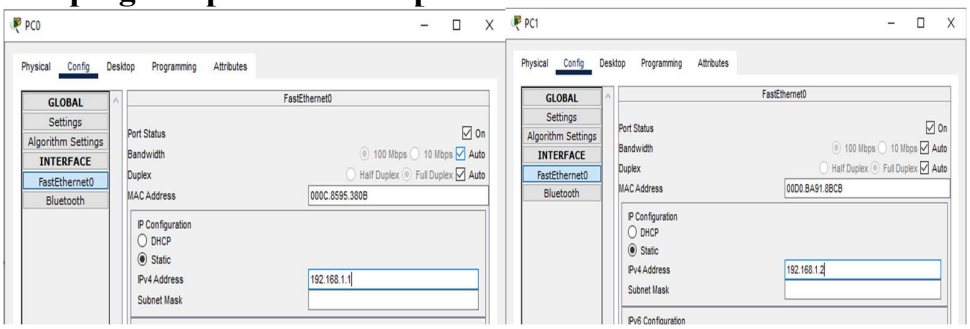
Roll No.: 20221471

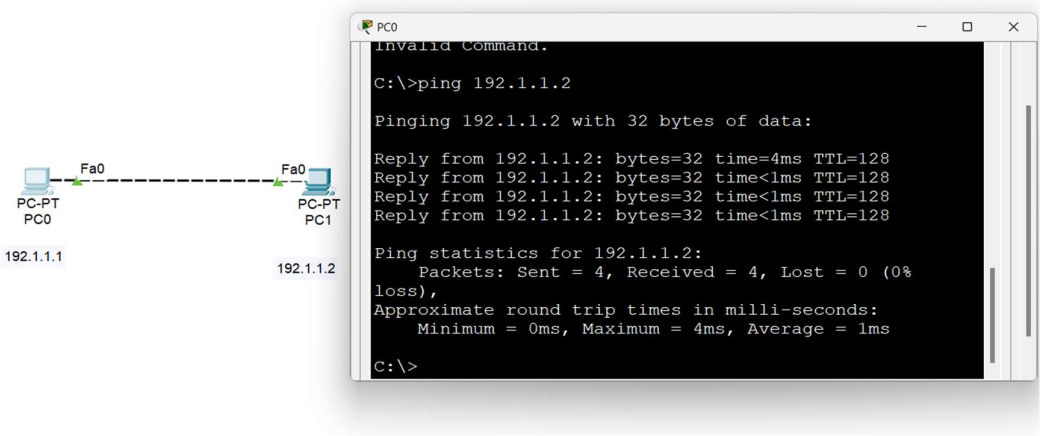
Exam Roll No: 22020570047

Student Sign: **Professor Sign:**

2. To Study And Perform PC to PC Communication

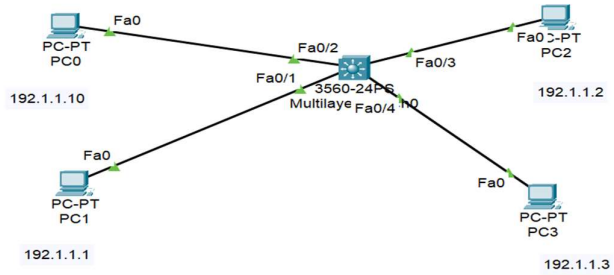
a. Connect two PCs with a wire and set IP addresses on both of them and ping one pc to another pc.

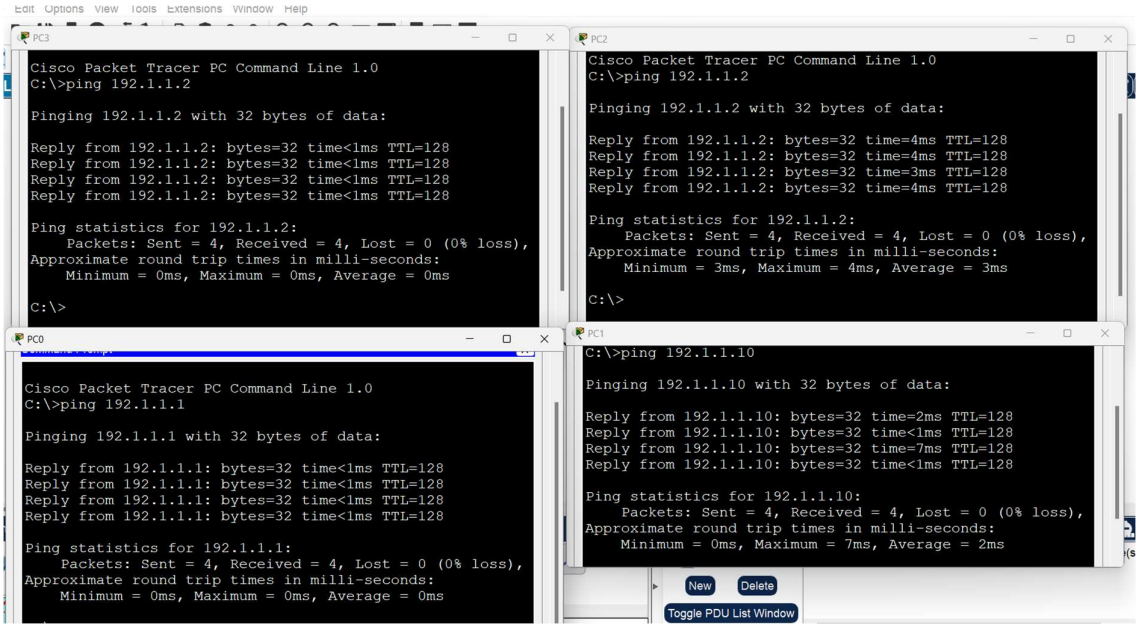




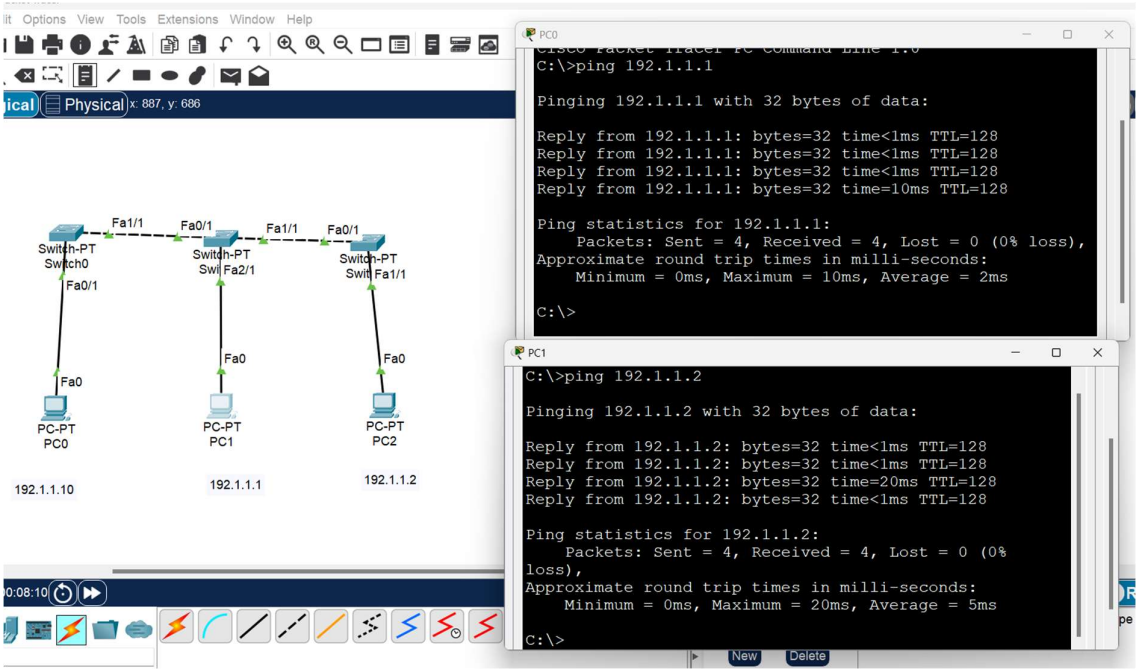
3. Create a star topology using hubs and switch

Ans. First create 4 PCs centered at a switch and then connect them with wire and then ping each PC to ensure that the connection is established.



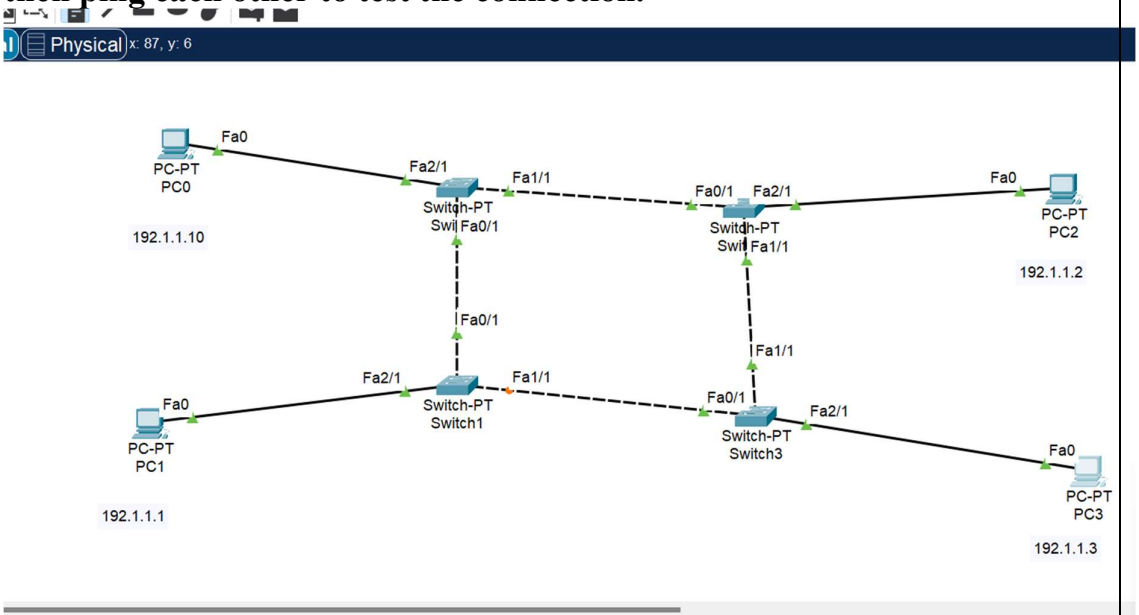


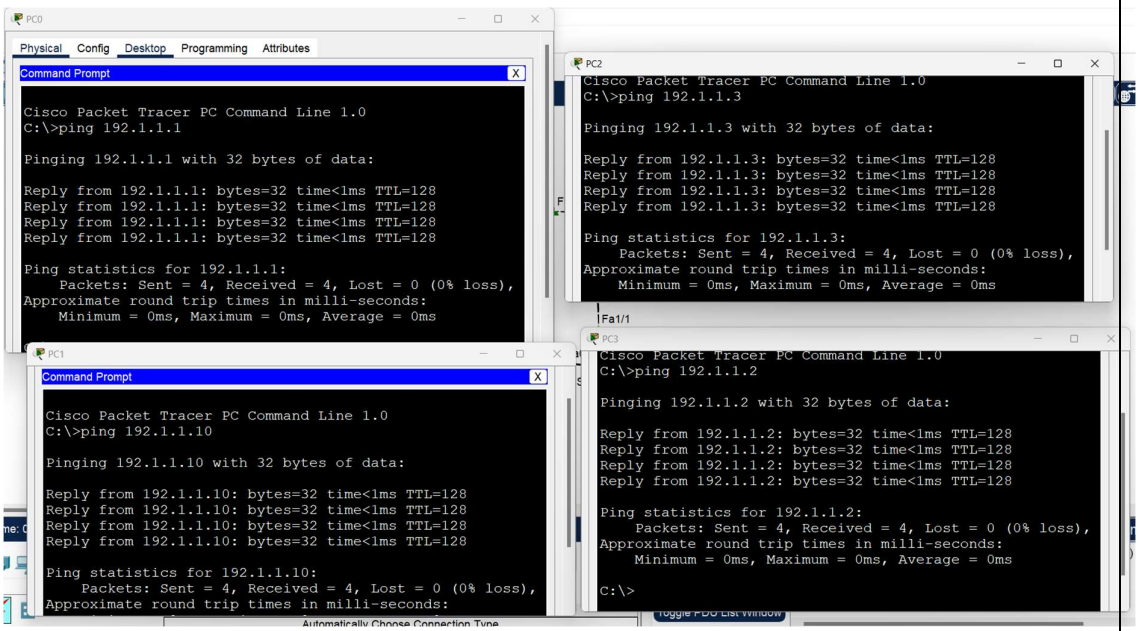
4. **To create Bus, Ring, Tree, hybrid and Mesh**
   Ans.
   a. **Bus topology**
      Ans:- Create three switches and three pcs and connect them according to the figure and set the ip address on every pc and then ping each other.



b. Ring Topology

Ans. Create four switches and four pcs and connect them according to the figure and then set ip address accordingly and then ping each other to test the connection.



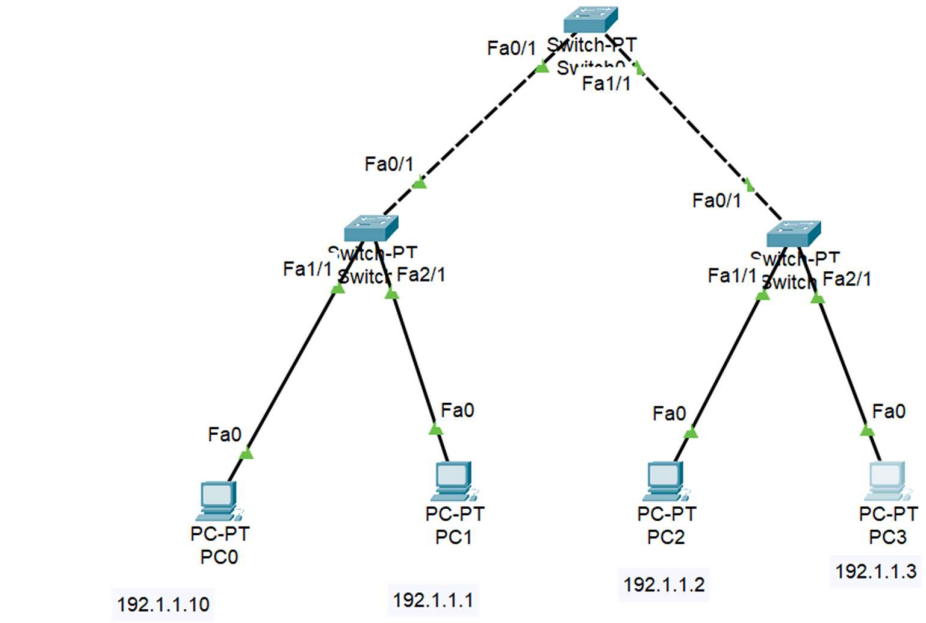


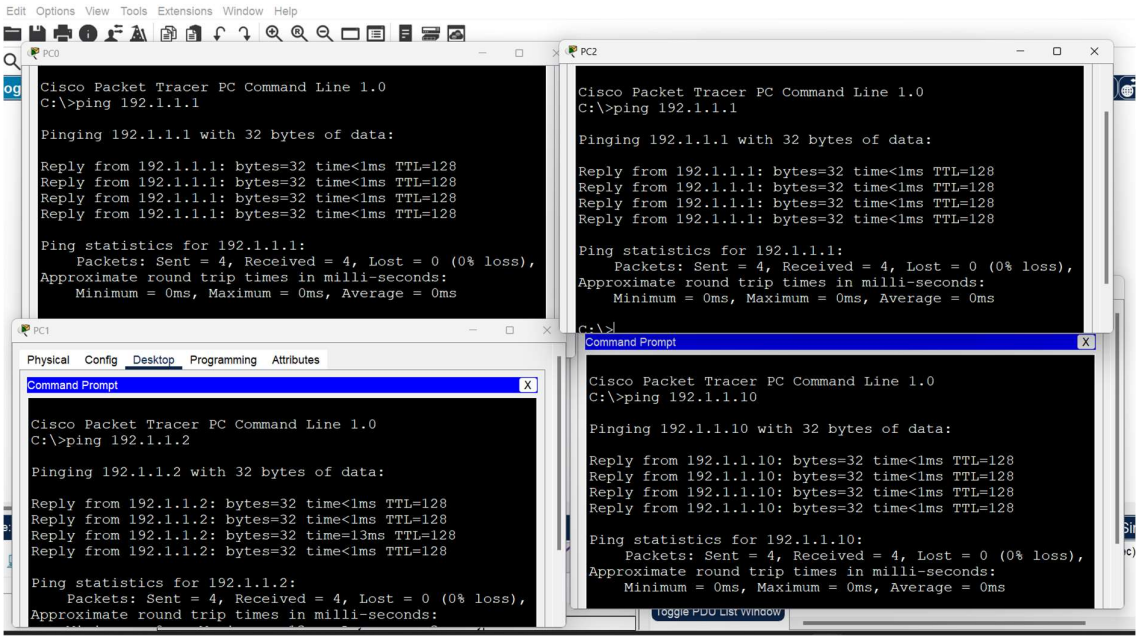
c. Tree Topology

Ans.

Create three switches and four pcs and connect them accordingly and set ip address of the pcs and ping them to see if they are working or not.

x: 1045, y: 66

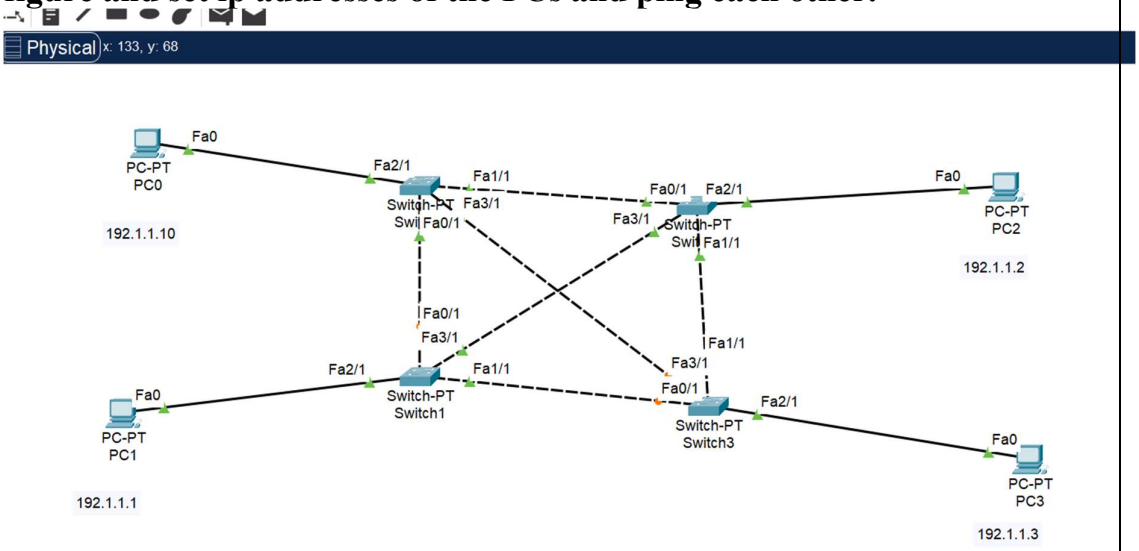

Fa0/1
Switch-PT
Fa1/1
Fa0/1
Fa0/1
Switch-PT
Fa1/1
Fa2/1
Switch-PT
Fa1/1
Fa2/1
Fa0
Fa0
Fa0
Fa0
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
PC-PT
PC3
192.1.1.10
192.1.1.1
192.1.1.2
192.1.1.3

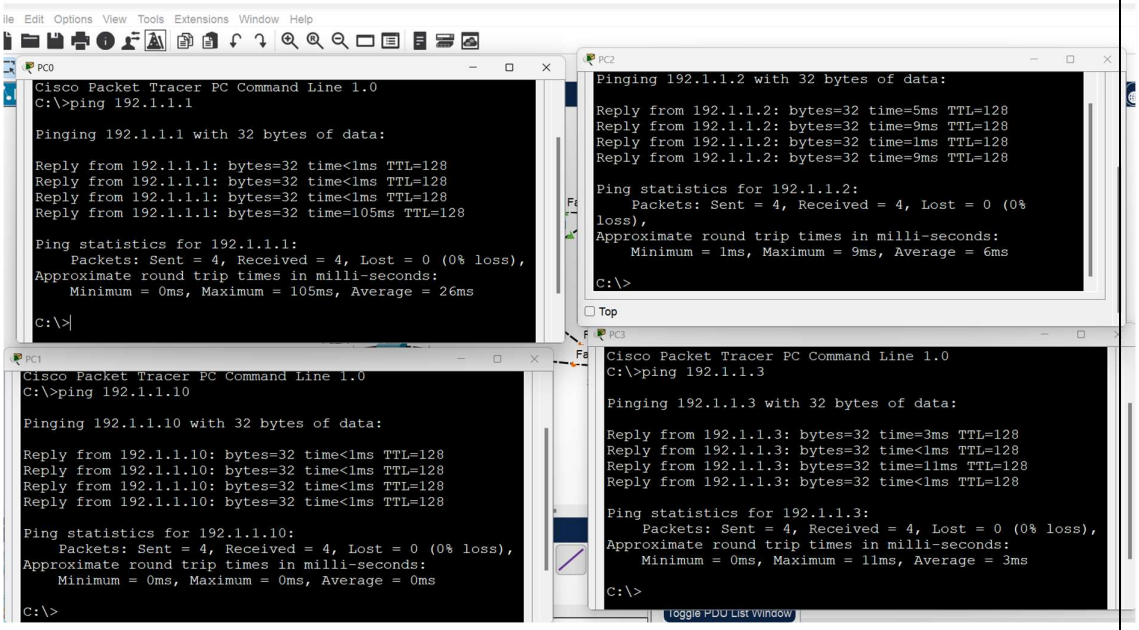

Edit Options View Tools Extensions Window Help
PC0
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.1.1.1
Pinging 192.1.1.1 with 32 bytes of data:
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Ping statistics for 192.1.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC2
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.1.1.1
Pinging 192.1.1.1 with 32 bytes of data:
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Reply from 192.1.1.1: bytes=32 time<1ms TTL=128
Ping statistics for 192.1.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.1.1.2
Pinging 192.1.1.2 with 32 bytes of data:
Reply from 192.1.1.2: bytes=32 time<1ms TTL=128
Reply from 192.1.1.2: bytes=32 time<1ms TTL=128
Reply from 192.1.1.2: bytes=32 time=13ms TTL=128
Reply from 192.1.1.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.1.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.1.1.10
Pinging 192.1.1.10 with 32 bytes of data:
Reply from 192.1.1.10: bytes=32 time<1ms TTL=128
Reply from 192.1.1.10: bytes=32 time<1ms TTL=128
Reply from 192.1.1.10: bytes=32 time<1ms TTL=128
Reply from 192.1.1.10: bytes=32 time<1ms TTL=128
Ping statistics for 192.1.1.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
Toggle PDU List Window

d. Mesh Topology:-

Ans:-

Create 4 switches and four PCs and connect them according to the figure and set ip addresses of the PCs and ping each other.

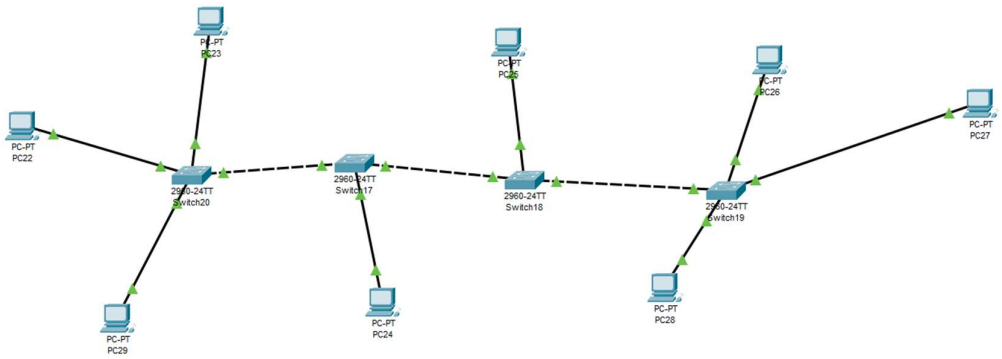




e. Hybrid Topology

Ans.

A hybrid network topology is an interconnection of two or more basic network topologies, each of which contains its own nodes. The resulting topology will exhibit characteristics of all the constituent topologies, thereby limiting the inherent weaknesses of each topology.



5. **Perform initial switch configuration.**

   Ans.

   a. **Hostname:-**

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname student
student(config)#exit
student#
%SYS-5-CONFIG_I: Configured from console by console
```

   b. **Password:-**

```
student#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
student(config)#line console 0
student(config-line)#password Ramanujan123
student(config-line)#exit
student(config)#exit
student#
%SYS-5-CONFIG_I: Configured from console by console
```

   c. **Interface Configuration:-**

```
Switch(config)# interface FastEthernet 0/1
Switch(config-if)# speed 100  (Optional - Depending on model)
Switch(config-if)# duplex full  (Optional - Depending on model)
Switch(config-if)# description Connection to PC0
```

6. **To perform initial router configuration**

   Ans.

   a. **Interface Configuration:-**

```
Router(config)# interface FastEthernet 0/0
Router(config-if)# ip address 192.168.1.1 255.255.255.0
Router(config-if)# no shutdown
```

b. **Hostname:-**

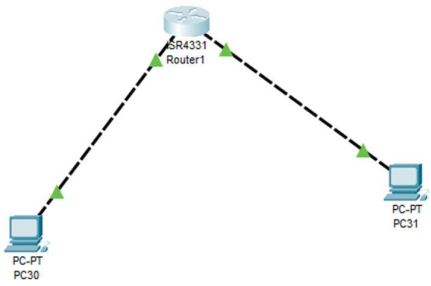
```
Router>enable
Router#confirgure terminal
                ^
% Invalid input detected at '^' marker.

Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname ramanujan
ramanujan(config)#exit
ramanujan#
%SYS-5-CONFIG_I: Configured from console by console
```

c. **Password:-**

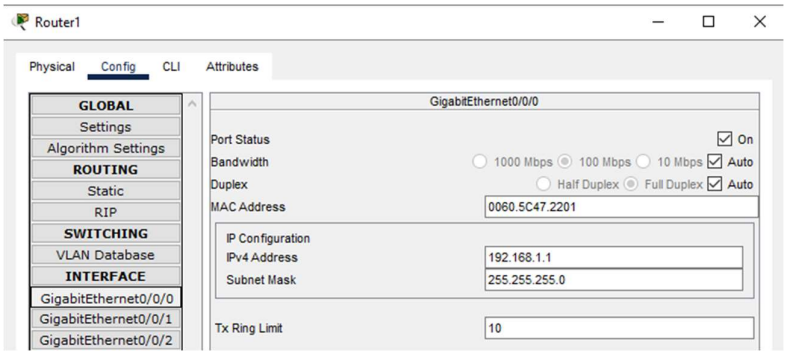
```
ramanujan#config t
Enter configuration commands, one per line.  End with CNTL/Z.
ramanujan(config)#enable secret RC123
ramanujan(config)#
```

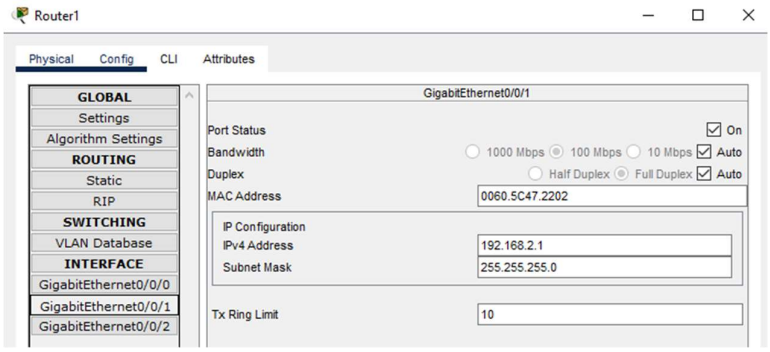
7. **To implement connection between devices using router.**

a. **Connect two pcs to a router and configure ip addresses for both pcs.**

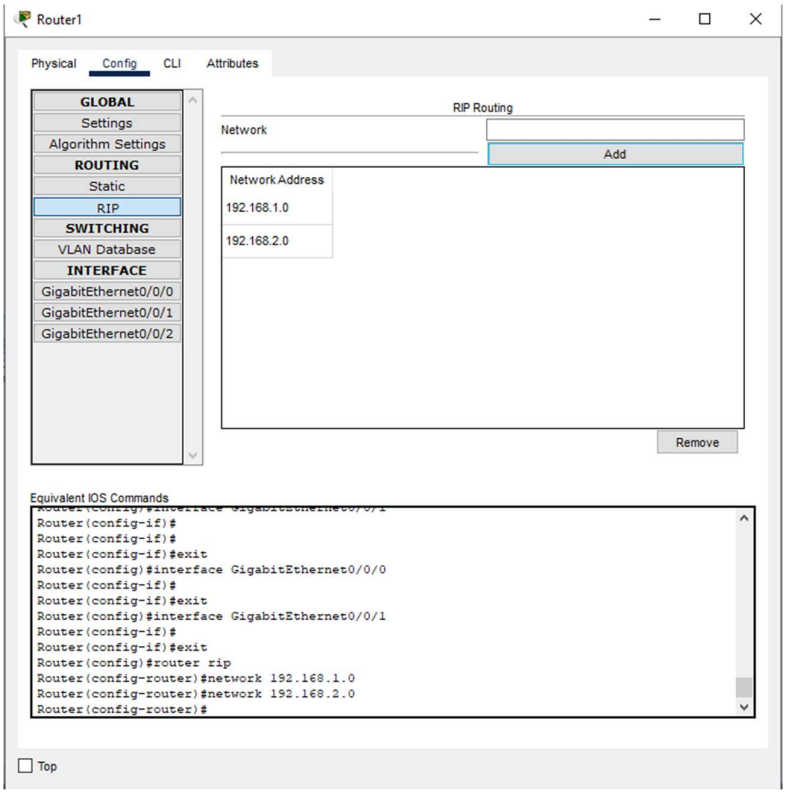


b. **Configure the router and set ip addresses for both ports.**





c. Configure RIP for the router.

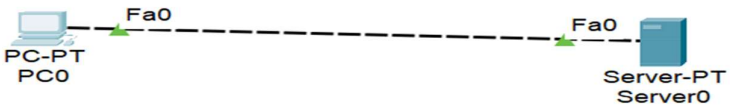


d. Testing via packet tracer

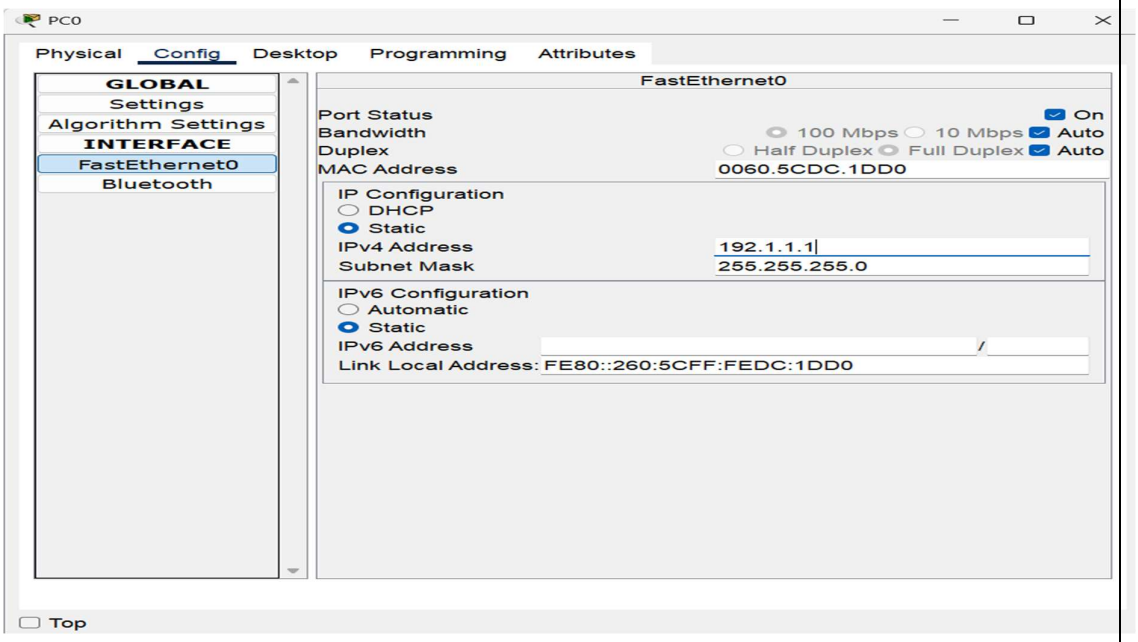
8. To Implement Client Server Network

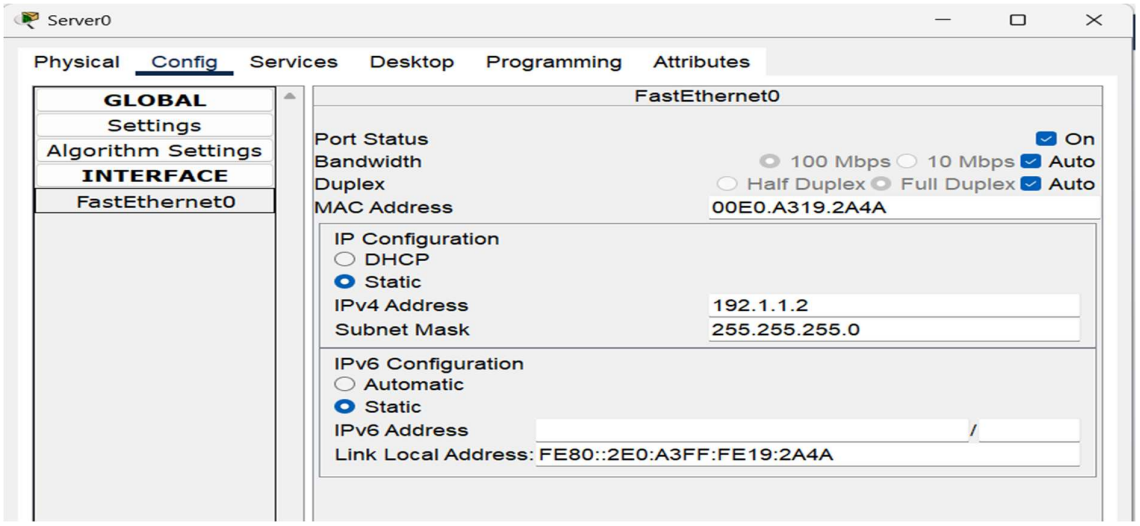
Ans.

a. Create one PC and server and then connect them to each other with the wire.

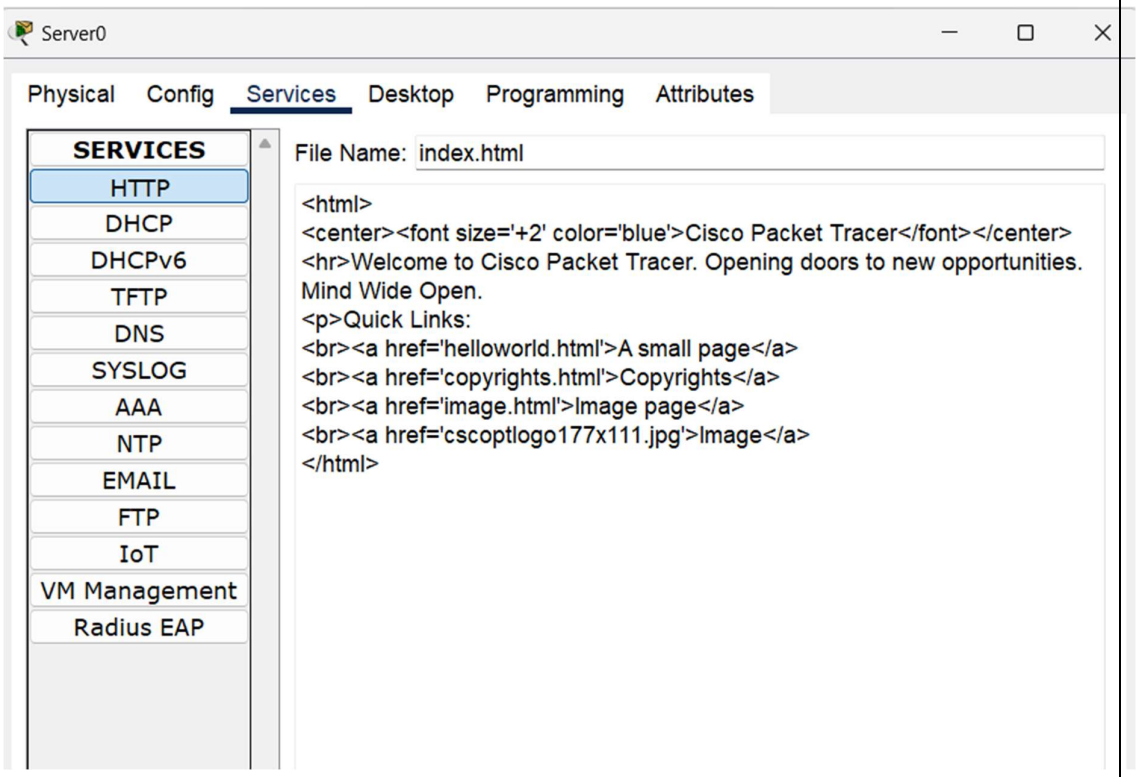


b. Set the ip addresses on both PC and the server.





c. **Add the html code in the services section of the server.**



d. **Then finally open the web browsesr in the PC and then ping the ip on the server.**