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DATA COMMUNICATION AND NETWORKING LABORATORY

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GROUP :- G1

SUBJECT CODE :- CAP 276

LABORATORY NO:- 2 (CA 2)

DATE :- 20/10/2022

Step 1:-

First, Open The Cisco Packet Tracer Desktop And Select The Devices Given Below:

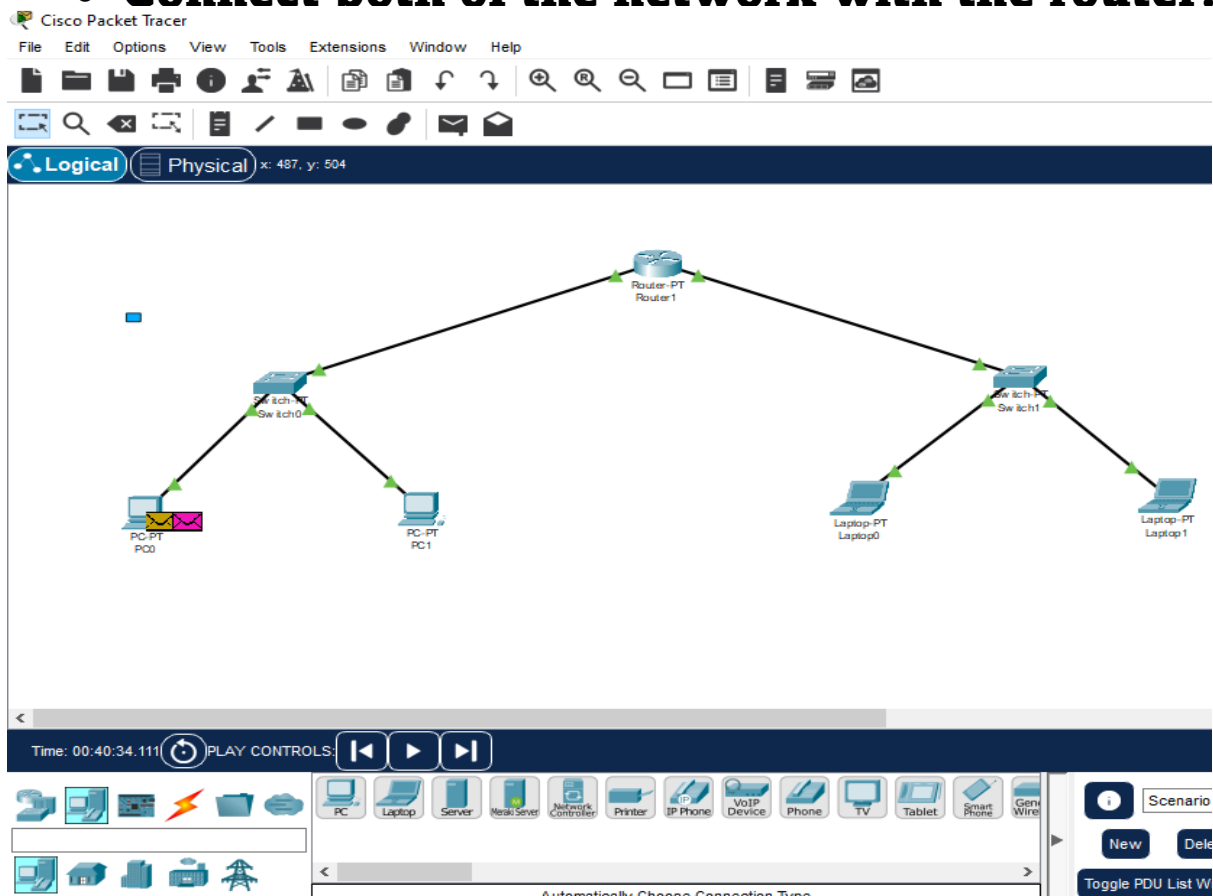
S.no.	Device	Model Name
1.	PC	PC
2.	Switch	PT - Switch
3.	Router	Router empty

IP Addressing Table:

S.no.	Device	IP4v Address	Subnet mask
1.	pc0	192.168.0.1	255.255.255.0
2.	pc1	192.168.0.2	255.255.255.0
3.	pc2	10.20.30.2	255.255.255.0
4.	pc3	10.20.30.1	255.255.255.0
5.	Router	10.20.30.3	

- **Create A LAN Network By Using Class A IP Address.**
- **Create a second LAN network using class C IP address**

- **Connect both of the network with the router.**



Step 2:-

Configure The Pcs (Hosts) With Ipv4 Address And Subnet Mask According To The IP Addressing Table Given Above.

- **To assign an IP address in PC0, click on PC0.**

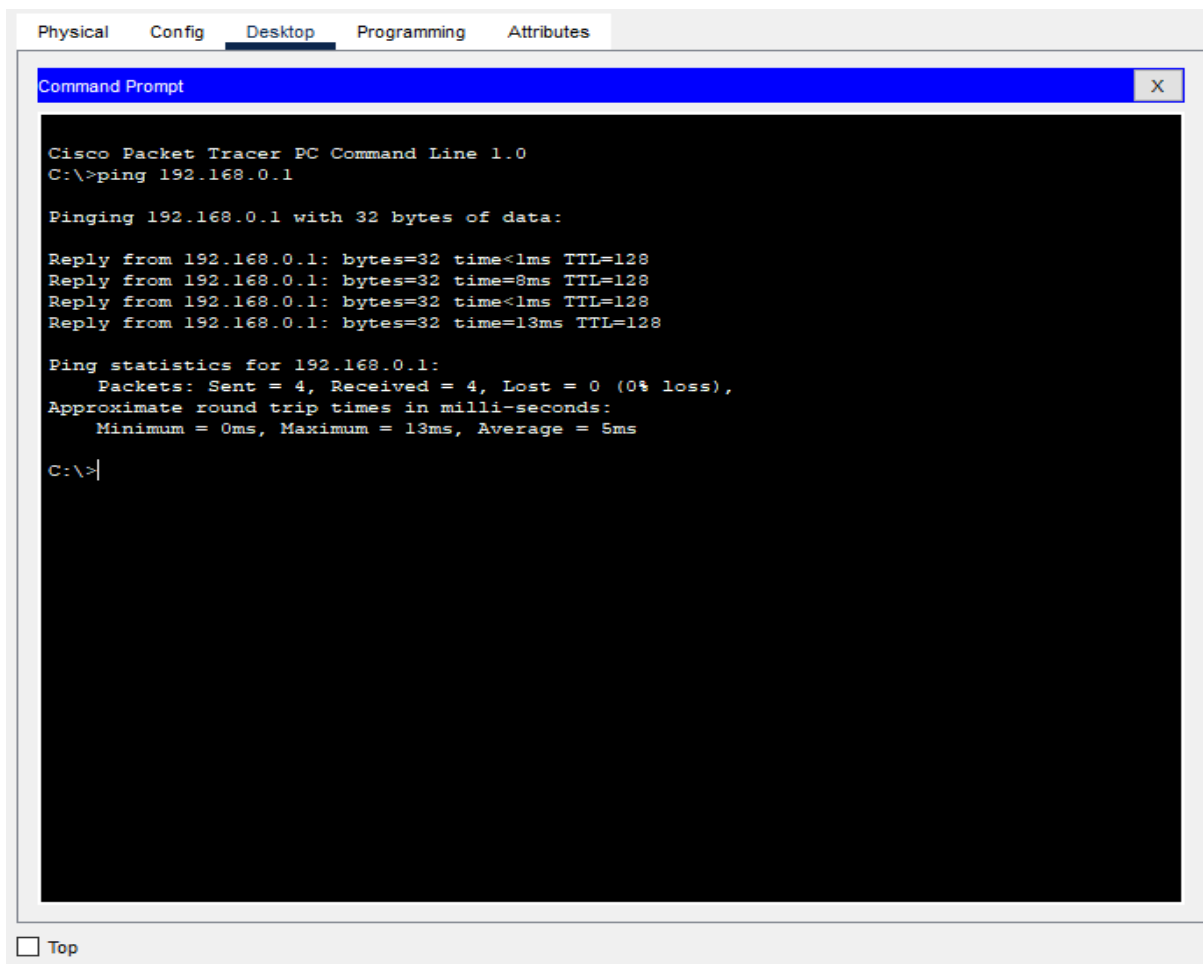
- **Then, go to desktop and IP configuration and there you will find IPv4 configuration.**
- **Add IPv4 address and subnet mask.**

The screenshot shows a network configuration window titled "IP Configuration" with a close button (X). The "Interface" dropdown is set to "FastEthernet0". The "IP Configuration" section has two radio buttons: "DHCP" (unselected) and "Static" (selected). Below these are four text input fields: "IPv4 Address" (192.168.0.1), "Subnet Mask" (255.255.255.0), "Default Gateway" (0.0.0.0), and "DNS Server" (0.0.0.0). The "IPv6 Configuration" section also has two radio buttons: "Automatic" (unselected) and "Static" (selected). Below these are four text input fields: "IPv6 Address" (empty), "Link Local Address" (FE80::205:5EFF:FEA1:2C0C), "Default Gateway" (empty), and "DNS Server" (empty). The "802.1X" section has a checkbox "Use 802.1X Security" (unchecked), a dropdown "Authentication" (MD5), and two text input fields for "Username" and "Password" (both empty). At the bottom left, there is a "Top" link.

Step 3.

Verify the connection by pinging the IP address of any host in PC0.

- **Use the ping command to verify the connection.**
- **We will check, if we are getting any replies or not.**
- **As we can see here getting replies from the targeted node on both PCs. Hence the connection is verified.**



The screenshot shows a Cisco Packet Tracer PC Command Line window. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is selected. The Command Prompt window displays the following text:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<1ms TTL=128
Reply from 192.168.0.1: bytes=32 time=8ms TTL=128
Reply from 192.168.0.1: bytes=32 time<1ms TTL=128
Reply from 192.168.0.1: bytes=32 time=13ms TTL=128

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 5ms

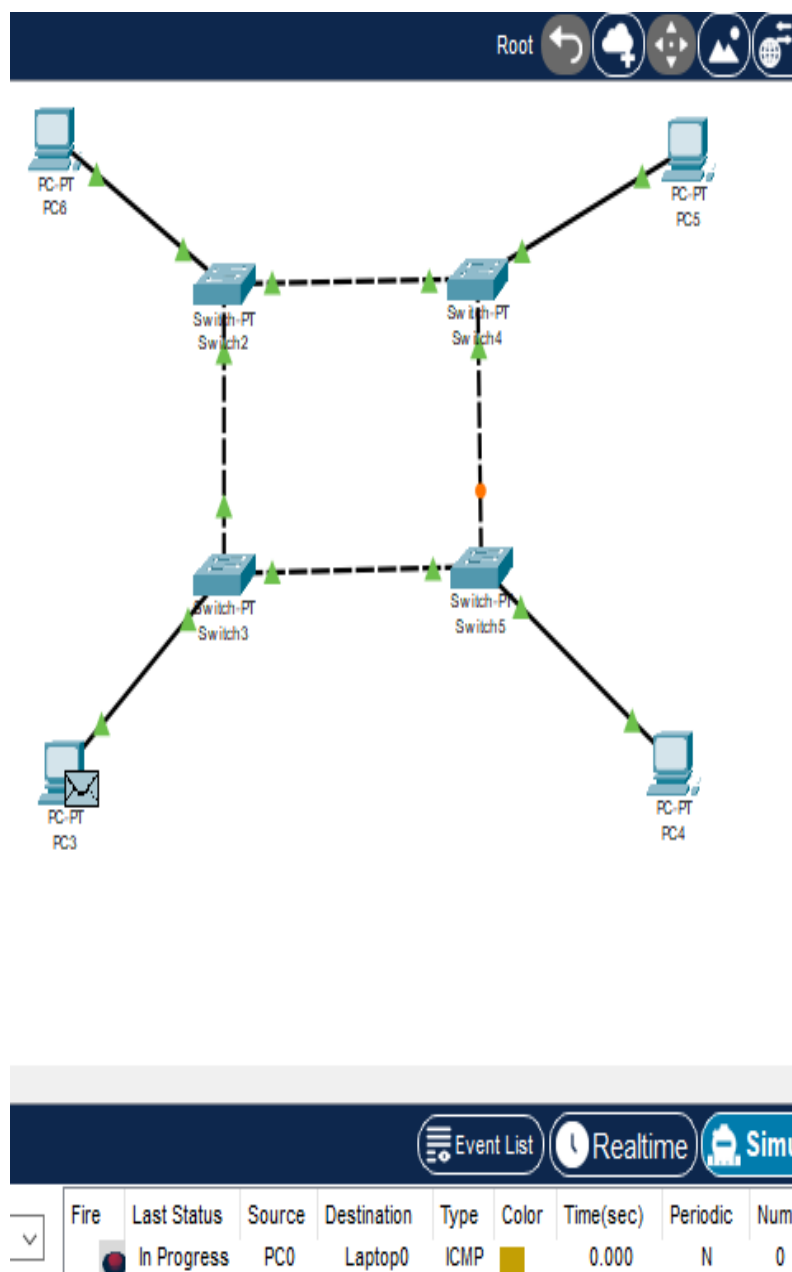
C:\>|
```

At the bottom left of the window, there is a checkbox labeled "Top".

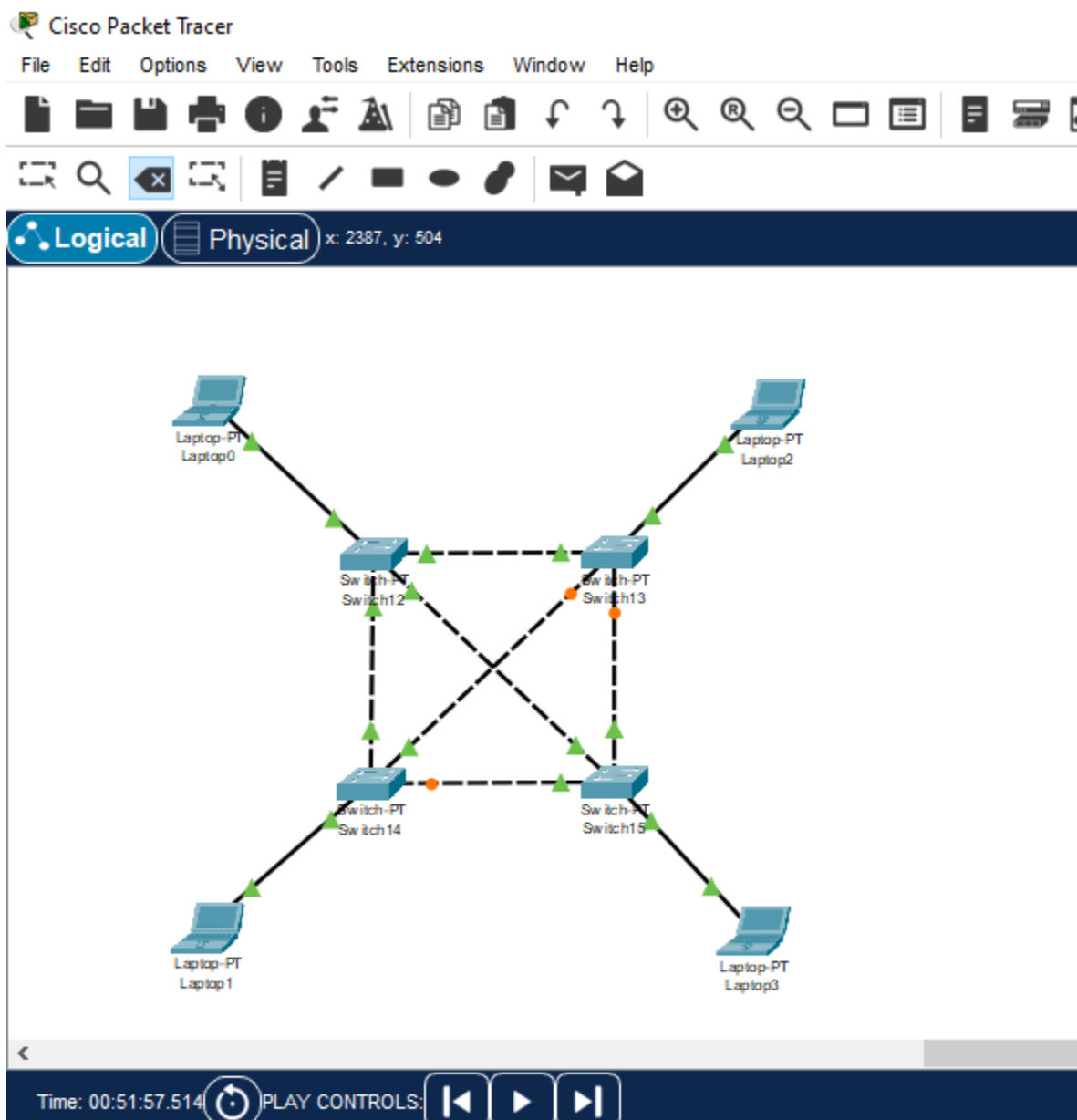
Step 4. A Simulation Of The Experiment Is Given Below We Have Sent Two PDU Packets One Targeted From PC0 To PC3.

Q2. Design a network consisting of ring, mess and tree topology using switch with network ID.

- Ring topology:
- Forms a ring like structure.
- Token passing for communication.

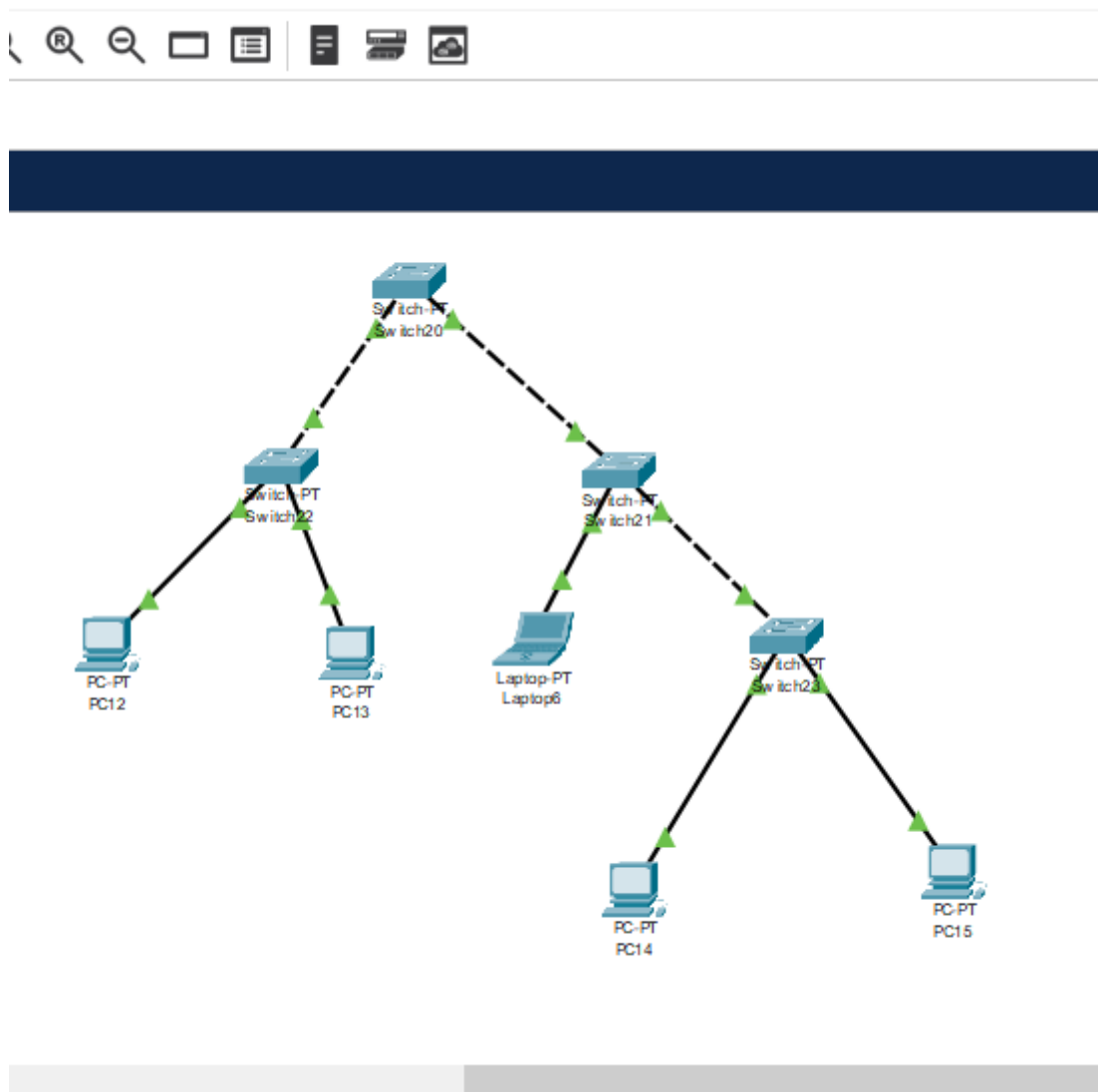


- **Mess Topology:**
- **All the nodes are connected with each other.**
- **Expensive to implement.**



Tree topology: Create a hierarchy like structure.

- Two nodes are connected to one.



Q3. Consider and design lab1 and lab2 with star and bus topology respectively. Demonstrate how these labs will be able to share data with each other in simulation mode.

