

VIT-AP UNIVERSITY, ANDHRA PRADESH

CSE3003 – Computer Networks - Lab Sheet: 1

Academic year: 2023-2024

Semester: Fall

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Branch/ Class: B.Tech

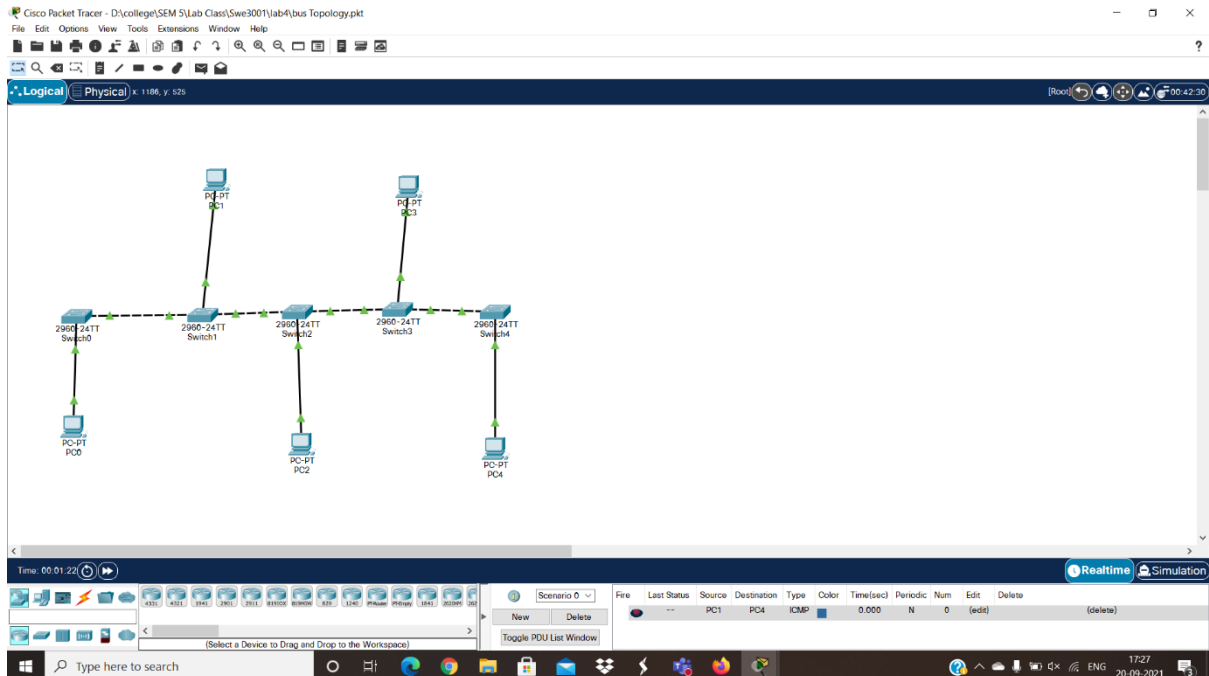
Date:

School: SCOPE

Reg. no.: 22BCE7224

LAB 1

1. Design a Bus Topology network using Switches.



Objectives:

1. Design a BUS Topology using switches with PCs.
2. Verify the connectivity.

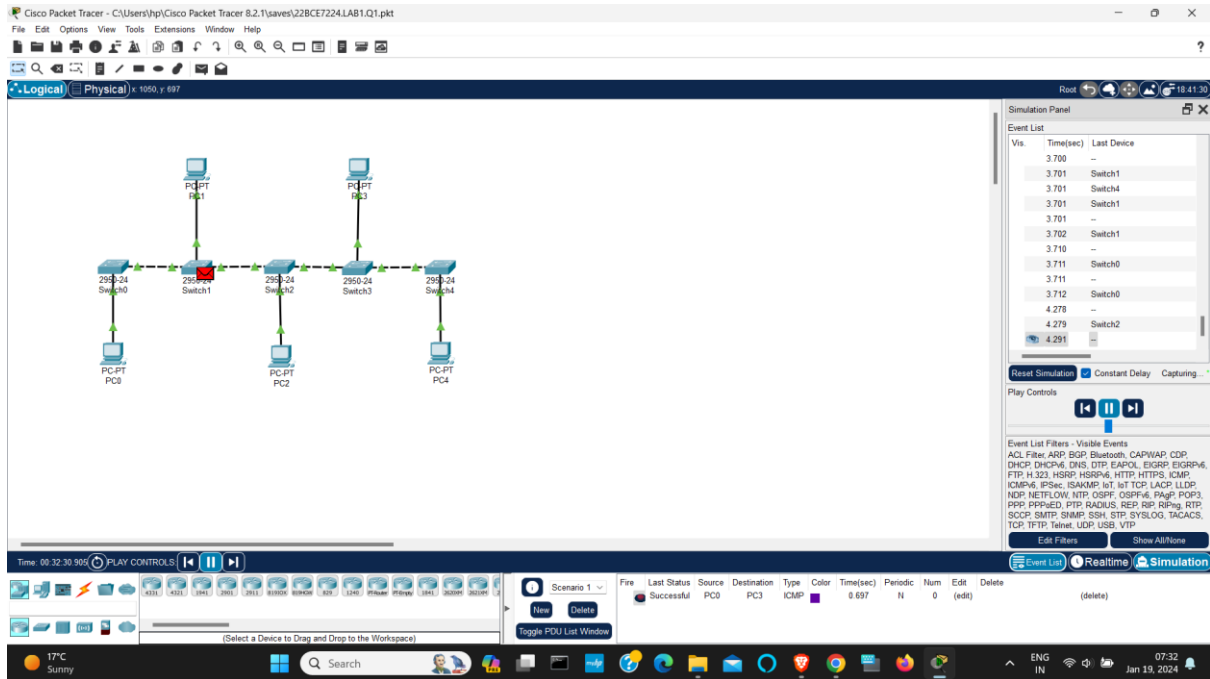
Addressing Table:

Device	Interface	IP Address	Subnet Mask
PC0	NIC	192.172.16.1	255.255.255.0
PC1	NIC	192.172.16.2	255.255.255.0
PC2	NIC	192.172.16.3	255.255.255.0
PC3	NIC	192.172.16.4	255.255.255.0
PC4	NIC	192.172.16.5	255.255.255.0

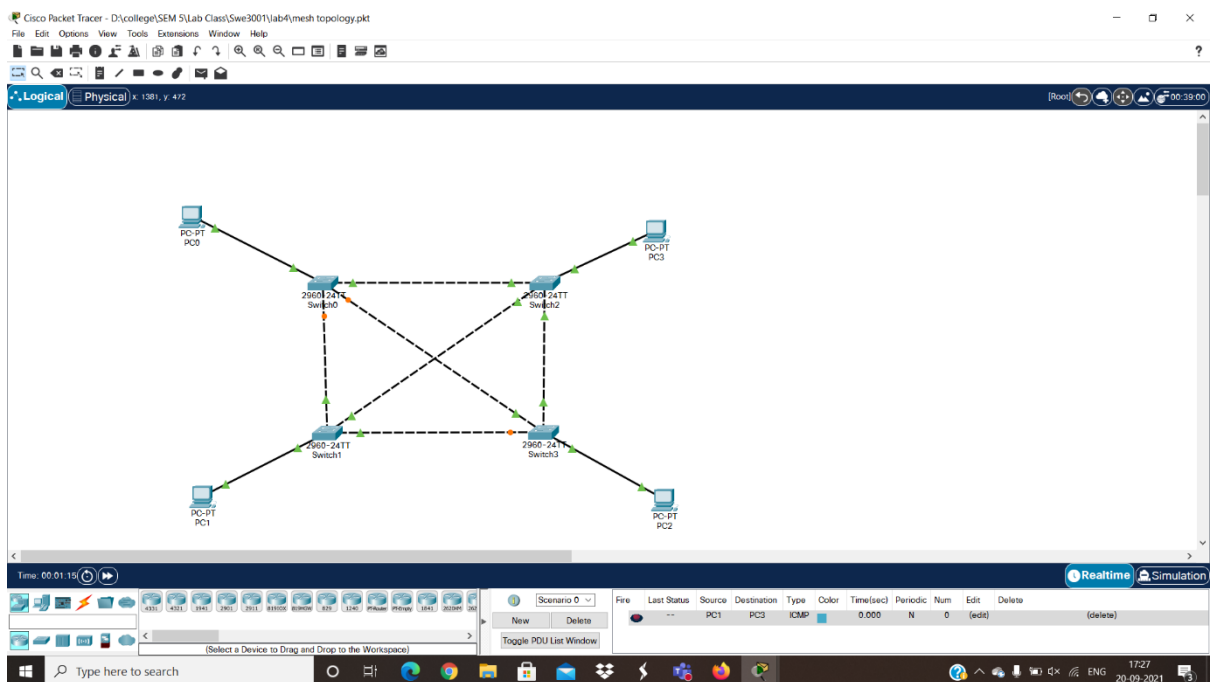
Procedure:

- Consider 5 PC's and 5 Switches
- Connect them as shown in figure.
- Now configure each PC as shown in table.
- Now send the packet from one end to the other node of the terminal.

OUTPUT-



2. Design a Mesh Topology network using Switches.



Objectives:

2. Design a Mesh Topology using switches with PCs.
3. Verify the connectivity.

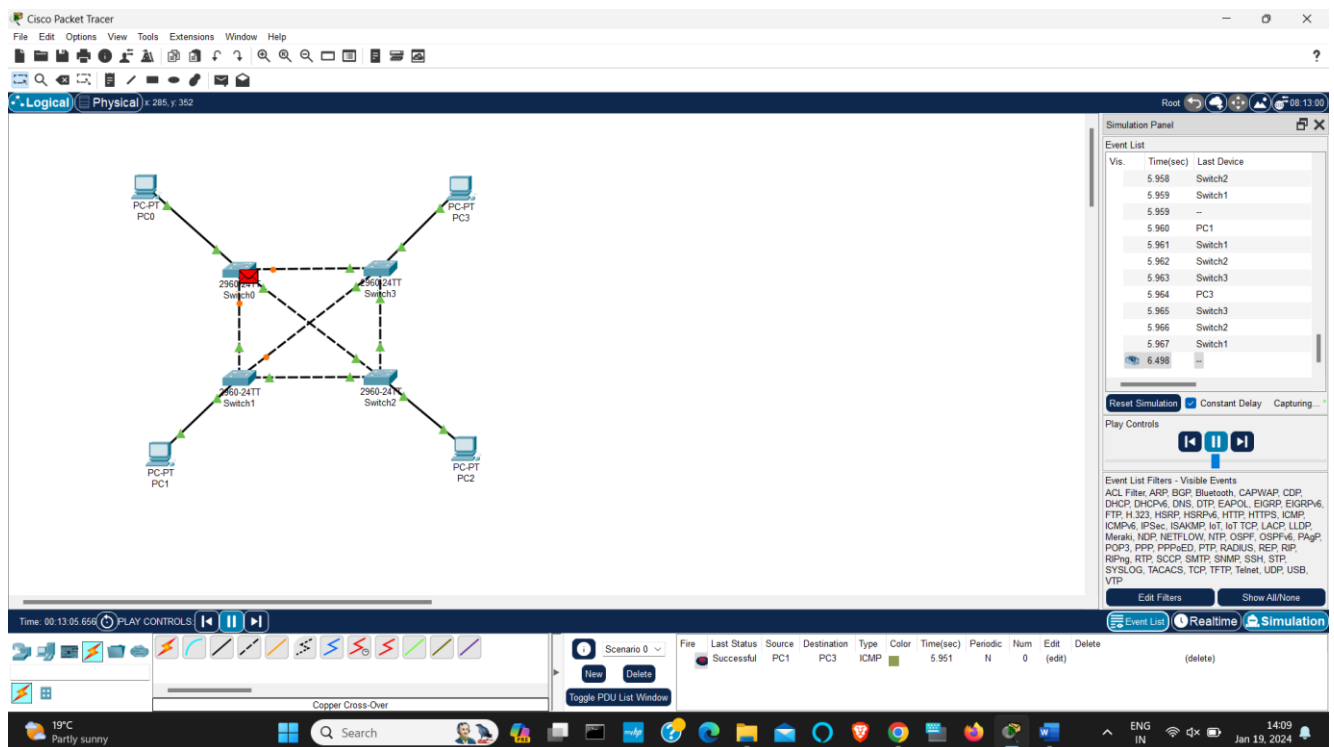
Addressing Table:

Device	Interface	IP Address	Subnet Mask
PC0	NIC	10.10.10.1	255.0.0.0
PC1	NIC	10.10.10.2	255.0.0.0
PC2	NIC	10.10.10.3	255.0.0.0
PC3	NIC	10.10.10.4	255.0.0.0
PC4	NIC	10.10.10.5	255.0.0.0

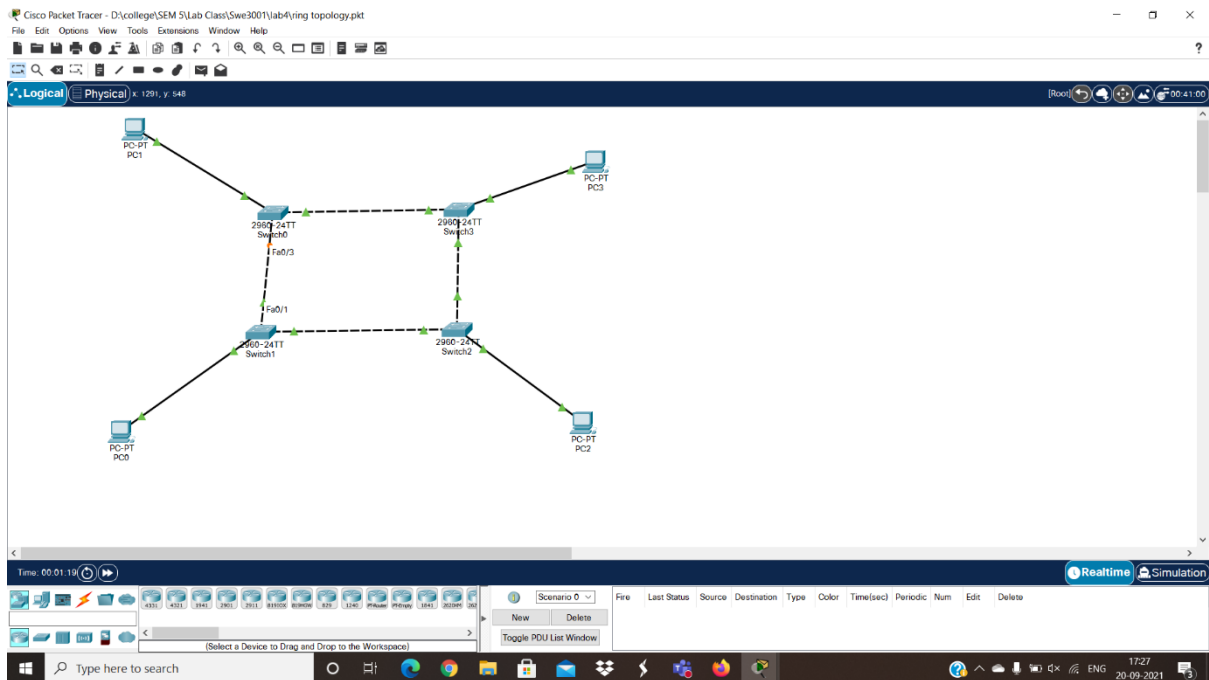
Procedure:

- Consider 5 PC's and 5 Switches
- Connect them as shown in figure.
- No configure each PC as shown in addressing table.
- Now send the packet from one end to the other node of the terminal.

OUTPUT-



3. Design a Ring Topology network using Switches.



Objectives:

3. Design a Ring Topology using switches with PCs.
4. Verify the connectivity.

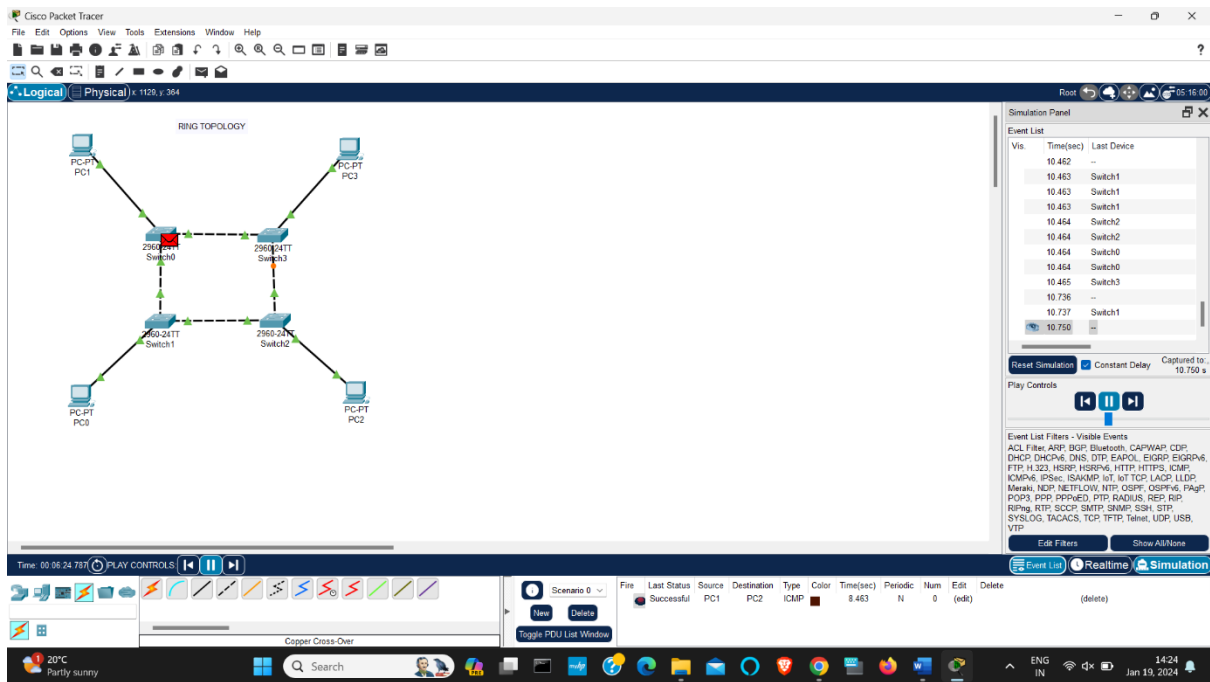
Addressing Table:

Device	Interface	IP Address	Subnet Mask
PC0	NIC	10.10.10.1	255.0.0.0
PC1	NIC	10.10.10.2	255.0.0.0
PC2	NIC	10.10.10.3	255.0.0.0
PC3	NIC	10.10.10.4	255.0.0.0

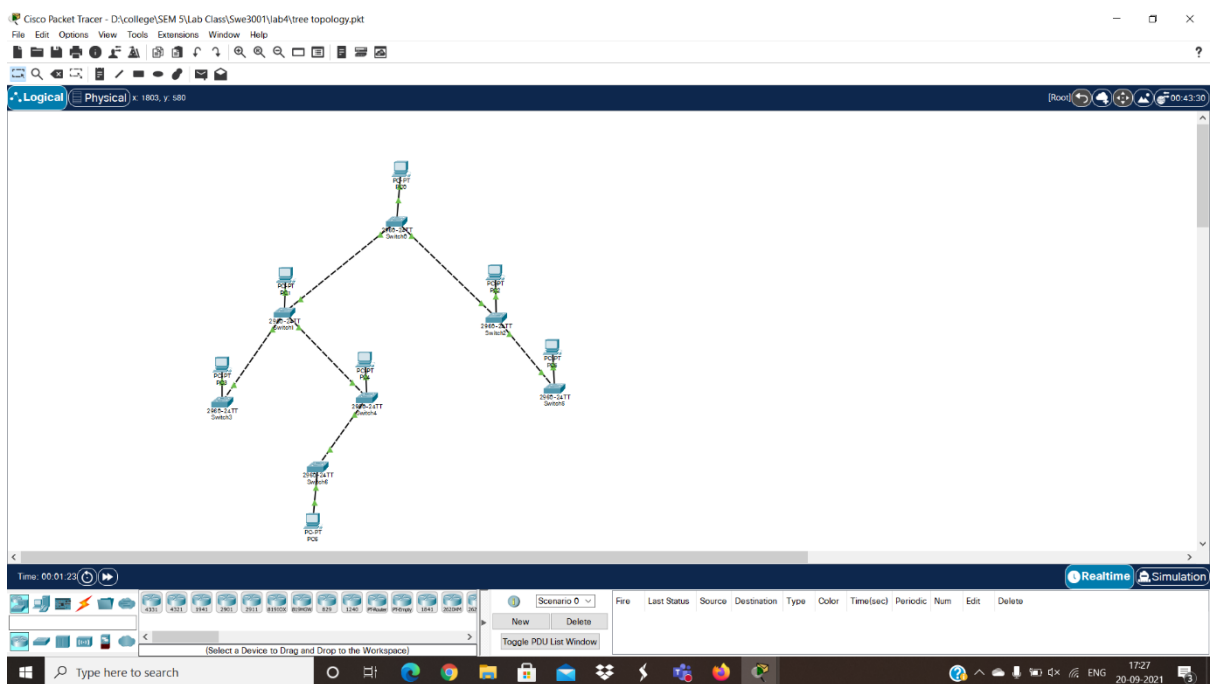
Procedure:

- Consider 5 PC's and 5 Switches
- Connect them as shown in figure.
- No configure each PC as shown in addressing table.
- Now send the packet from one end to the other node of the terminal.

OUTPUT-



4. Design a Tree Topology network using Switches.



Objectives:

4. Design a Tree Topology using switches with PCs.
5. Verify the connectivity.

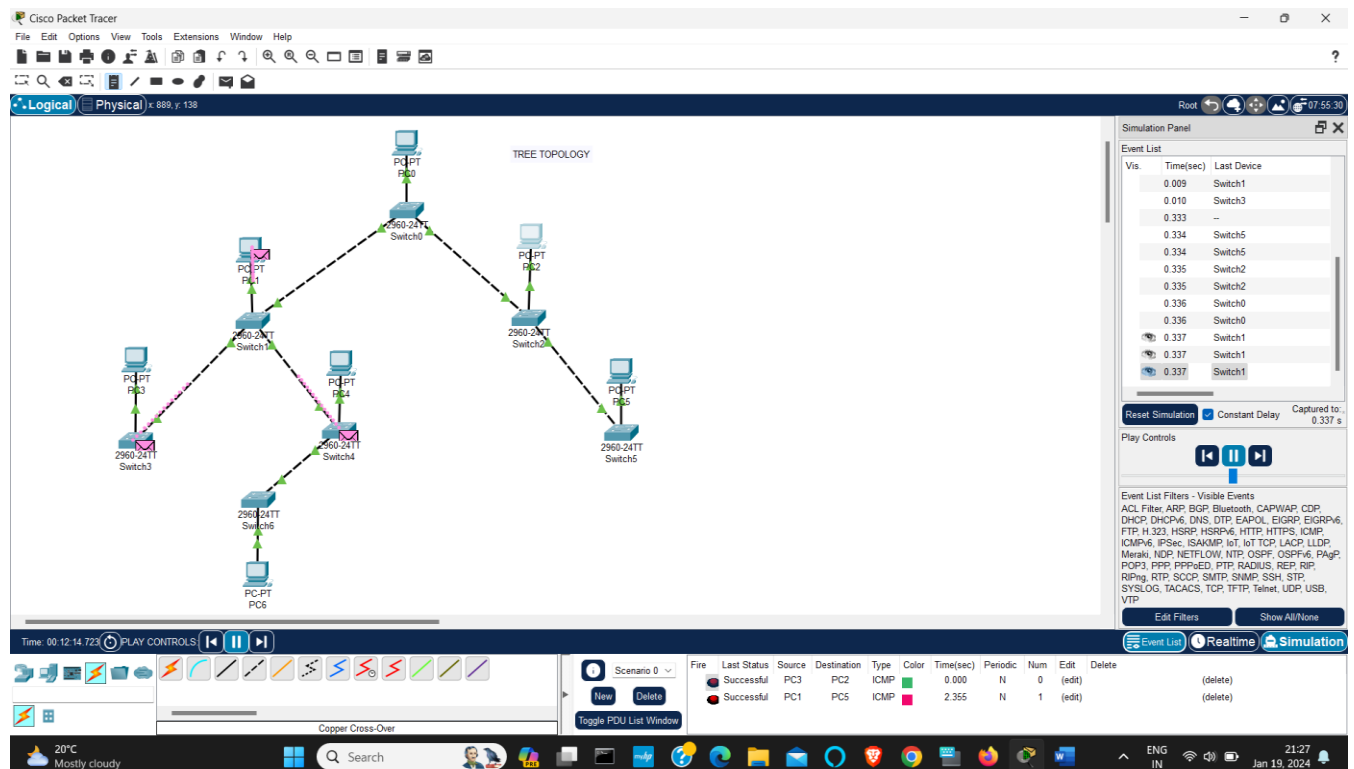
Addressing Table:

Device	Interface	IP Address	Subnet Mask
PC0	NIC	10.10.10.1	255.0.0.0
PC1	NIC	10.10.10.2	255.0.0.0
PC2	NIC	10.10.10.3	255.0.0.0
PC3	NIC	10.10.10.4	255.0.0.0
PC4	NIC	10.10.10.5	255.0.0.0
PC5	NIC	10.10.10.6	255.0.0.0
PC6	NIC	10.10.10.7	255.0.0.0
PC7	NIC	10.10.10.8	255.0.0.0

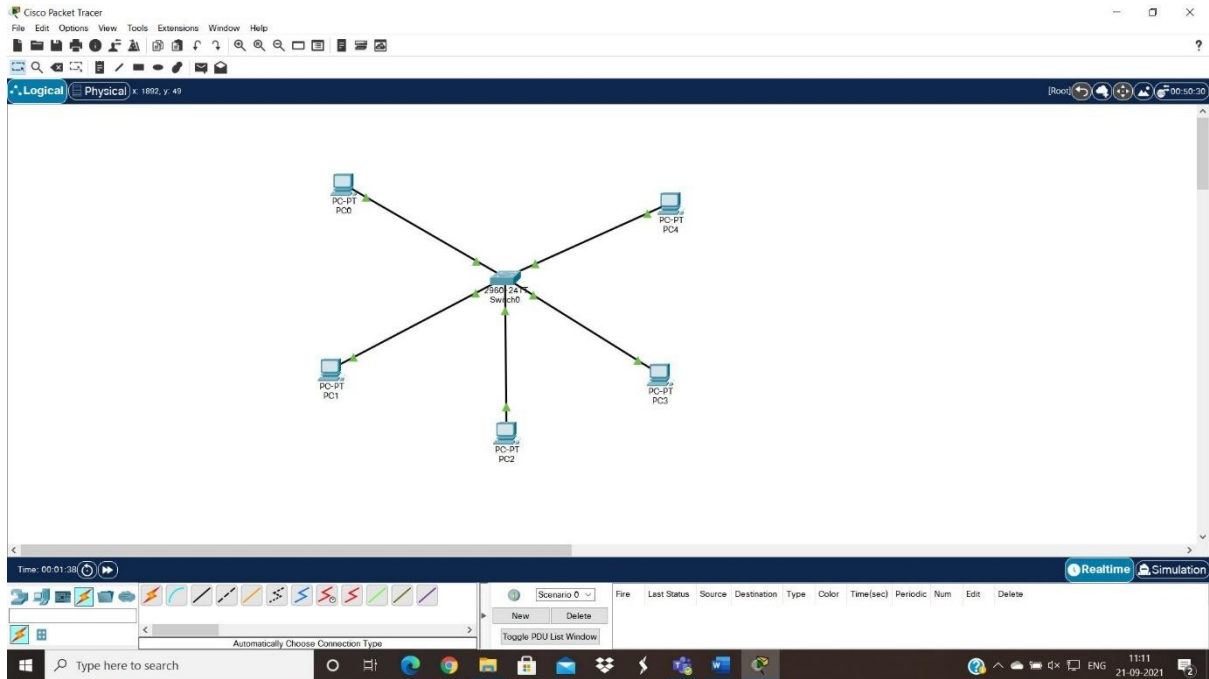
Procedure:

- Consider 7 PC's and 7 Switches
- Connect them as shown in figure.
- No configure each PC as shown in addressing table.
- Now send the packet from one end to the other node of the terminal.

OUTPUT-



5. Design a Star Topology network using Switches.



Objectives:

5. Design a Star Topology using switches with PCs.
6. Verify the connectivity.

Addressing Table:

Device	Interface	IP Address	Subnet Mask
PC0	NIC	10.10.10.1	255.0.0.0
PC1	NIC	10.10.10.2	255.0.0.0
PC2	NIC	10.10.10.3	255.0.0.0
PC3	NIC	10.10.10.4	255.0.0.0
PC4	NIC	10.10.10.5	255.0.0.0

Procedure:

- Consider 5 PC's and 1 Switches
- Connect them as shown in figure.
- No configure each PC as shown in addressing table.
- Now send the packet from one end to the other node of the terminal.

OUTPUT-

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 748, y 470

STAR TOPOLOGY

```
graph TD; S[Switch0] --- PC0[PC-PT PC0]; S --- PC1[PC-PT PC1]; S --- PC2[PC-PT PC2]; S --- PC3[PC-PT PC3]; S --- PC4[PC-PT PC4];
```

Simulation Panel

Event List

Vis.	Time(sec)	Last Device
	6.630	Switch0
	6.630	Switch0
	6.630	Switch0
	8.626	—
	8.627	Switch0
	8.627	Switch0
	8.627	Switch0
	8.627	Switch0
	8.627	Switch0
	9.717	—
	9.718	Switch0
	10.627	—

Reset Simulation Constant Delay Captured to: 10.627 s

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, iVt, iVt TCP, LACP, LLDP, Meraki, NTP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, RDP, RIP, RIPv2, RIPv3, SCCP, SMTP, SNMP, SIP, STP, Syslog, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Time: 00:27:48.642 PLAY CONTROLS

Scenario 0

New Delete

Toggle PDU List Window

File	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC3	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC1	PC4	ICMP		0.000	N	1	(edit)	(delete)

Copper Straight-Through

Watchlist Ideas

ENG IN 21:57 Jan 19, 2024