



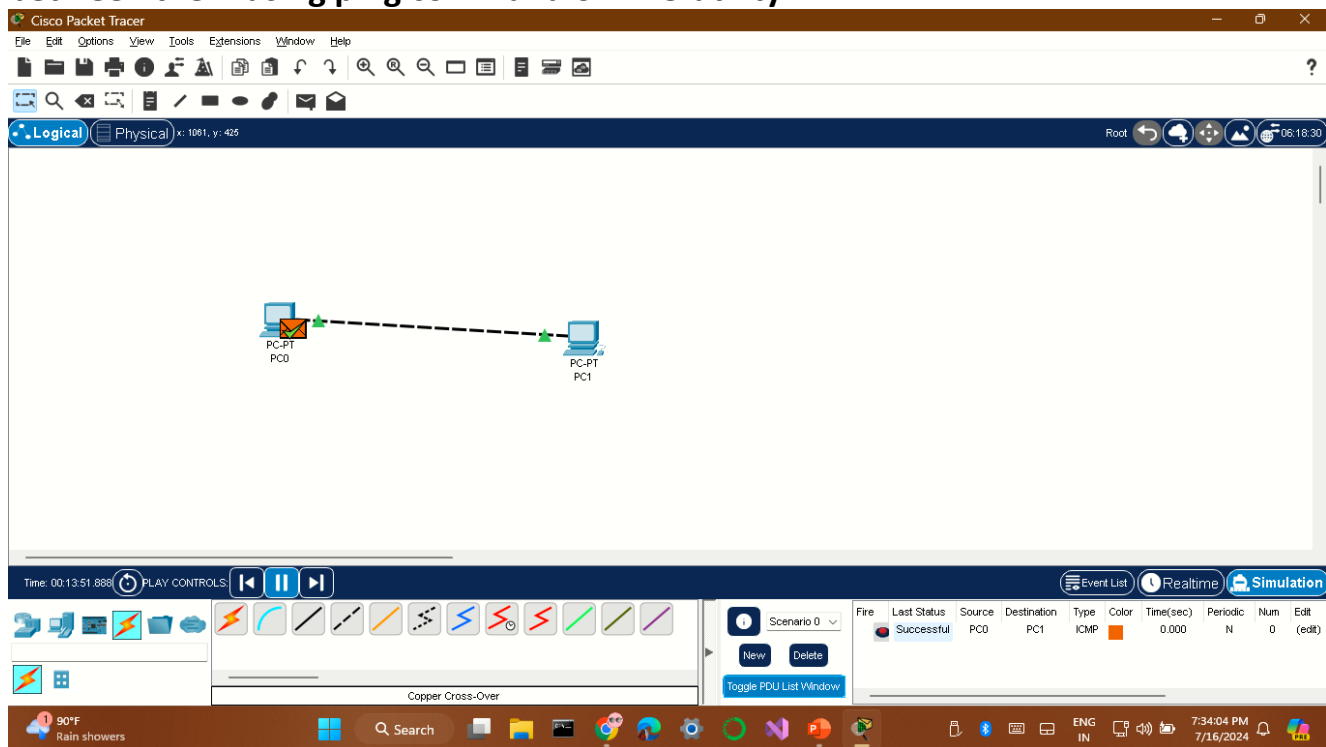
Date: 20/07/2024

### Lab Practical #04:

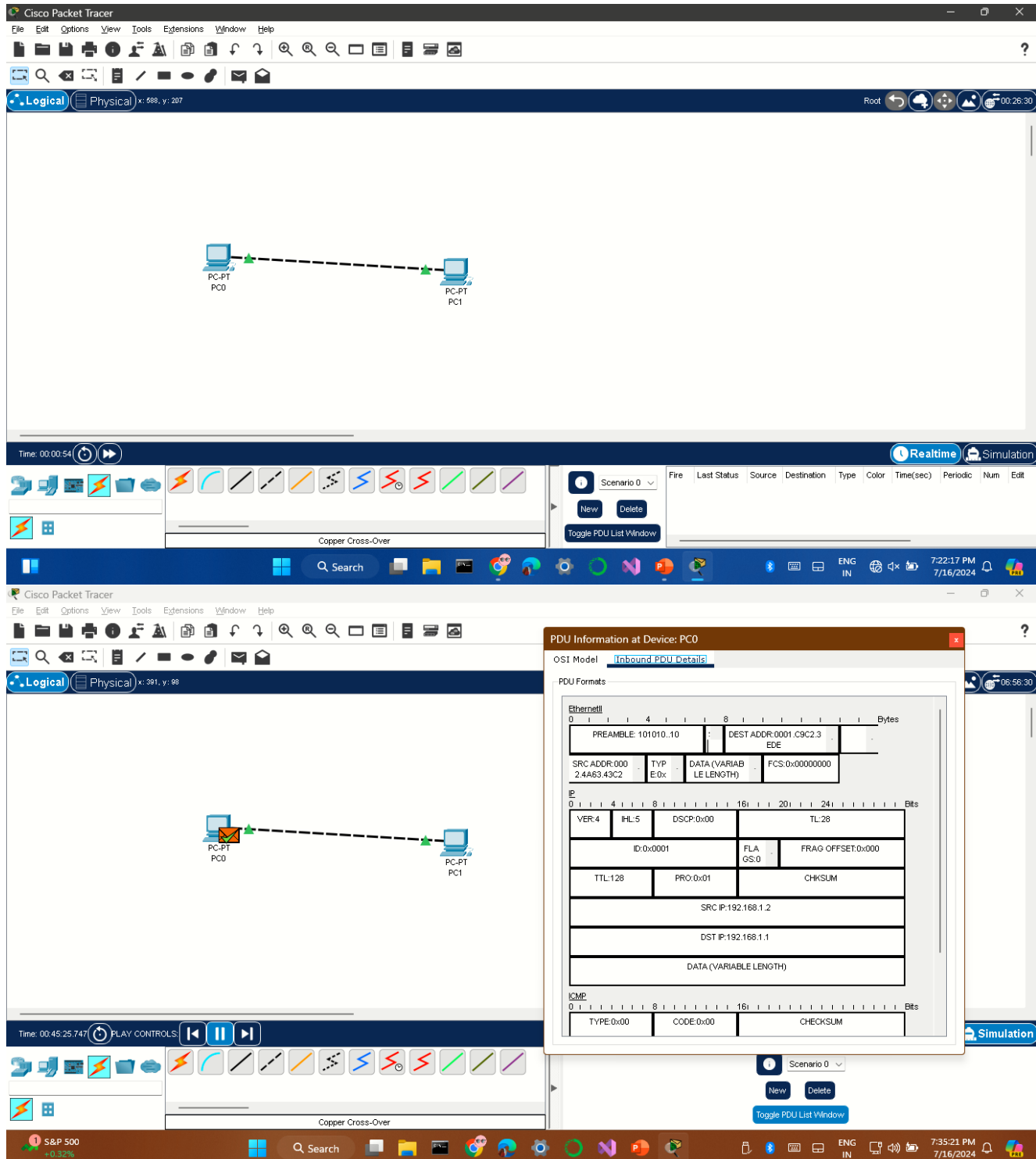
Installation of Network Simulator (Packet Tracer) and Implement different LAN topologies.

### Practical Assignment #04:

1. Create a simple network with switch and two or more pc. Also check connectivity between them using ping command or PDU utility.



Date: 20/07/2024



The screenshot displays the Cisco Packet Tracer interface. The main workspace shows two PCs, PC0 and PC1, connected by a dashed line representing a network link. The interface includes a menu bar (File, Edit, Options, View, Tools, Extensions, Window, Help), a toolbar with various icons, and a status bar at the bottom. The bottom right corner shows the system clock as 7:35:21 PM on 7/16/2024.

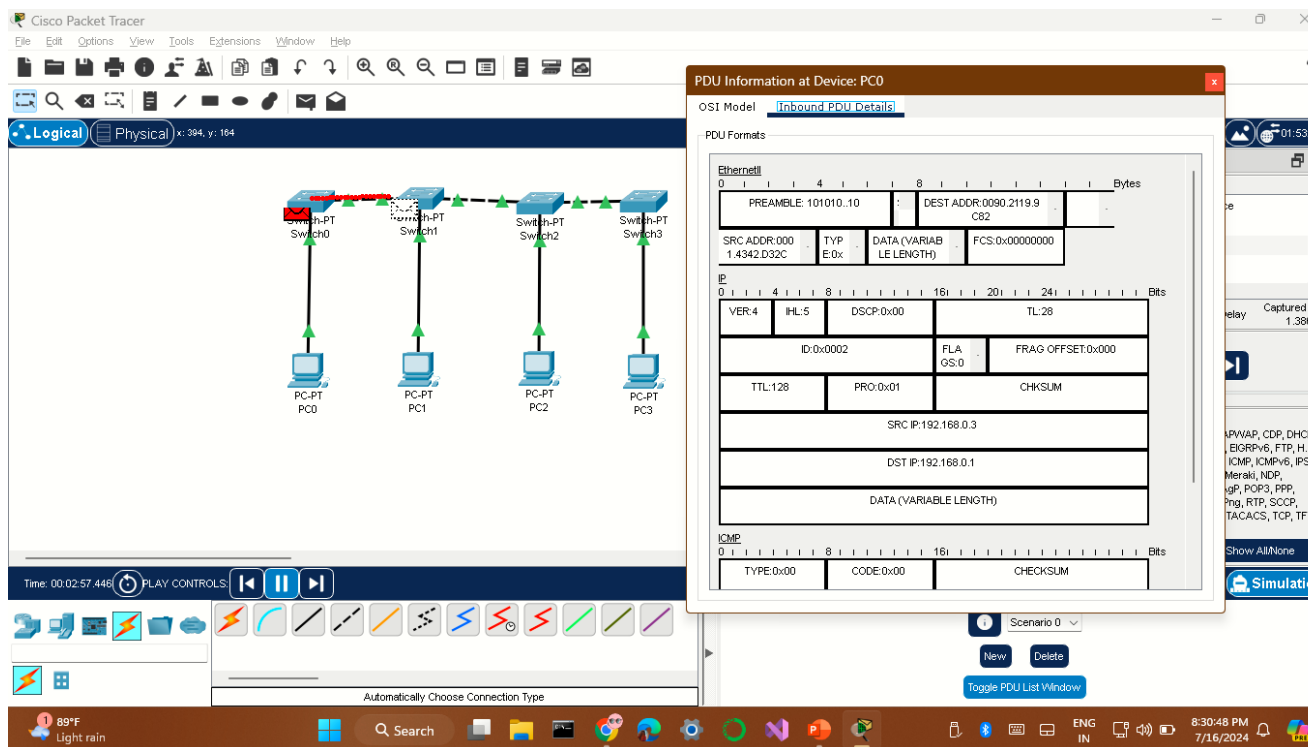
On the right side, a window titled "PDU Information at Device: PC0" is open, showing the "Inbound PDU Details" for an Ethernet II packet. The packet details are as follows:

Ethernet II			
0	4	8	Bytes
PREAMBLE: 101010...10		DEST ADDR: 0001.C9C2.3	
SRC ADDR: 0002.4A63.43C2		FCS: 0x00000000	
IP			
0	4	8	16
VER: 4	IHL: 5	DSCP: 0x00	TL: 28
ID: 0x0001		FRAG OFFSET: 0x000	
TTL: 128		CHKSUM	
SRC IP: 192.168.1.2			
DST IP: 192.168.1.1			
DATA (VARIABLE LENGTH)			
ICMP			
0	8	16	Bits
TYPE: 0x00	CODE: 0x00	CHECKSUM	

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## 2. Implement different topologies in packet tracer.

### a. Bus



The screenshot shows a Cisco Packet Tracer environment with a Bus topology. Four switches (Switch-PT Switch0, Switch-PT Switch1, Switch-PT Switch2, Switch-PT Switch3) are connected in a line. Three PCs (PC-PT PC0, PC-PT PC1, PC-PT PC2) are connected to the switches. A PDU Information window is open on the right, showing details for an Ethernet II frame and an IP packet.

**PDU Information at Device: PC0**

OSI Model: [Inbound PDU Details](#)

PDU Formats

Ethernet II

PREAMBLE: 101010...10		DEST ADDR: 0090.2119.9C82	
SRC ADDR: 0001.4342.D32C	TYP: E0x	DATA (VARIABLE LENGTH)	FCS: 0x00000000

IP

VER: 4		IHL: 5		DSCP: 0x00		TL: 28	
ID: 0x0002				FLAG: 0		FRAG OFFSET: 0x000	
TTL: 128		PRO: 0x01		CHKSUM			
SRC IP: 192.168.0.3							
DST IP: 192.168.0.1							
DATA (VARIABLE LENGTH)							

ICMP

TYPE: 0x00		CODE: 0x00		CHECKSUM	

### b. Ring



# DARSHAN INSTITUTE OF ENGINEERING & TECHNOLOGY

## Semester 5<sup>th</sup> | Practical Assignment | Computer Networks (2101CS501)

Date: 20/07/2024

File Edit Options View Tools Extensions Window Help

Logical Physical x: 293, y: 243

Root 01:35:30

Time: 00:03:07

Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit

Automatically Choose Connection Type

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x: 587, y: 325

Root 05:52:30

Time: 00:06:55.088

PLAY CONTROLS

Upcoming Earnings

Search

ENG IN

12:34:39 PM 7/20/2024

PDU Information at Device: Switch1

OSI Model Outbound PDU Details

PDU Formats

Ethernet 802.3

Bytes															
PREAMBLE: 101010...10										DEST ADDR: 0180.C200.0000					
SRC ADDR: 0060.5C12.3C5E										LEN: 3		DATA (VARIABLE LENGTH)			
FCS: 0x00000000										DATA (VARIABLE LENGTH)					

LLC

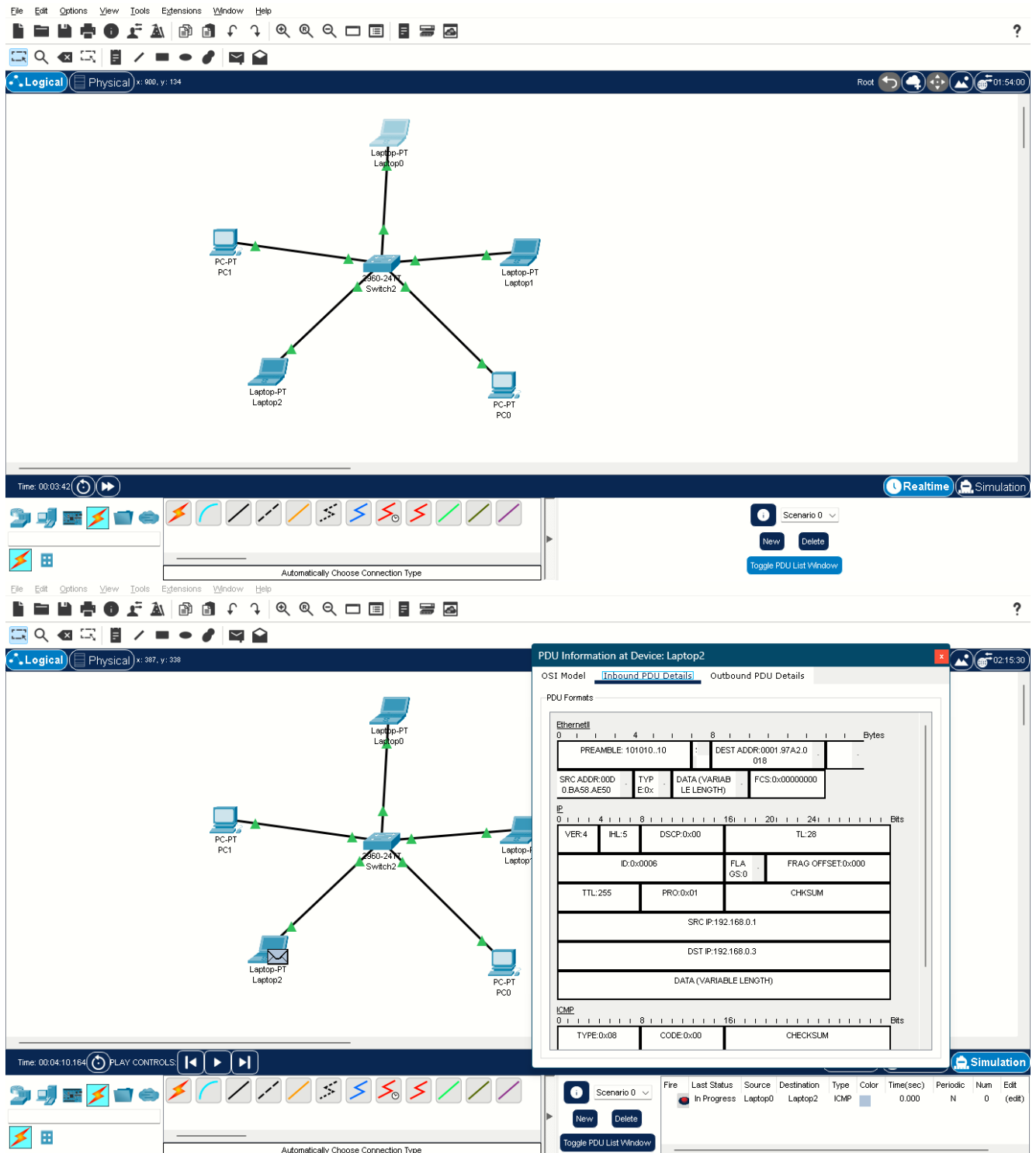
Bits															
DSAP: 0x42								SSAP: 0x42				CONTROL BYTE: 3			

STP BPDU

Bits															
PROTOCOL ID: 0								VERSION: 0				MESSAGE TYPE: 0			
ROOT ID: 32769 / 0003.E4B6.188C															
ROOT PATH COST: 0															

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### c.Star



The image displays two screenshots from the c.Star network simulation software. The top screenshot shows a star topology with a central switch (Switch2) connected to five devices: Laptop-PT Laptop0, PC-PT PC1, Laptop-PT Laptop1, Laptop-PT Laptop2, and PC-PT PC0. The bottom screenshot shows the same topology with a PDU information window open for Laptop2. The PDU details are as follows:

**Ethernet II**

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
PREAMBLE: 101010...10														DEST ADDR: 0001.97A2.0018																	
SRC ADDR: 0000.BA50.AE50														TYP: 0x08		DATA (VARIABLE LENGTH)										FCS: 0x00000000					

**IP**

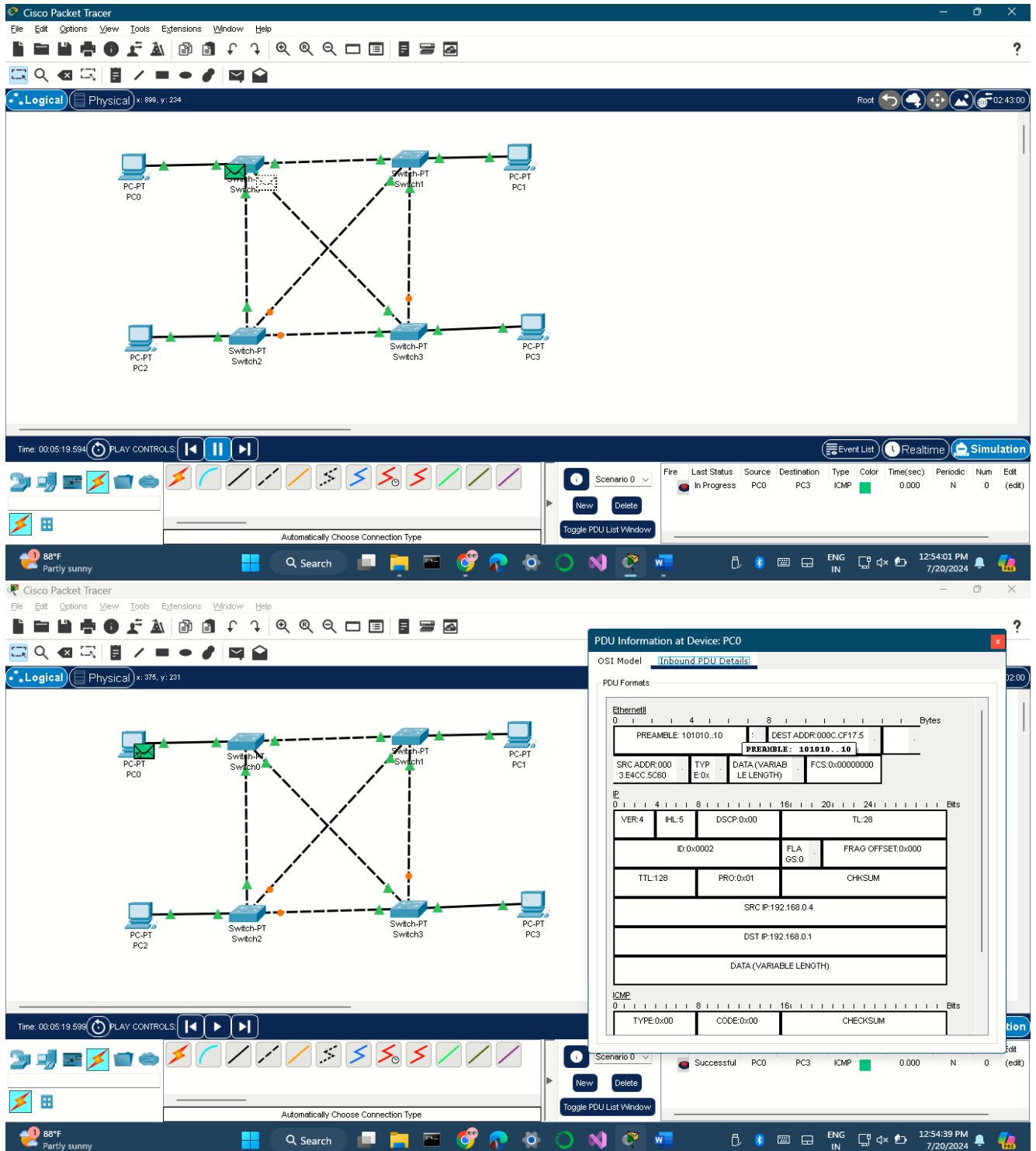
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
VER: 4		IHL: 5		DSCP: 0x00				TL: 28																							
ID: 0x0006																FLA: 0				FRAG OFFSET: 0x000											
TTL: 255								PRO: 0x01								CHKSUM															
SRC IP: 192.168.0.1																															
DST IP: 192.168.0.3																															
DATA (VARIABLE LENGTH)																															

**ICMP**

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
TYPE: 0x08																CODE: 0x00								CHECKSUM							

### d.Mesh

Date: 20/07/2024



The image displays two screenshots of the Cisco Packet Tracer application. The top screenshot shows a network topology with four PCs (PC0, PC1, PC2, PC3) connected to three switches (Switch1, Switch2, Switch3) in a mesh configuration. The bottom screenshot shows the same topology with a PDU (Protocol Data Unit) details window open for PC0. The PDU details window shows the following information:

**PDU Information at Device: PC0**

OSI Model: **Inbound PDU Details**

PDU Formats:

**Ethernet II**

0	4	8	12	16	20	24	Bytes
PREAMBLE: 101010...10				DEST ADDR: 000C.CF17.5			
SRC ADDR: 0003.E40C.5C80				TYP: E:0x		DATA (VARIABLE LENGTH)	
FCS: 0x00000000							

**IP**

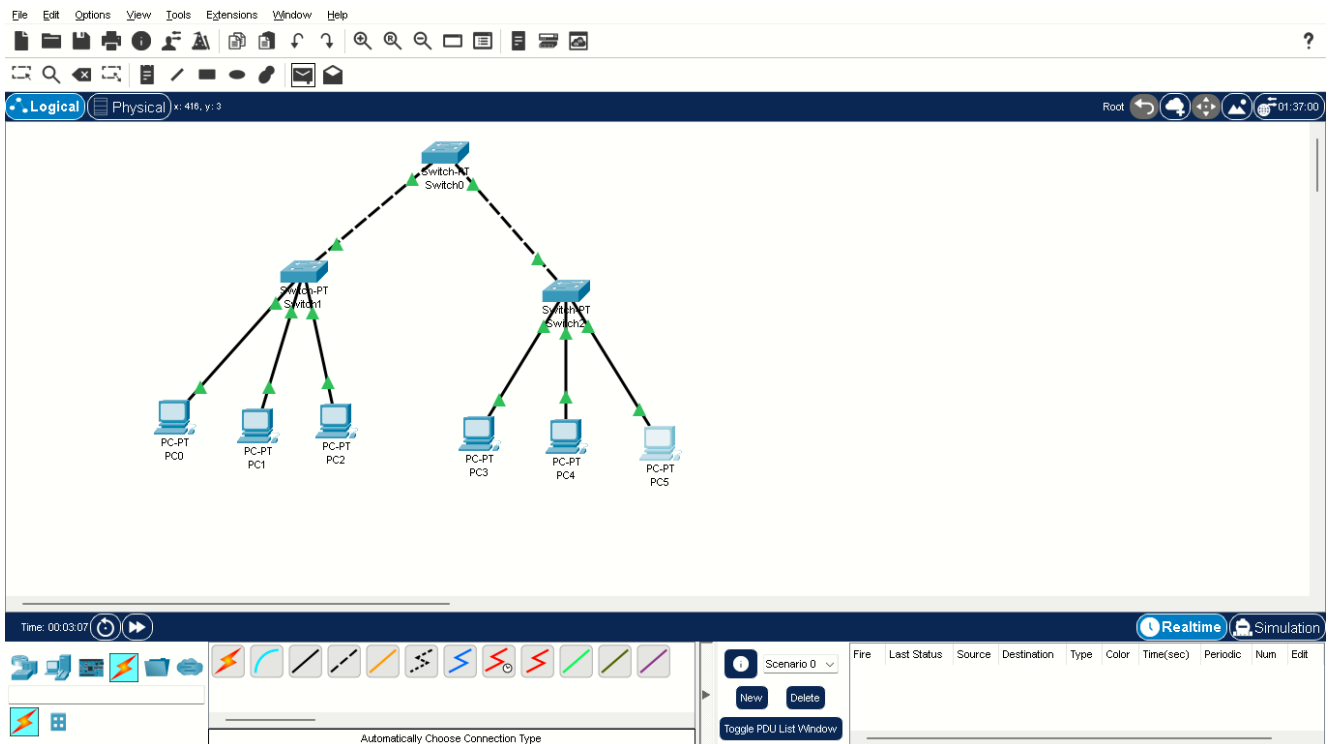
0	4	8	12	16	20	24	Bits
VER: 4		IHL: 5		DSCP: 0x00		TL: 28	
ID: 0x0002				FLAG: 0		FRAG OFFSET: 0x000	
TTL: 128				PRO: 0x01		CHKSUM	
SRC IP: 192.168.0.4							
DST IP: 192.168.0.1							
DATA (VARIABLE LENGTH)							

**ICMP**

0	4	8	12	16	20	24	Bits
TYPE: 0x00		CODE: 0x00		CHECKSUM			

Date: 20/07/2024

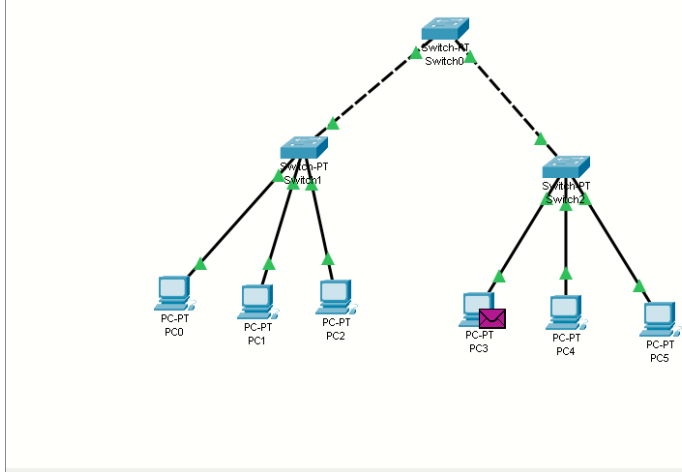
## e.Tree



Date: 20/07/2024

File Edit Options View Tools Extensions Window Help

Logical Physical x: 606, y: 333



Time: 00:03:48.317 PLAY CONTROLS

Automatically Choose Connection Type

### PDU Information at Device: PC3

OSI Model Inbound PDU Details Outbound PDU Details

PDU Formats

EthernetII

PREAMBLE: 101010...10		DEST ADDR: 0010.1179.E8B7	
SRC ADDR: 0000.9741.35A4	TYP: E:0x	DATA (VARIABLE LENGTH)	FCS: 0x00000000

IP

VER: 4	IHL: 5	DSCP: 0x00	TL: 28
ID: 0x0006		FLA GS: 0	FRAG OFFSET: 0x000
TTL: 255		PRO: 0x01	CHECKSUM
SRC IP: 192.168.0.1			
DST IP: 192.168.0.4			
DATA (VARIABLE LENGTH)			

ICMP

TYPE: 0x08	CODE: 0x00	CHECKSUM
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Simulation

Scenario 0

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
In Progress	Switch0	PC0	ICMP			0.000	N	0	(edit)
In Progress	PC0	PC3	ICMP			0.000	N	1	(edit)

New Delete

Toggle PDU List Window