

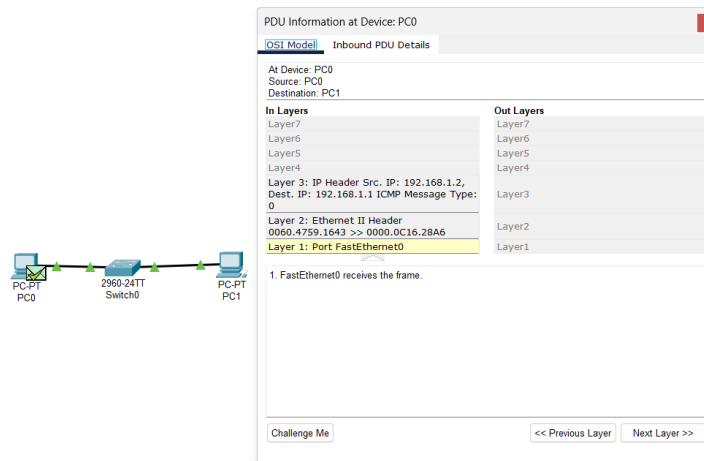
Date: 25/06/2025

### Lab Practical #04:

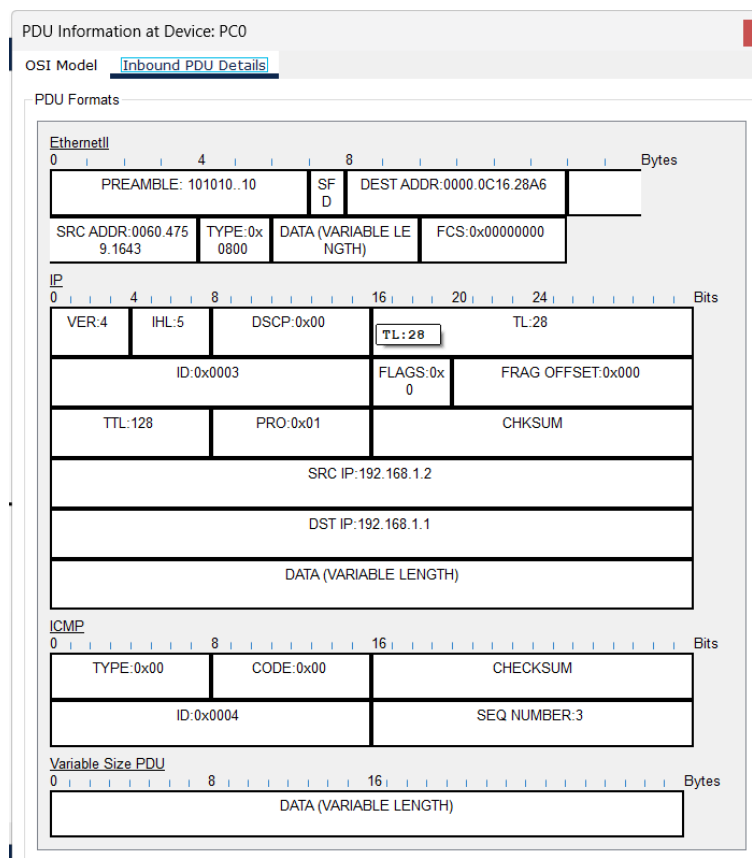
Installation of Network Simulator (Packet Tracer) and Implement different LAN topologies.

### 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.



0.1 Simple network with switch OSI Model



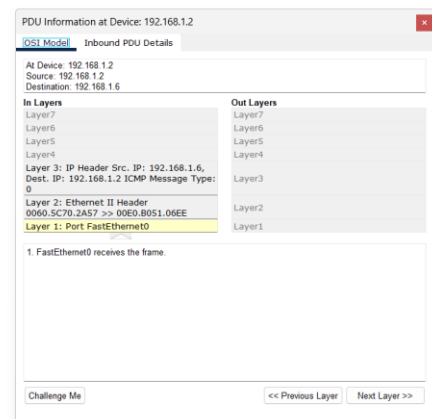
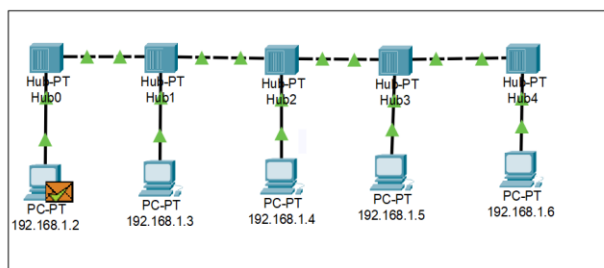
0.2 Simple network with switch PDU

Date: 25/06/2025

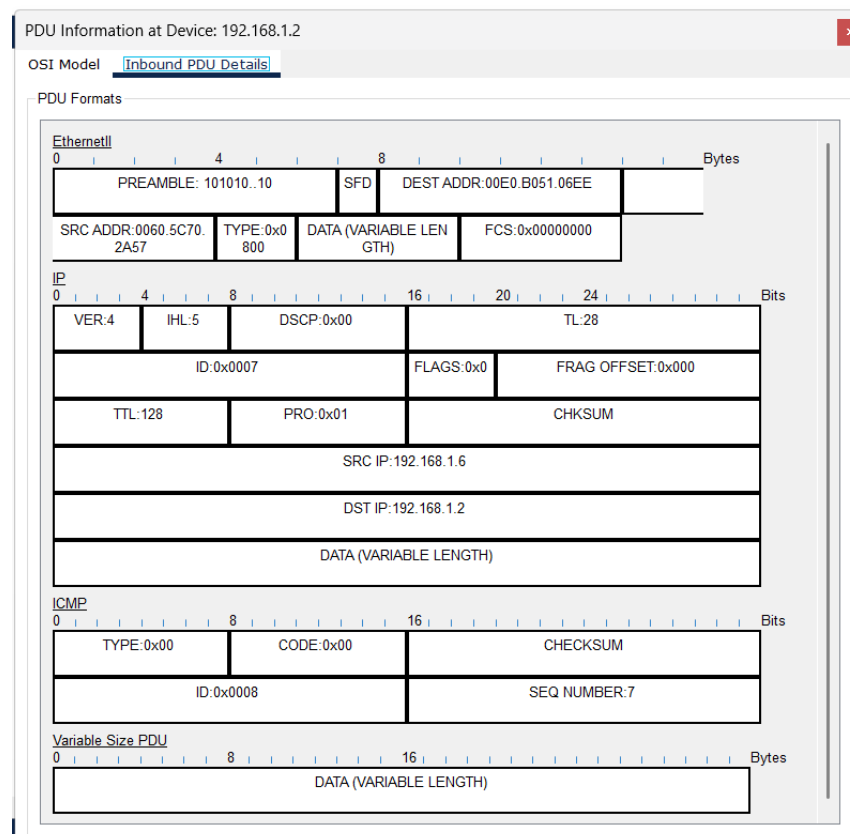
## 2. Implement different topologies in packet tracer.

- Bus
- Ring
- Star
- Mesh
- Tree

### 1 Bus

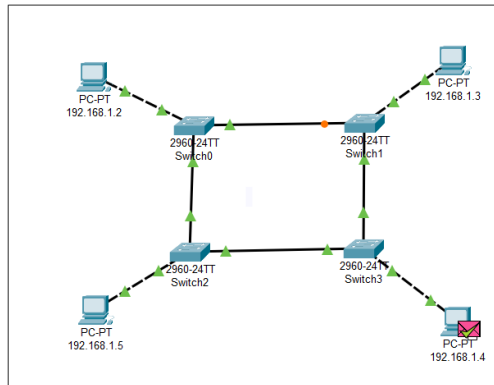


#### 1.1 Bus Topology OSI Model



#### 1.2 Bus Topology PDU Screenshot

## 2 Ring



PDU Information at Device: 192.168.1.4

**OSI Model** Inbound PDU Details

At Device: 192.168.1.4  
Source: 192.168.1.4  
Destination: 192.168.1.5

**In Layers**

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.4 ICMP Message Type: 0
- Layer2: Ethernet II Header 0010.11EA.64BE >> 0060.476D.3BE9
- Layer1: Port FastEthernet0**

**Out Layers**

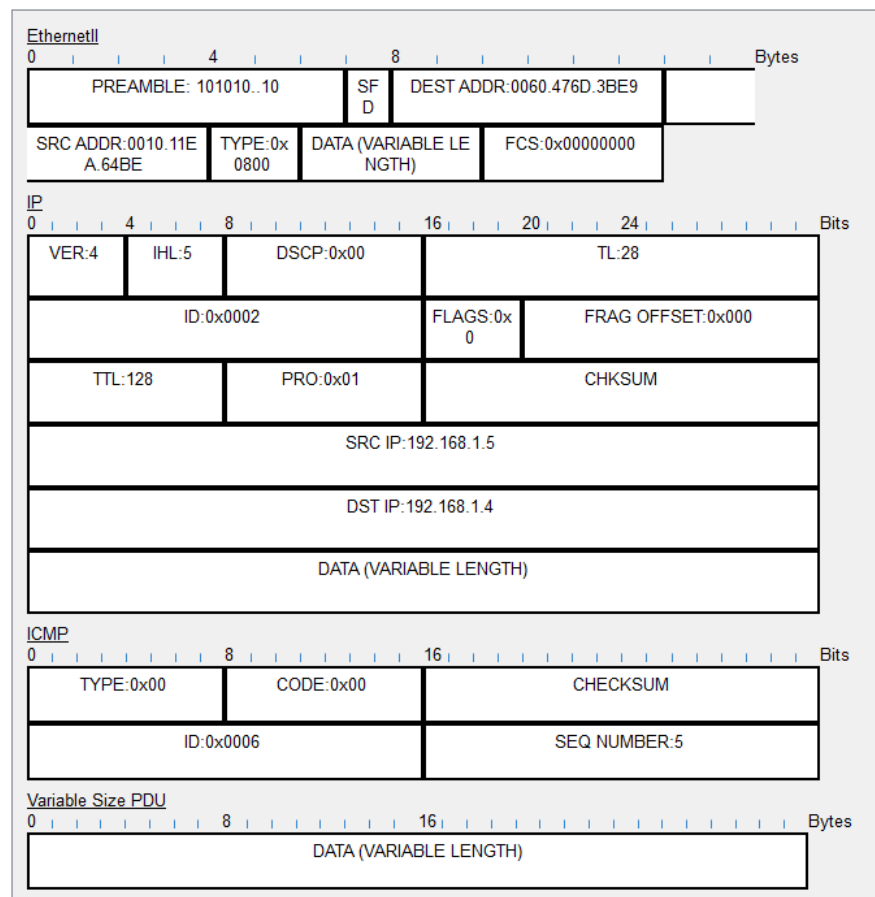
- Layer7
- Layer6
- Layer5
- Layer4
- Layer3
- Layer2
- Layer1

1. FastEthernet0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

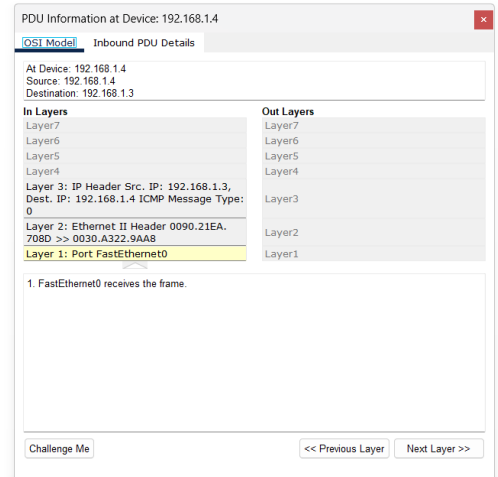
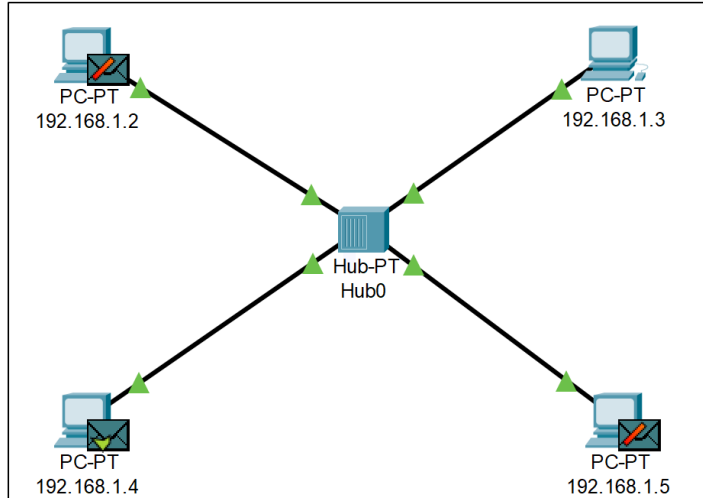
### 2.1 Ring Topology OSI Model

#### PDU Formats

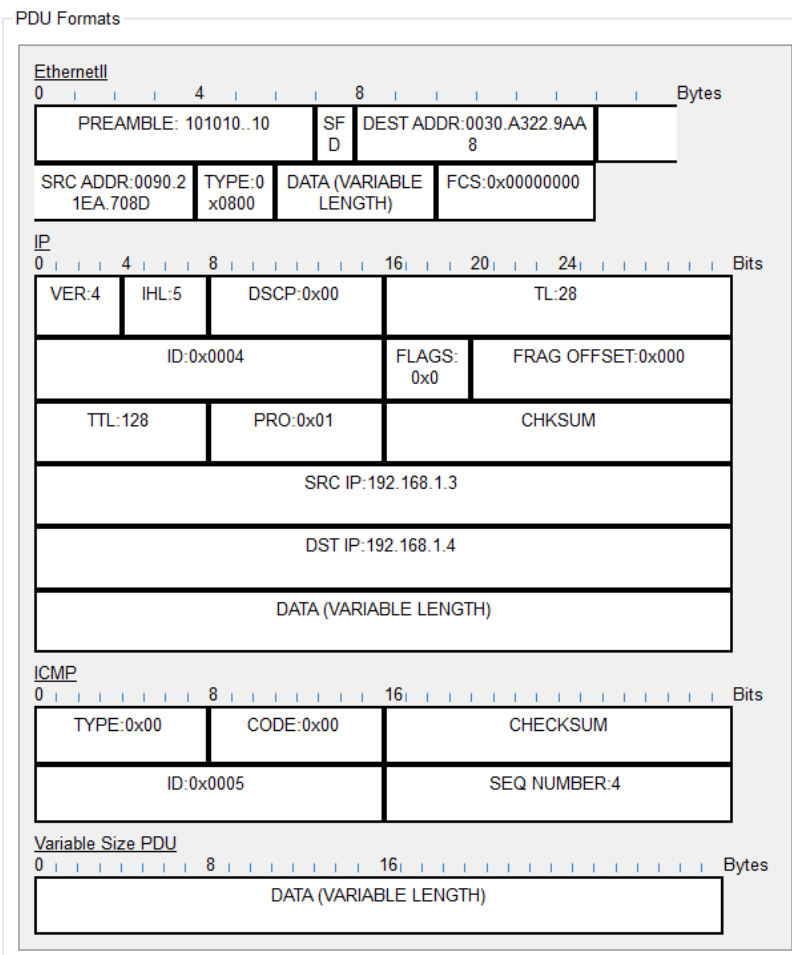


### 2.2 Ring Topology PDU Screenshot

### 3 Star

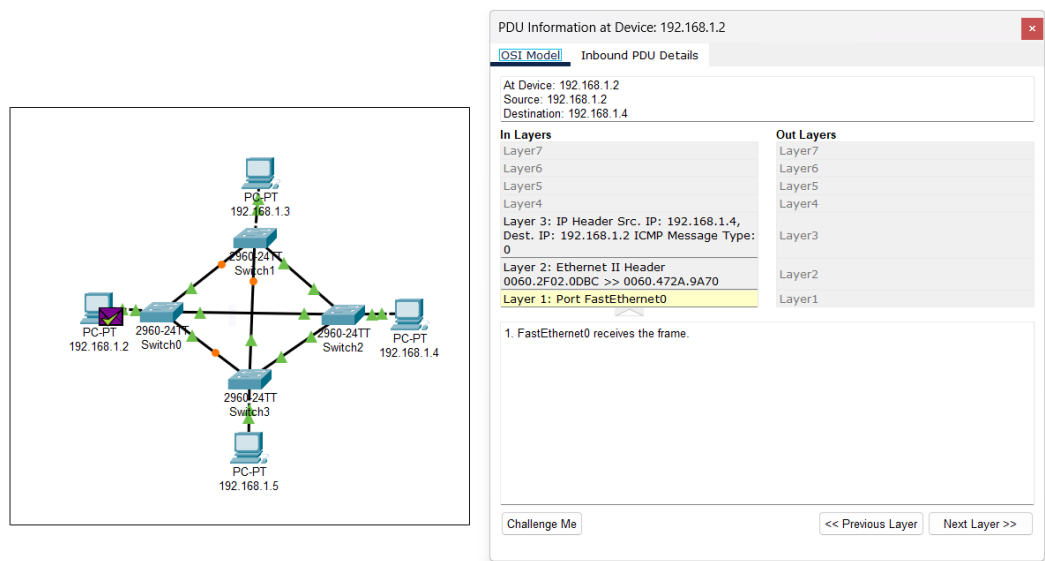


3.1 Star Topology OSI Model

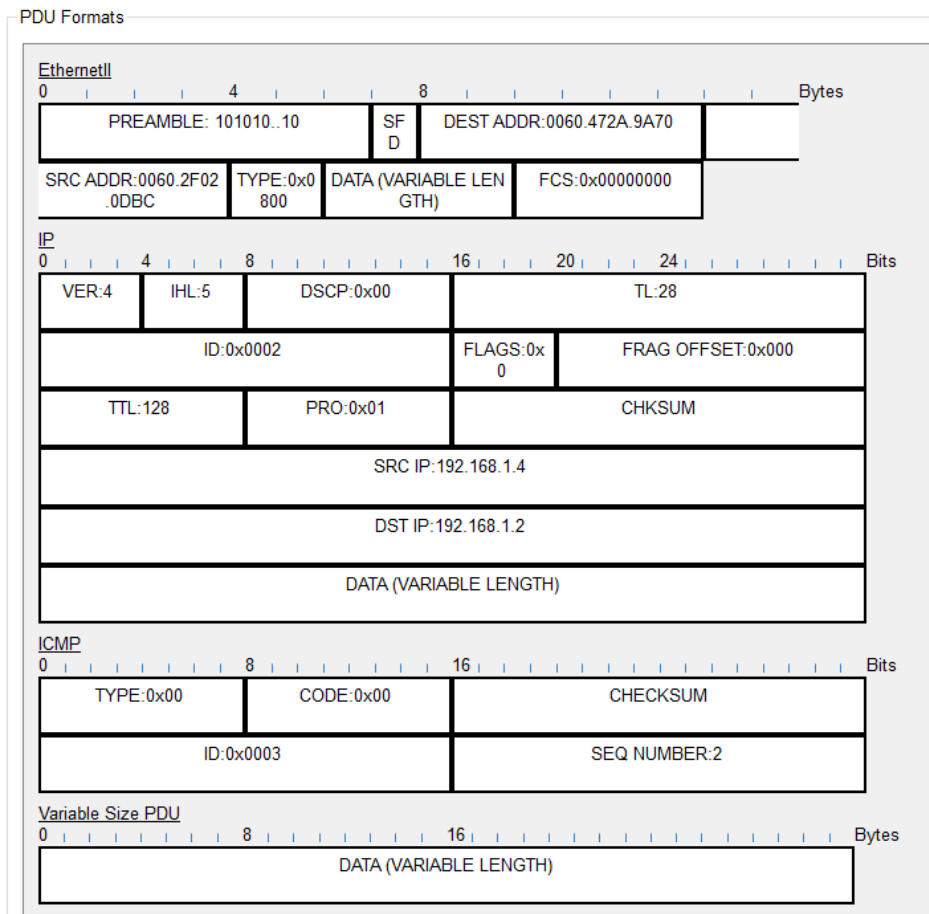


3.2 Star Topology PDU Screenshot

## 4 Mesh



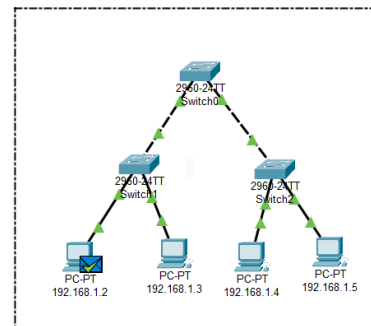
4.1 Mesh Topology OSI Model



4.2 Mesh Topology PDU Screenshot

Date: 25/06/2025

## 5 Tree



PDU Information at Device: 192.168.1.2

OST Model Inbound PDU Details

At Device: 192.168.1.2  
Source: 192.168.1.2  
Destination: 192.168.1.5

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.2 ICMP Message Type: 0	Layer3
Layer2: Ethernet II Header 00D0.9737.66BB >> 000C.CFE3.2275	Layer2
Layer1: Port FastEthernet0	Layer1

1. FastEthernet0 receives the frame.

Challenge Me << Previous Layer Next Layer >>

### 5.1 Tree Topology OSI Model

PDU Formats

**EthernetII**

Bytes			
PREAMBLE: 101010..10		SF D	DEST ADDR:000C.CFE3.2275
SRC ADDR:00D0.9737.66BB	TYPE:0x0800	DATA (VARIABLE LENGTH)	
FCS:0x00000000			

**IP**

Bits			
VER:4	IHL:5	DSCP:0x00	TL:28
ID:0x0004		FLAGS:0x0	FRAG OFFSET:0x000
TTL:128	PRO:0x01	CHKSUM	
SRC IP:192.168.1.5			
DST IP:192.168.1.2			
DATA (VARIABLE LENGTH)			

**ICMP**

Bits		
TYPE:0x00	CODE:0x00	CHECKSUM
ID:0x0005		SEQ NUMBER:4

**Variable Size PDU**

Bytes	
DATA (VARIABLE LENGTH)	

### 5.2 Tree Topology PDU Screenshot