

Date: 02/07/2025

Lab Practical #05:

Study the concept of VLAN using packet tracer.

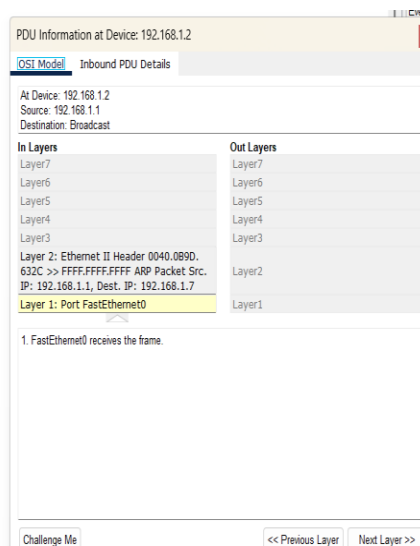
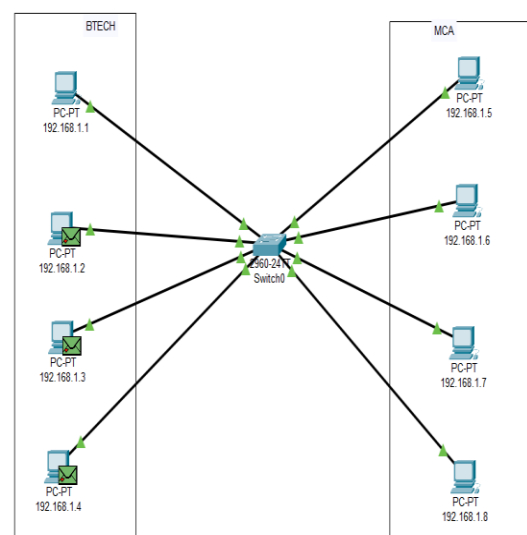
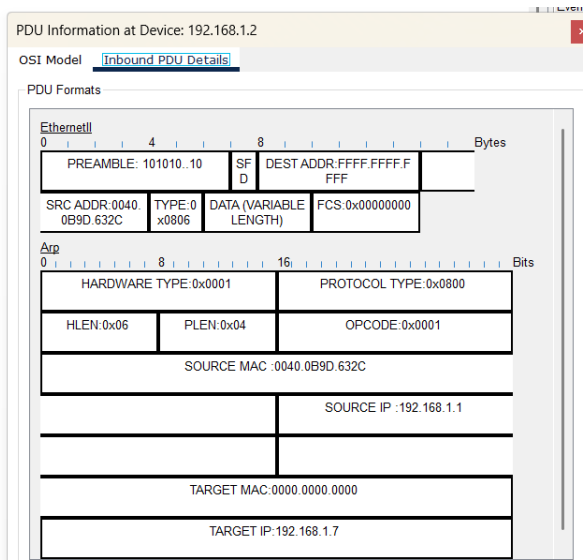
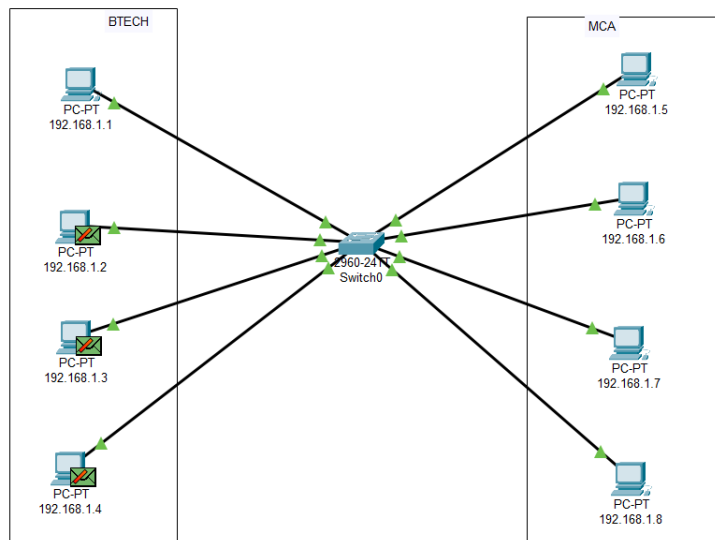
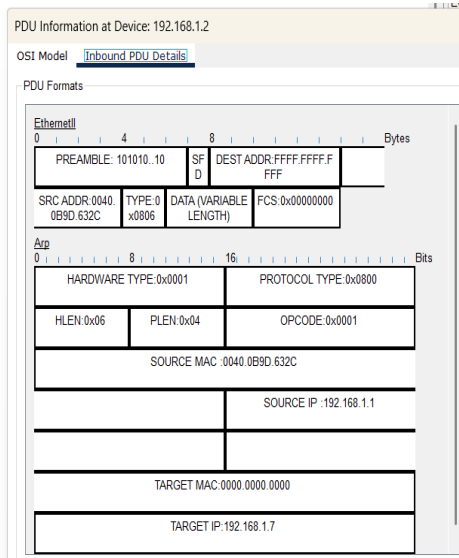
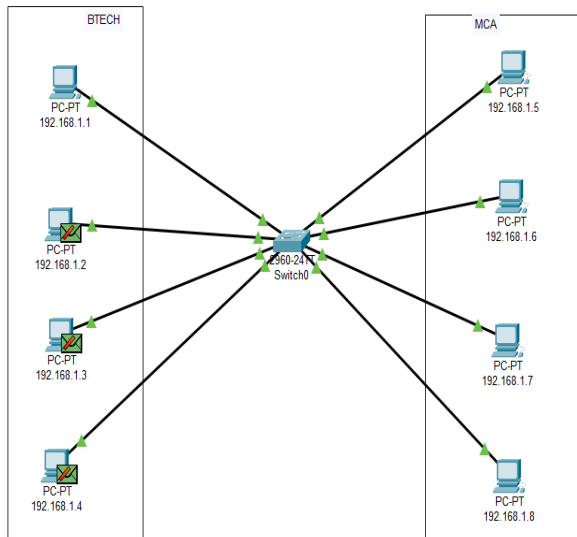
Practical Assignment #05:

1. Implement the different network structures in VLAN and VLAN trunking. Also check connectivity between them using ping command or PDU utility.

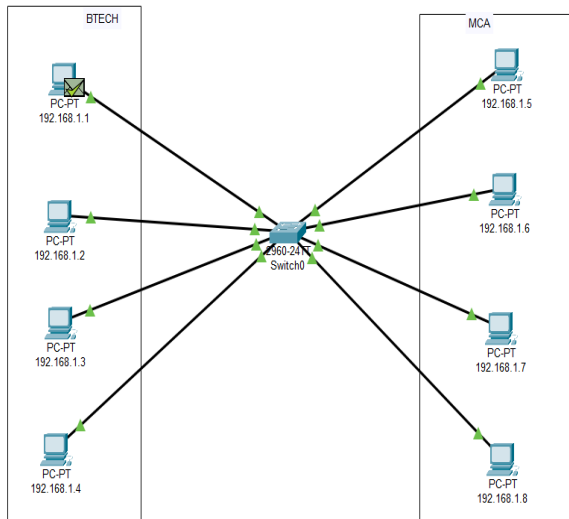
Steps to Configure VLANs in Cisco Packet Tracer

1. Set Up the Network Topology
 - Open Cisco Packet Tracer.
 - Place a 2960 switch on the workspace.
 - Add multiple PCs and connect them to the switch using Copper Straight-Through cables.
2. Access the Switch Configuration
 - Click on the switch device.
 - Navigate to the Config tab.
3. Add VLANs
 - In the left menu, choose VLAN Database.
 - In the VLAN configuration table:
 - Enter a VLAN ID (e.g., 10) and a VLAN Name (e.g., Sales), then press Add.
 - Enter another VLAN ID (e.g., 20) with a Name (e.g., HR), then press Add.
4. Configure Switch Ports for VLANs
 - Select an interface such as FastEthernet0/1 from the left panel.
 - Change the Port Mode to Access.
 - From the VLAN dropdown, assign the correct VLAN ID (e.g., 10).
 - Repeat for other interfaces, assigning each to the correct VLAN.
5. Assign IP Addresses to End Devices
 - For each PC: go to Desktop → IP Configuration.
 - Assign IP addresses within the same subnet for devices in the same VLAN.
6. Test VLAN Connectivity
 - Use the ping command: PCs in the same VLAN should communicate successfully.
 - PCs in different VLANs will be unable to communicate unless a router-on-a-stick setup or a Layer 3 switch is used.

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PDU Information at Device: 192.168.1.1

OSI Model [Inbound PDU Details](#)

PDU Formats

EthernetII			
Bytes			
PREAMBLE: 101010...10		SF 0	DEST ADDR: 0040.0B9D.63 2C
SRC ADDR: 0060.703A.5B64	TYPE: 0 x0800	DATA (VARIABLE LENGTH) FCS: 0x00000000	

IP			
Bits			
VER: 4	IHL: 5	DSCP: 0x00	TL: 28
ID: 0x0002		FLAGS: 0x0	FRAG OFFSET: 0x000
TTL: 128	PRO: 0x01	CHKSUM	
SRC IP: 192.168.1.3			
DST IP: 192.168.1.1			
DATA (VARIABLE LENGTH)			

ICMP		
Bits		
TYPE: 0x00	CODE: 0x00	CHECKSUM