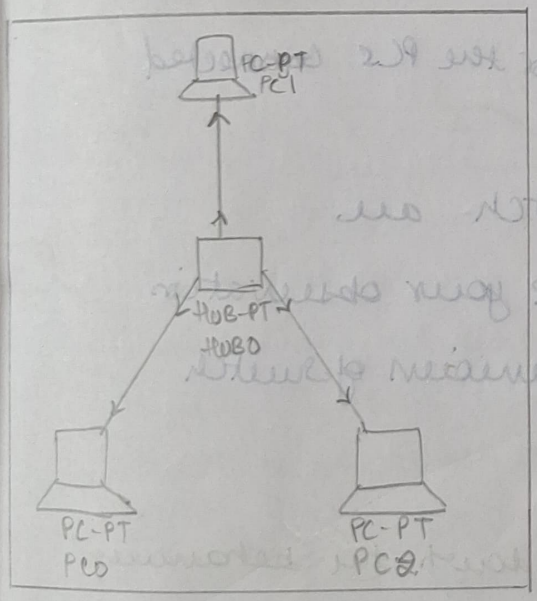
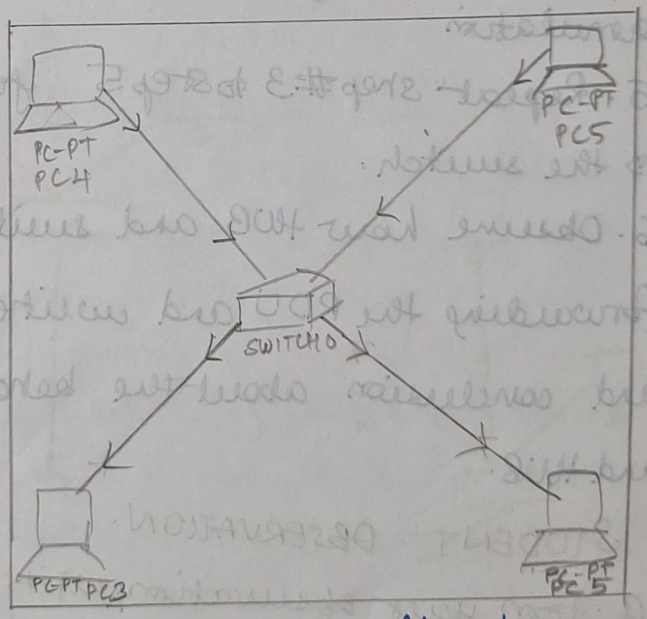
EXPNO: 3 31/07/2024

AIM:- To study the Packet tracer tool Installation and User Interface Overview.

-ANALYSE THE BEHAVIOUR OF NETWORK DEVICES USING CISCO PACKET TRACER SIMULATOR.

1. From the network component box, click & drag & drop the below components:
   a. 4Generic PCs and One HUB
   b. 4Generic PCs and one Switch
2. Click on Connections:
   a. Click on Copper Straight-Through cable.
   b. Select one of the PC and connect it to HUB using the cable. The link LED should glow in green, indicating that the link is up. Similarly connect remaining 3 PCs to the HUB
   c. Similarly, connect 4 PCs to the switch using copper-straight-through cable.





3. Click on the PCs connected to hub, go to the Desktop tab, Click on IP configuration and enter an IP address and Subnet mask. Here the default gateway and DNS server information is not needed as there's only 2 end devices in the network.

PC0	
IP CONFIGURATION	
IP Configuration	
○DHCP	⊙Static
IP Address	10.1.1.1
Subnet Mask	255.0.0.0
Default Gateway	
DNS Server.	

PC1	
IP CONFIGURATION	
IP Configuration	
○DHCP	⊙Static
IP Address	10.1.1.2
Subnet Mask	255.0.0.0
Default Gateway	
DNS Server	

Click on the PDU (message icon) from the common tool bar,

a. Drag and Drop it on one of PC (source machine) and then drop it on another PC (destination machine) connected to the HUB.

4. Observe the flow of PDU from source PC to destination PC by selecting the Realtime mode of simulation

5. Repeat step #3 to step 5 for the PCs connected to the switch.

6. Observe how HUB and switch are forwarding the PDU and write your observation and conclusion about the behaviour of switch and HUB.

STUDENT OBSERVATION.

a. From your observation write down the behaviour of switch and HUB in terms of forwarding the packets received by them.

HUB :-

1. Broadcasting * broadcast packets to all connected devices regardless of destination address.

2. No Filtering * Do not filter packets or use MAC address to direct traffic.

SWITCH :-

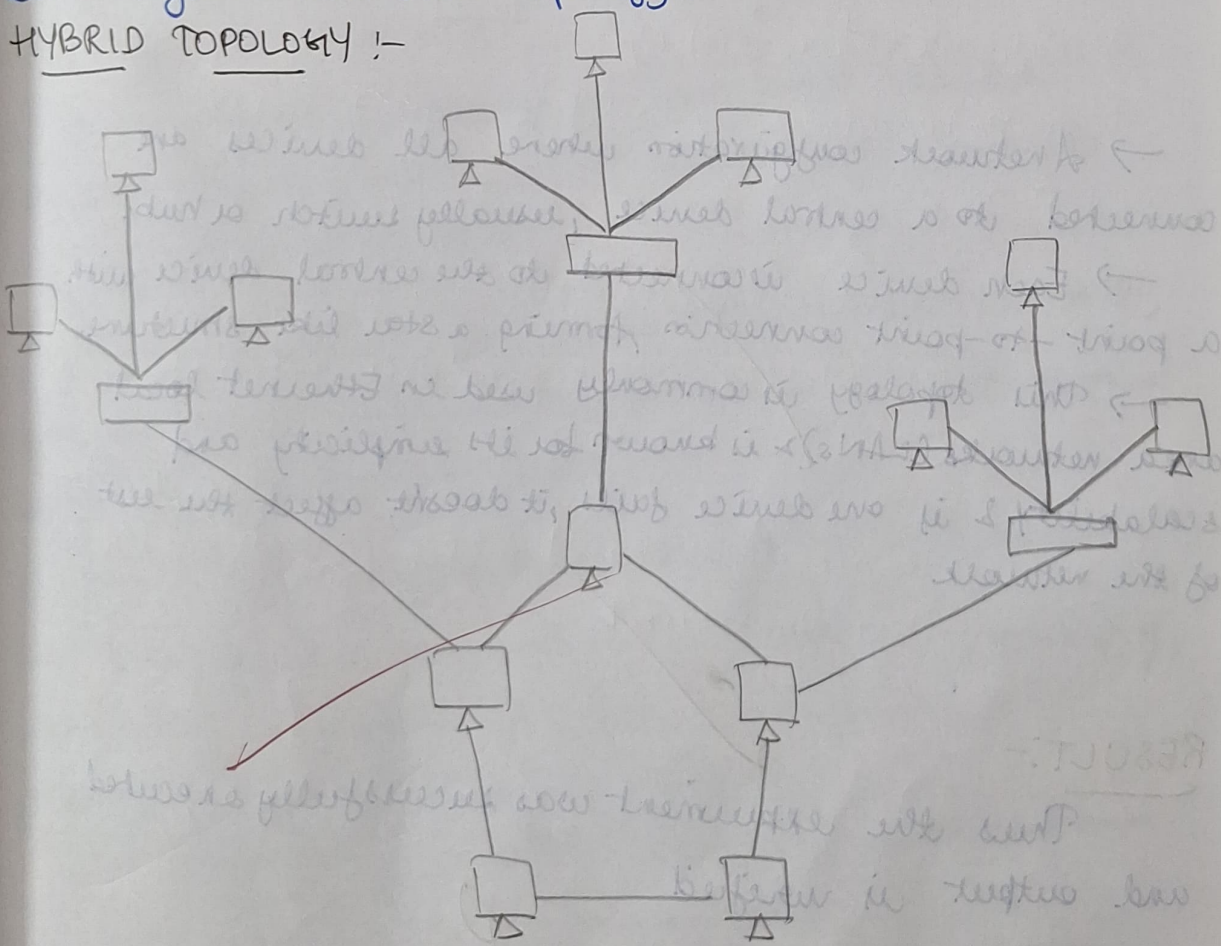
1. Unicast Forwarding * Switches forward packets only to the devices with the specific destination MAC address.

2. MAC address Table * Switches maintain a MAC address table to direct packets to the correct port.

(b) Find out the ~~most~~ network topology implemented in your college and draw and label that topology in your observation book.

*. Network Topology implemented in our college is both hybrid and star topology.

HYBRID TOPOLOGY :-

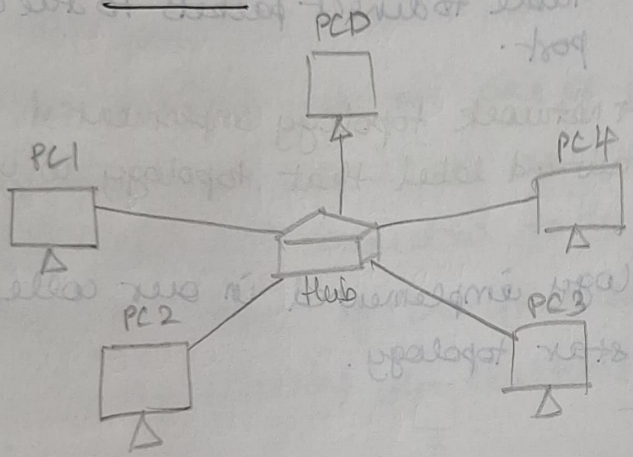


→ A kind of network topology that is a combination of 2 or more network topologies such as mesh, bus and ring topologies

→ A variety of technologies are needed for its physical implementation and offers a COMPLEX STRUCTURE.

→ Increase in flexibility, fault tolerance & allows new basic topologies to be added or removed easily.

STAR TOPOLOGY



→ A network configuration where all devices are connected to a central device, usually switch or hub.

→ Each device is connected to the central device with a point-to-point connection forming a star like structure.

→ This topology is commonly used in Ethernet local area networks (LANs) & is known for its simplicity and scalability & if one device fails, it doesn't affect the rest of the network

RESULT:-

Thus the experiment was successfully executed and output is verified

10/8/24