31/7/2025

Practical - III

To understand environment of CISCO PACKET TRACER to design simple network

A simulator, as the name suggests, simulates network devices and its environment. Packet Tracer is an exciting network design, simulation and modelling tool.

1. It allows you to model complex systems without the need for dedicated equipment.
2. It helps to practice network configuration and troubleshooting skills via computer or mobile device.
3. Protocols in Packet Tracer are coded to work and behave in the same ways as they would on real hardware.

Analyse the behaviour of network devices using CISCO PACKET TRACER simulator

1. From the network, component box, click and drag-and-drop the below components:
   a. 4 Generic PCs and One HUB
   b. 4 Generic 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 are only two end devices in the network.

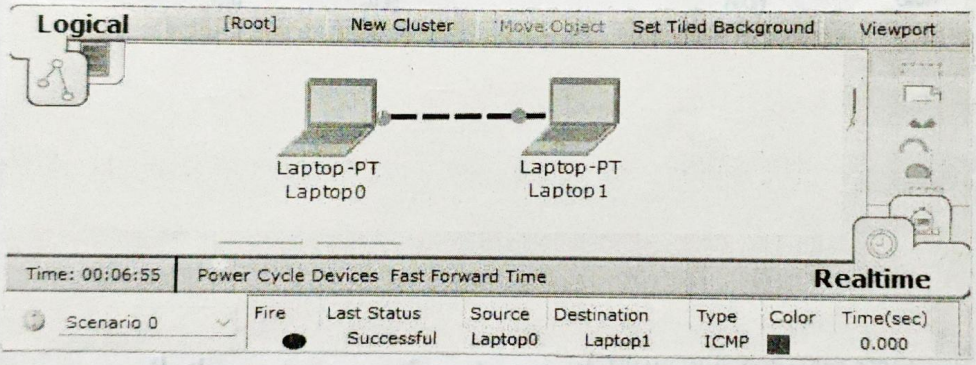
Click on the PDU (message icon) from the common tool bar,

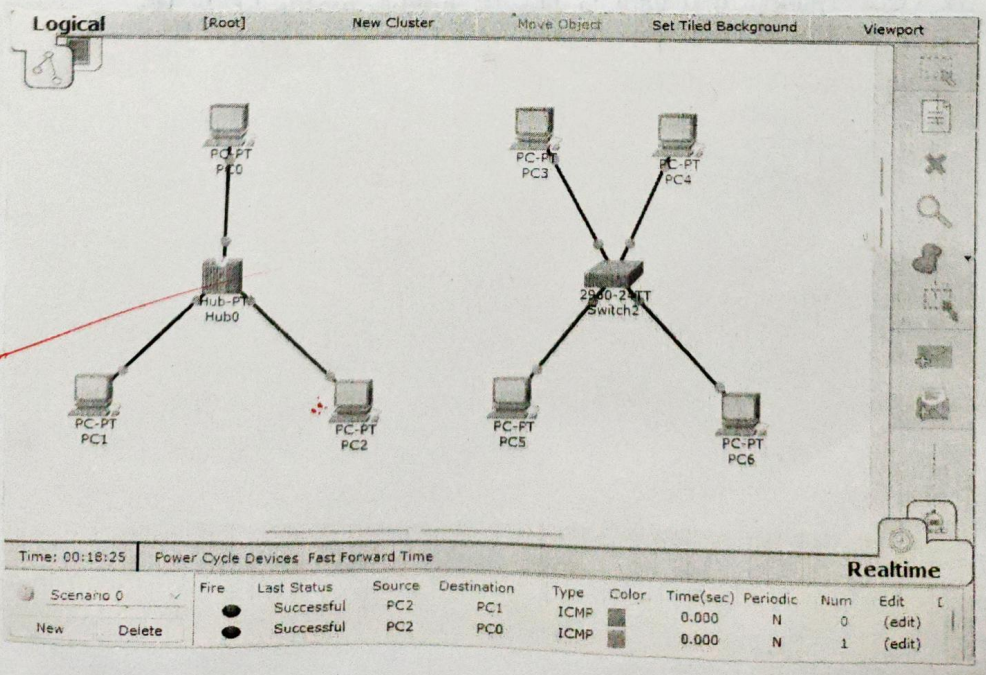
a. Drag and drop it one one of the PCs (source machine) and then drop it on another PC (destination machine) connected to the HUB.

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

5. Repeat step 3 and 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 behaviours of Switch and HUB.

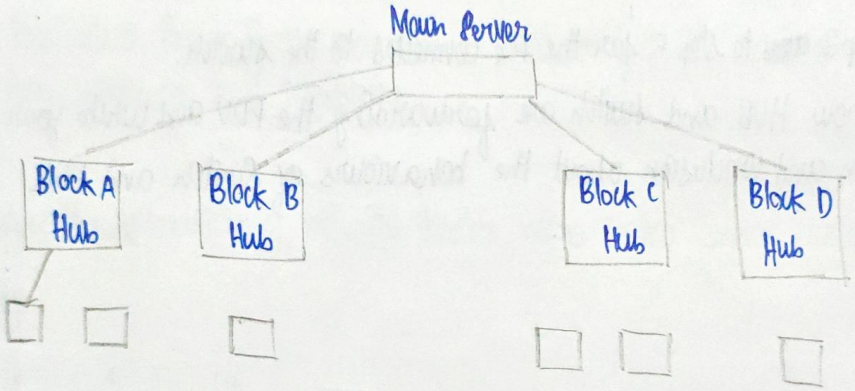




1. From your observation, write down the behavior of switch and hub in terms of forwarding the packets received by them.

Both switch and hub acts as the central controller for all the PCs (nodes) connected through them. Messages are forwarded in a very instant manner and an animation is shown in real time.

2. Find out the network topology implemented in your college and draw and label the topology.



Tree Topology

Result:

Hence, the Cisco Tracker was used to connect switches and hubs to PCs.

4/9/25