EXPERIMENT 03: EXPERIMENTS ON CISCO PACKET TRACER
(SIMULATOR TOOL)

Aim:

Analyze the behaviour of network devices using CISCO PACKET TRACER simulator.

Steps:

1. From the network components 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 3PCs to HUB.

    c. Similarly, connect 4PCS 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.

4. Observe the flow of PDV from source PC to destination PC by selecting the realtime mode of simulation.
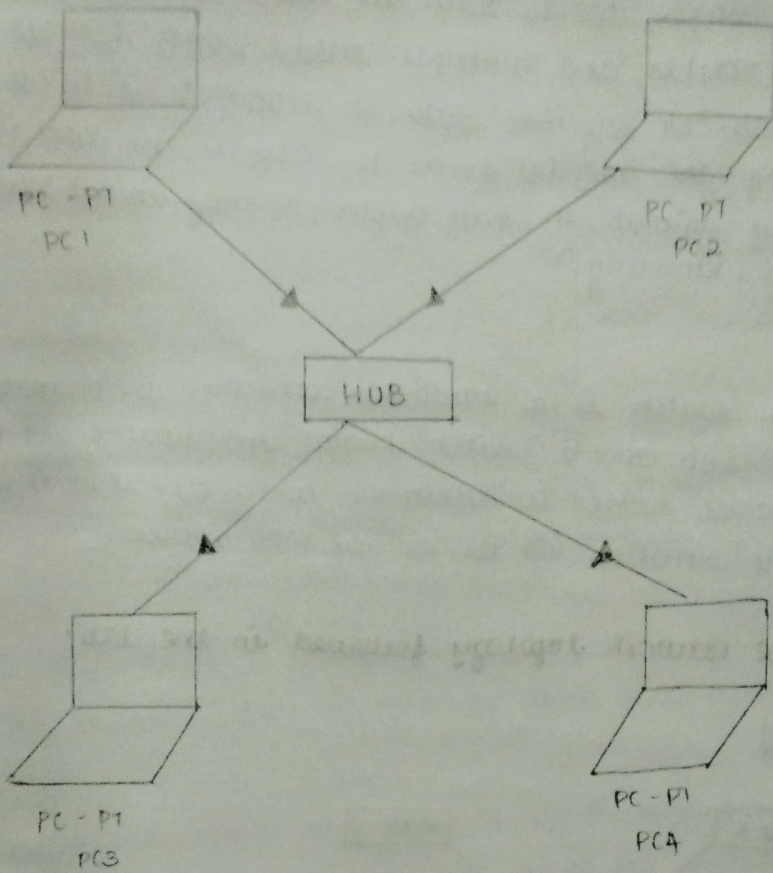
5. Repeat step#3 to step#5 for the PCS connected to the switch.

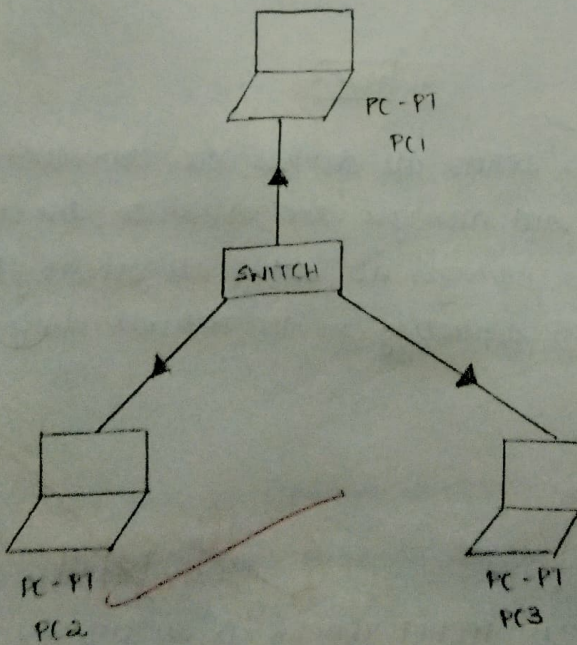6. Observe how HUB and switch are forwarding the PDV and write your observation and conclusion.

Observation:

Hub :

PC - PT
PC1

PC - PT
PC2

HUB

PC - PT
PC3

PC - PT
PC4

Switch:

PC - PT
PC1

SWITCH

PC - PT
PC2

PC - PT
PC3

a) From your observation write down the behaviour of switch and Hub in terms of forwarding the packets received by them.
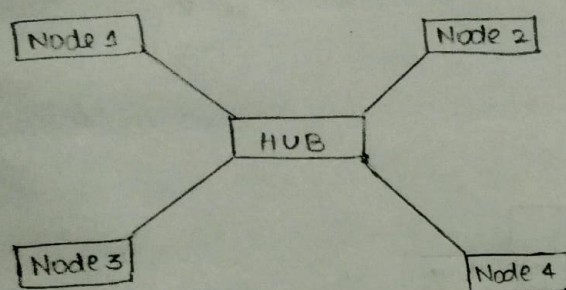
Ans: Hub:

Hubs are simple devices with an input Ethernet port that connects to a router and multiple output ports for devices to connect to when it receives data, it transmits it to all connecting devices, leaving the intended device to recognize the data. Network hubs also only operate in half-duplex, so they cannot send and receive data simultaneously.

Switch:

A network switch is a hardware connection device that is smarter than hub. Once a switch knows the routes and ports, it reads data packet header to determine which devices it is supposed to transmit information via its unique MAC address.

b) Find out the network topology followed in the lab.

Ans: Star Topology

It is a network design where all devices are connected to a central hub or switch and messages are passed to the central core that in turn passes the messages to either all other system or the specific destination system depending on the network design

Result:

Experiment on CISCO PACKET TRACER is successfully executed and the output is verified.

30/1/24