

a) To study the Packet tracer tool Installation and User Interface Overview.

The Packet tracer tool has been installed successfully. The User Interface was studied.

b) 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. 1 Generic PC 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 1 PC to the switch using copper straight-through cable.

3. Click on the PCs connected to the hub, go to 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 end devices in the network.

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 behaviours 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.

Ans: Hub: Broadcasts incoming packets to all devices. It doesn't check destination addresses, leading to more traffic and collisions. Works at OSI layer 1.

Switch: Forwards packet only to the intended device by checking MAC addresses. Reduces traffic and improves efficiency. Works at OSI layer 2.

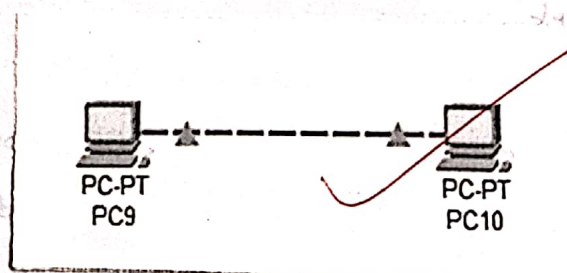
b. Find out the network topology implemented in your college and draw and label that topology.

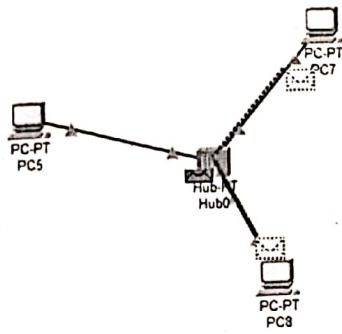
Ans: * Topology used: Star Topology

* All devices are connected to a central switch.

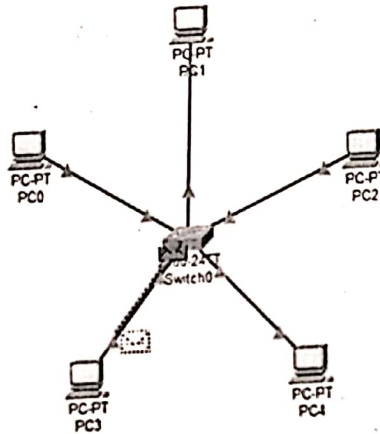
* Easy to manage and a failure in one device doesn't affect the rest.

* If the central switch fails, the entire network goes down.





3 Generic PCs and one HUB



5 Generic PCs and one Switch

Result:

Thus the experiments on CISCO PACKET TRACER tool has been done successfully.