Practical - 3

Aim:
TO study the Packet Tracer tool installation and user Interface.

a) TO understand environment of CISCO PACKET TRACER to design simple network

Introduction:
1) It allows you to model complex system without the need for dedicated equipment.
2) It helps you to practice your network configuration and troubleshooting. skills via computer or an android or ios based mobile device.
3) It is available for both the Linux and windows desktop environment.
4) Protocols in packet tracer are coded to work and behave in the same way as they would on real hardware.

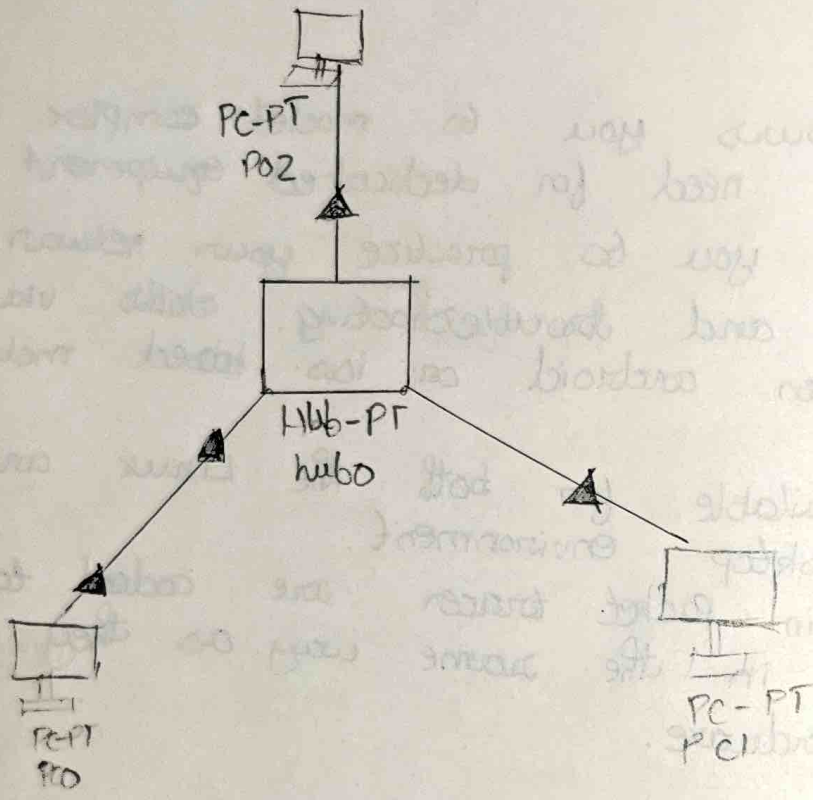
Analyse the behaviour of network devices using cisco packet tracer. simulator.

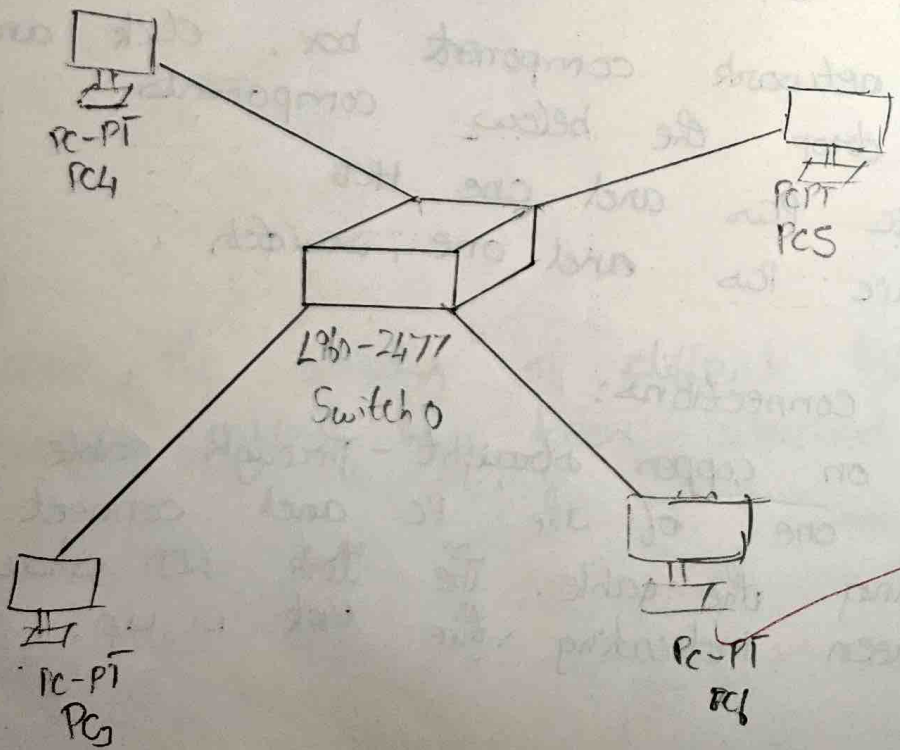
1) From the network component box, click and drag-and-drop the below components:
   a) 4 Generic PCs and one HUB
   b) 4 Generic PCs and one switch

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 green indicating 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.

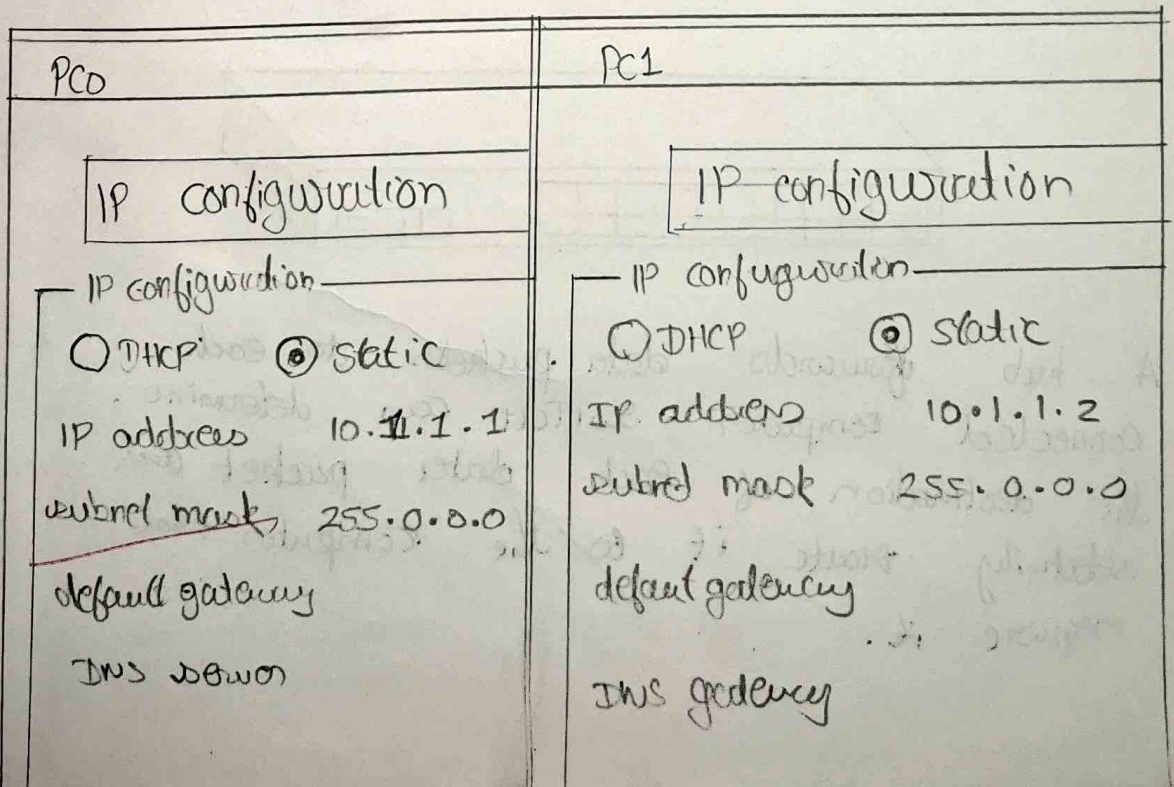
click on the PDU (message icon) from the common tool bar,

a) Drag and drop it on one of PC and then drop it on another PC 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 switch.

6) observe how HUB and switch are forwarding the PDU and write your observation and conclution about the behaviours of switch and HUB.



Student observation:

a) behaviour of switch and HUB

ans: HUB: a basic networking device that broadcast incomming data packets to all devices connecting to its ports.

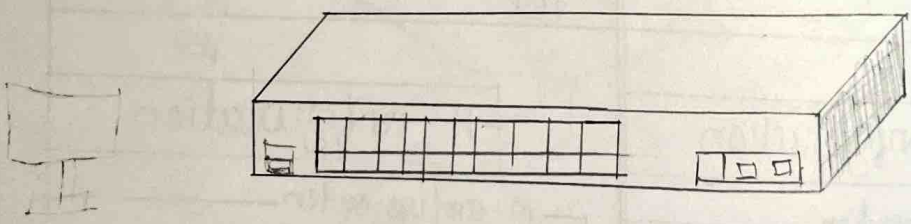
They operate on a physical layer of osi model and don't have capabability to distinguish between devices (different) or filter traffic.

collisions: when a collision happense the network performance is degraded.

Switch: It operates on a data link layer of the OSI model

- It maintains a MAC address table, which maps each MAC address to the corresponding port.
- This significatly reduces the chances of collisions and improves overall network throughput.

b) Topology diagram:



A hub forwards data packets to each connected computer. SWITCH can determine the destination of each data packet and selectively route it to the computer that require it.

Result:

Thus the study of Packet tracer tool and interface overview is studied.

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