CISCO PACKET TRACER ?
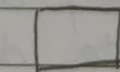
1> Interface overview :
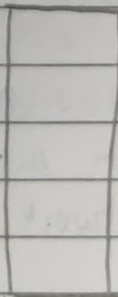
When we open packet tracer we are presented by :
→ menu bar
→ main tool bar — consists of shortcut to file and edit commands
→ Workspace ⇒ two types
         → logical : not relative to position
         →) physical : relative to position
→ simulation bar ⇒ has real time simulation as well
→ network component box : device type selection box and device specific box
→ Device type box : consists of types of device routers, hubs, switches etc
→ Device specific box : consists of specific devices for a type of device
→ user created packet window : This window manages the packets you put in the network during simulation mode.

IP address v4 : 32 bits — 4 octets
subnet mask = network address + host address

PCO ⟍

[diagram: box labeled "PCO" connected by dashed line to a tall rectangle labeled "server"]

Creating first packet tracer

1. Open packet tracer
2. In device selective select a end device and server
3. In connection select a copper cross over cable and add to PC-PT PC0 and select fast ethernet and connect to server-PT server0 fast ethernet. The lights turn green indicating a working connection.
4. Click on server and in desktop top select ipconfig set the ipv4 to 10.0.0.1 and the subnet mask is generated for the entered ipv4
5. Repeat the same process for PC0 and set ipv4 to 10.0.0.2
6. From common tool bar select data packet and place it on generic pc and then on generic server select realtime or simulation if in realtime it shows transferred successfully the connections are proper. In simulation play controls → auto capture → play controls → auto capture / play then you can see realtime transfer of packet.
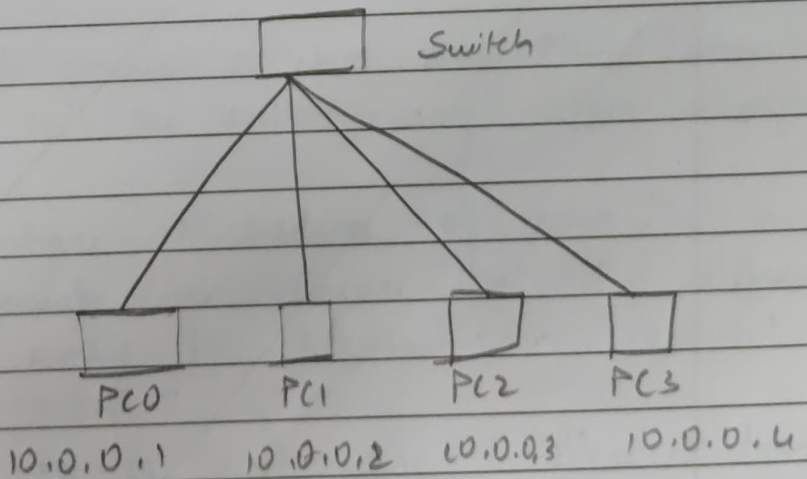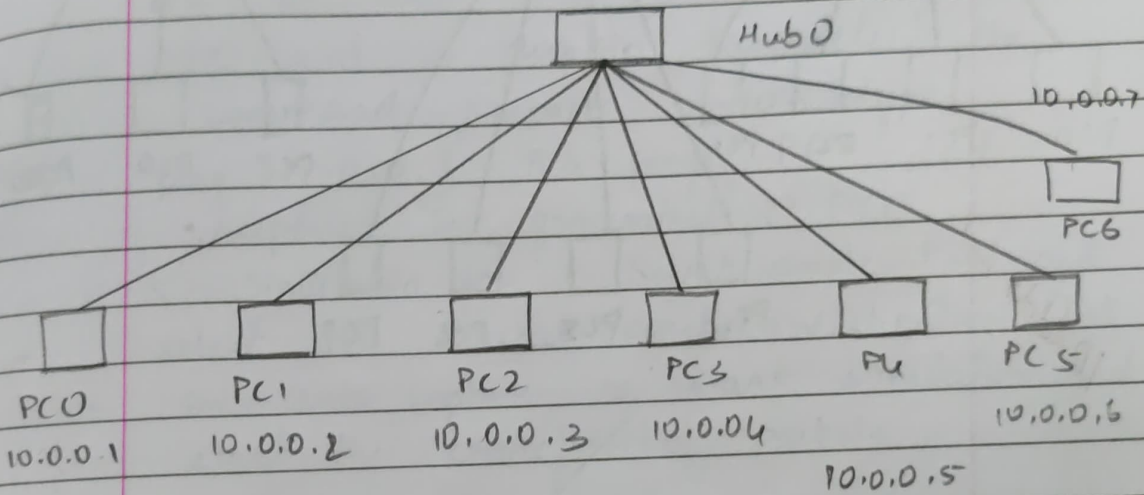
Router : A router is a network ng device used to transfer data packet b/w computer network
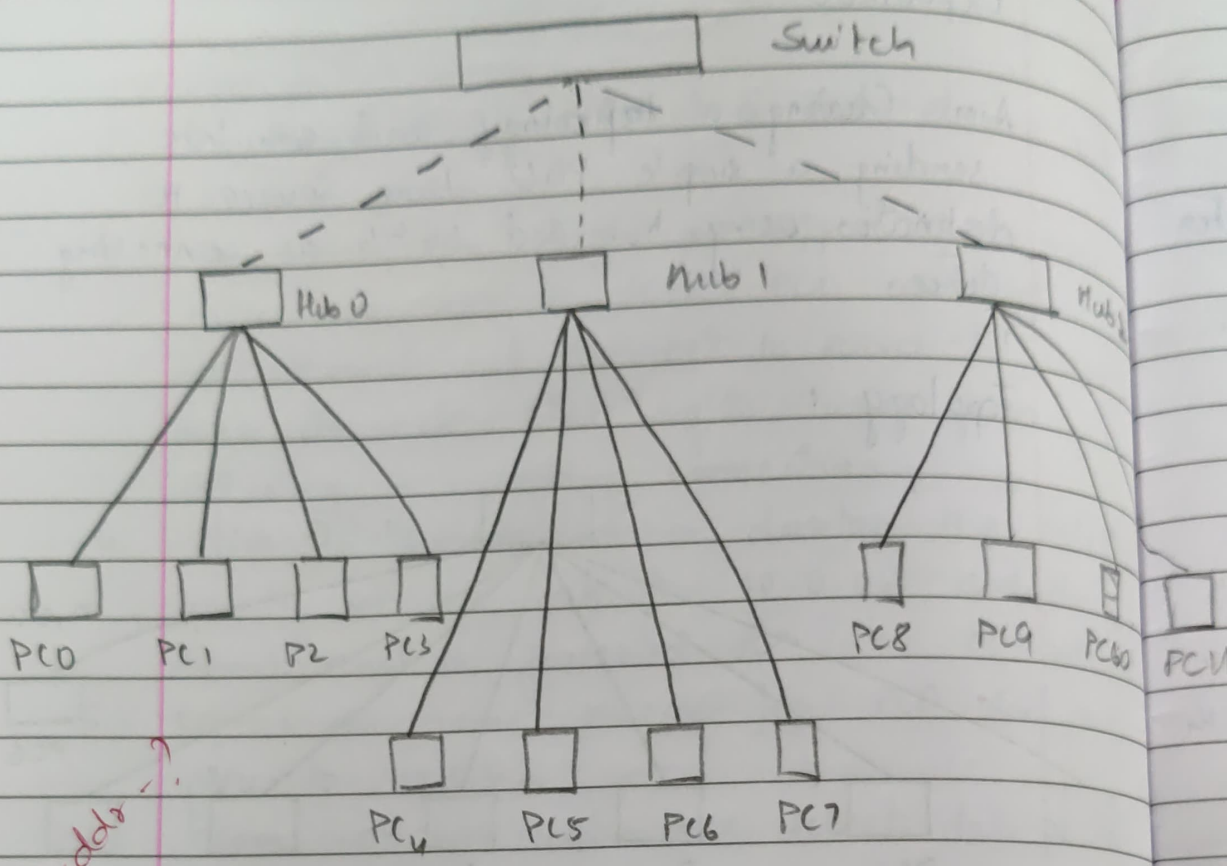
Switches : It is a networking device used to segment the network into different subnetwork called lan networks.

10/11/22

Experiment - 1

Aim : Creating a topology and simulate
sending a simple PDU from source to
destination using hub and switch as connecting
device.

Topology :

Hub 0

10.0.0.7

PC6

PC0   PC1   PC2   PC3   Pu   PC5
10.0.0.1   10.0.0.2   10.0.0.3   10.0.04   10.0.0.6
                                                  10.0.0.5

Switch

PC0   PC1   PC2   PC3
10.0.0.1   10.0.0.2   10.0.03   10.0.0.4

Switch

Hub 0   Hub 1   Hub 2

PC0   PC1   P2   PC3   PC8   PC9   PC60   PCU

IPaddr~?

PC4   PC5   PC6   PC7

Procedure:

using Hub:
1) Add generic hub and seven PC's to the logo logical workspace
2) Configure the IP address of the PC's from 10.0.0.1 to 10.0.0.7
3) Connect all pc's to hub using copper straight cable (because different layers)
4) Real time : Select the source PC and in desktop tab select the command prompt option type ping 10.0.0.3. This pings PC2 and response is generated in PC0
5) Simulation time : Select simple PDU and select the source and destination. Click on auto capture to start simulation and start the transfer of packets

Using switch:

1) Add generic switches and then connect PC's to the switch using copper straight cable.
2) configure IP address of each PCS in the configuration tab. Ensure that IP is different for every PC starting from 10.0.0.1 to 10.0.0.7
3) If no of switch are insufficient then add parts by clicking on device

Real time sim : Select source PC and in the desktop select command prompt option. In

command line ping to destination PC by specifying its IP.

Simulation : Select the simple PDU and select the source and destination computer clicking on auto capture allows us to see packet transfer.

Hybrid mode :

i) Add a switch and three hubs and 12 pc's

ii) connect switch and three hubs with copper cross over wire because it is in the same layer

iii) Connect the 12 pcs in group of 4 to the ~~hubs~~ three hubs respectively using copper straight wire.

iv) Configure the IP of each of the PC and add a note below each PC displaying the ~~port~~ IP addresses

Realtime mode : Select PC you want to send packet from and open its command prompt specify the destination PC by specifying its IP address. A response is sent by destination PC to source PC.

Simulation mode: Add a simple PDU by selecting the pair of PC and click on auto capture from right panel.

Observation:

→ Hub:

Learning outcome: i) ~~when~~ Connection b/w hub and devices is established through copper straight through wire as they belong to different dayers

ii) No. of ports can be added if needed by clicking on the device and adding the necessary port.

ii) Hub broadcasts the packets to all the connected devices and the packet is only accepted by matching with IP address.

Result: PC > ping 10.0.0.7
pinging 10.0.0.7 with 32 bytes of data
Reply from 10.0.0.7 : byte = 32
Hme 0ms
Reply from 10.0.0.7 byte = 32
Hme 0ms

ping statistic for 10.0.0.7
packet set = 2 recieve 2 lost

Switches:

→ Learning outcome:

i) When source device sends a message to switch it only sends the message to the destination unlike hub which broadcasts over the entire network.

ii) Connection b/w the switch and end devices is through copper straight cable as they belong to different network layers.

iii) No of ports can be added if needed by clicking on device and adding the necessary ports.

Hybrid mode:

Learning outcomes: i) switch and hub are connected through copper straight crossover cable and the devices and hubs are connected using ~~cop~~ cable copper ~~can~~ straight through as they are different network.

ii) Switch after receiving the packet sends it to the hub containing the destination PC.

Present legibly

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