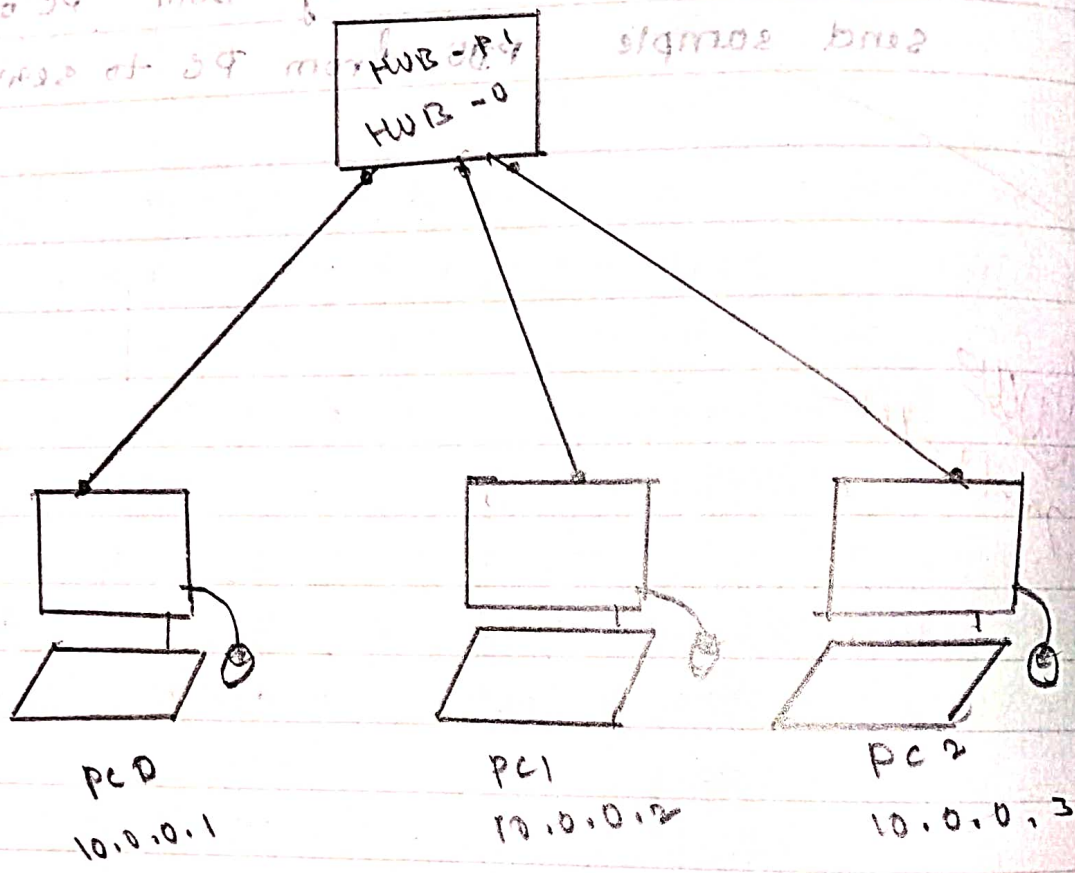
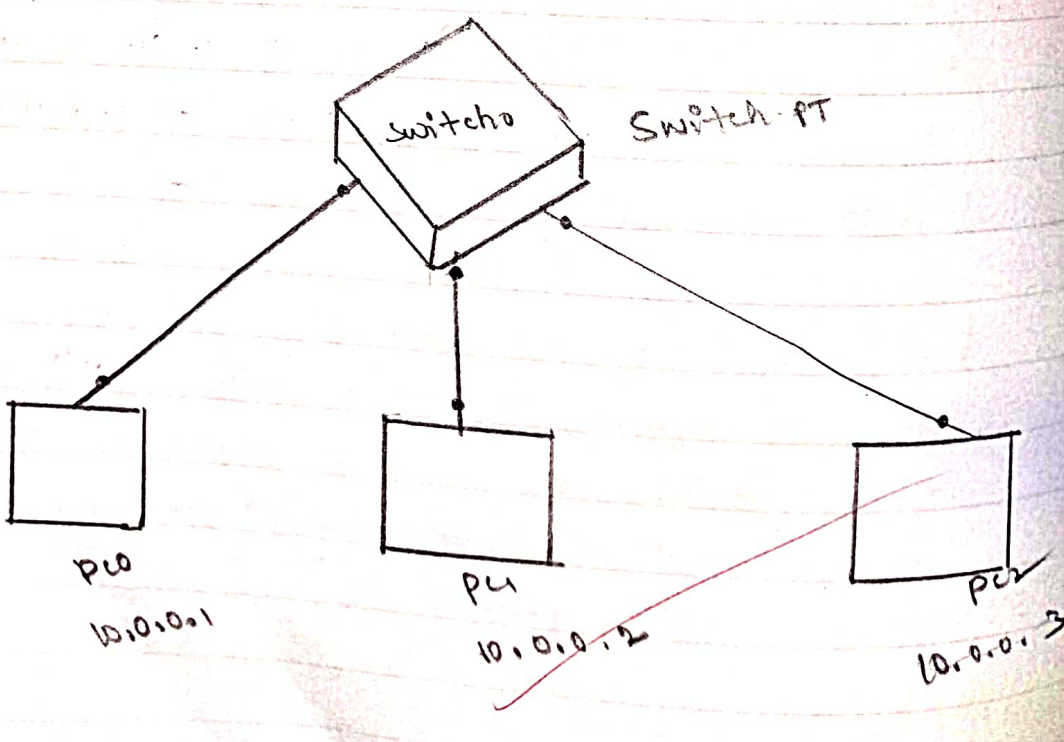
Topology:-


HUB-PT
HUB-0
PC0
10.0.0.1
PC1
10.0.0.2
PC2
10.0.0.3


switch0
Switch-PT
PC0
10.0.0.1
PC1
10.0.0.2
PC2
10.0.0.3

Lab-1

chandra's Dt: Pg:

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

Procedure:

Hub:-

1. Place 7 generic PC's and 1 generic hub in logical workspace and all 7 PC's are connected to hubby copper straight wire.
2. Set each PC's with IP address from 10.0.0.0
3. to 10.0.0.6 respectively and connect each PC to hub copper straight wire
3. A simple PDU is placed on any 2 devices and messag / packet passing can be seen in simulation mode by clicking autocapture
4. In realtime mode a command prompt is opened for certain PC and following command is given to transfer message PING destination IP address

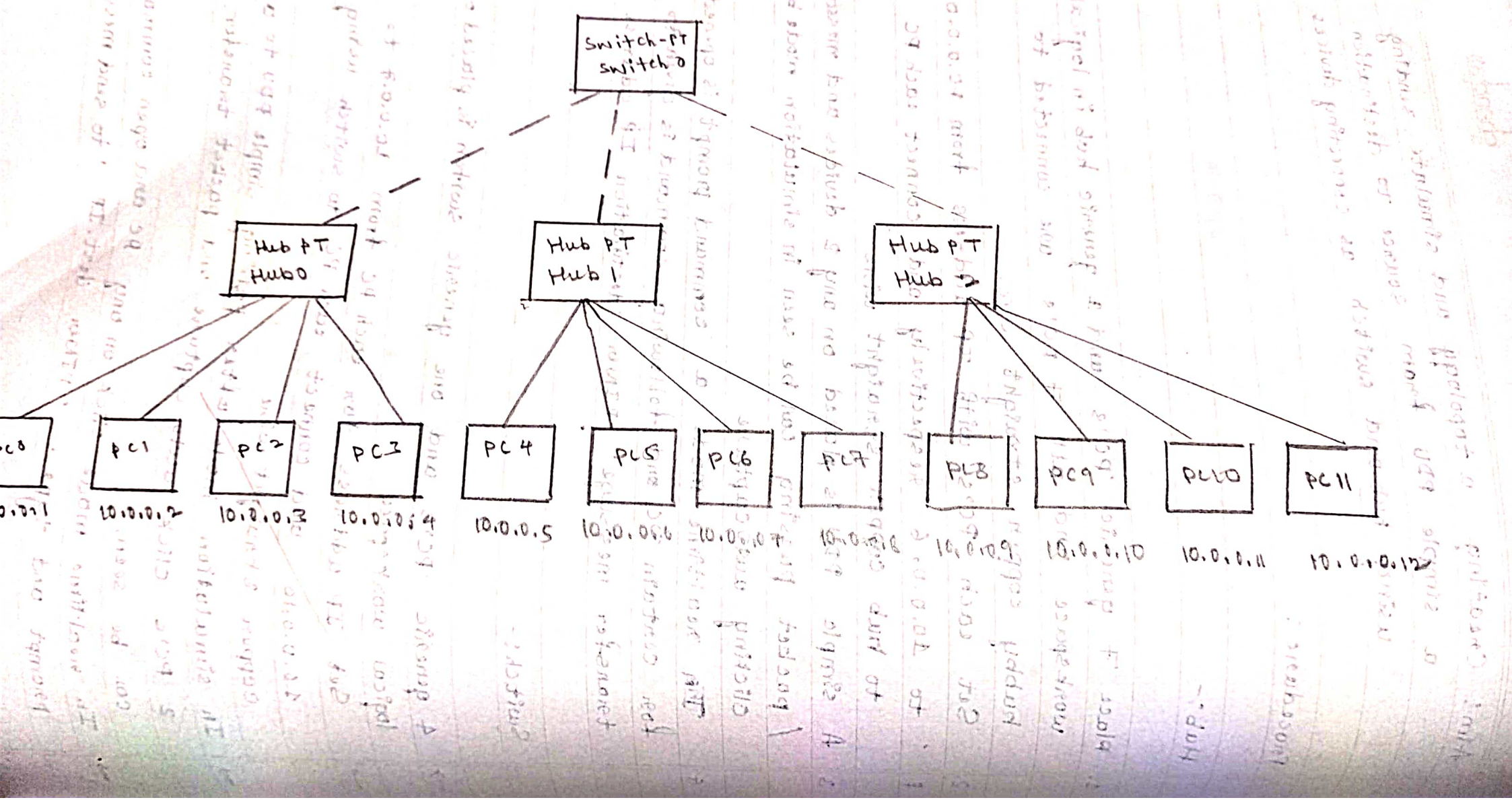
Switch:-

→ 4 generic PC's and one generic switch is placed on logical workspace

→ Set IP address for each PC from 10.0.0.7 to 10.0.0.10 and connect each PC to switch using copper straight wire.

→ In simulation mode after pairing simple PDU to any 2 PC's click auto capture and packet transfer can be seen.

→ In realtime mode click on any PC and open command prompt and type . ' PING dest. IP ' to send message


Switch-PT
switch 0
Hub PT
Hub 0
Hub PT
Hub 1
Hub PT
Hub 2
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PC8
PC9
PC10
PC11
10.0.0.1
10.0.0.2
10.0.0.3
10.0.0.4
10.0.0.5
10.0.0.6
10.0.0.7
10.0.0.8
10.0.0.9
10.0.0.10
10.0.0.11
10.0.0.12

chandra's
Dt: Pg:

* Hybrid

→ 12 PC's · 3hubs, 1-switch all genre's are placed onto logical workspace.

→ 3-generic hubs are connected to switch using copper cross-over wire and 12 PC's are connected to 3 hubs, 4PC each using copper straight wire assigning IP adress for each PC from 10.0.0.0 to 10.0.0.11 respectively.

→ After selecting 2 PC's from different hubs with simple-PDU and clicking on autocapture, packing passing simulation can be seen in simulation mode.

→ In realtime mode open command prompt by clicking any · PC → devices → 'command prompt and type 'PINGr dest IP-address' to send packet

* Observations:

* Hub:

→ learning outcome - After source sends message to hub it is broadcasted to all end devices but only destination 'device 'reads and sends response back to hubs for source to get response

→ Hub establishes connection to end devices quickly and signals by green-light

Result:

PINGr 10.0.0.3

PINGrINGr 10.0.0.3 with 32 bytes of data

REPLYFROM 10.0.0.3 bytes=3 · time=0ms

PINGr STATISTICS FOR 10.0.0.3 ·

DETAILS, OF 'how many packets sent and received

chandra's
Dt: Pg:

* Switch :

learning observation:

→ Unlike hub, switch doesnot given green signals immidiately but takes some amount of time called learning time. and the packets can be sent once green signal can be sent once green signal is generated.

→ Initially switch also broadcasts for all end-devices and the next time, the communications happens and message passing types only between ~~and message pass.~~ source and destination devices.

* Result :

PING 10.0.0.5

PINGING 10.0.0.5 with 32 bytes of data

PING STATISTICS FOR 10.0.0.3

"Details of how many packets sent and recieved"

* Hybrid :

learning outcome:

→ Message sent by one PC of one hub to switch is sent to destination hub which broadcast to all devices of that hub and only destined end-devices sends back respons to source of other hub.

Result:

PING 10.0.0.4

PINGING 10.0.0.4 with 32 bytes of data

REPLY from 10.0.0.4 bytes=32

PING STATISTICS for 10.0.0.4

"DETAILS of number of packets sent and recieved"