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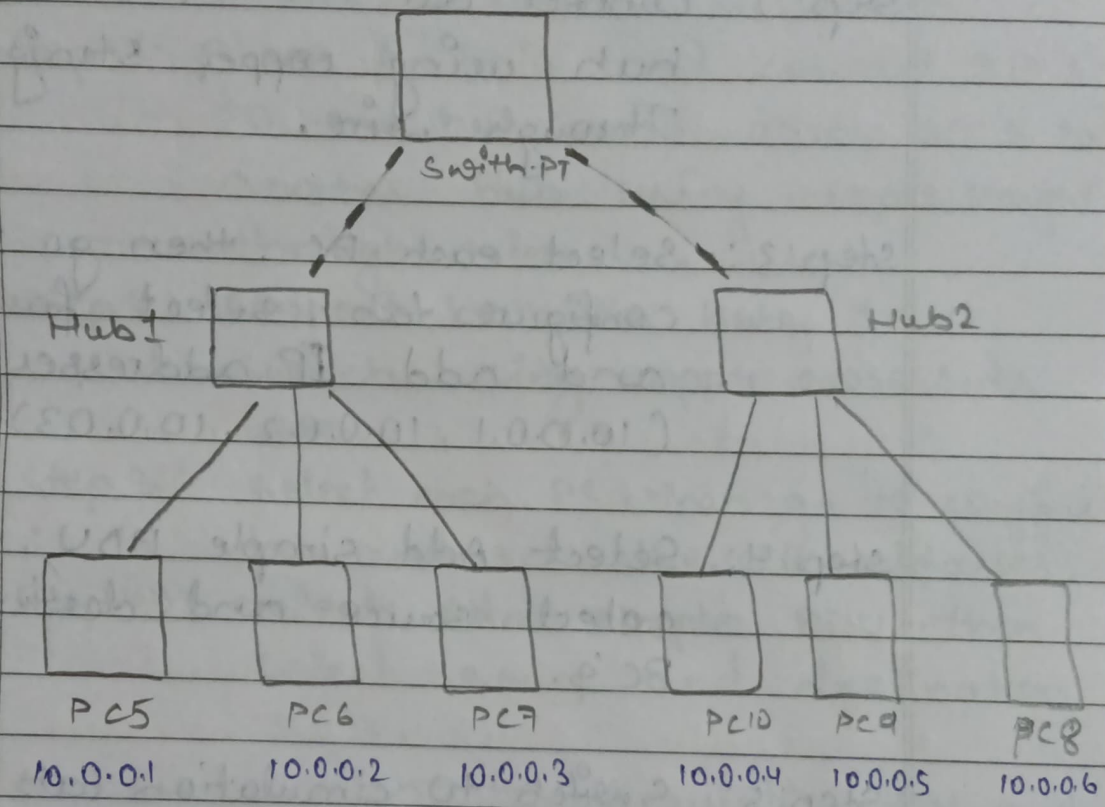
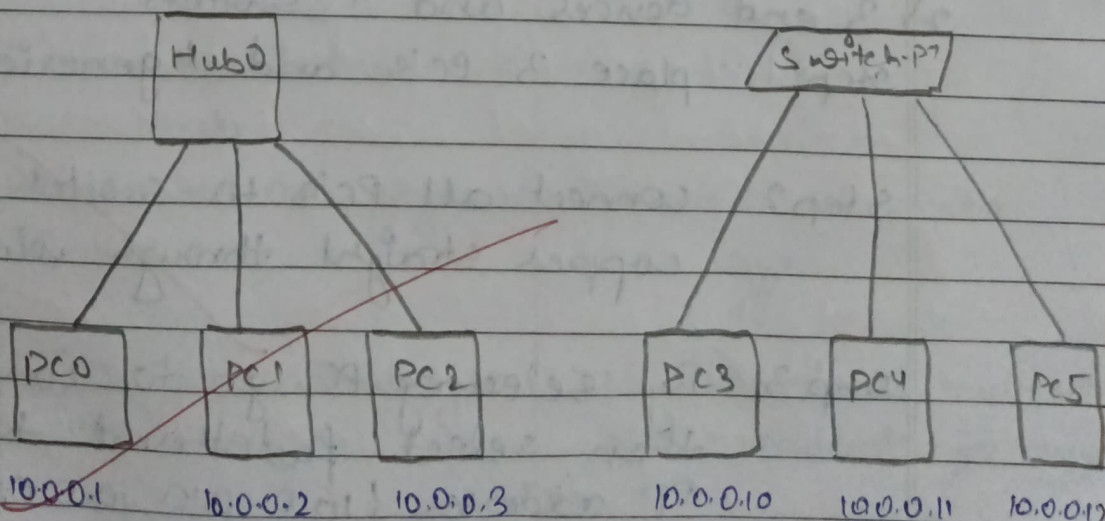
LAB-01 Exp: 1

Objective:

- Simulate a transmission of simple PDU using hub and switch as connecting devices.

- Configuration:-





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- procedure:

1) 3 end devices and 1 hub:-

step: 1 :- Place 3 PC's along with 1 hub. All generics to be chosen.

step: 2 : connect all the PC's to the hub using copper straight-Through wire.

step: 3 :- Select each PC, then go to configure tab, select fastethernet and add IP addresses (10.0.0.1, 10.0.0.2, 10.0.03)

step: 4 :- Select Add simple PDU, then select source and destination PC's.

step: 5 :- Switch to simulation tab and observe after clicking on play.

2) 3 end devices and 1 switch.

step: 1 :- place 3 PC's and 1 generic switch

step 2 : connect all PC's to switch using copper straight through wires.

step 3 : By selecting PC, go to configure tab, then select fastethernet to set IP address (10.0.0.10, 10.0.0.11, 100.0.0.12)

Step 4: select add simple PDU and select

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source & destination PC's.

step5:- Observe the simulation in simulation mode.

3. 6 end devices, 2 hubs and 1 switch

step1:- Place 6 PC's and connect 3 PC's to one hub and other 3PC's to another hub using copper straight through wires.

step2:- connect both the hubs to a switch using copper cross over wire.

step3:- select each PC, then go to configure tab and set the IP addresses.

step4:- select Add simple PDU, then select soure and destination PC's.

step5:- Switch to simulation tab and observe after clicking on play.

- Difference between hub and switch

Hub	Switch
1) operated on physical layer.	1) operated on Data link layer.
2) It is broadcast type transmission.	2) It is unicast, multicast and broadcast type transmission.
3) Hub have 4/12 ports.	3) Switch can have 24 to 48 ports.

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4) Hub is half duplex transmission mode.	4) Switch is full duplex transmission mode
5) cannot be used as repeater	5) can be used as repeater.

- observation:-

1. The hub sends the packet to all available devices. The destination PC accepts the packet and sends the acknowledgement back. All the remaining PC's repeat the packet.

2. The switch sends the packet only to the destination PC which accepts and sends back acknowledgement.

3. The hub01 receive packet and sends to other PC and the switch, the switch sends it to hub1 which transmit it to all remaining PC's, the destination PC accept the packet and acknowledge by sending it, back by hub1 → switch → hub01

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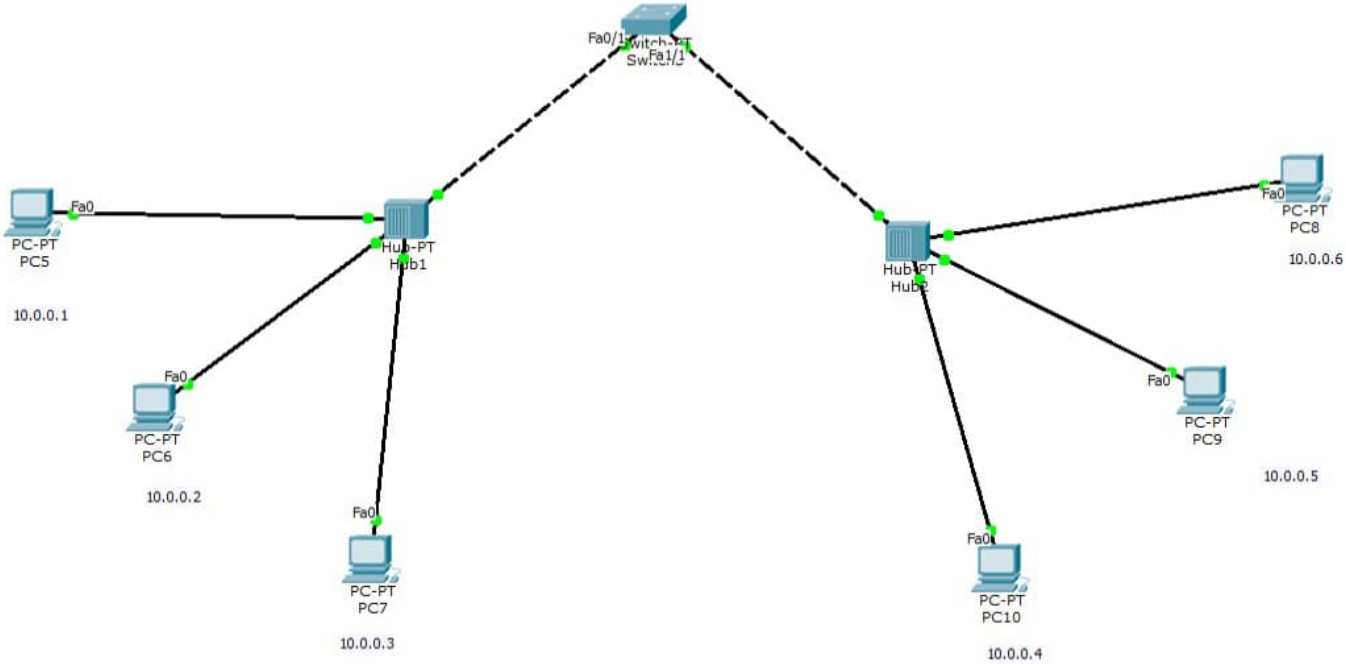
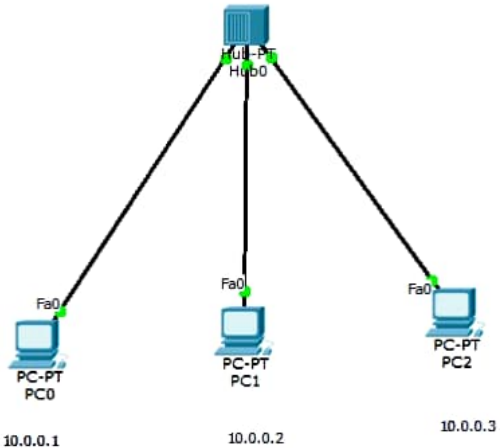
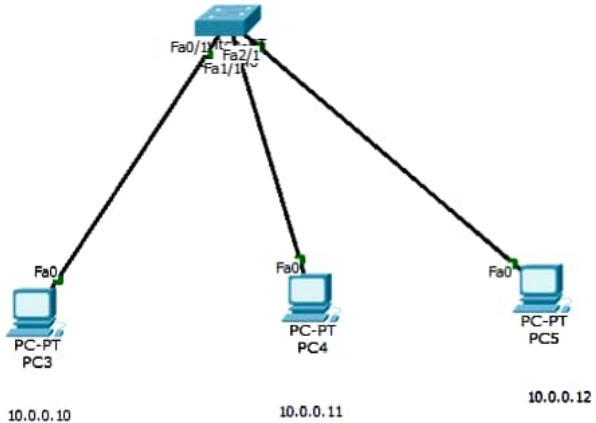

Fa0/1
Switch-PT
Switch1
Fa1/1
Fa0
PC-PT
PC5
10.0.0.1
Hub-PT
Hub1
Hub-PT
Hub2
Fa0
PC-PT
PC8
10.0.0.6
Fa0
PC-PT
PC6
10.0.0.2
Fa0
PC-PT
PC9
10.0.0.5
Fa0
PC-PT
PC7
10.0.0.3
Fa0
PC-PT
PC10
10.0.0.4


Hub-PT
Hub0
Fa0
PC-PT
PC0
10.0.0.1
Fa0
PC-PT
PC1
10.0.0.2
Fa0
PC-PT
PC2
10.0.0.3


Fa0/1
Fa2/1
Fa1/1
Fa0
PC-PT
PC3
10.0.0.10
Fa0
PC-PT
PC4
10.0.0.11
Fa0
PC-PT
PC5
10.0.0.12