C N - LAB

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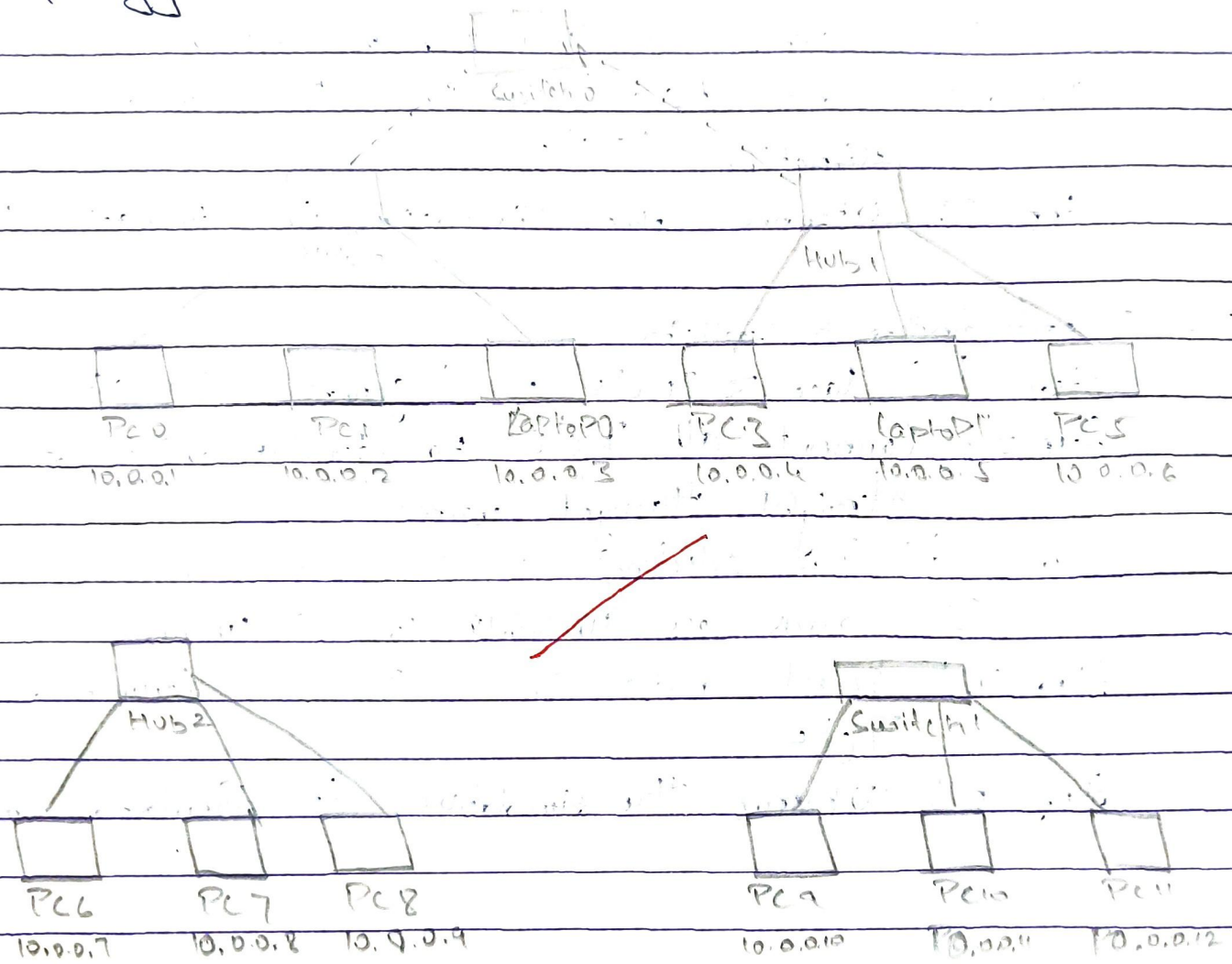
Experiment - 1

Objective : Stimulate the transmission of simple PDU using Hubs and switch as connecting devices

Topology :



Procedure

1] 3 end devices & 1 Hub

Step 1: Place 3 generic PC's and 1 generic Hub

Step 2: Connect all the PC to the Hub using copper straight through wires

Step 3: By selecting PC -> config -> FastEthernet 0 set IP Address as 10.0.0.7, 10.0.0.8 & 10.0.0.9

Step 4: Select Add Sample PDU, select source & destination PC's

Step 5: Observe the simulation in simulation Mode

2] 3 end devices & switch

Step 1: Place 3 PC's & 1 generic switch

Step 2: Connect all PC's to switch using copper Straight throught wires

Step 3: By selecting PC -> config -> FastEthernet 0 set IP address as 10.0.0.10, 10.0.0.11, 10.0.0.12

Step 4: Select Add Simple PDU & source & destination PC's

Step 5: Observe the simulation in simulation mode

3] 6 end devices & 2 Hubs & 1 switch

Step 1: Place 4 PC's, 2 laptops, 2 hubs & 1 switch

Step 2: Connect 2 PC's & 1 laptop to each hub using copper straight through wire & both hubs to the switch using copper cross-over wire

Step 3: Set IP address for all to end devices for 10.0.0.1 to 10.0.0.6

Step 4: Select Add simple PDU & select source & Pc

Step 5: Observe the simulation in simulation mode

Observation:

1] The hub sends the packet to all available devices the destination Pc accepts the packet & sends the acknowledgement back all the remaining Pc's reject the packet

2] The switch sends the packet only to the destination Pc which accepts & sends back acknowledgement back

3] The hub0 receive packet & sends to other Pc & the switch, the switch sends it to hub1 which transmits it to all remaining Pc's / the destination Pc accepts the packet & acknowledgement by sending it back by hub1 -> switch -> hub0

Difference between Hub & Switch

Hub	Switch
* Hub is operated in physical layer of OSI	* Switch is operated in data link layer of OSI
* Hub is broadcast type transmission	* Switch is unicast, multicast, broadcast type transmission
* Hub have 4/12 ports	* Switch can have 24 to 48 ports
* Hub is half duplex transmission mode	* Switch is full duplex transmission mode
* Hub is simple old not generally used	* Switch is sophisticated & widely used.