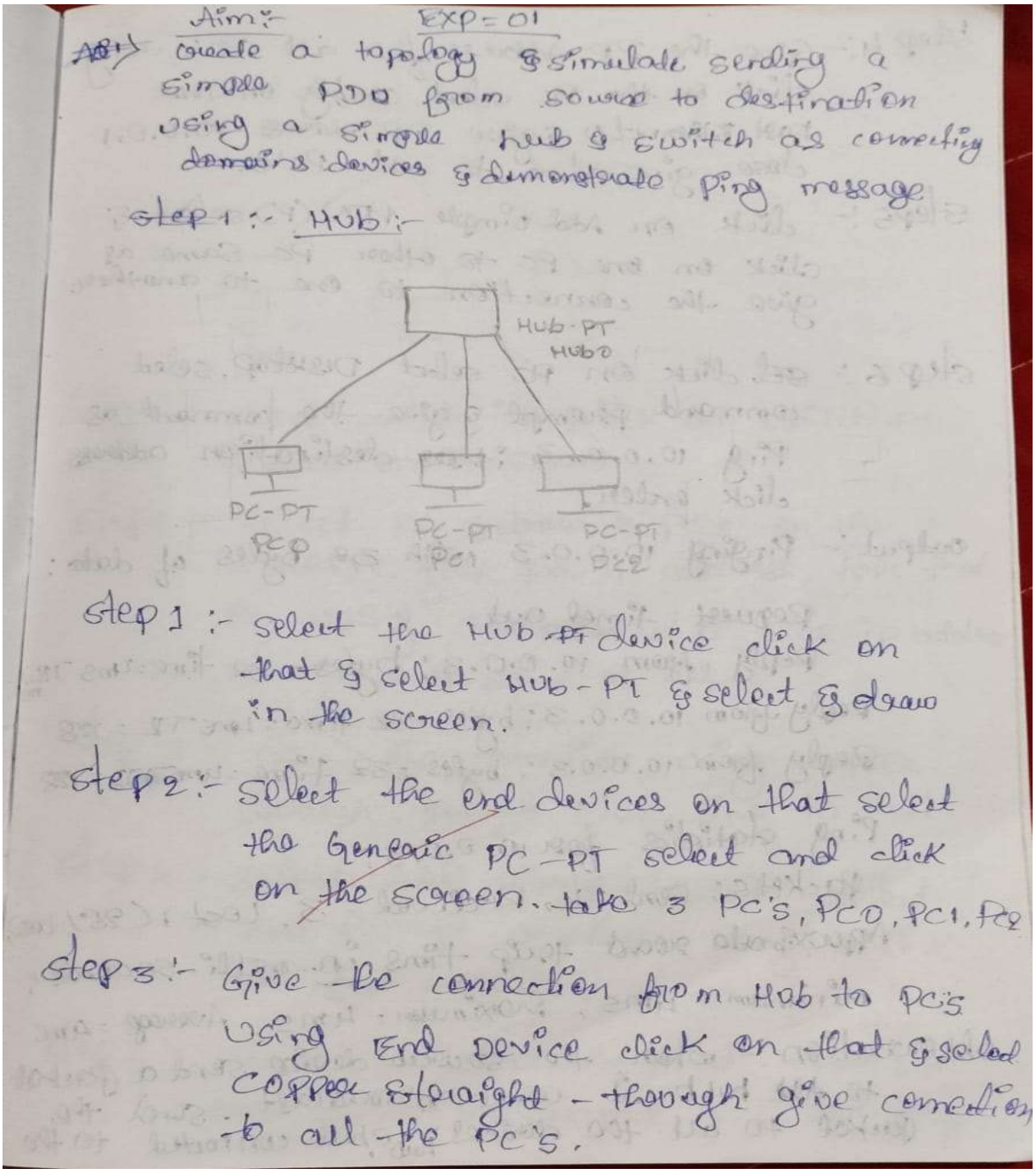
LAB-1

Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping messages.

OBSERVATION:



Aim:- EXP=01

Create a topology & simulate sending a simple PDU from source to destination using a simple hub & switch as connecting devices & demonstrate ping message

Step 1 :- Hub :-

Step 1 :- Select the Hub-PT device click on that & select Hub-PT & select & draw in the screen.

Step 2 :- Select the end devices on that select the Generic PC-PT select and click on the screen. take 3 PC's, PC0, PC1, PC2

Step 3 :- Give the connection from Hub to PC's using End Device click on that & select copper straight-through give connection to all the PC's.

step 4:- Give the IP Address for all PC's, using click on the PC select config on that FastEthernet0 & give IP address 10.0.0.1 close. give same to all PC's.

step5:- click on Add simple PDU (P) select & click on one PC to other PC same as give the connection to one to another.

step 6:- set click on PC select Desktop, select command prompt & give the command as Ping 10.0.0.3 it as destination address click enter.

output:- Pinging 10.0.0.3 with 32 bytes of data:

Request timed out.

Reply from 10.0.0.3; bytes = 32 time=4ms TTL=128

Reply from 10.0.0.3; bytes = 32 time=4ms TTL = 128

Reply from 10.0.0.3: bytes = 32 time = 4ms TTL = 128

Ping statistics for 10.0.0.3;

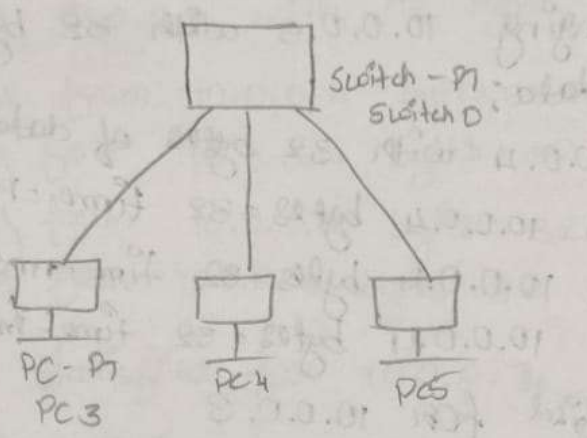
Packets: Sent = 4, Received = 3. Lost = 1 (25% Loss),

Approximate round trip tims in milli-seconds;

Minimum = 4ms, Maximum = 4ms, Average = 4ms

observation:- when the source device send a packet to the hub it will broadcast. send the packet to all the devices hub all connected to the

Switch:



Step 1 :- Select switch icon & click on switch-PT & click on the screen.

Step 2 :- Select PC & draw 3 PC's on the screen. give the ip address for that PC using Fast Ethernet 0. Give ip address as 10.0.0.4. Same as all.

Step 3 :- Give the connection using copper. Straigh through give link to all

Step 4 :- Select Add simple PDU(P) select one PC to another PC give link to that message.

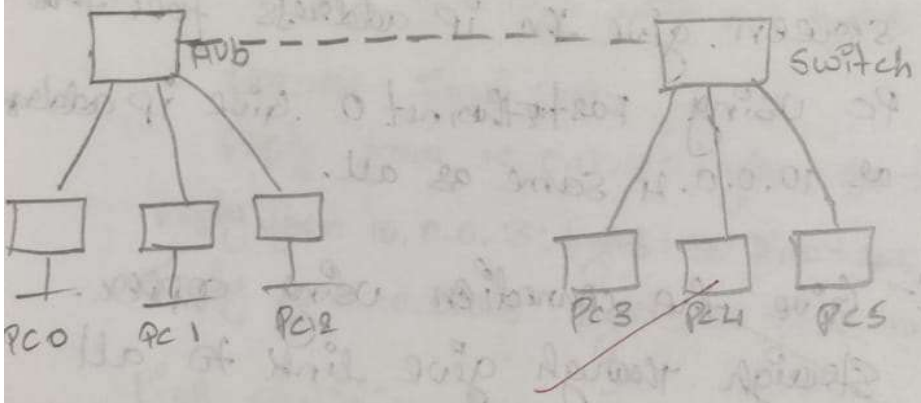
Step 5 :- select Pc click on that click on Desk-top -> Command give the ping address.

Step 6 :- PC> Ping 10.0.0.5

Output :- Pinging 10.0.0.5 with 32 bytes of data;

Pinging 10.0.0.4 with 32 bytes of data:
Reply from 10.0.0.4 bytes = 32 time = 1 ms TTL = 128
Reply from 10.0.0.4 bytes = 32 time = 1 ms TTL = 128
Reply from 10.0.0.4 bytes = 32 time = 1 ms TTL = 128
Ping satisfied for 10.0.0.3
Packets : Send = 4, Recived = 4 lost = 0 (0% loss)
Approximat round toup times in milli-seconds.

Observation :- when the source device sent a packet to all hub it will broadcast or send the packet to all the devices which all connected to the hub.



Step 1 :- Previously drawn hub topology & switch topology are connected through copper cross over In hub port 3 is used, in switch fast ethernet is used.

Step 2 :- Add simple PDC from PC0 to PC3.

Ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data;

Reply from 10.0.0.4 bytes = 32 time = 1ms TTL = 128
Reply from 10.0.0.4 bytes = 32 time = 1ms TTL = 128
Reply from 10.0.0.4 bytes = 32 time = 1ms TTL = 128
Reply from 10.0.0.4 bytes = 32 time = 1ms TTL = 128

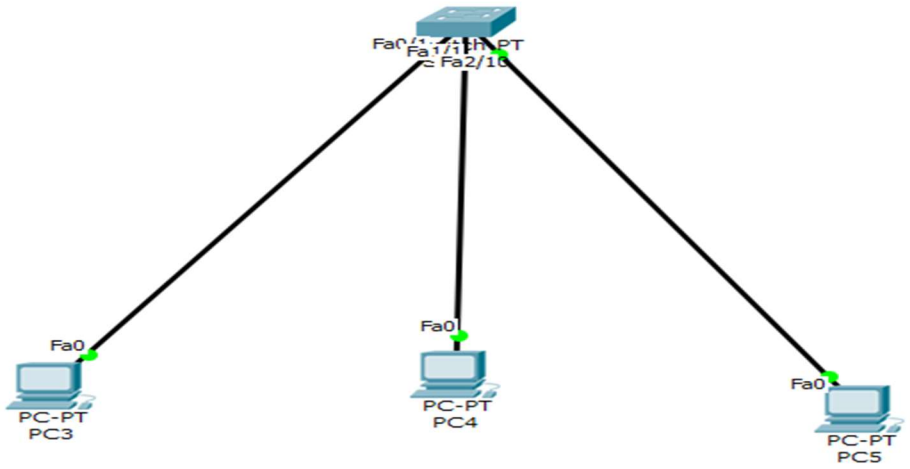
Ping statistics for 10.0.0.4

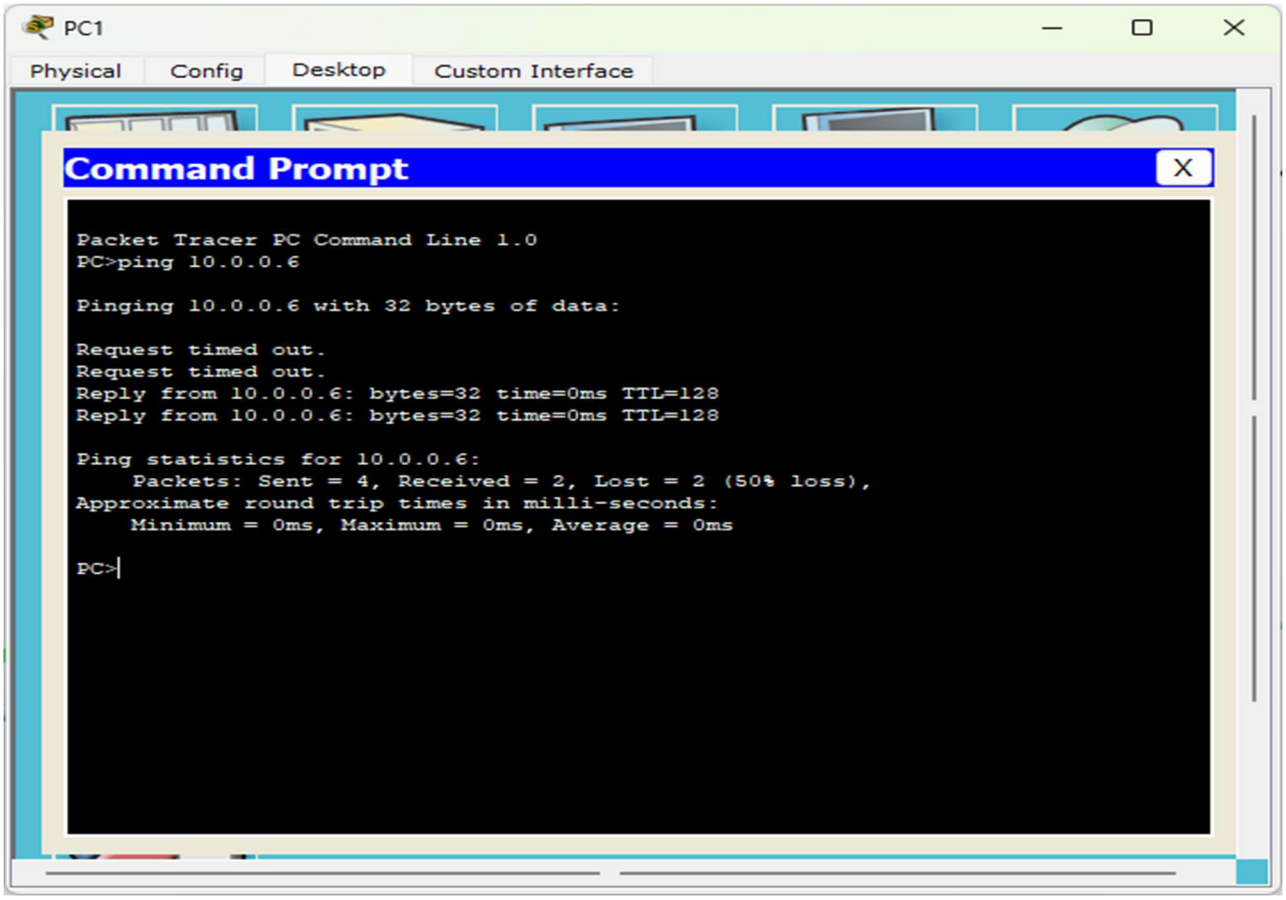
Packets = sent = 4, Received = 4 lost = 0 (0% loss)
Approximate round trip times in milli-second.
minimum = 4ms maximum = 4ms Average = 4ms

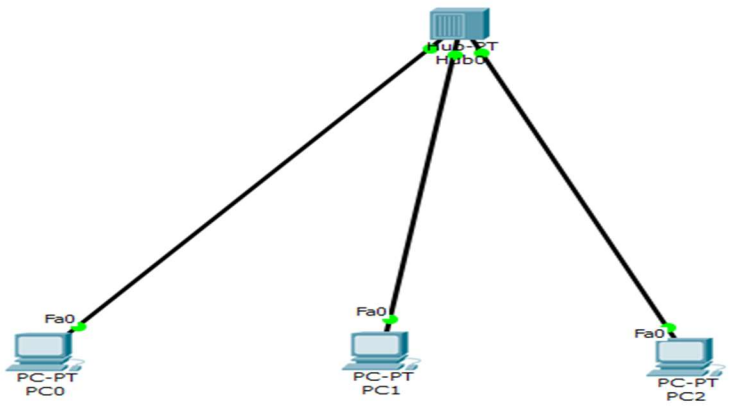
Observation:-

In simulation mode PC0 sends packet to hub. hub send it to PC1 PC2 & select broad casts it to PC3, PC4 & PC5
PC1, PC2, PC4 & PC5 discards them.
PC3 accepts & sends acknowledgment to hub through switch.
Hub is broad casts it to all 3PCs
only PC0 accepts it & others discard.
In second round PC0 sends packet to hub it broad casted to PC1, PC2 switch.
Now switch broad casts it only to PC3.
thus. switch is smart device.

OUTPUT :


Fa0
PC-PT
PC3
Fa0
PC-PT
PC4
Fa0
PC-PT
PC5


PC1
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.6
Pinging 10.0.0.6 with 32 bytes of data:
Request timed out.
Request timed out.
Reply from 10.0.0.6: bytes=32 time=0ms TTL=128
Reply from 10.0.0.6: bytes=32 time=0ms TTL=128
Ping statistics for 10.0.0.6:
Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>



PC3

Physical | Config | Desktop | Custom Interface

Command Prompt

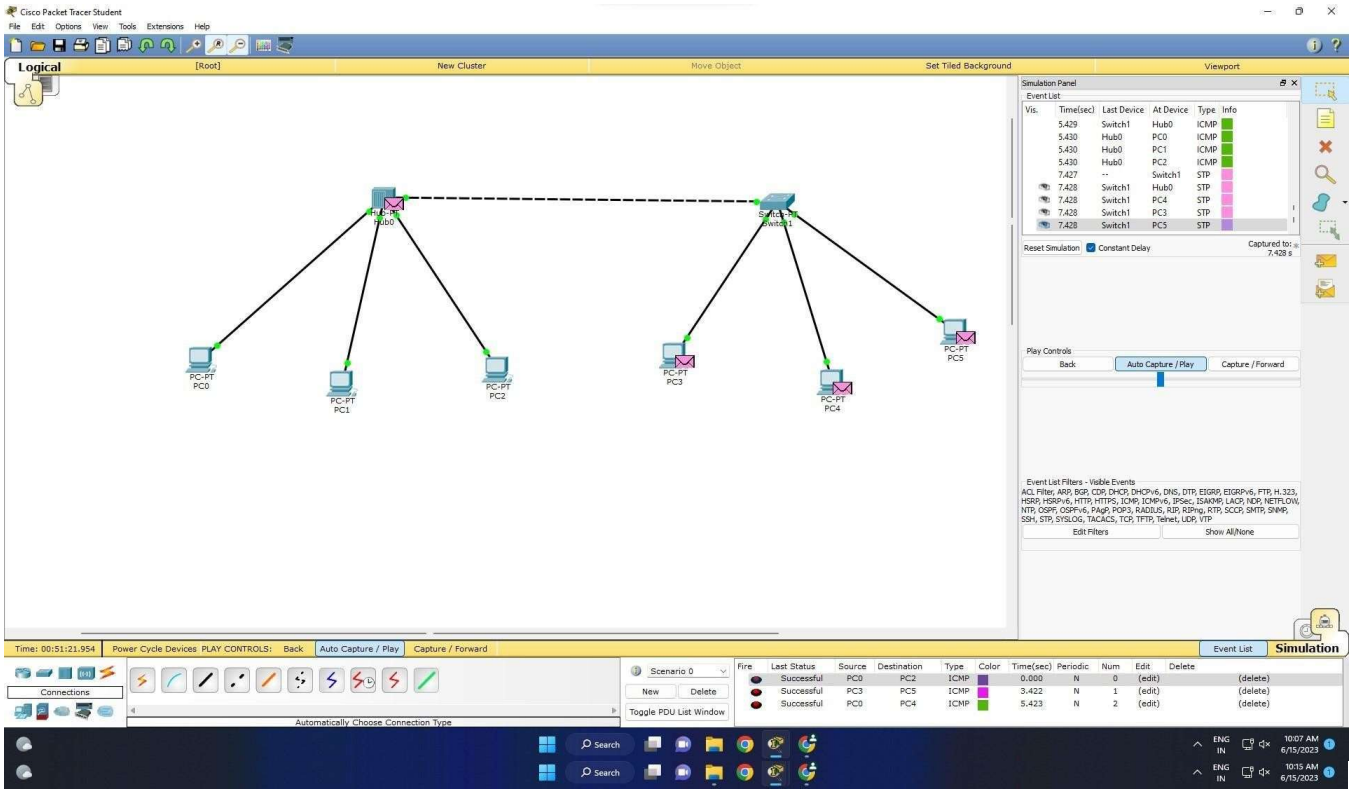
```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.6

Pinging 10.0.0.6 with 32 bytes of data:

Reply from 10.0.0.6: bytes=32 time=0ms TTL=128
Reply from 10.0.0.6: bytes=32 time=0ms TTL=128
Reply from 10.0.0.6: bytes=32 time=0ms TTL=128
Reply from 10.0.0.6: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Hub0
Switch1
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
PC-PT PC4
PC-PT PC5
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type Info
5.429 Switch1 Hub0 ICMP
5.430 Hub0 PC0 ICMP
5.430 Hub0 PC1 ICMP
5.430 Hub0 PC2 ICMP
7.427 -- Switch1 STP
7.428 Switch1 Hub0 STP
7.428 Switch1 PC4 STP
7.428 Switch1 PC3 STP
7.428 Switch1 PC5 STP
Reset Simulation
Constant Delay
Captured to: 7.428 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Time: 00:51:21.954
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Successful PC0 PC2 ICMP 0.000 N 0 (edit) (delete)
Successful PC3 PC5 ICMP 3.422 N 1 (edit) (delete)
Successful PC0 PC4 ICMP 5.423 N 2 (edit) (delete)
Search
ENG IN
10:07 AM 6/15/2023
10:15 AM 6/15/2023