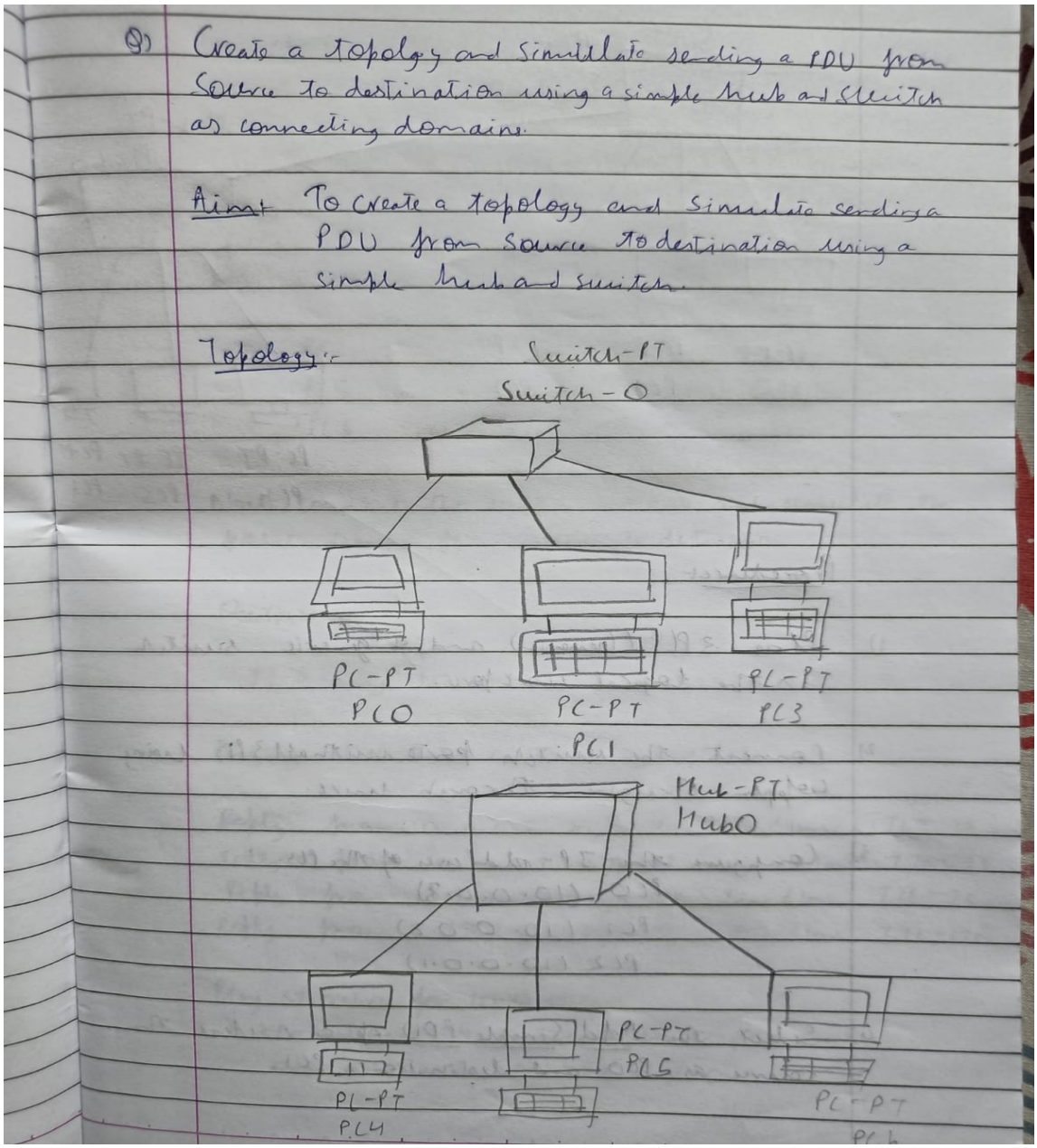
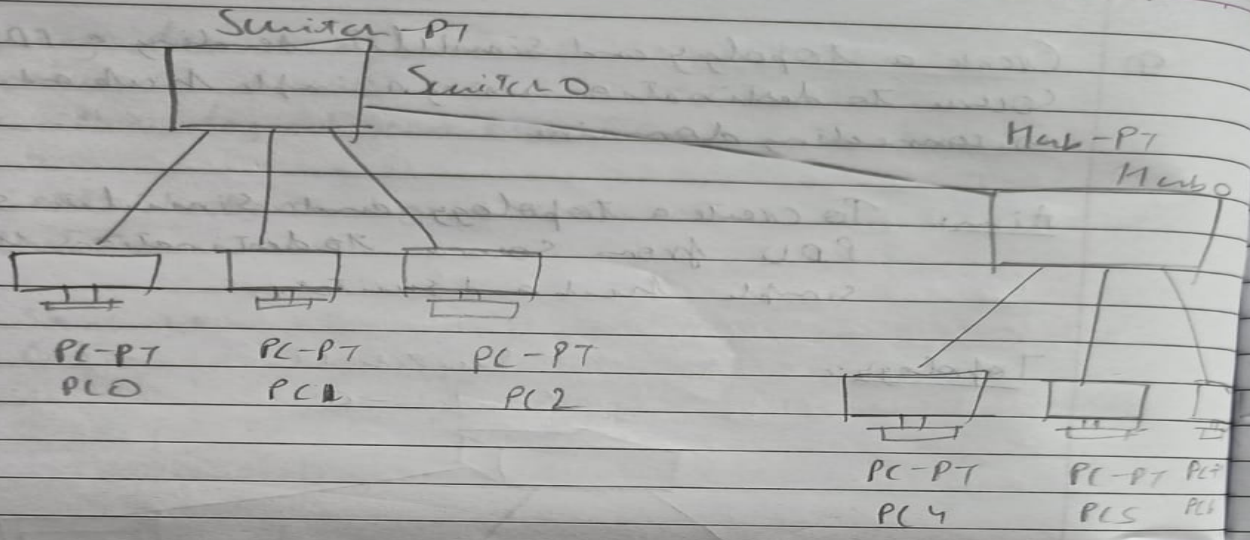
WEEK 1

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:





Procedure:-

1) Place 3 PCs (Generic) and a generic switch in the logical workspace.

2) Connect the switch ports with all 3 PCs using copper straight - through wire.

3) Configure the IP - addresses of the PCs.
PC0 (10.0.0.3)
PC1 (10.0.0.2)
PC2 (10.0.0.1)

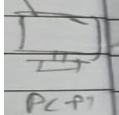
4) Select the Add Simple PDU option, select the source as PC0 and destination as PC1.

5) On clicking Play in simulation mode the packet can be traced in simulation mode.

(Hub to PCs).

1) Follow the same procedure as done for switch, but replace the switch with hub.

PC4 10.0.0.4
PC5 10.0.0.5
PC6 10.0.0.6



Now connect the switch and hub and simulate the packet transfer from source to destination.

Output :-

PC> ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time<1ms TTL=128
Reply from 10.0.0.2: bytes=32 time<1ms TTL=128
Reply from 10.0.0.2: bytes=32 time<1ms TTL=128
Reply from 10.0.0.2: bytes=32 time<1ms TTL=128

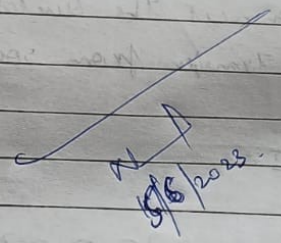
Ping Statistics for 10.0.0.2:
Packets: Sent = 4, Received: 4, Lost = 0 (0% Loss)
Min = 0ms, Max = 0ms, Average = 0ms

Date: / /

Observations

1) Observed that switch transfers the packets to all the devices during the 1st iteration, and then it records the IP-address of the intended destination device and sends packet to that particular destination.

2) Observed that Hub broadcasts the packets to all the end devices and the devices which are not intended to receive the packets discard the packets and the intended device receives the packet and sends back the acknowledgment to the source.



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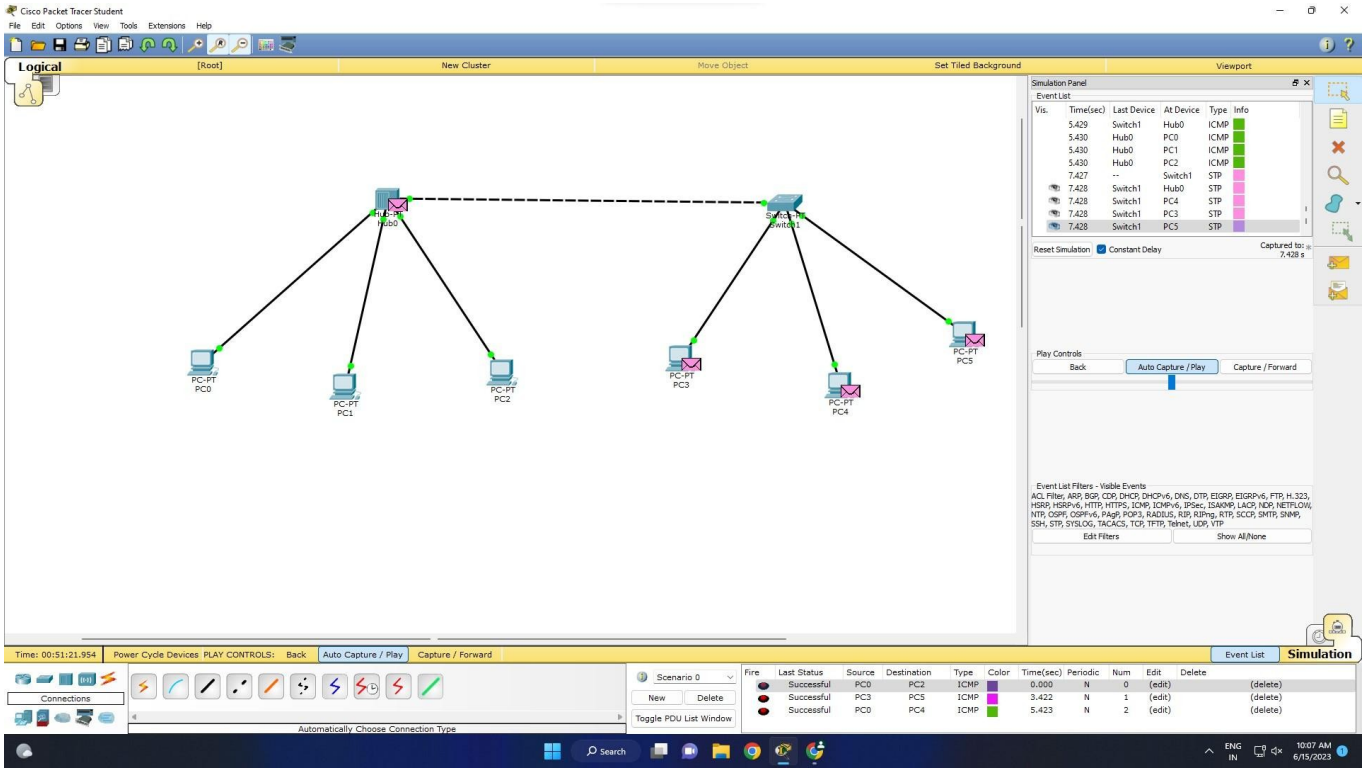
OUTPUT:


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
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
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
PC-PT PC4
PC-PT PC5
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
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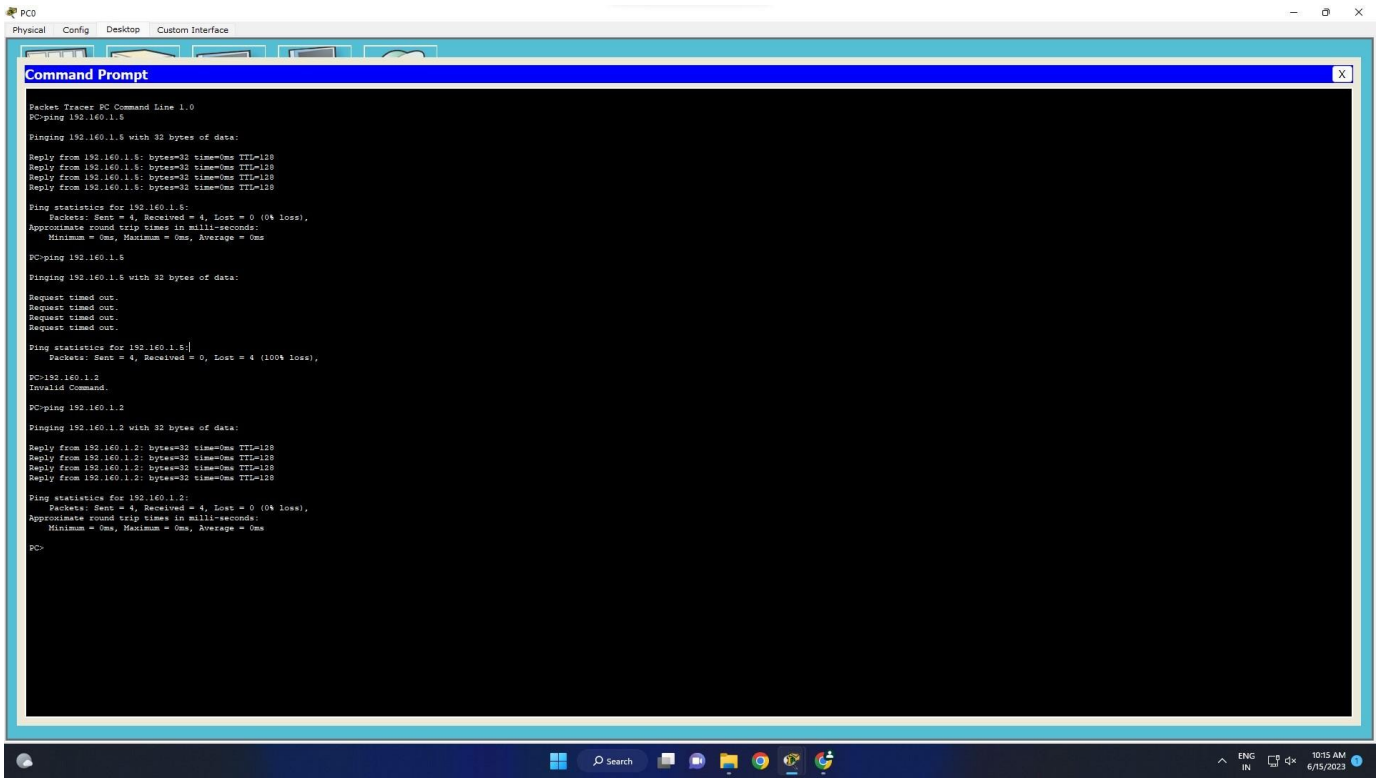
PC0
Physical Config Desktop Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 192.160.1.5
Pinging 192.160.1.5 with 32 bytes of data:
Reply from 192.160.1.5: bytes=32 time=0ms TTL=128
Reply from 192.160.1.5: bytes=32 time=0ms TTL=128
Reply from 192.160.1.5: bytes=32 time=0ms TTL=128
Reply from 192.160.1.5: bytes=32 time=0ms TTL=128
Ping statistics for 192.160.1.5:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>ping 192.160.1.5
Pinging 192.160.1.5 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.160.1.5:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>192.160.1.2
Invalid Command.
PC>ping 192.160.1.2
Pinging 192.160.1.2 with 32 bytes of data:
Reply from 192.160.1.2: bytes=32 time=0ms TTL=128
Reply from 192.160.1.2: bytes=32 time=0ms TTL=128
Reply from 192.160.1.2: bytes=32 time=0ms TTL=128
Reply from 192.160.1.2: bytes=32 time=0ms TTL=128
Ping statistics for 192.160.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>
Search
ENG IN
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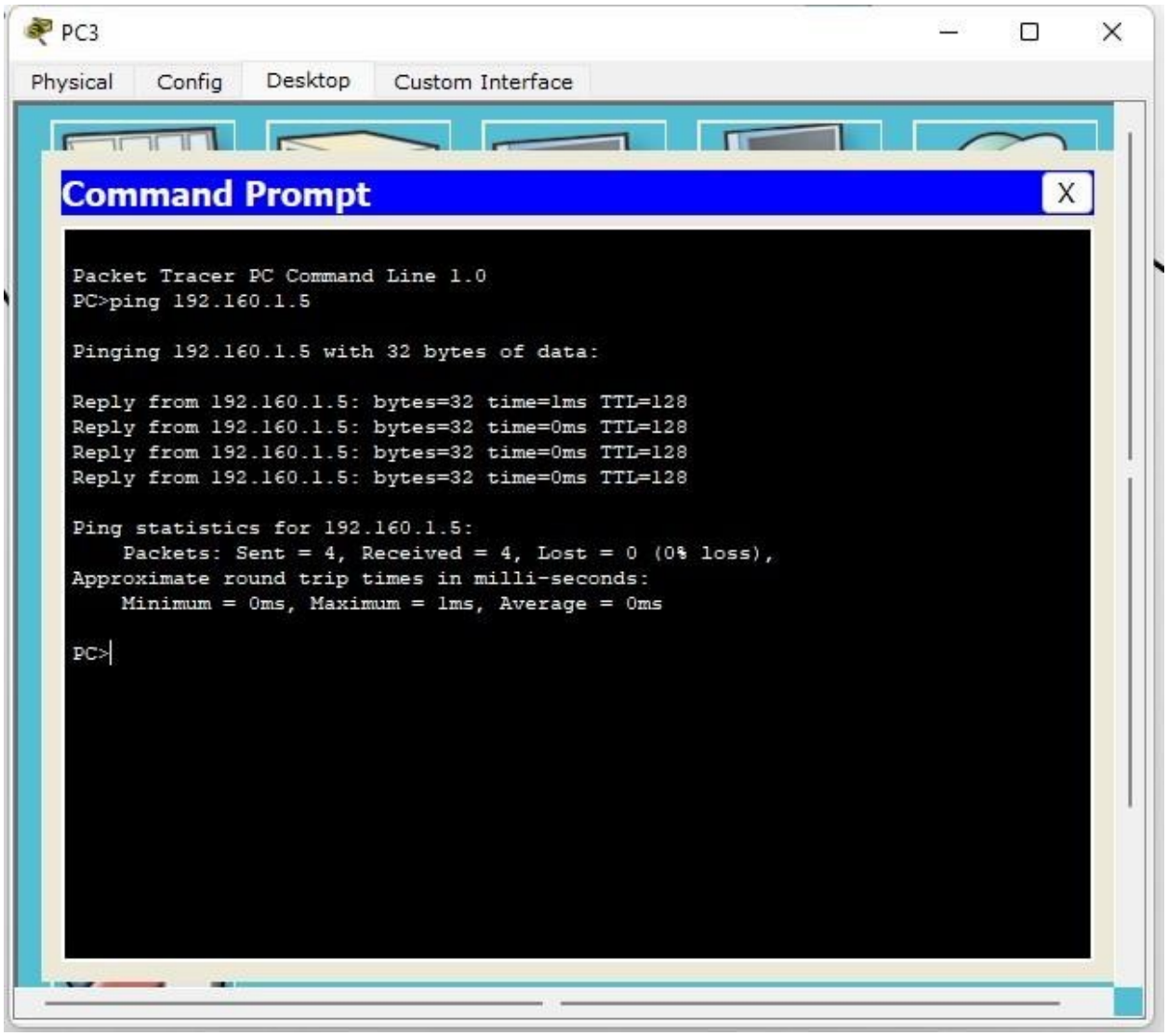
PC3
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 192.160.1.5
Pinging 192.160.1.5 with 32 bytes of data:
Reply from 192.160.1.5: bytes=32 time=1ms TTL=128
Reply from 192.160.1.5: bytes=32 time=0ms TTL=128
Reply from 192.160.1.5: bytes=32 time=0ms TTL=128
Reply from 192.160.1.5: bytes=32 time=0ms TTL=128
Ping statistics for 192.160.1.5:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>