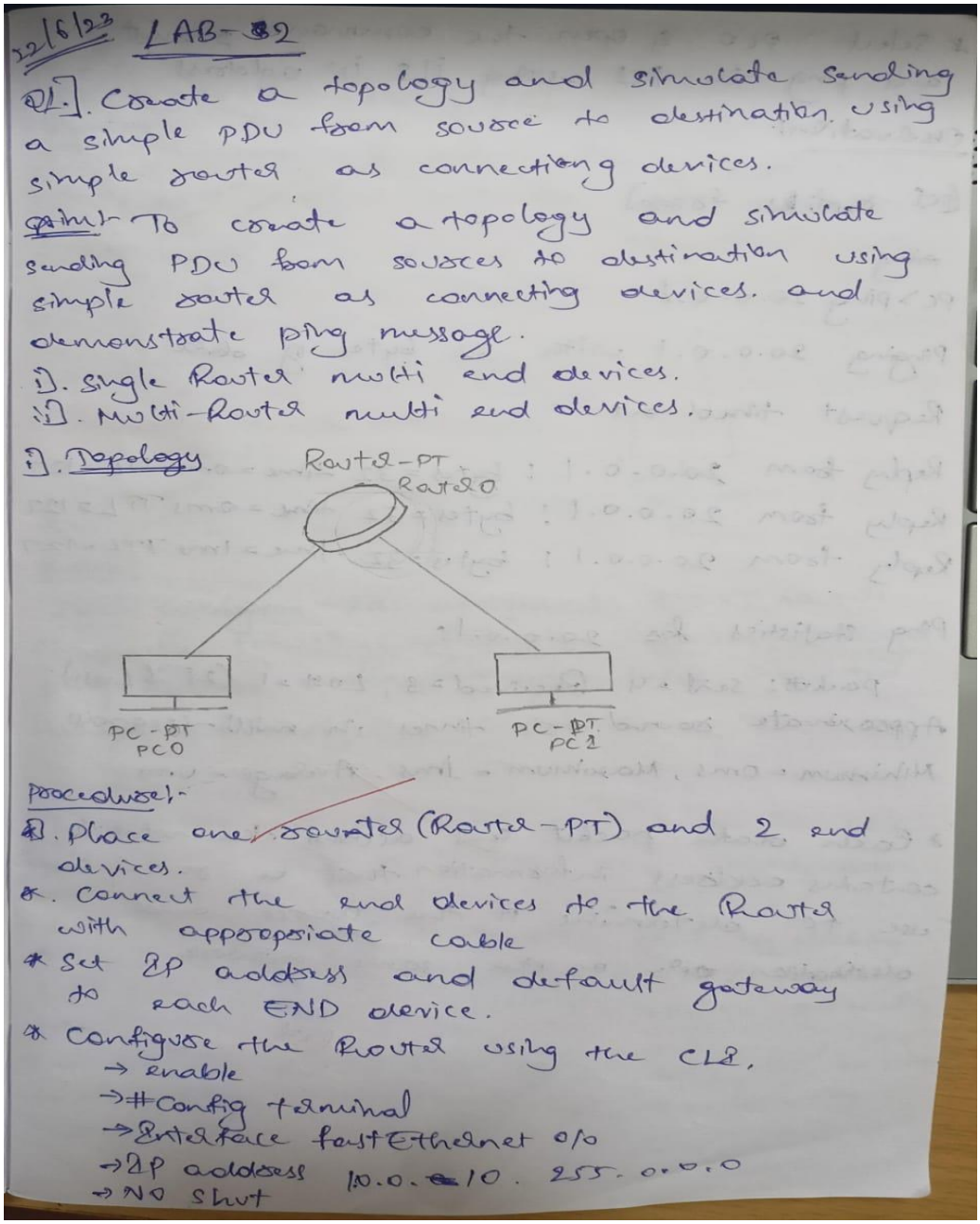
LAB 2

Configure IP address to routers (one and three) in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

OBSERVATION:



12/6/23 LAB-02

Q1]. Create a topology and simulate sending a simple PDU from source to destination using simple router as connecting devices.

Aim:- To create a topology and simulate sending PDU from sources to destination using simple router as connecting devices. and demonstrate ping message.

i]. Single Router multi end devices.

ii]. Multi-Router multi end devices.

i]. Topology

Procedure:-

1. Place one router (Router-PT) and 2 end devices.
2. Connect the end devices to the Router with appropriate cable
3. Set IP address and default gateway to each END device.
4. Configure the Router using the CLI.
   - → enable
   - → # Config terminal
   - → Interface fastEthernet 0/0
   - → IP address 10.0.0.10 255.0.0.0
   - → NO shut

* Select PC0 & open the command prompt and ping the PC1 using its ip address

Observation:-

(PC1 ~~ip~~ ~~from~~)

~~ping~~

PC>ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Request timed out

Reply from 20.0.0.1 : bytes = 32 time = 0ms TTL = 127
Reply from 20.0.0.1 : bytes = 32 time = 0ms TTL = 127
Reply from 20.0.0.1 : bytes = 32 time = 1ms TTL = 127

Ping statistics for 20.0.0.1:

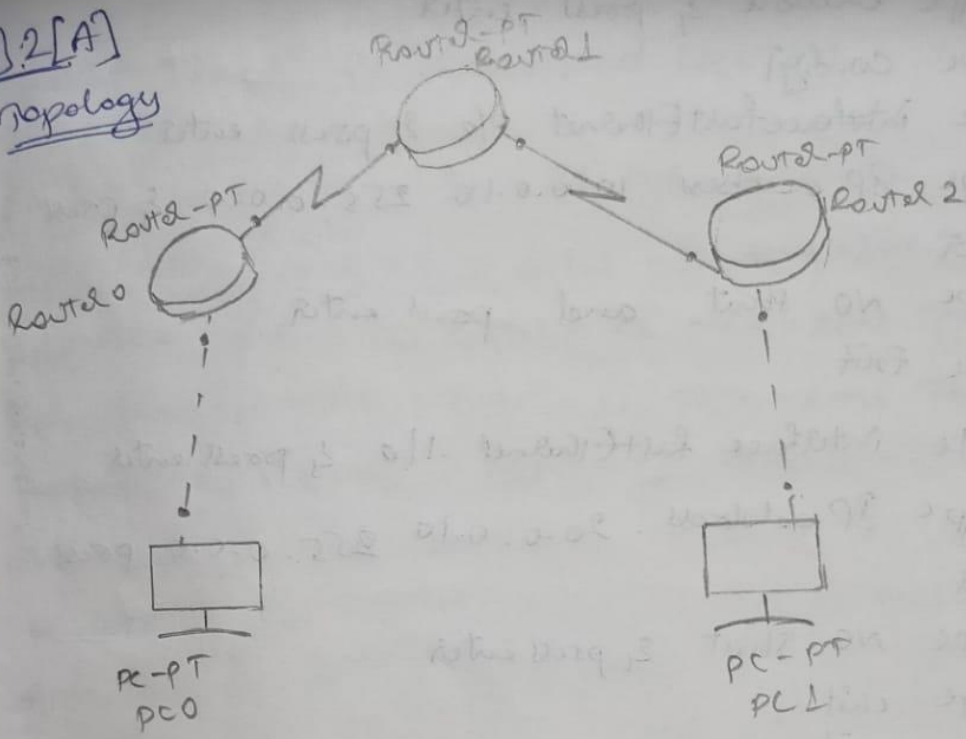
Packets: Sent = 4 Received = 3, Lost = 1 (25% Loss)
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms.

* Each data packet sent across the network contains address information that a router can use to determine if the source and destination are on the same network.

live

3.2[A]

Topology



~~3.2.2~~

Aim:- Configure IP address to three routers in packet tracer. Explore the following messages ping. response destination, unreachable, sequested timed out. reply.

Procedure:-

→ Select one generic router and 2 generic pc's. Connect the pc's to router using copper cross-over cable.

→ Set the IP address of both pc's by clicking on PC & config tab. Along with IP address set gate way in the settings opptions on config tab.

→ To set the IP address of a router, click on it and goto CLI tab and type the following commands

Step 1:- Type NO & press enter.
→ type enable & press enter
→ type configT
→ type interface fastEthernet 0/0 & press enter.
→ type IP address 10.0.0.10 255.0.0.0 & press enter.
→ type NO shut and press enter.
→ type Exit.
→ Type interface fastEthernet 1/0 & press enter
→ Type IP address 20.0.0.10 255.0.0.0 press enter
→ type NO shut & press enter
→ type exit
→ type exit
→ type show IP route [for showing connection status]
* close the tabs & click on PC to go to command prompt.
* Type ping 20.0.0.1 to sent packet across.
* At last send packets in simulation mode to get a successful transmission.

PING OUTPUT:-

output 1:-

Packet tracer PC command line 1.0
PC > Ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data
Reply from 10.0.0.10 Destination host unreachable (3)
Request timed out.
Ping statistics for 40.0.0.1

packets : sent = 4 Received = 0 Lost = 4 (100% loss)

output 2

Packet Tracer PC command Line: 1.0.

PC> ping 10.0.0.1

pinging 10.0.0.1 with 32 bytes of data

Reply from 10.0.0.1 : bytes = 32 time = 2ms TTL = 125

Reply from 10.0.0.1 : bytes = 32 time = 8ms TTL = 125

Reply from 10.0.0.1 : bytes = 32 time = 2ms TTL = 125

Reply from 10.0.0.1 : bytes = 32 time = 2ms TTL = 125

ping statistics for 10.0.0.1

packets : sent = 4 Received = 4 Lost = 0 (0% Loss).

Approximate round trip times in ms

Min = 2ms Max = 8ms Average = 3ms.

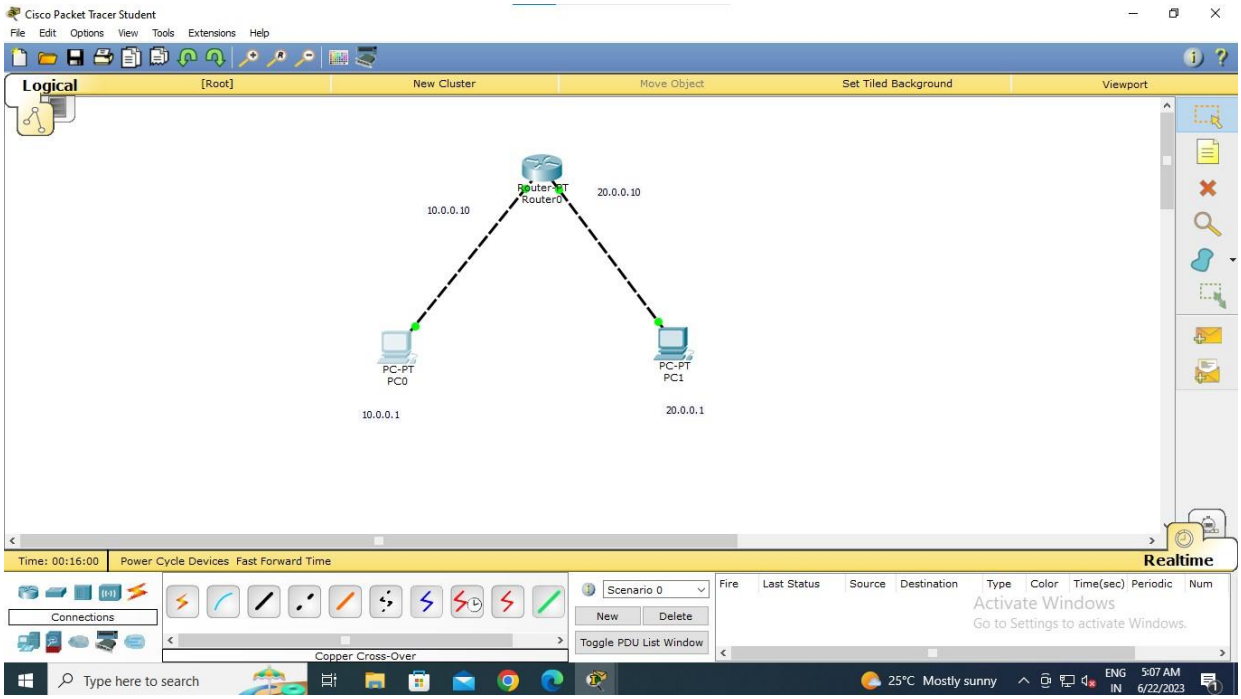
Observation:-

→ In program 2.1 when we ping the destination address we get allocated with 32 bytes. In this first 8 bytes are used to learn about the router and their address. Rest bytes are used for sending packets to destination address. Then again if we ping all bytes are used for message sending and there will be no timed-out message.

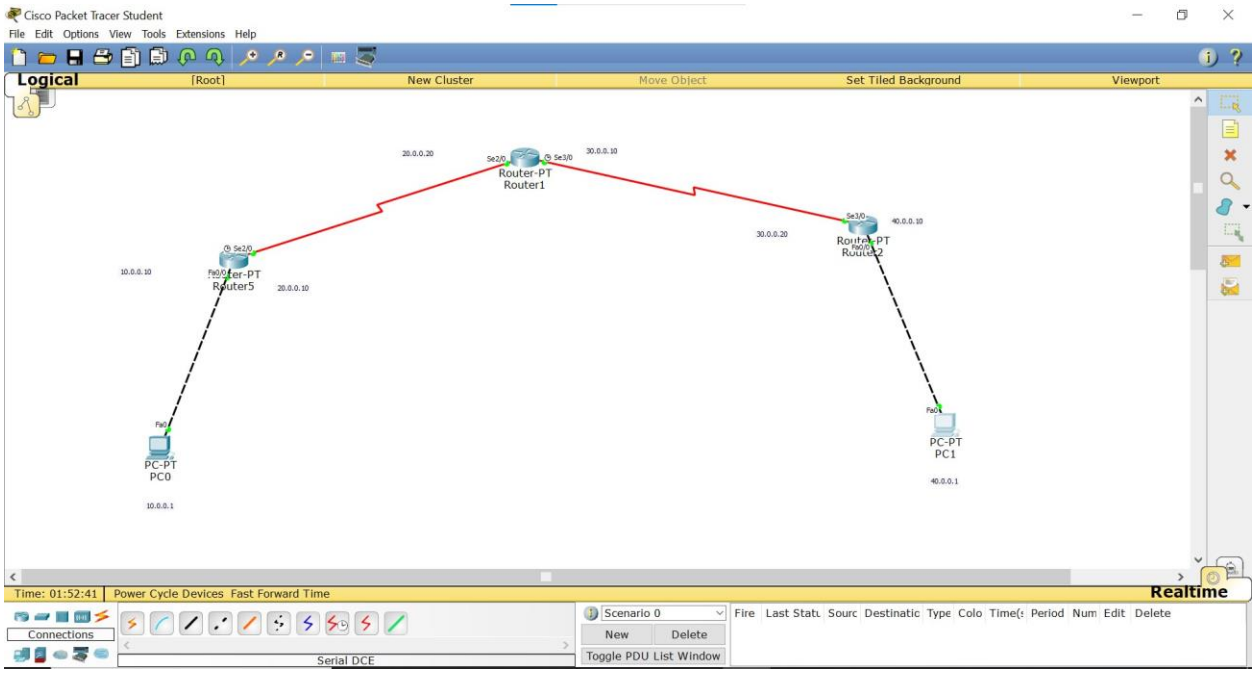
→ In program 2.2 when the routers doesn't know about the remaining address and we ping a message we get host unreachable message and the routers have here access/ knowledge about other addresses, message will be sent successfully.

TOPOLOGY:

PROGRAM 2.1

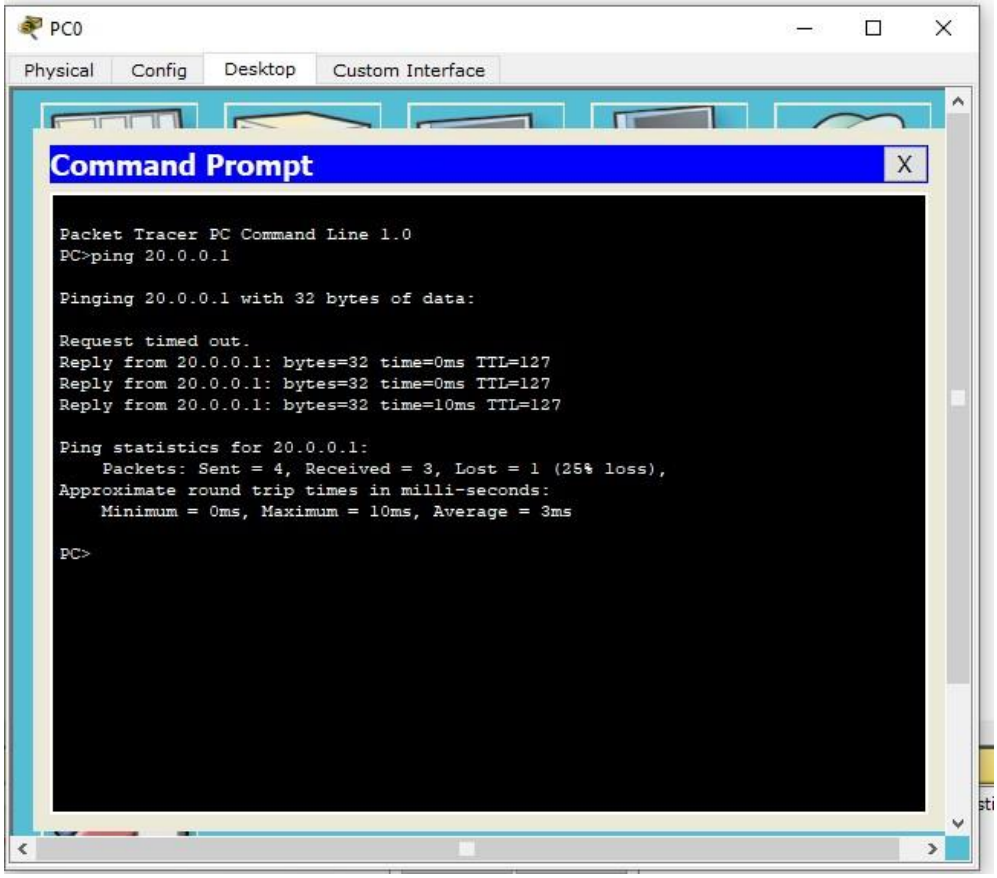


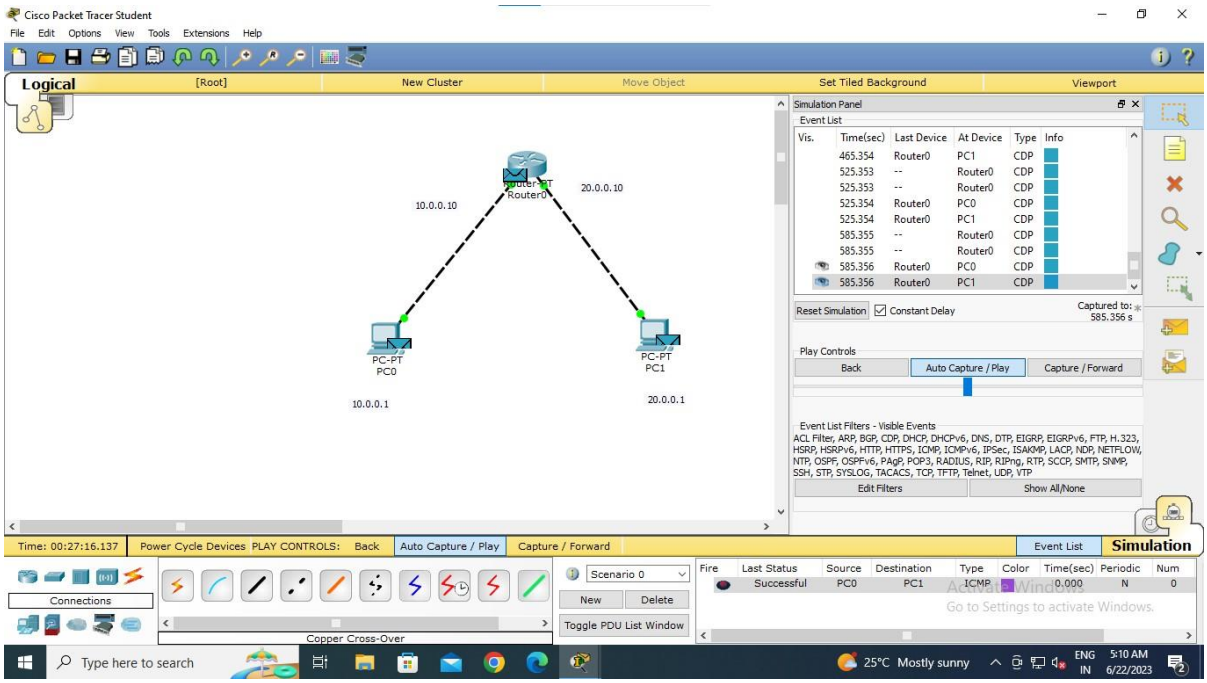
PROGRAM 2.2



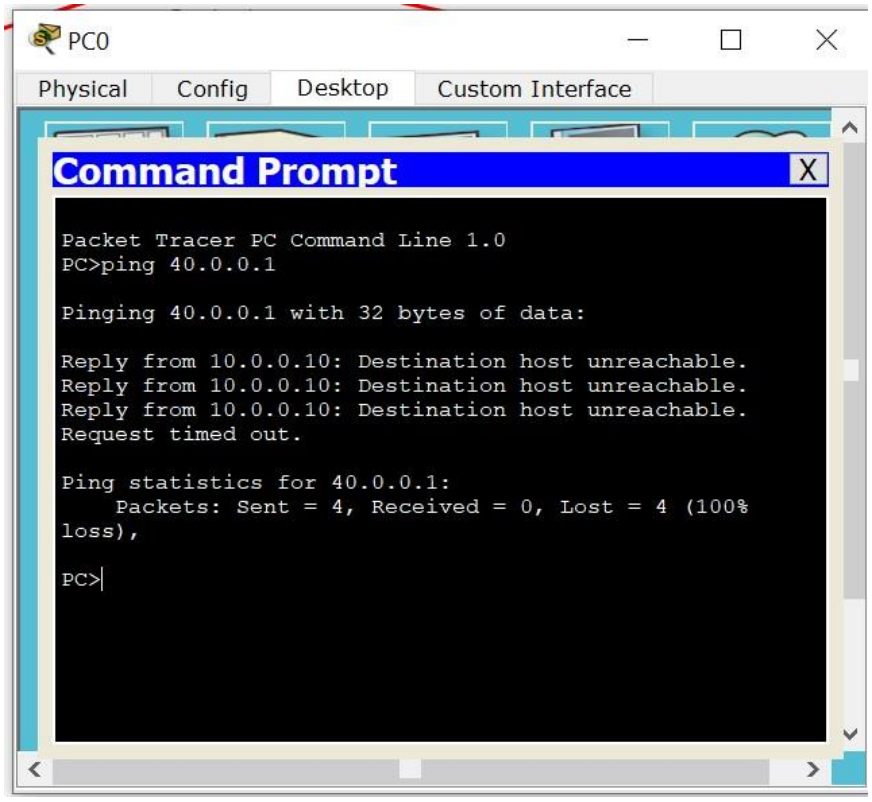
OUTPUT:

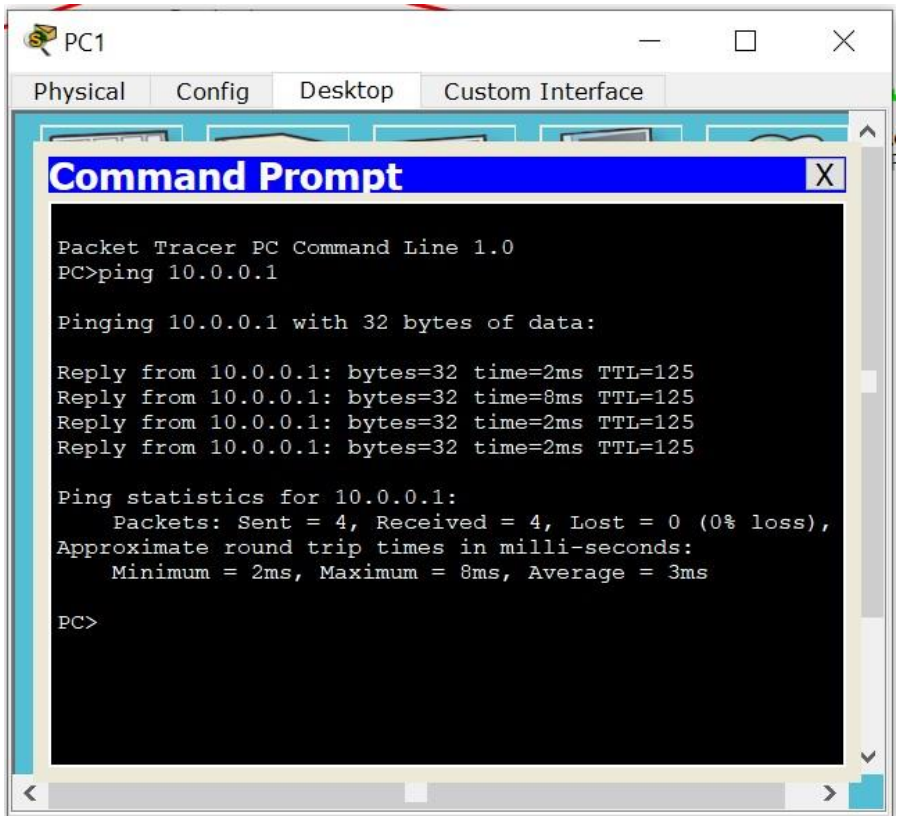
PROGRAM 2.1

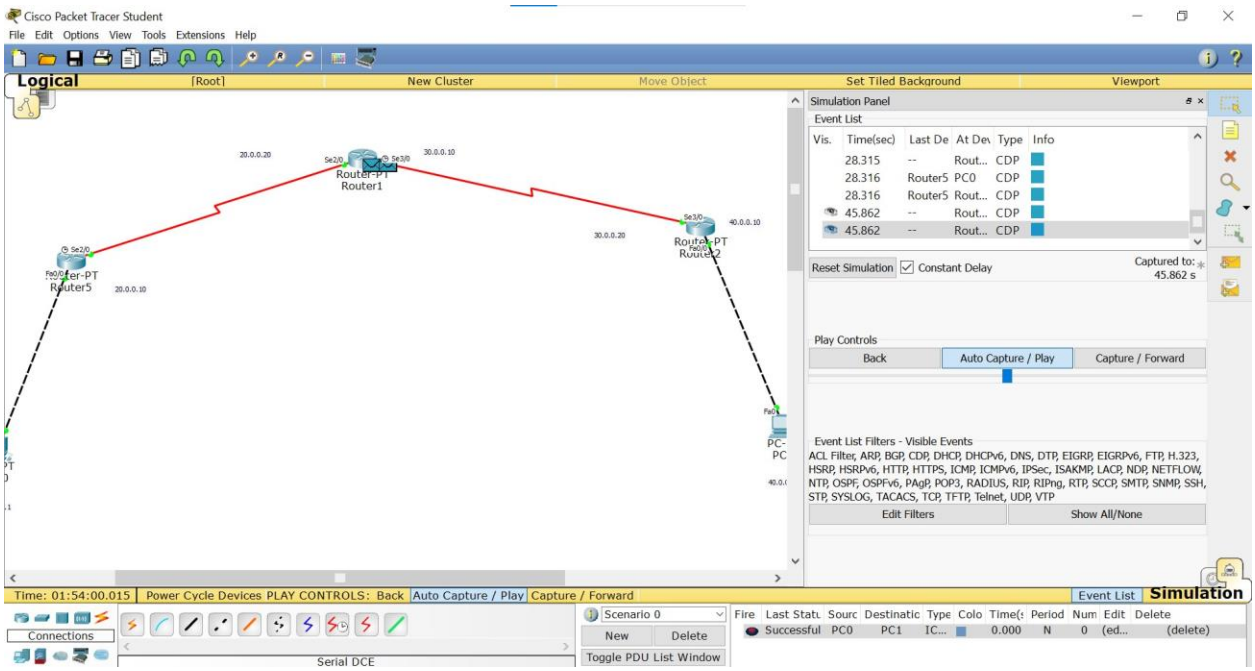

PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=10ms TTL=127
Ping statistics for 20.0.0.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 10ms, Average = 3ms
PC>


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
10.0.0.10
20.0.0.10
Router0
PC-PT PC0
PC-PT PC1
10.0.0.1
20.0.0.1
Simulation Panel
Event List
Reset Simulation
Constant Delay
Play Controls
Back
Auto Capture / Play
Capture / Forward
Edit Filters
Show All/None
Time: 00:27:16.137
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Successful
PC0
PC1
ICMP
Type here to search
25°C Mostly sunny
ENG IN
5:10 AM
6/22/2023

PROGRAM 2.2


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Request timed out.
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100%
loss),
PC>


PC1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=8ms TTL=125
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 8ms, Average = 3ms
PC>


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router-PT
Router1
Router-PT
Router5
Router-PT
Router2
PC-PC
20.0.0.20
30.0.0.10
30.0.0.20
40.0.0.10
20.0.0.10
Simulation Panel
Event List
Vis. Time(sec) Last De At Dev Type Info
28.315 -- Rout... CDP
28.316 Router5 PC0 CDP
28.316 Router5 Rout... CDP
45.862 -- Rout... CDP
45.862 -- Rout... CDP
Reset Simulation
Constant Delay
Captured to: 45.862 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: 01:54:00.015
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Statu Sourc Destinatic Type Colo Time(s Period Num Edit Delete
Successful PC0 PC1 IC... 0.000 N 0 (ed... (delete)