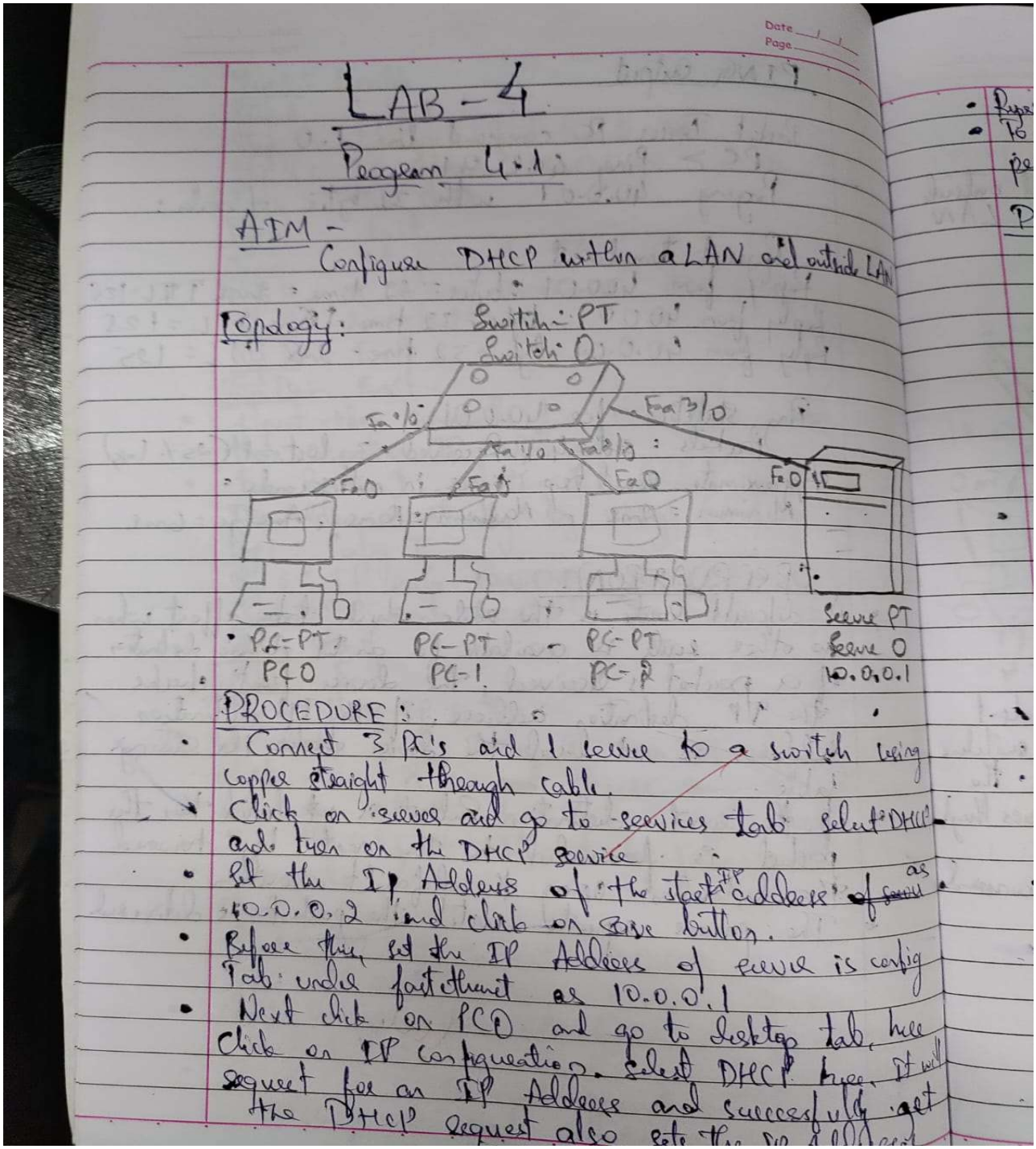
WEEK 4

Configure DHCP within a LAN and outside LAN.

OBSERVATION:



LAB - 4

Program 4.1

AIM -

Configure DHCP within a LAN and outside LAN

Topology:

PROCEDURE:

- Connect 3 PC's and 1 server to a switch using copper straight through cable.
- Click on server and go to services tab select DHCP and turn on the DHCP service
- Set the IP Address of the start IP address as 10.0.0.2 and click on save button.
- Before this, set the IP Address of server is config Tab under fastethernet as 10.0.0.1
- Next click on PC0 and go to desktop tab, here click on IP configuration. Select DHCP here. It will request for an IP Address and successfully get the DHCP request also set the IP address

- Repeat this steps for other 2 PC's
- To send a packet access PC's, go to PC's command prompt and type ping destination IP Address.

PING OUTPUT:

Packet Tracer PC command Line 1.0
PC> ping 10.0.0.3
pinging 10.0.0.3 with 32 bytes of data

Reply from 10.0.0.3: bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.3: bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.3: bytes = 32 time = 1ms TTL = 128
Reply from 10.0.0.3: bytes = 32 time = 0ms TTL = 128

- Ping statistics for 10.0.0.3:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)
  Approximate round trip times in milliseconds:
  Minimum = 0ms, Maximum = 1ms, Average = 0ms

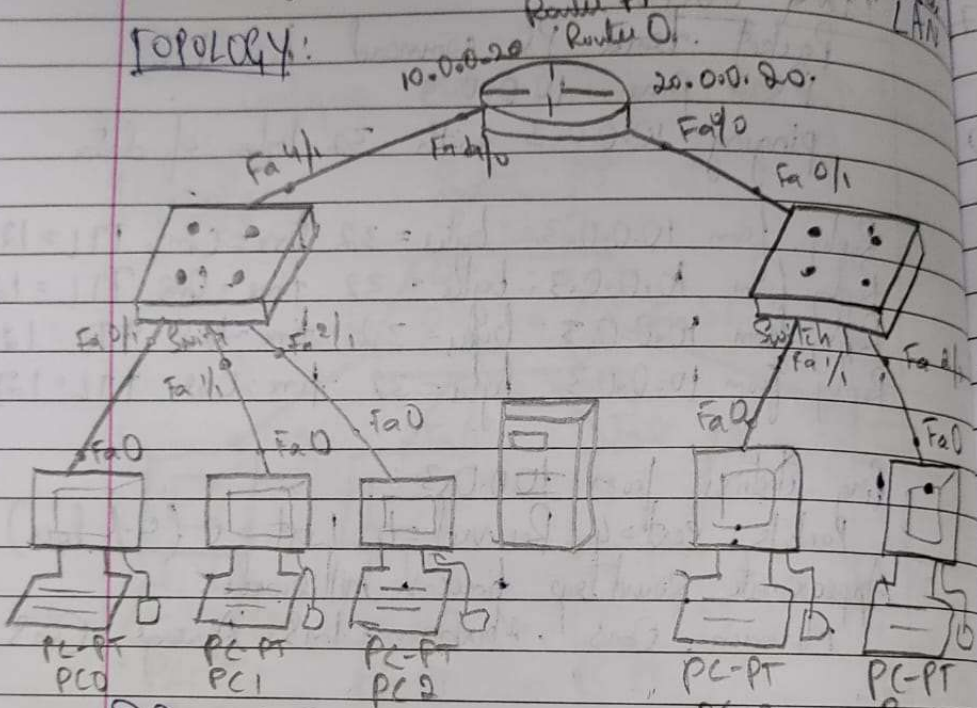
OBSERVATION:-

- DHCP is used to dynamically assign an IP address to any device or node.
- It is a client-server protocol in which servers manage a pool of unique IP address & also about client configuration parameters.
- DHCP-enabled clients send a request to DHCP server when they want to connect to a network.
- DHCP server responds to the client request by providing IP configuration information from address pools, previously specified by a network administrator.

PROGRAM - 4.2

AIM:
Configure DHCP within a LAN and outside LAN

TOPOLOGY:



PROCEDURE:

- Add a Router, a Switch and 2PC's to the logical program Network & connect the router to both switches.
- Set the server IP address of server and with the help of server set the first 3 PC's IP Address by DHCP.
- Now set the Router IP address with the following commands statically
  Step 1: NO
  Step 2: Enable
  Step 3: Config T
  Step 4: Interface fastethernet 4/0
  Step 5: IP address 10.0.0.20 255.0.0.0

Step 6: No Shut
Step 7: Exit.
Step 8: interface fastethernet 0/0
Step 9: IP address 20.0.0.20 255.0.0.0
Step 10: No Shut.
Step 11: Exit
Step 12: Exit
Step 13: Show IP route.

- Go to server and set the gateway as 10.0.0.20
- Again go to router CLI and follow these commands
  Step 14: Config T
  Step 15: IP helper-address 10.0.0.1
  Step 16: No shut.
  Step 17: Exit.
- Now go to server services and add one more pool name as server Pool 1, start IP address as 20.0.0.2 and default gateway as 20.0.0.20. Then click add & save.
- Now set the other two PC's IP address by going to this Desktop → IP Configuration and selecting DHCP which will automatically generate its IP address.
- Now the network is complete and we can send packets from any PC to other by typing ping destination IP address in their respective command prompts.

PING OUTPUT.

Packet Tracer PC command line 1.0
PC > ping 20.0.0.2
pinging 20.0.0.2 with 32 bytes of data

Request timed out.

Reply from 20.0.0.2: bytes=32 time=0ms TTL=
Reply from 20.0.0.2: bytes=32 time=0ms TTL=
Reply from 20.0.0.2: bytes=32 time=0ms TTL=

Ping statistics for 20.0.0.2.
Packets sent=4, Received=3, loss=1 (25%
Approximate round trip times in milliseconds
Minimum=0ms, Maximum=0ms, Average=0

OBSERVATION.

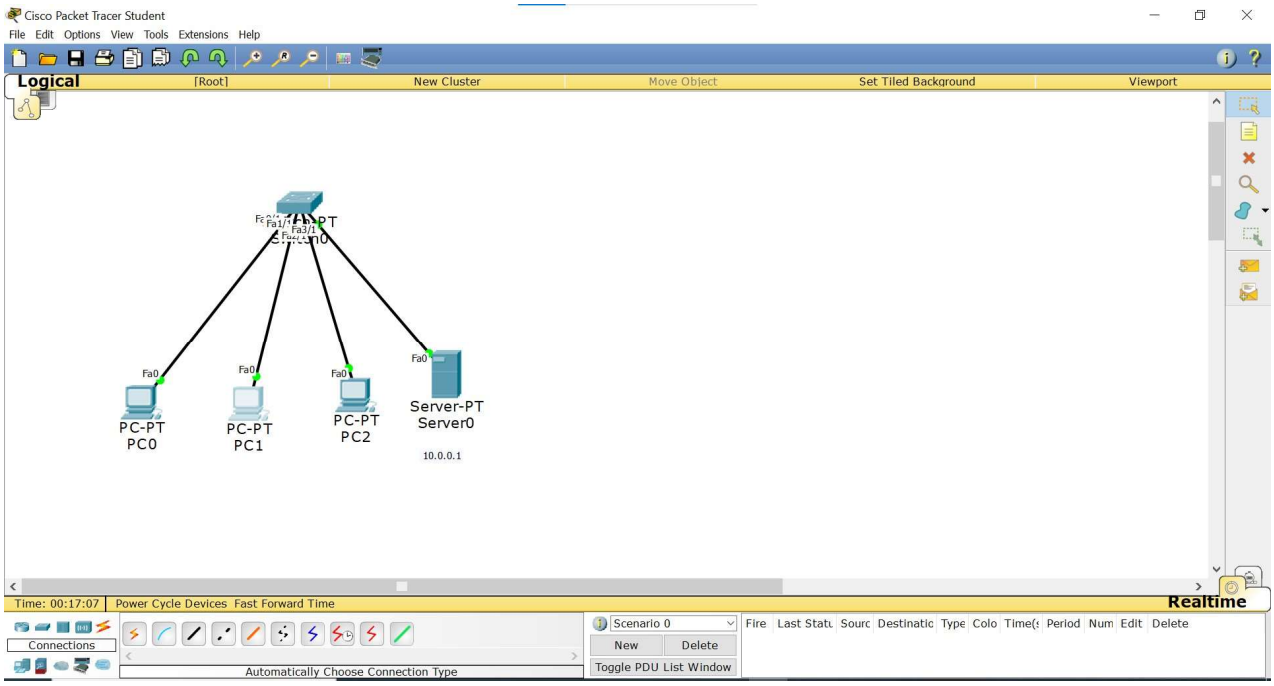
- DHCP is used to assign IP addresses dynamic to different devices.
- To assign continous IP address we create a server pool where we assign the starting IP address and a default gateway number. For PC's under different switches we create a diff server pool again and start.

This take care of delivering the packets to correct destination IP address and also sends back the ACK to the initial device.

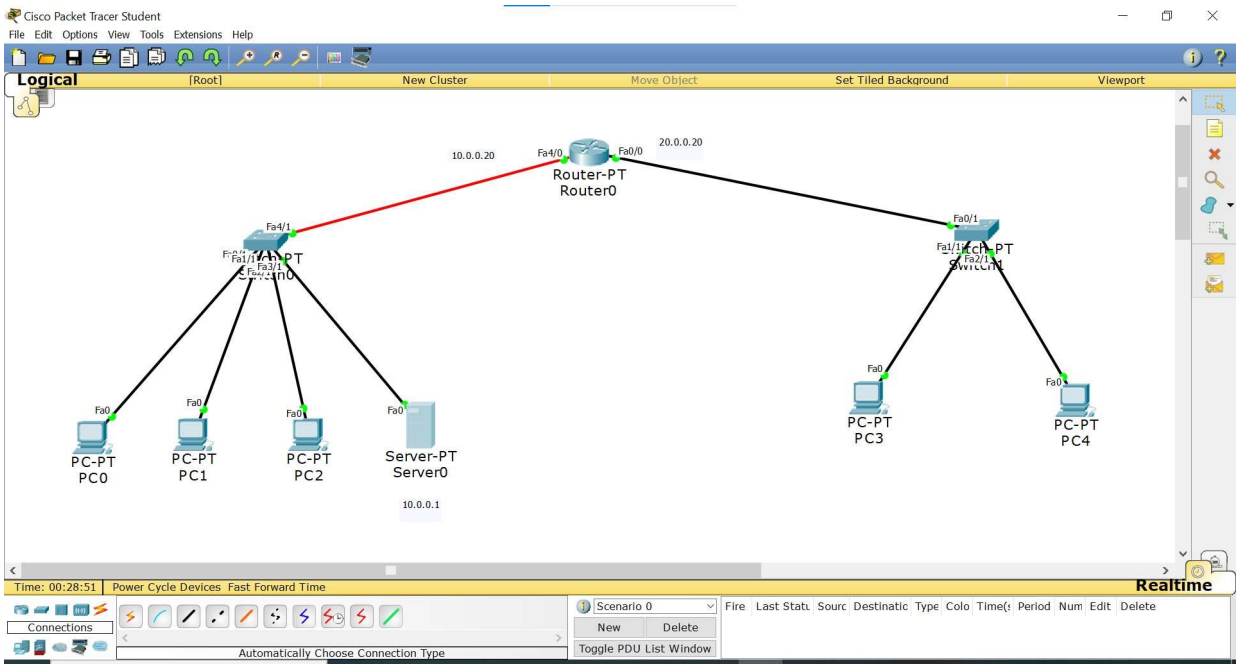
18/7/23

TOPOLOGY:

PROGRAM 4.1:

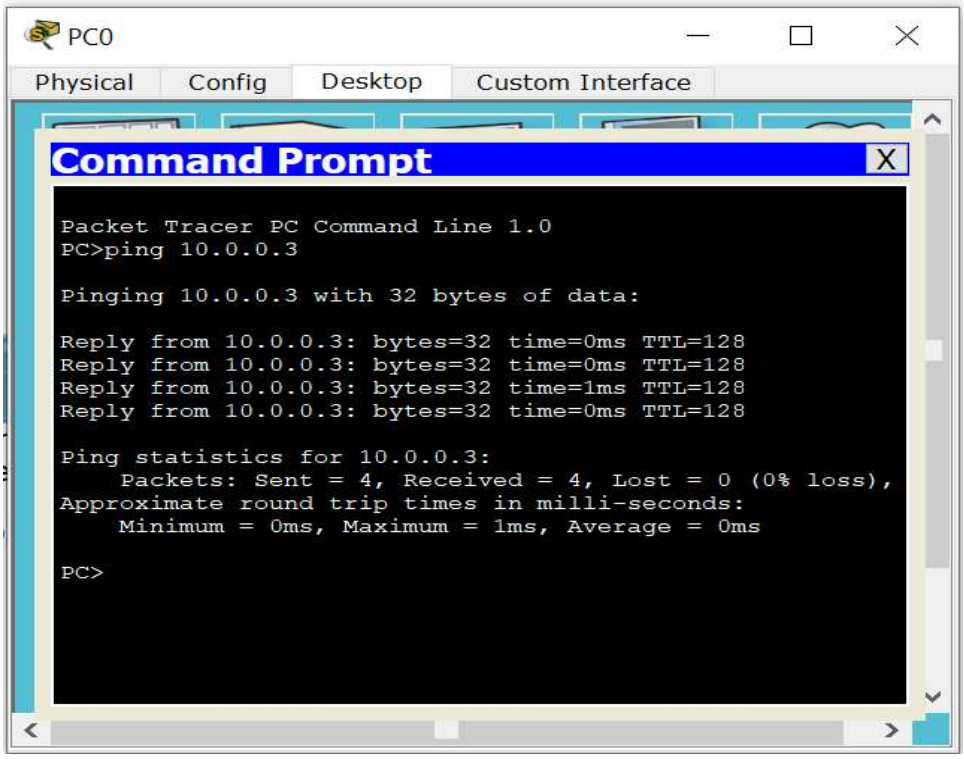


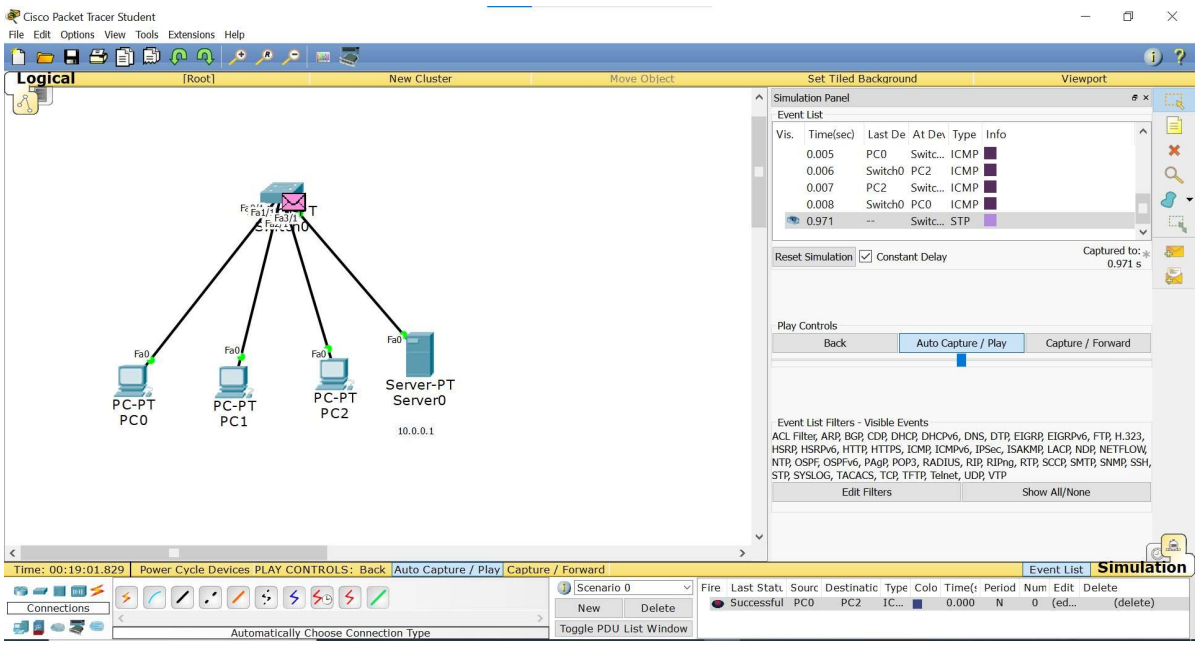
PROGRAM 4.2:



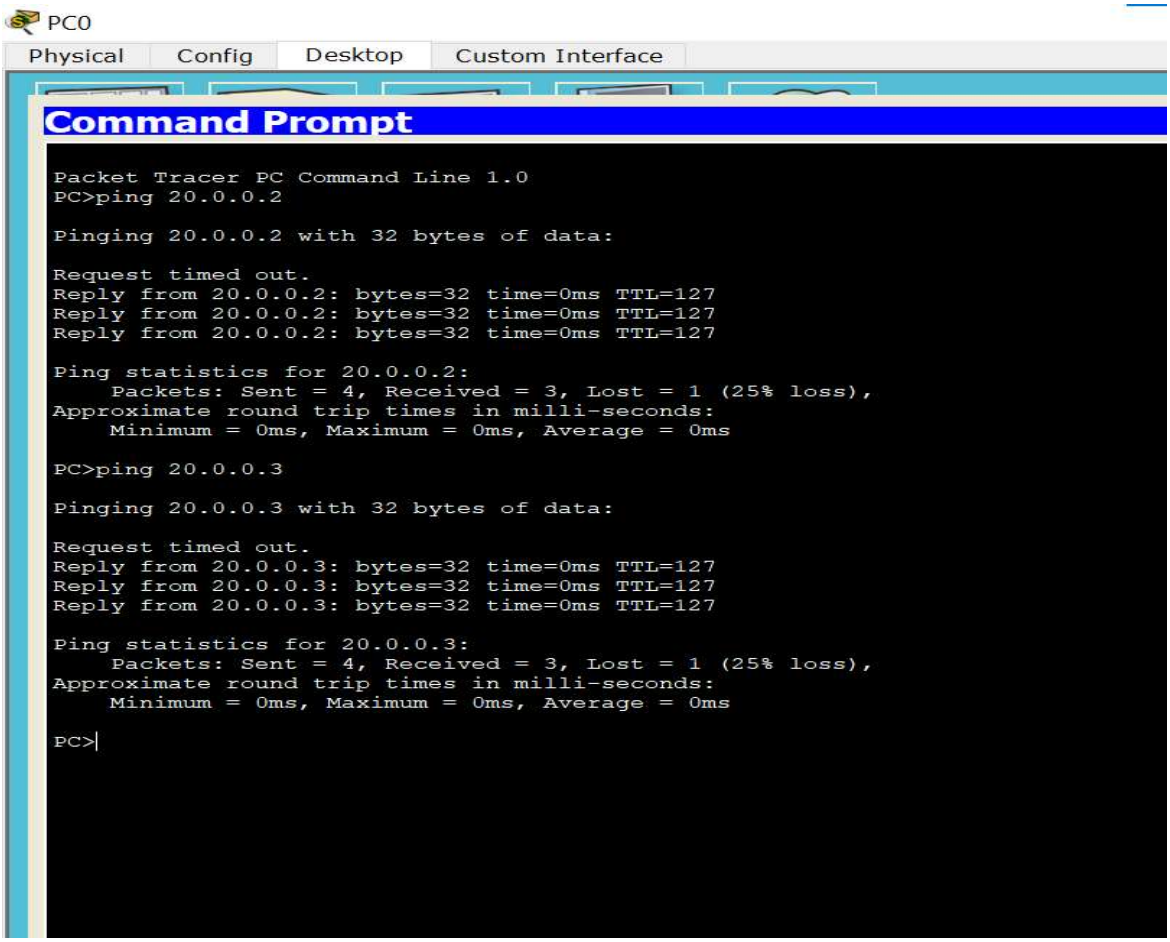
OUTPUT:

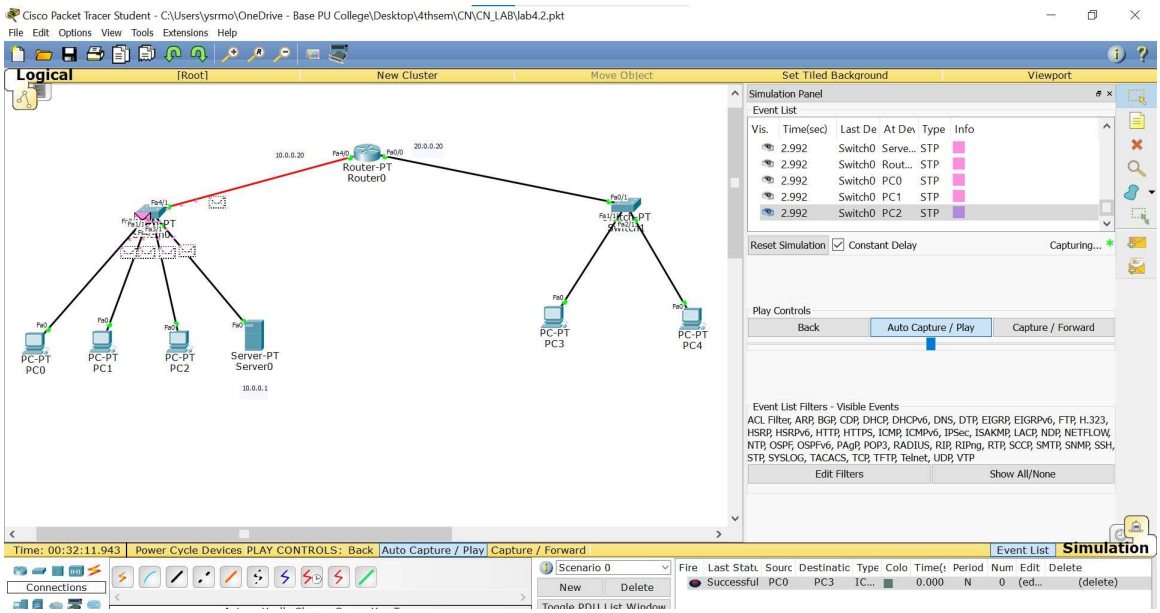
PROGRAM 4.1:





PROGRAM 4.2:


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.2
Pinging 20.0.0.2 with 32 bytes of data:
Request timed out.
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127
Ping statistics for 20.0.0.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>ping 20.0.0.3
Pinging 20.0.0.3 with 32 bytes of data:
Request timed out.
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Ping statistics for 20.0.0.3:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>


Cisco Packet Tracer Student - C:\Users\ysrmo\OneDrive - Base PU College\Desktop\4thsem\CN\CN_LAB\lab4.2.pkt
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router-PT
Router0
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
Server-PT
Server0
PC-PT
PC3
PC-PT
PC4
Simulation Panel
Event List
Reset Simulation
Constant Delay
Capturing...
Play Controls
Back
Auto Capture / Play
Capture / Forward
Edit Filters
Show All/None
Time: 00:32:11.943
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Scenario 0
New
Delete