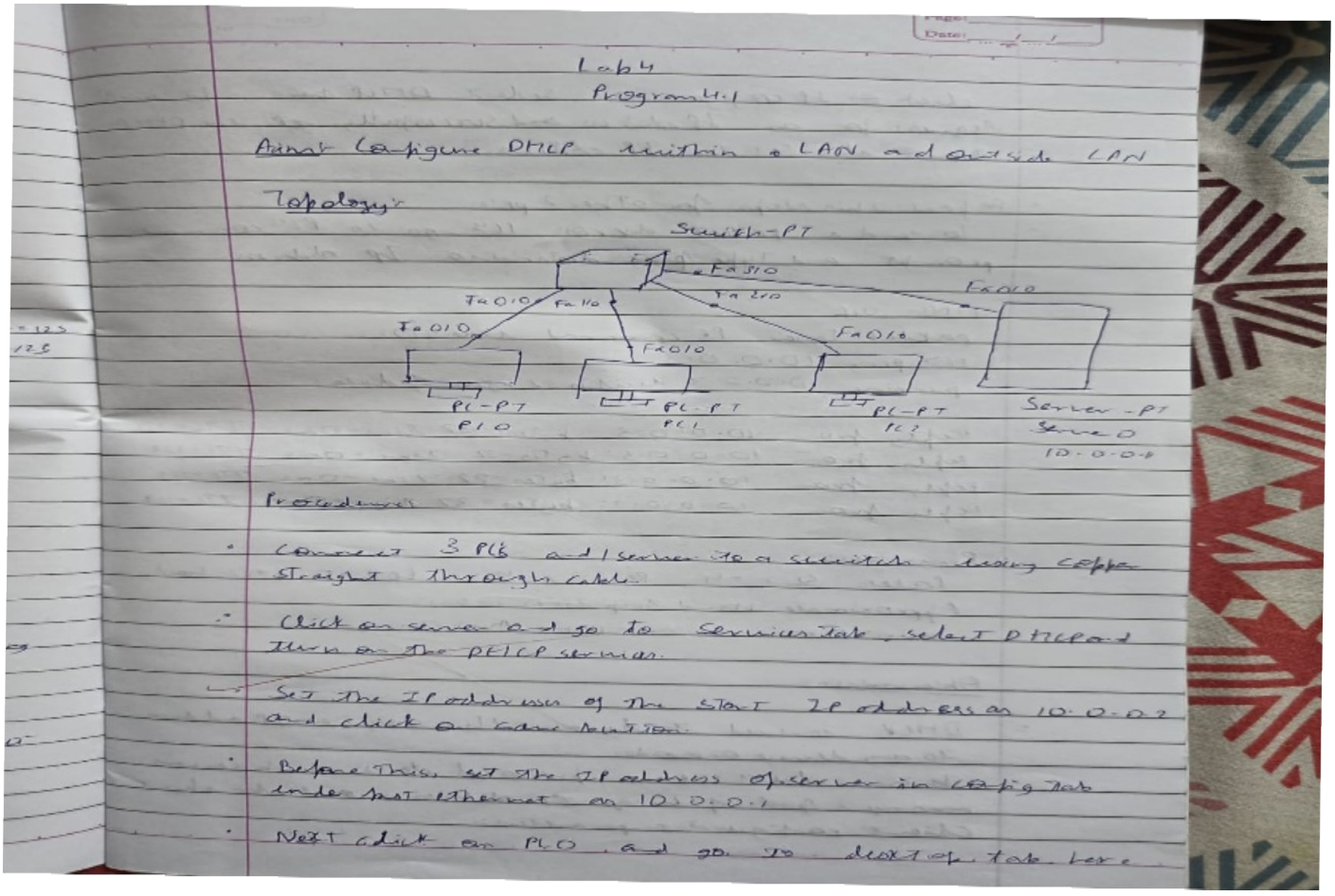
WEEK 4

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 PCs and 1 server to a switch using copper straight through cable.
- Click on server 0 and go to services tab, select DHCP and turn on the DHCP services.
- 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 in config tab inside fast ethernet 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 across PC's, go to PC's command prompt and type ping destination IP address.

PING OP:-

packet Tracer PC command line 10:
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 = 0ms TTL = 128
Reply from 10.0.0.3 : bytes = 32 time = 0ms TTL = 128

Ping Stats:
Packets : Sent = 4 Received = 4 Lost = 0 (0% Loss)
Approximate round trip times in ms:
Min = 0ms , max = 0ms, Avg = 0ms

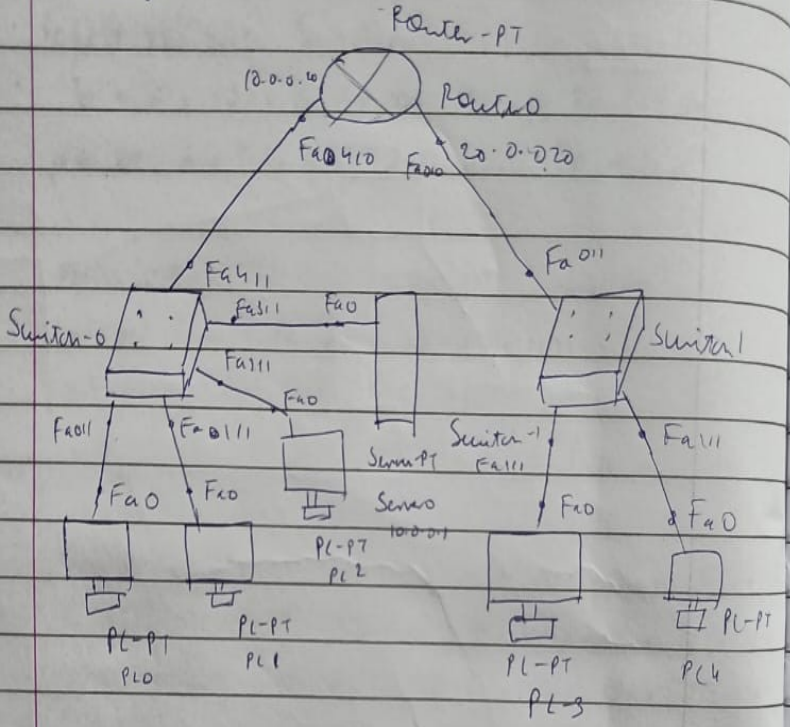
Observation:-

- DHCP is used to dynamically assign an IP address to any device or node.
- It is a client-server protocol to which servers manage a pool of unique IP addresses and also about client configuration parameters.

Program 4.2

Aim:- Configure DHCP within a LAN and outside LAN

Topology:-



Procedure:-

- Add a router, a switch and 2 PC's to 4.1 program network and connect router to both switches.
- Set the server IP address of server and with the help of server, set first 3 PC's IP address through DHCP.
- Set router IP address with following commands statically
  Step-1 : No
  Step-2: Enable
  Step 3: Config T
  Step4: Interface fast Ethernet 0/0 4/0.

Steps: Ip address 10.0.0.20 255.0.0.0
Step6: No shut
Step7: Exit
Step8: Interface fast Ethernet 0/0
Step9: Ip address 20.0.0.20 255.0.0.0
Step10: No Shut
Step11: Exit
Step12: Exit
Step13: Show Ip route

→ Go to server and set gateway as 10.0.0.20
→ Again go to router CLI and follow these commands

Step14: Config T
Step15: interface fast Ethernet 0/0
Step16: ip helper-address 10.0.0.1
Step17: No Shut
Step18: Exit

- Now go to server services and add one more pool name as server pool1, start Ip address as 20.0.0.1 and default gateway as 20.0.0.20. Click add and save.

- Now set other 2 PC's Ip address by going to their Desktop Ip configuration and selecting DHCP option which will automatically generate it's Ip address.

- Network is complete and can send packets from any PC to other by typing ping destination Ip address in their respective command prompt.

Ping output:

Packet from PC commands ping
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 Stats:
Packets sent = 4 Received = 0 (0% Loss)
Approx. round trip times in ms:
Min = 0ms, max = 0ms, Avg = 0ms

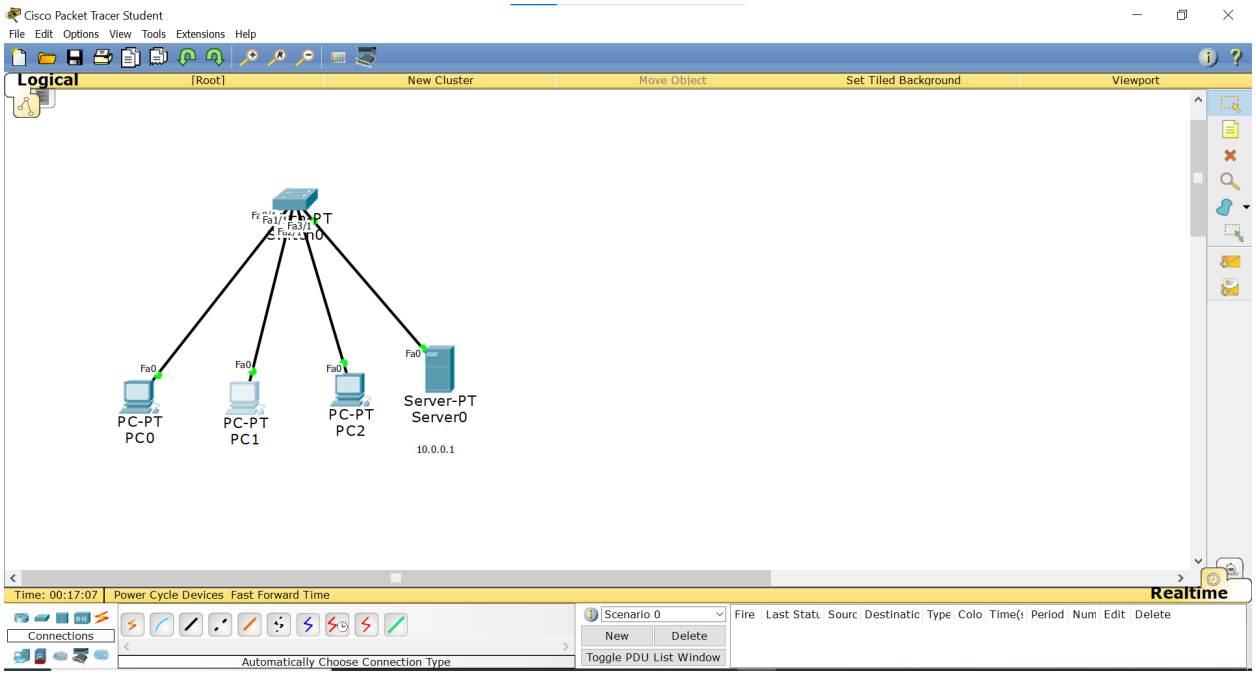
Observation:

- DHCP is used to assign IP addresses dynamically to different devices
- To assign continous IP addresses the create scope feature is used where we assign starting IP address and a default gateway number.

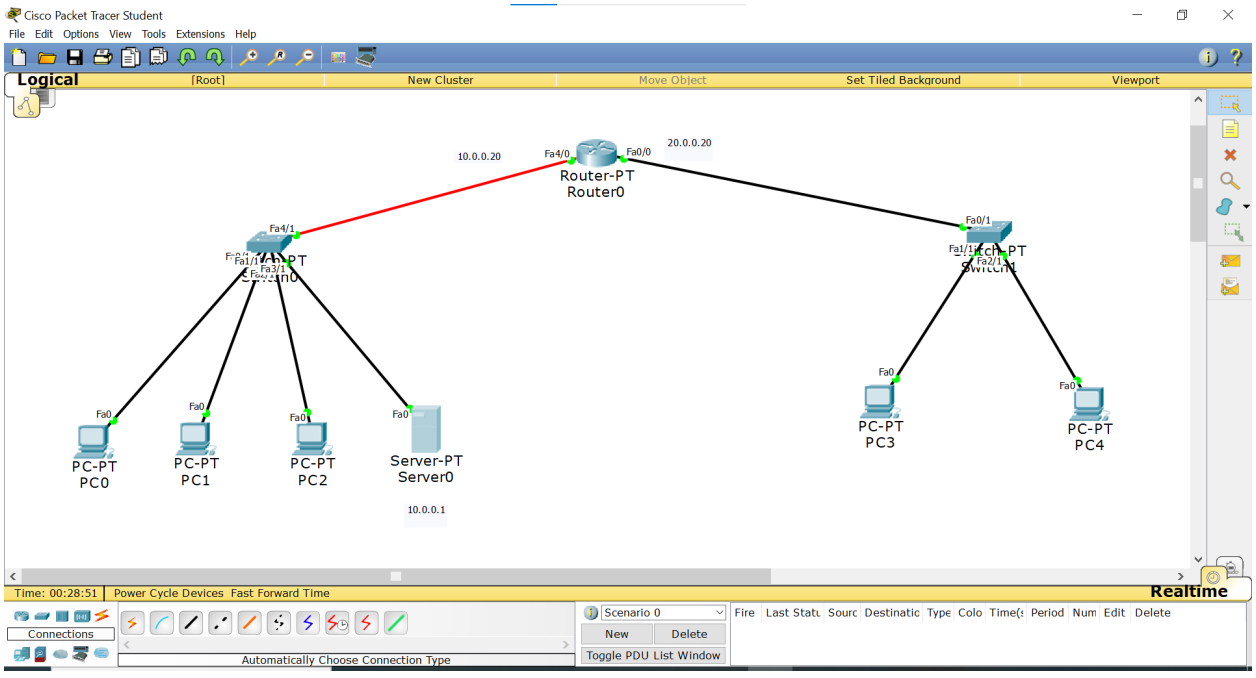
20/7/23

TOPOLOGY:

PROGRAM 4.1:

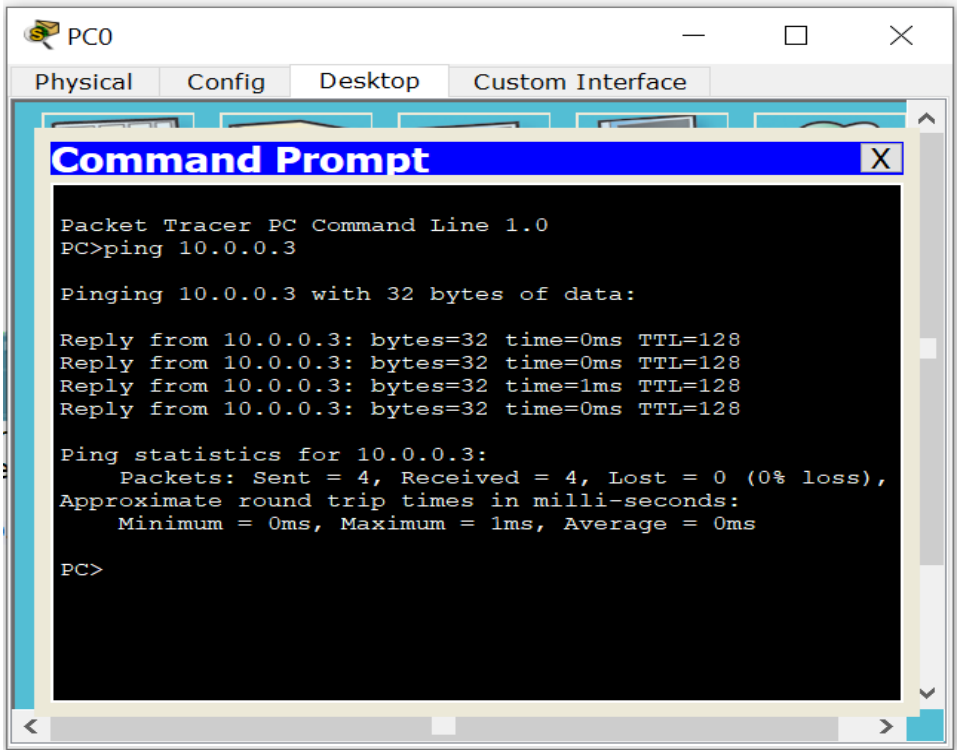


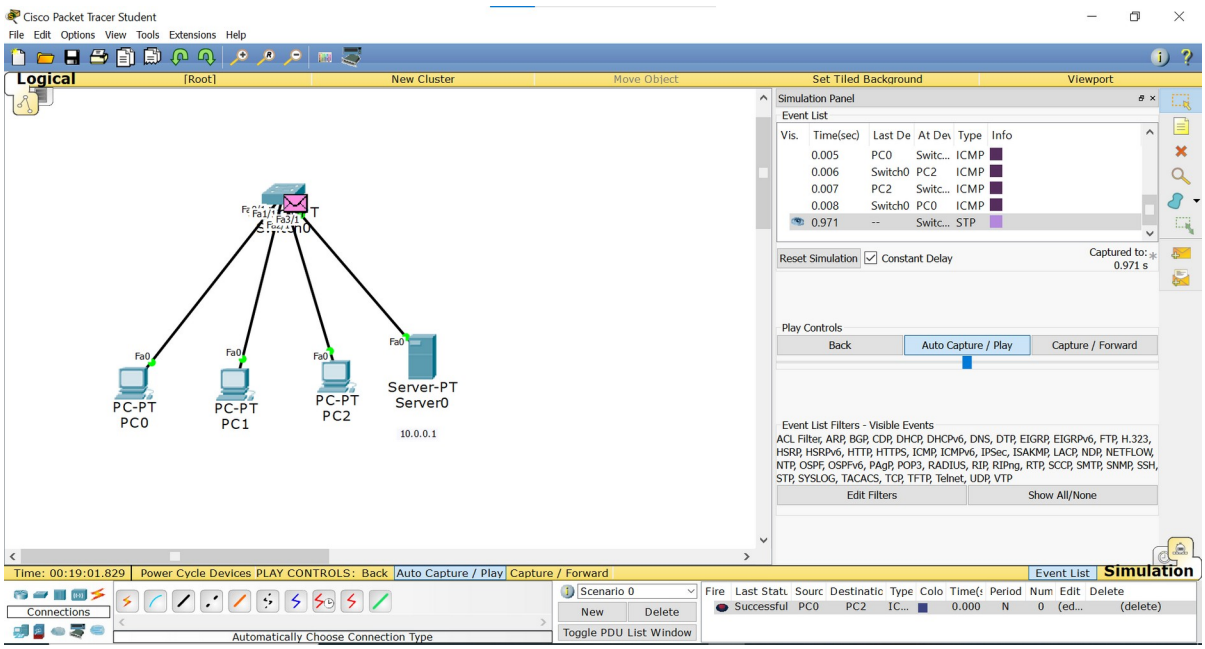
PROGRAM 4.2:



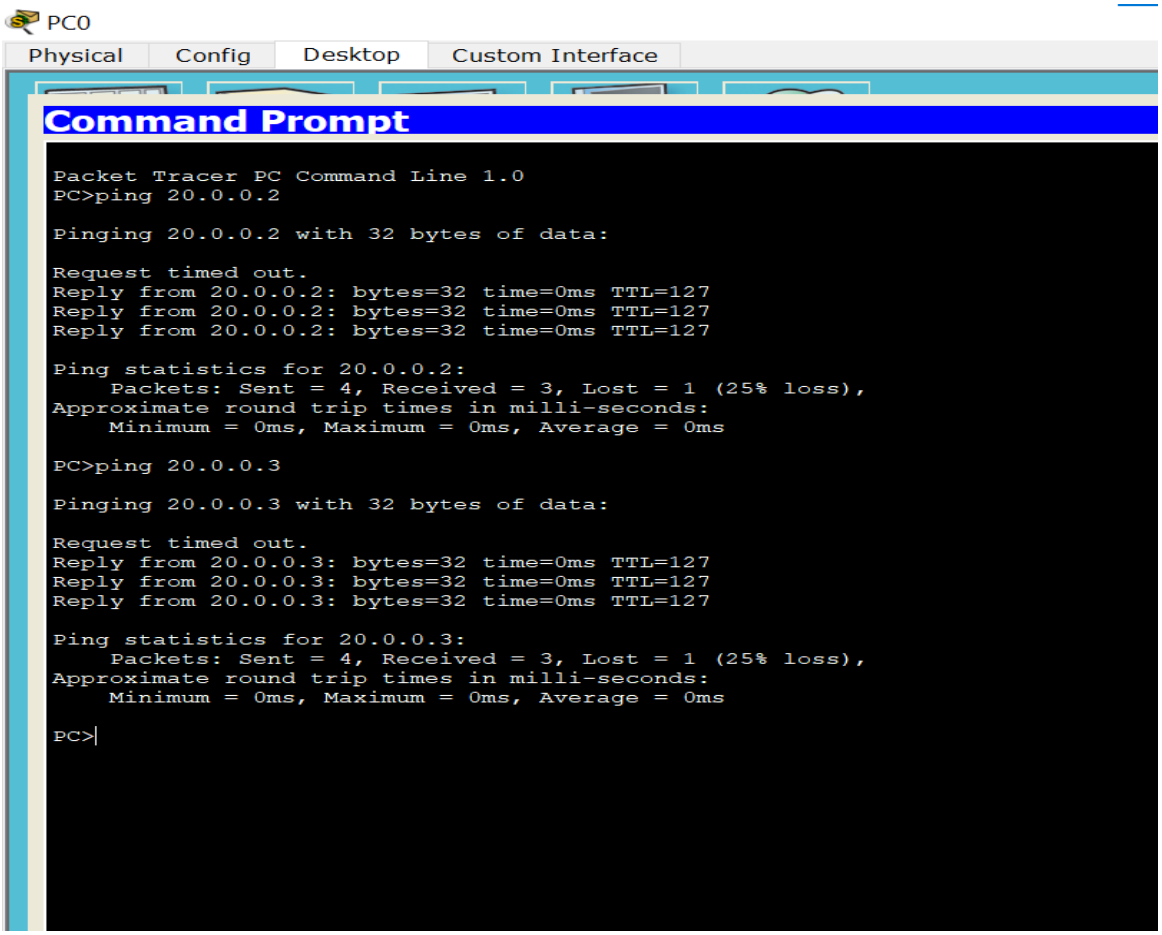
OUTPUT:

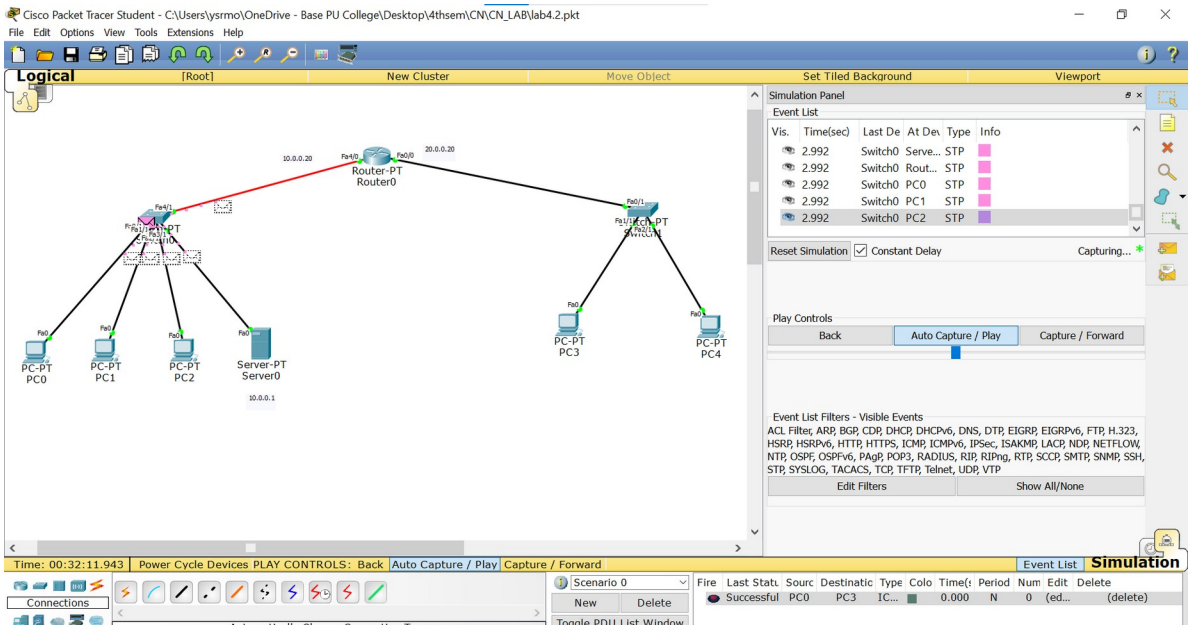
PROGRAM 4.1:





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
Simulation
Connections
Scenario 0
New
Delete