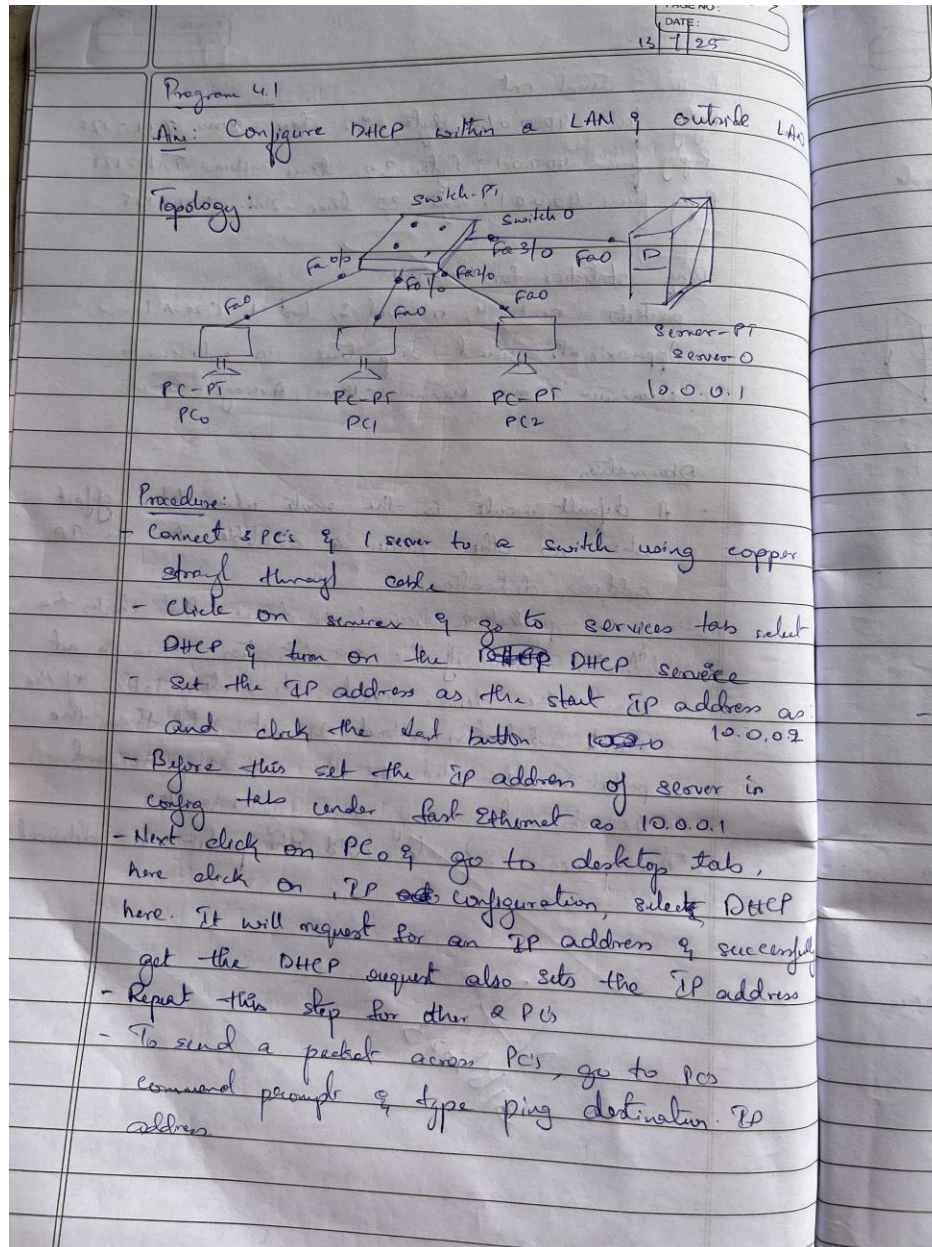


## LAB 4

Configure DHCP within a LAN and outside LAN.

OBSERVATION:

TOPOLOGY:



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 from 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 addresses & also about client configuration parameters.
- DHCP-enabled clients send a request to DHCP server when they want to connect to a network.
- The DHCP server responds to the client request by providing IP configuration information from address pools, previously specified by a network administrator.

3/8



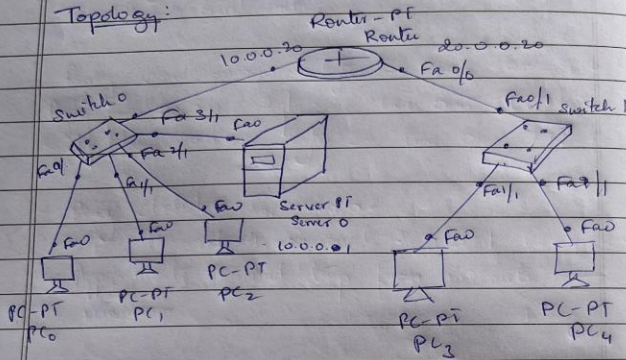
13-7-23

DATE

## Program 4.2

Aim: Configure DHCP within a LAN & outside LAN

### Topology:



### Procedure:

\* Add a router a switch & 2 PCs to 4.1 program network & connect the router to both switches.

\* Set the server IP address of server and with the help of server set the host-3 PC's IP address through 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 Fast Ethernet 4/0

Step 5: IP address 10.0.0.20 255.0.0.0

Step 4: No Shut

Step 5: Exit

Step 8: In

Step 9: S

Step 10: N

Step 11: E

Step 12: t

Step 13: S

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\* Again

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Step 14

Step 15

Step 16

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outside

Switch 1

Fast 11

Fast

PC 4

to 4.1

to

and

it

Step 8: Interface Fast Ethernet 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 address summary

\* Go to server & set the gateway as 10.0.0.20  
\* Again go to router CLI & follow these commands

Step 14: Config T  
Step 15: interface Fast Ethernet 0/0  
Step 16: IP helper-address 10.0.0.1  
Step 17: No shut  
Step 18: Exit

\* Now go to server services & add one more pool as server pool 1, start IP address as 20.0.0.2 & default gateway as 20.0.0.20. Then click add & save.

\* Now set the other 2 pc's IP address by going to Desktop → IP config & select DHCP which will automatically generate its IP address.

\* Now the network is complete & can send packets from any PC to other by typing ping destination IP address in their respective command prompt.

ALD  
21/8/2023

### 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=128

Reply from 20.0.0.2: bytes=32 time=0ms TTL=128

Reply from 20.0.0.2: bytes=32 time=0ms TTL=128

Ping statistics for 20.0.0.2

Packets sent=4, Received=3, Lost=1 (25% loss)

Approximate round trip times in milliseconds

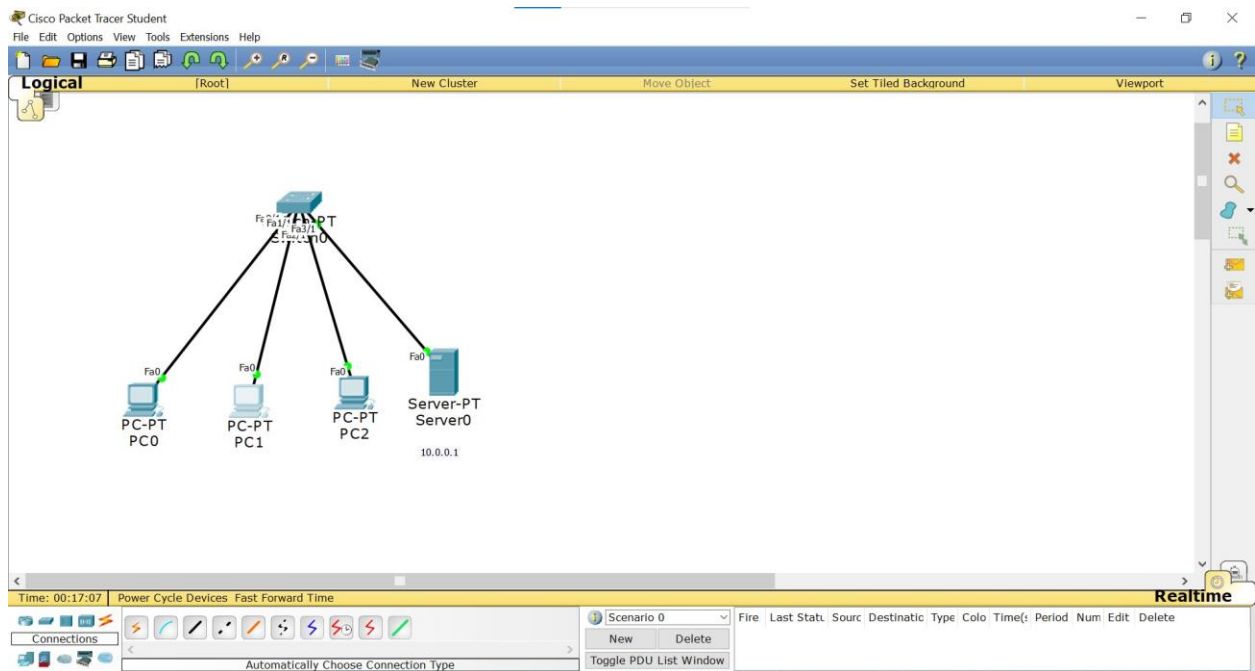
Minimum=0ms Maximum=0ms Average=0ms

### Observation:

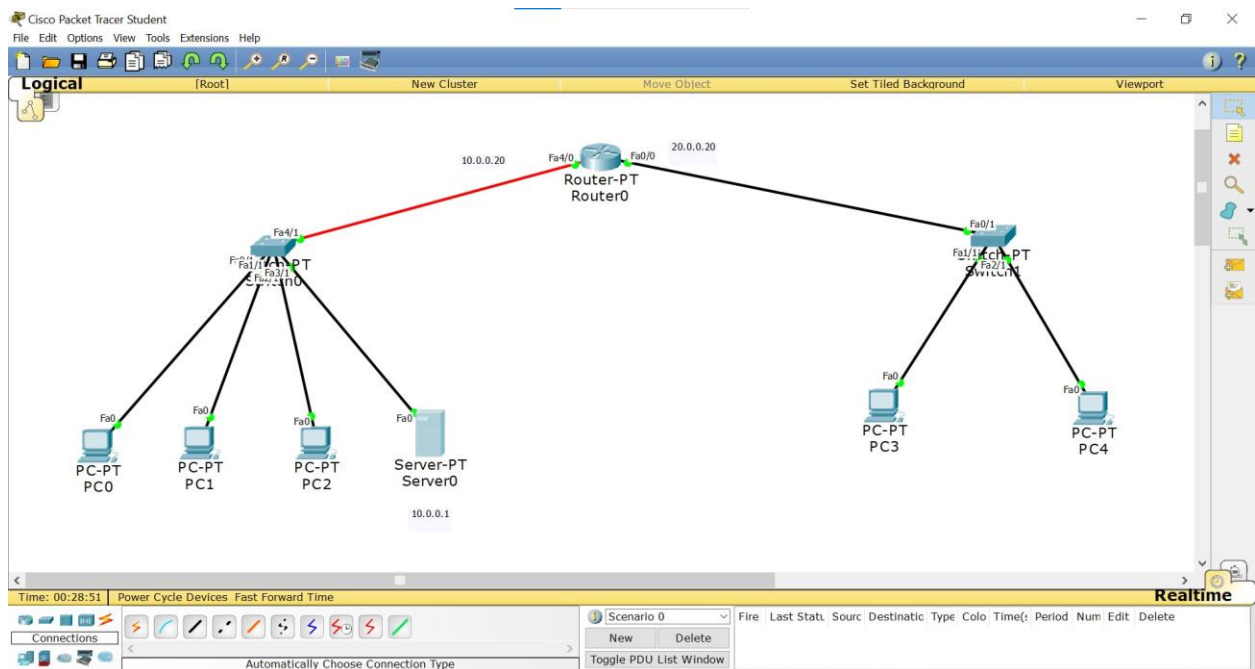
- \* DHCP is used to assign IP addresses dynamically to different devices.
- \* To assign continuous IP addresses we create a server pool where we assign the starting IP address & a default gateway number.
- For PC's under different switches we create a different server pool again & start.
- This tasks are of delivering the packets to correct destination IP address & also send back the packet into original device.



## PROGRAM 4.1:

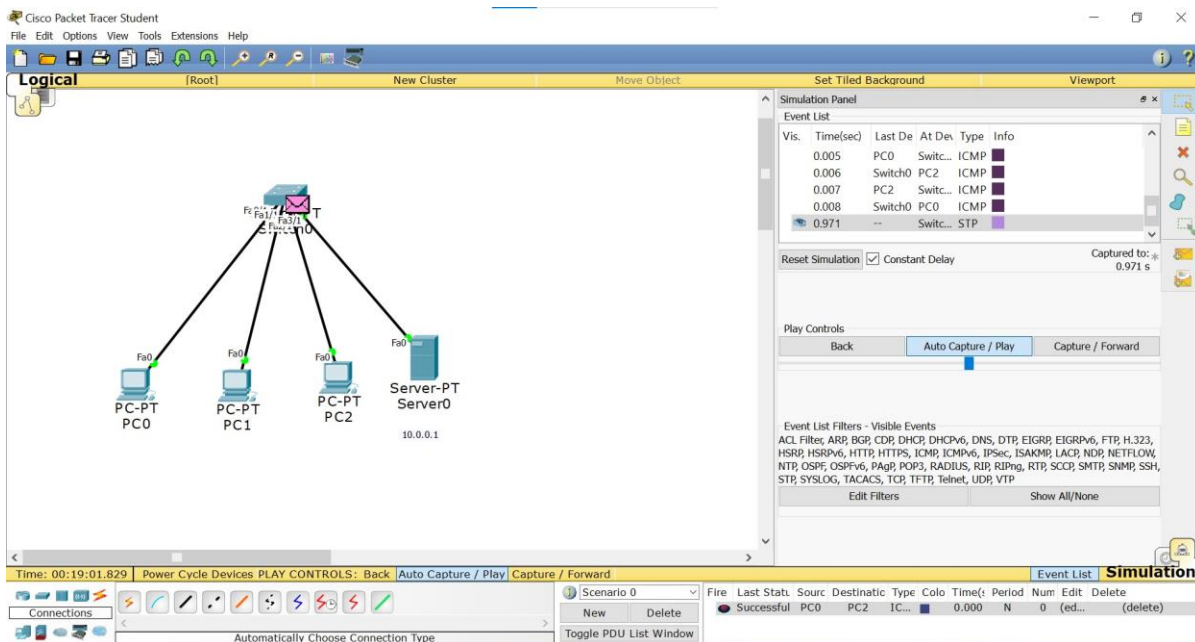
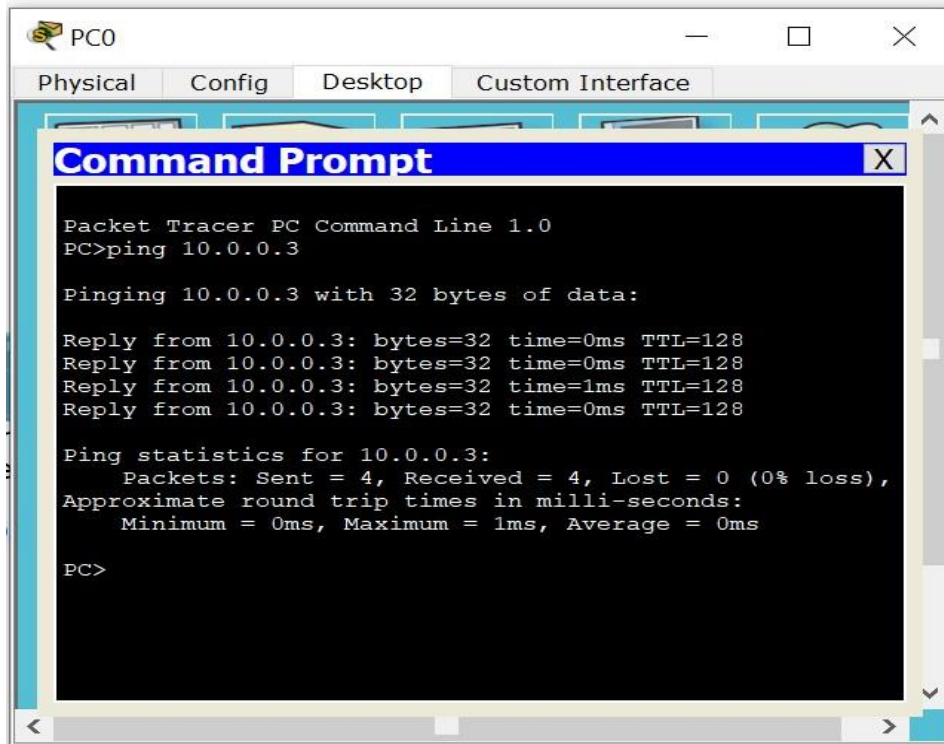


## PROGRAM 4.2:



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>|
```

