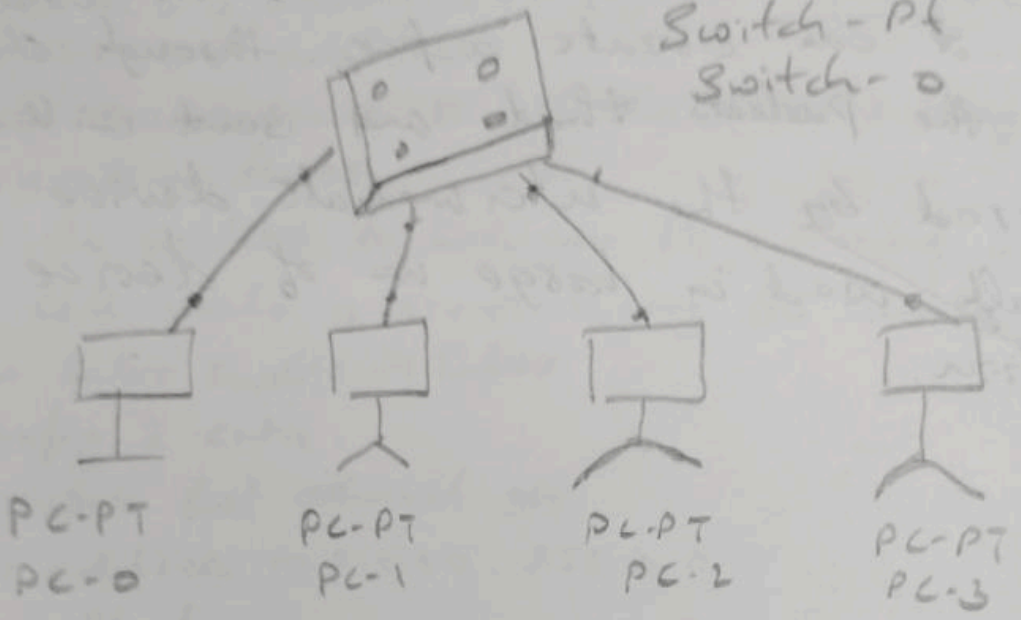
Lab-4

4(A)

Aim- Configure DHCP with a LAN to outside.

Topology.



Procedure

- Connect 3 PC's & 1 Server to a Switch using copper straight through cable.
- Click on Server & go to Services tab select DHCP & turn on DHCP service.
- Set the IP address of the start IP address as 10.0.0.2 & click on save button.
- Before this set the IP address of server in Config tab under Fast ethernet to 10.0.0.1.
- Next click on PC0 & go to desktop Tab. Click on IP config. Select DHCP here. It will request for an IP address & successfully get the DHCP request also sets the IP address
- Repeat this step for other 2 PC's.
- To send a packet across PC's go to PC3 Command & type ping dest.

Ping output

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.

Ping statistics from 10.0.0.3.

Packets Sent = 4 Received 4. Lost = 0 (0% Loss)

~~Packets sent = 4~~.

Approx round trip time in ms.

Min = 0 ms Max = 1ms Avg = 0 ms.

Observation

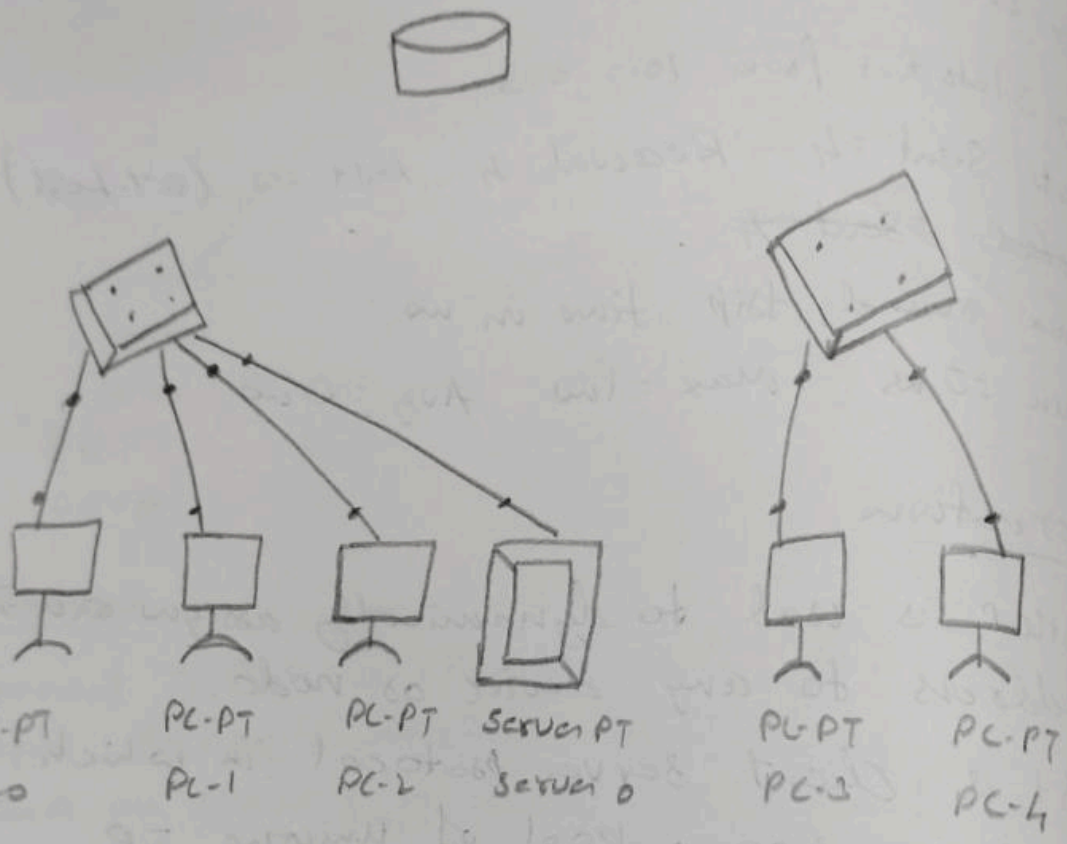
1) DHCP is used to dynamically assign an IP address to any device or node.
2) It is client server protocol in which servers manage a pool of unique IP address & also alove client config parameters.
3) DHCP enabled clients sends a request to DHCP server when they want to connect to a networks.

Lab

4(D)

Aim - Configure DHCP with a LAN & outside LAN.

Topology:



Procedure

Add a router, a switch & 2 PC's to 4(A) program network & connect the router to both switches

*) Set the server ~~set~~ IP address of server & with the help of server set the first 3 PC's IP address through DHCP.

*) Click on server

*) go to desktop -> IP configuration

*) IP address 10.0.0.1

Subnet Mask 255.0.0.0

Gateway 10.0.0.20.

Step-3

Configure the routes.

- Click on router go to CL 2.

Enable

Router # config t

Router (config) # fastethernet 0/0

Router (config) # ip address 10.0.0.20 255.0.0.0.

Router (config if) # no shut

Router (config if) # Exit

Router (Config) # interface fast ethernet 1/0.

Router (config if) # ip address 20.0.0.20 250.0.0.0

Router (config-if) # Exit.

Routing table.

Router -> show ip route.

10.0.0.0 is directly connected.

Step-4 - Go to server

- Select services then go to DHCP.

- Set service on

- Set Start IP address from the server.

Step-5

Then config the PC's

- Select a PC then desktop - go to IP config

Select DHCP.

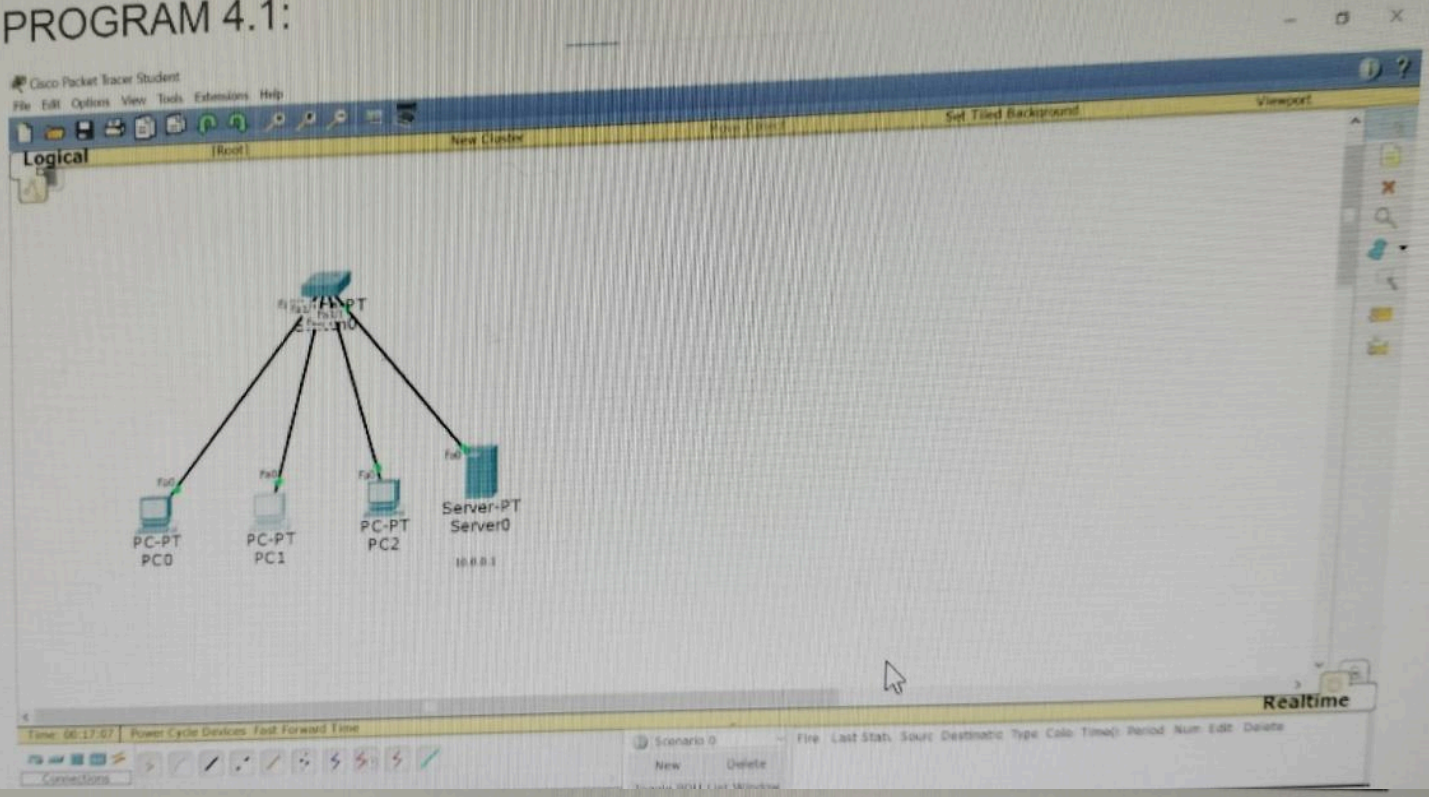
- Repeat the same procedure for all other PCS.

Observation

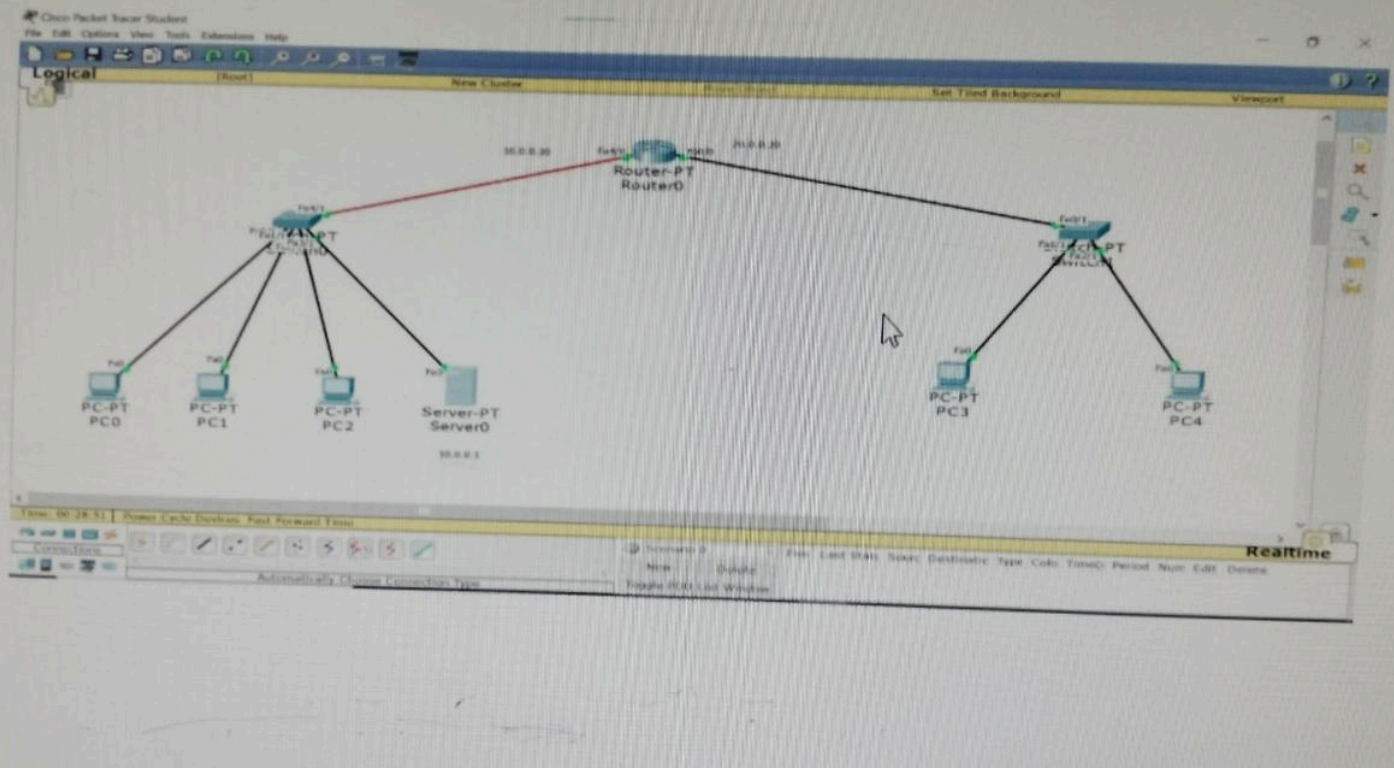
- DHCP is used to design IP address dynamically to diff devices.
- to assign continous IP address we create a Server Pool where we assign the St. IP address & a default gateway number. for Pcs under diff switches we create a diff Server pool again & start.

TOPOLOGY:

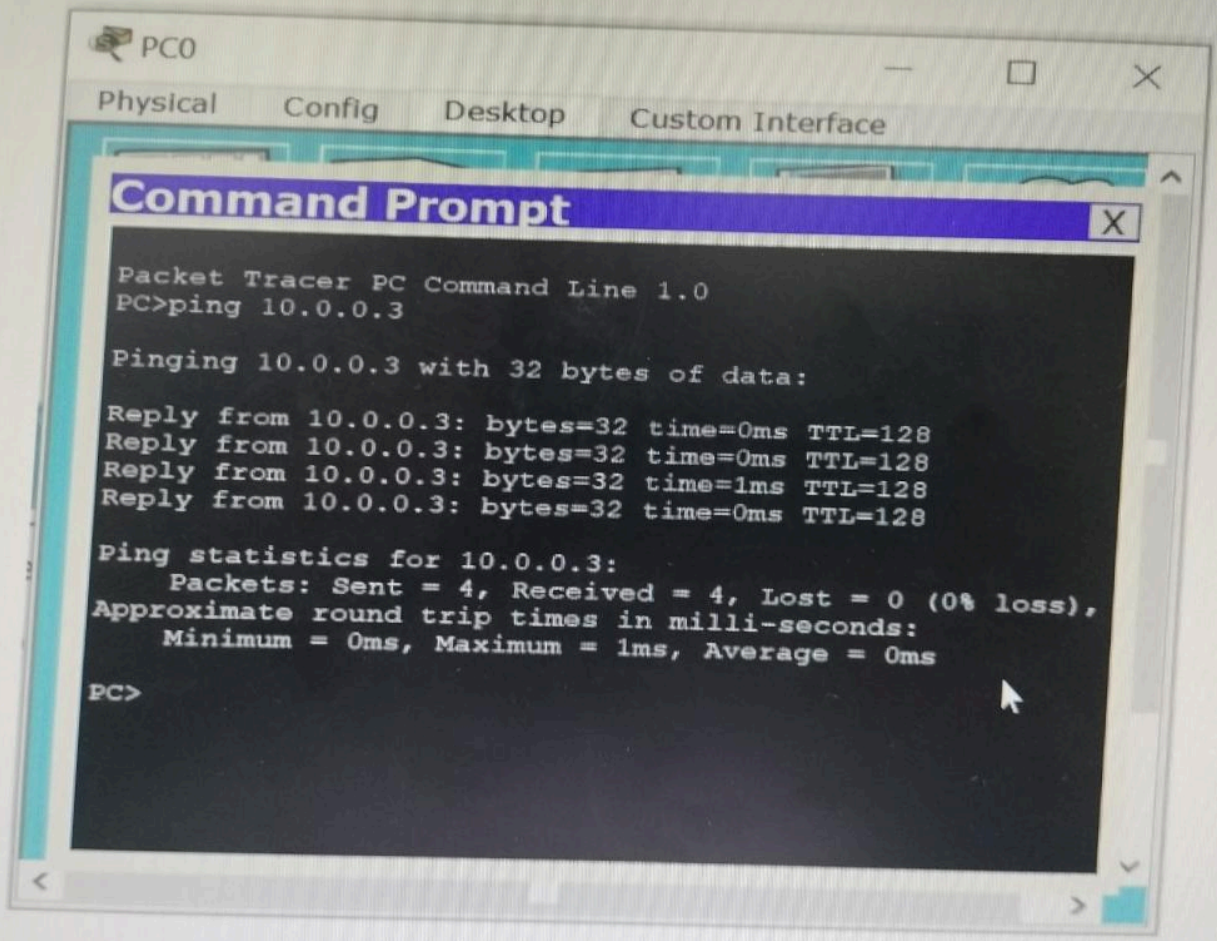
PROGRAM 4.1:

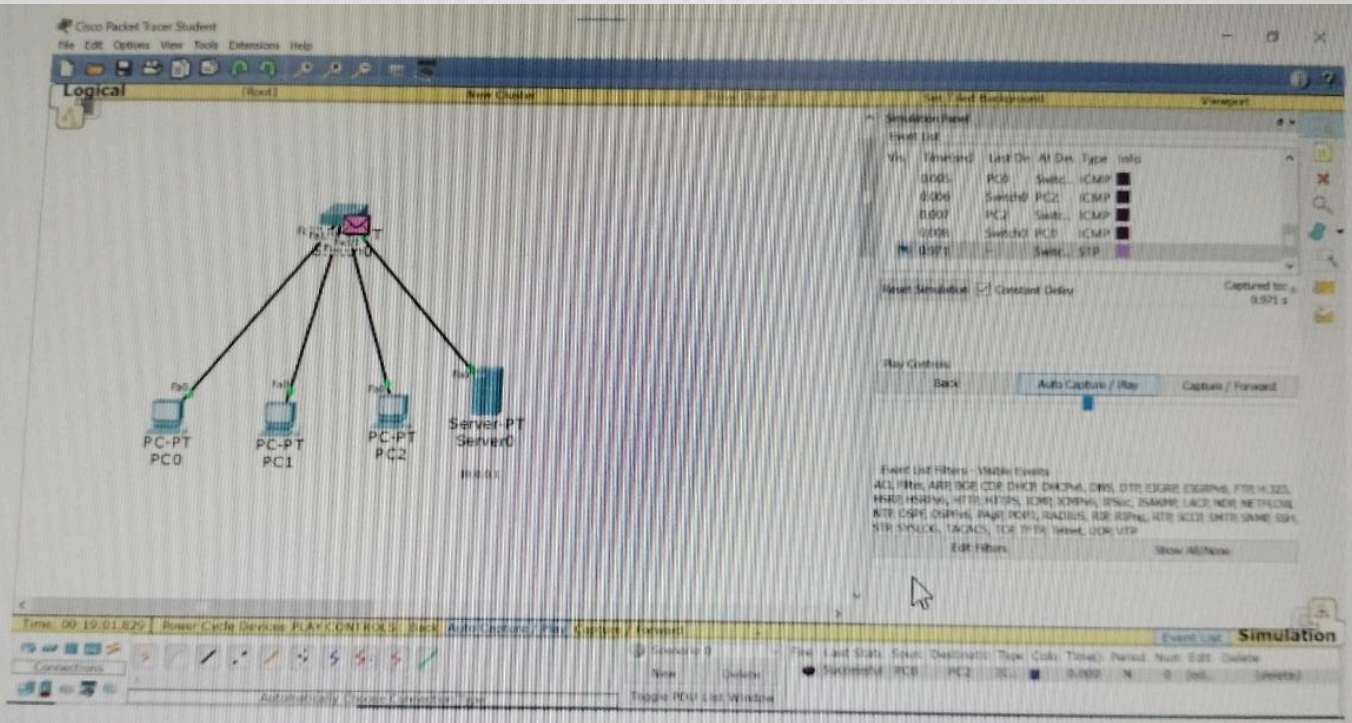


PROGRAM 4.2:



PROGRAM 4.1:


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
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 milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>


Logical
PC-PT PC0
PC-PT PC1
PC-PT PC2
Server-PT Server0
Simulation

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>
```