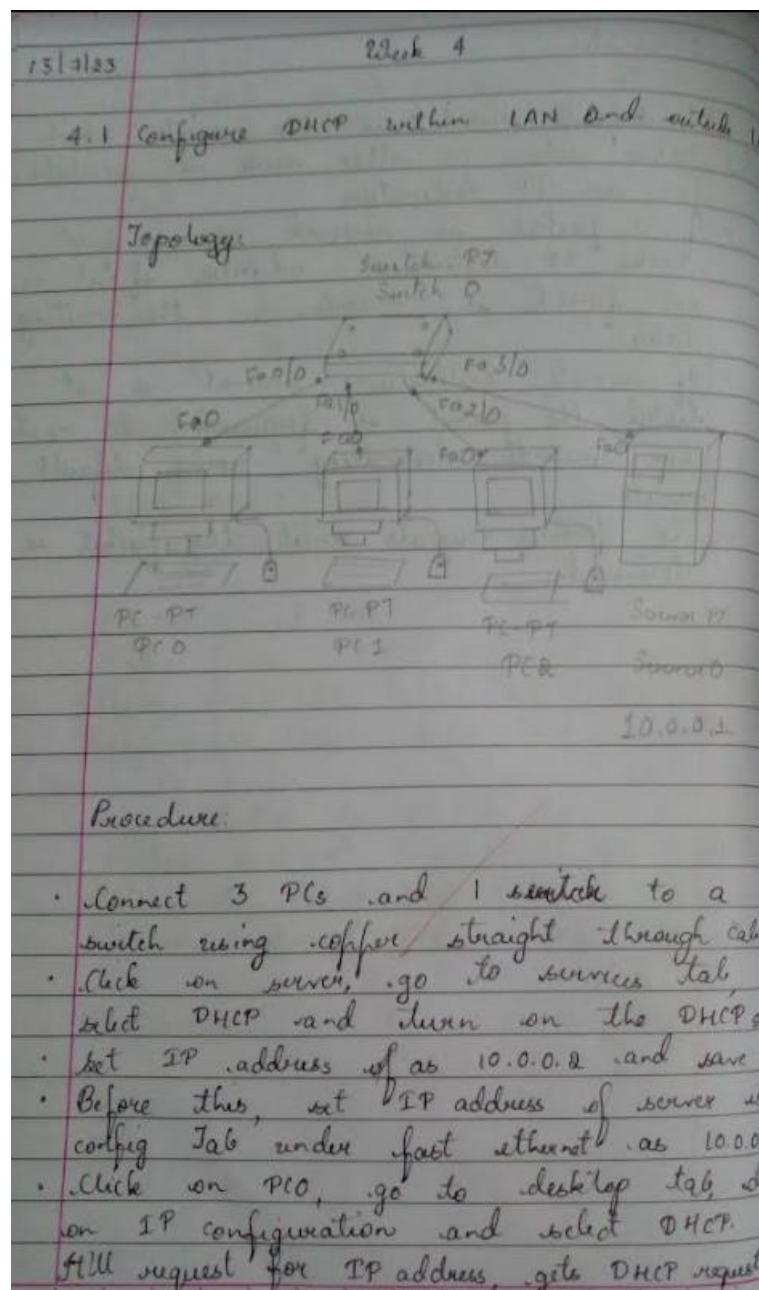


WEEK 4

Configure DHCP within a LAN and outside LAN.

Observation book :



Repeat this for both PCs

To send a packet across PCs, go to PC's command prompt, type ping destination IP address.

Ping output:

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=1

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

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

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

Ping statistics for 10.0.0.3:

Packets: Sent=4, Received=4, Lost=0 (0% loss)

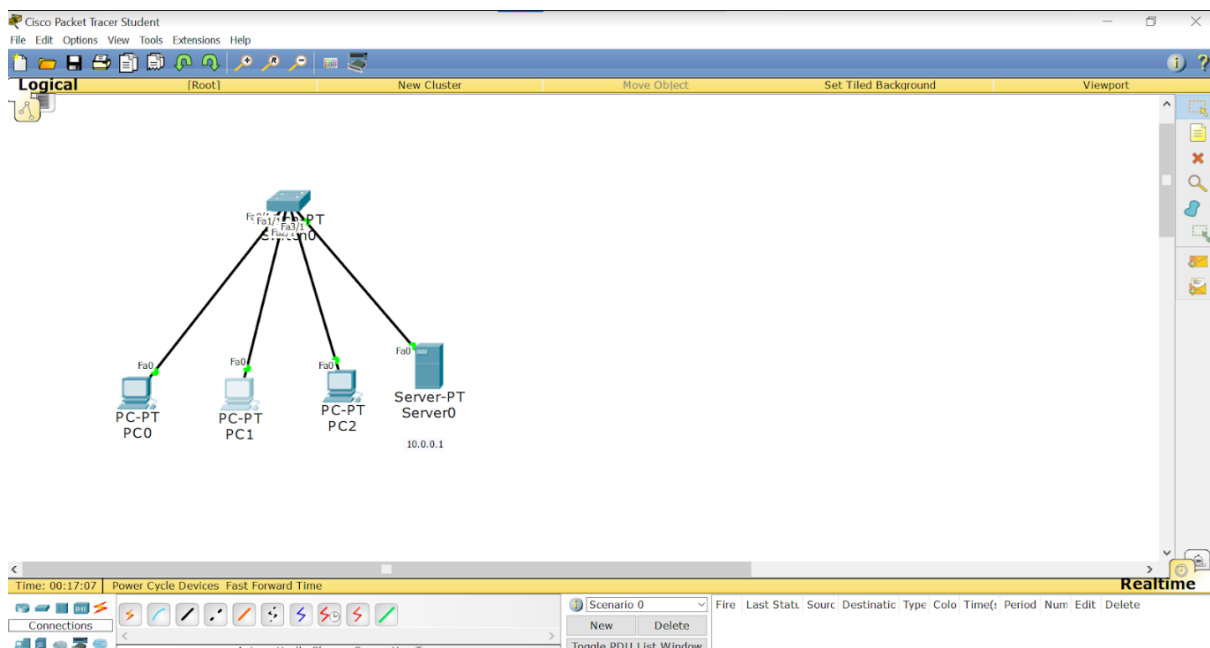
Approximate round trip time in milliseconds:

Minimum=0ms, Maximum=1ms, Average=0ms.

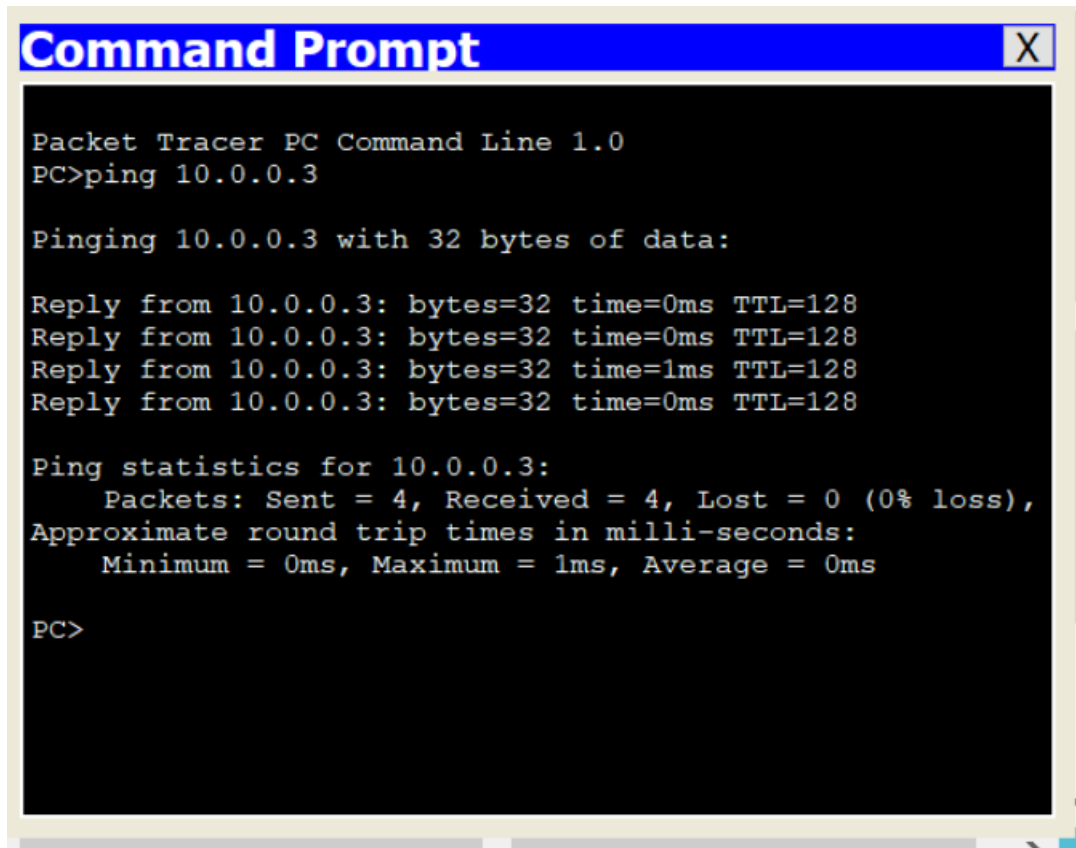
Observation:

- DHCP is used to dynamically assign IP address to any device or node.
- It is a client-server protocol in which server manages a pool of unique IP, client config. parameters.
- DHCP enabled clients send a request to DHCP server when they want to connect to network.
- It responds to client's request by providing IP configuration information from address pool previously specified by network administrator.

Topology :



Output :



The image shows a screenshot of a 'Command Prompt' window from the Packet Tracer application. The window has a blue title bar with the text 'Command Prompt' and a close button 'X' on the right. The background is black with white text. The text inside the window shows the following sequence of commands and 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 milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>
```

Observation book :

4.2 Configure DHCP within a LAN and internet.

Topology:

- Connect a router, switch to the previous setup, connect router to both switches.
- Set the IP address for server, set the IP address of first 5 PCs through DHCP.
- Set the router IP address with the following commands statically:

```

enable
config t
ip address fastEthernet 0/0
IP address 10.0.0.20 255.0.0.0
No shut
Exit
  
```

```

interface fastEthernet 0/0
IP address 20.0.0.20 255.0.0.0
No shut
Exit
Exit
Show IP route
  
```

- Go to server, set the gateway as 10.0.0.1
- Again go to router CLI, type the following

```

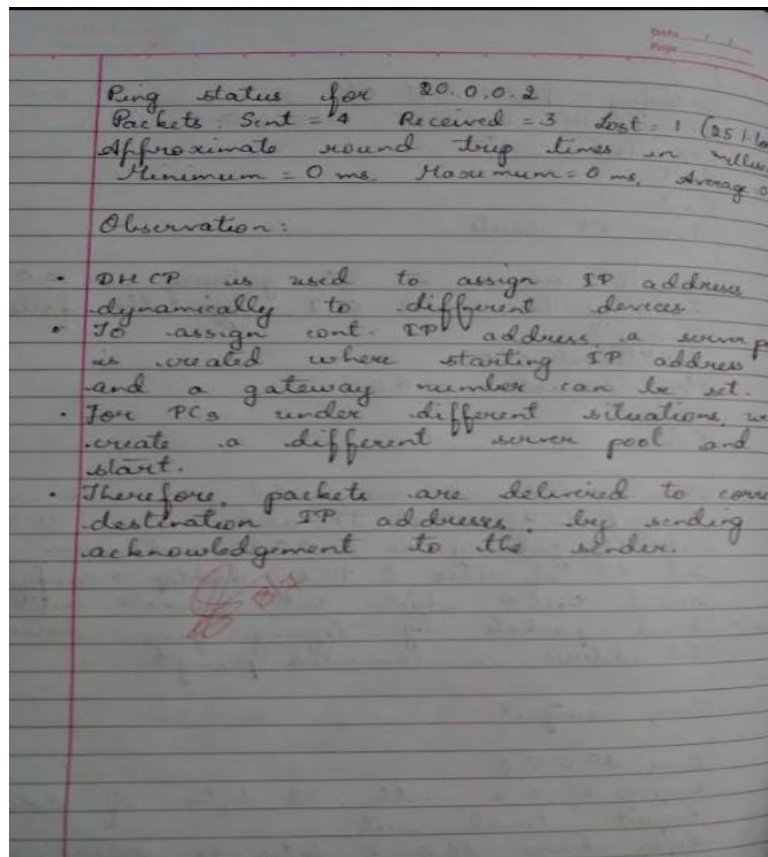
config t
ip helper-address 10.0.0.1
No shut
Exit
  
```

- Now go to services, add pool name as server pool 1, start IP address as 20.0.0.2, default gateway as 20.0.0.20 and save.
- Set IP of other 2 PCs, desktop, config.
- select DHCP which will generate automatic IP.
- Send packets by typing ping destination IP address in command prompt.

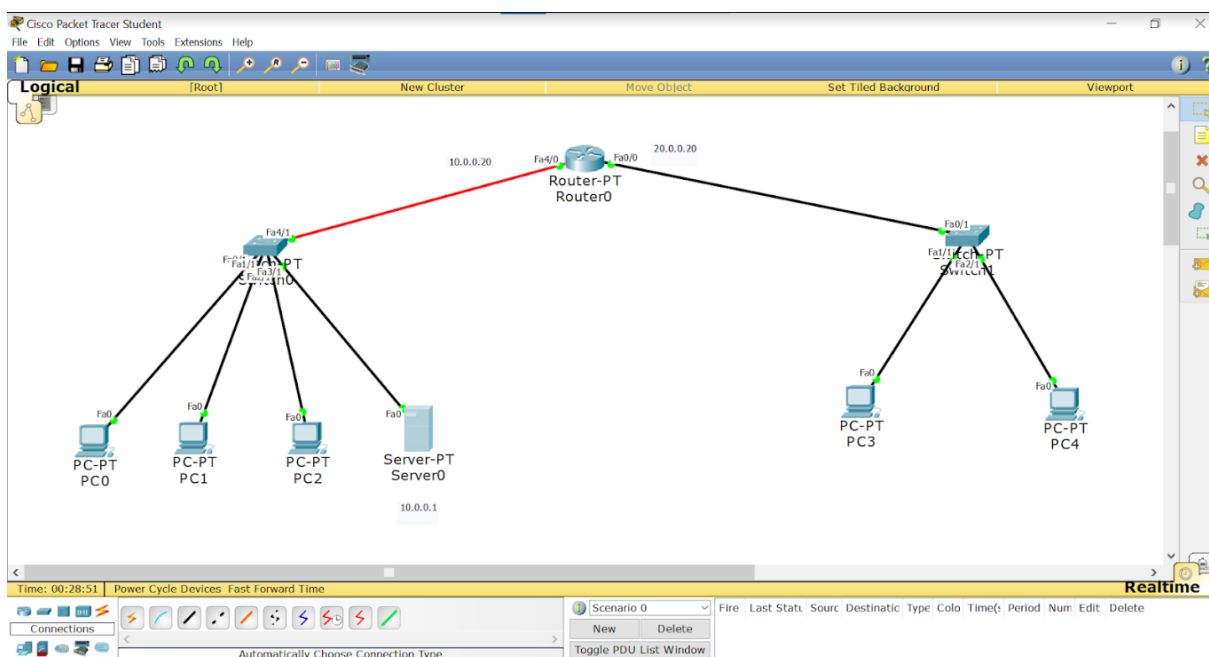
Ping output:

```

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
  
```



Topology :



Output :

```
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>|
```