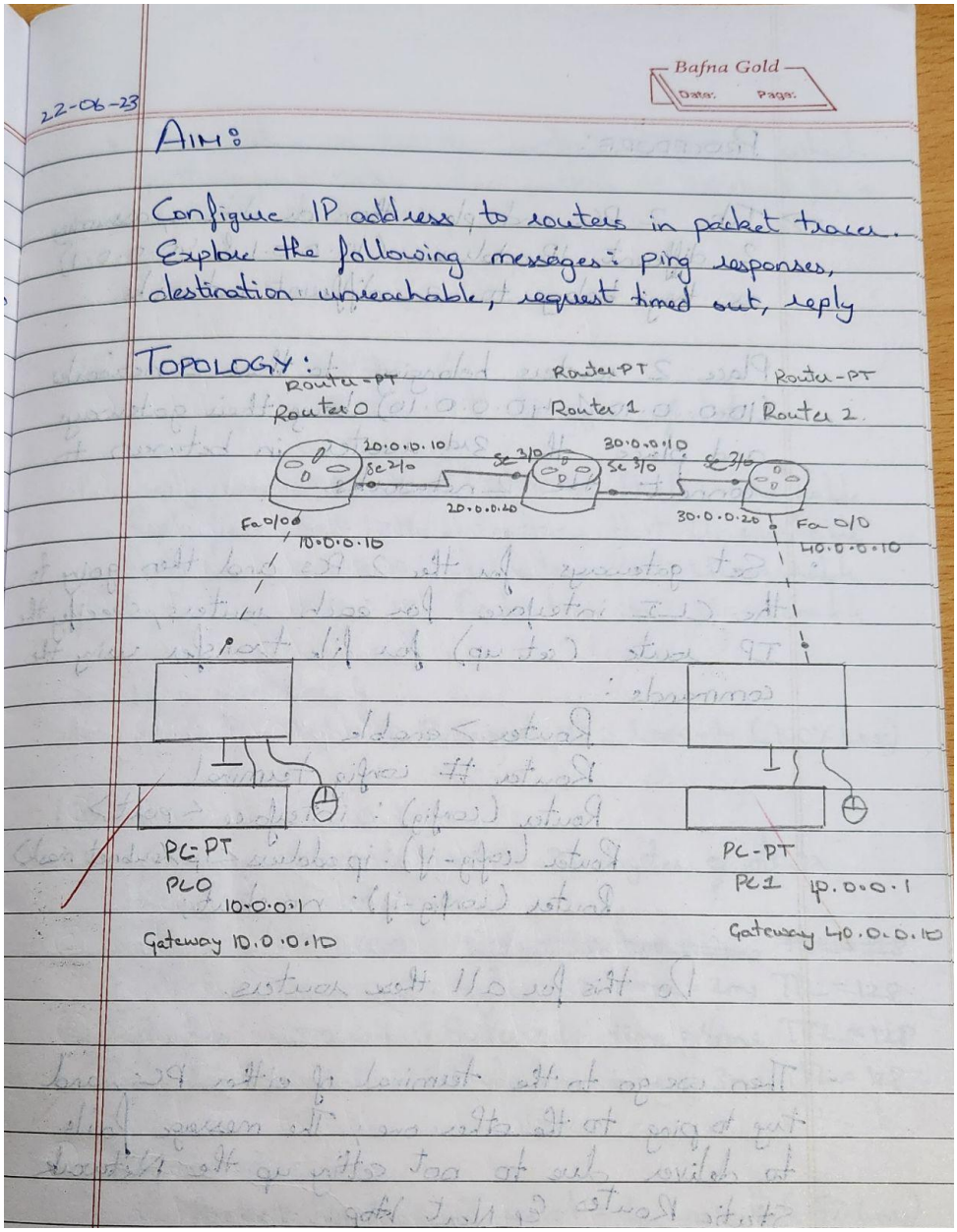
EXPERIMENT 2

AIM:

Configure IP address to routers in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

OBSERVATION:



PROCEDURE:

⇒ Take 2 PCs and place them as shown, assigning 2 different IP addresses (10.0.0.1 & 40.0.0.1) as they belong to 2 different networks.

- Place 2 routers belonging to these 2 networks (10.0.0.10 & 40.0.0.10) being their gateways. and place the 3rd router in between to connect the 2 networks.

- Set gateways for the 2 PCs and then going to the CLI interface for each routers, specify the IP route (set up) for file transfer using the commands:

```
Router > enable
Router # config terminal
Router (config): interface <port>
Router (config-if): ip address <ip> <subnet mask>
Router (config-if): no shut;
```

Do this for all these routers.

- Then we go to the terminal of either PCs, and try to ping to the other one; The message fails to deliver due to not setting up the Network Static Routes Eg Next Hop.

- We again go to CLI of each router and setup the "next hop" using the command:

```
> ip route <network-id> <mask> <next-hop>
```

eg: > ip route 40.0.0.0 255.0.0.0 20.0.0.20
(for router 1)

- This is done so that the router recognises which pathway to take when packet is received for a particular destination.

RESULT:

(i) > ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data

Reply from 10.0.0.10: Destination Host unreachable
Reply from 10.0.0.10: Destination Host Unreachable
Reply from 10.0.0.10: Destination Host Unreachable.
Reply from 10.0.0.10: Destination Host Unreachable

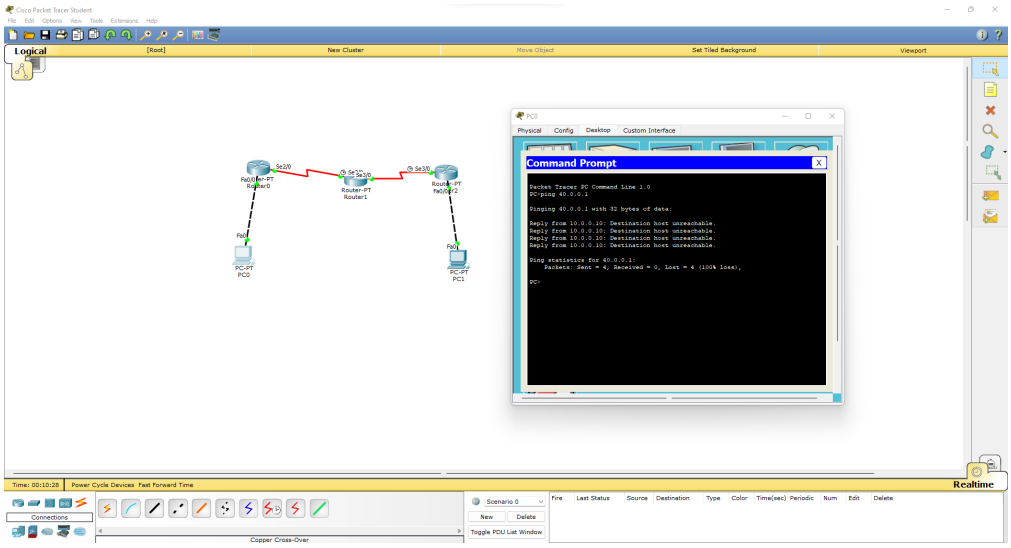
Ping Statistics:
Packets: sent = 4; Received = 0; Loss = 4 (100% Loss)

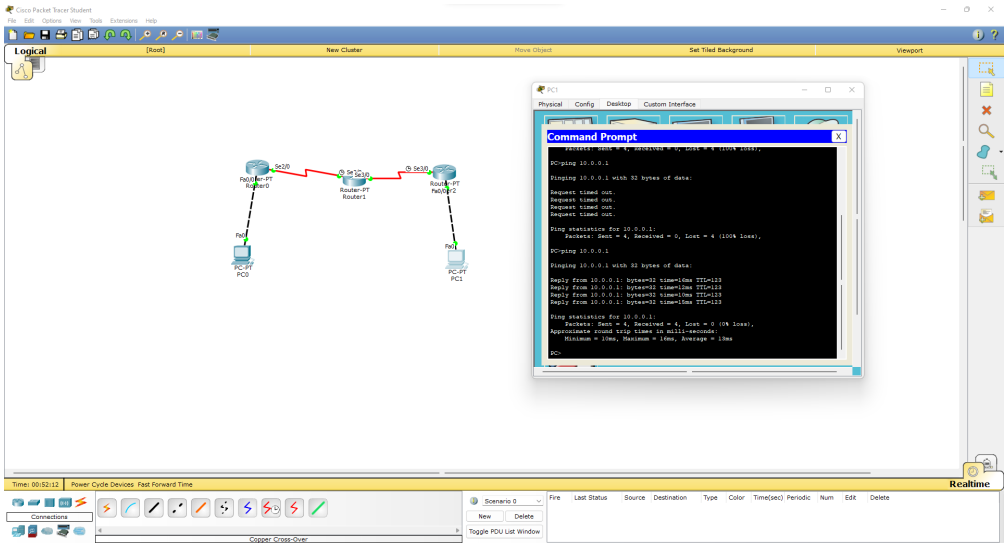
(ii) > ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data
Request Timed Out
~~Reply from 40.0.0.1 : Bytes = 32 time = 2ms TTL = 128~~
Reply from 40.0.0.1 : Bytes = 32 time = 2ms TTL = 128
Reply from 40.0.0.1 : Bytes = 32 time = 4ms TTL = 128
Reply from 40.0.0.1 : Bytes = 32 time = 3ms TTL = 128

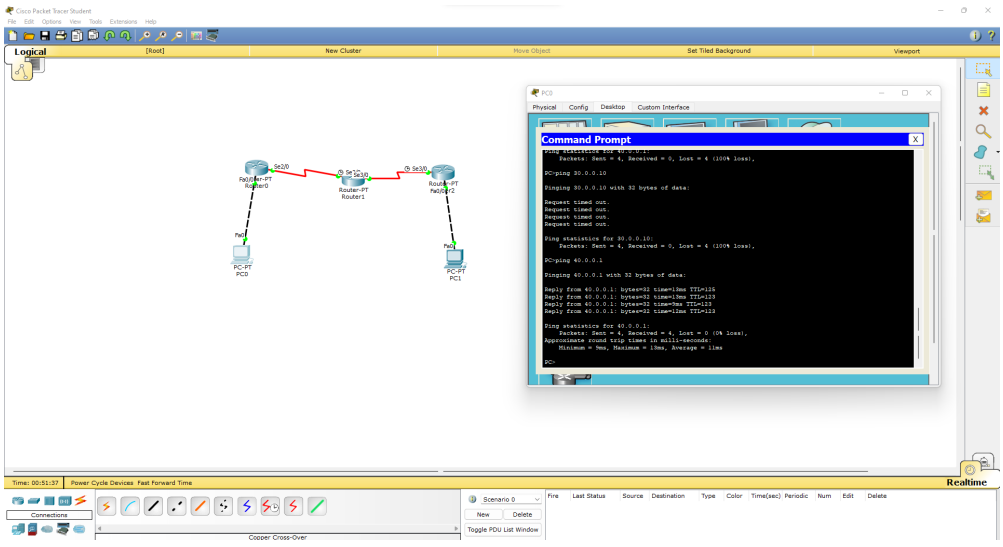
Ping Statistics
Packets : sent = 4, Received = 4, Loss = 0 (0% Loss)
Approx time in ms:

minimum = 2ms Maximum = 4ms average = 3ms

Result:


Logical
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>
Realtime


Logical
Command Prompt
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=10ms TTL=123
Reply from 10.0.0.1: bytes=32 time=10ms TTL=123
Reply from 10.0.0.1: bytes=32 time=10ms TTL=123
Reply from 10.0.0.1: bytes=32 time=10ms TTL=123
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 10ms, Maximum = 10ms, Average = 10ms
PC>
Realtime


Logical
Command Prompt
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 30.0.0.10
Pinging 30.0.0.10 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 30.0.0.10:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 40.0.0.1: bytes=32 time=10ms TTL=125
Reply from 40.0.0.1: bytes=32 time=10ms TTL=123
Reply from 40.0.0.1: bytes=32 time=9ms TTL=123
Reply from 40.0.0.1: bytes=32 time=12ms TTL=123
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 9ms, Maximum = 12ms, Average = 11ms
PC>
Realtime