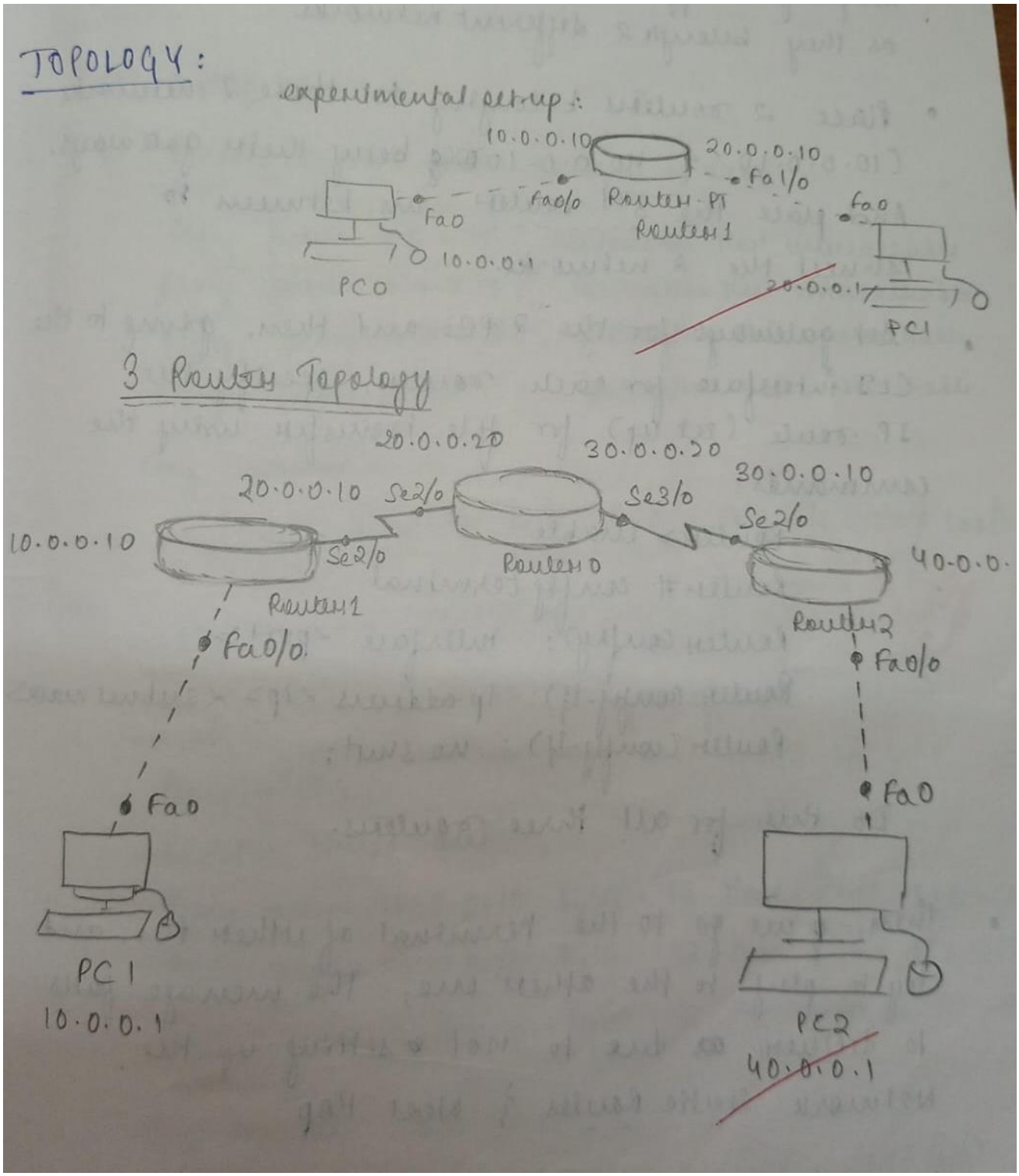
Experiment 2

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



Procedure:

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

- Place 2 routers belonging to those 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 router, 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 three routers.

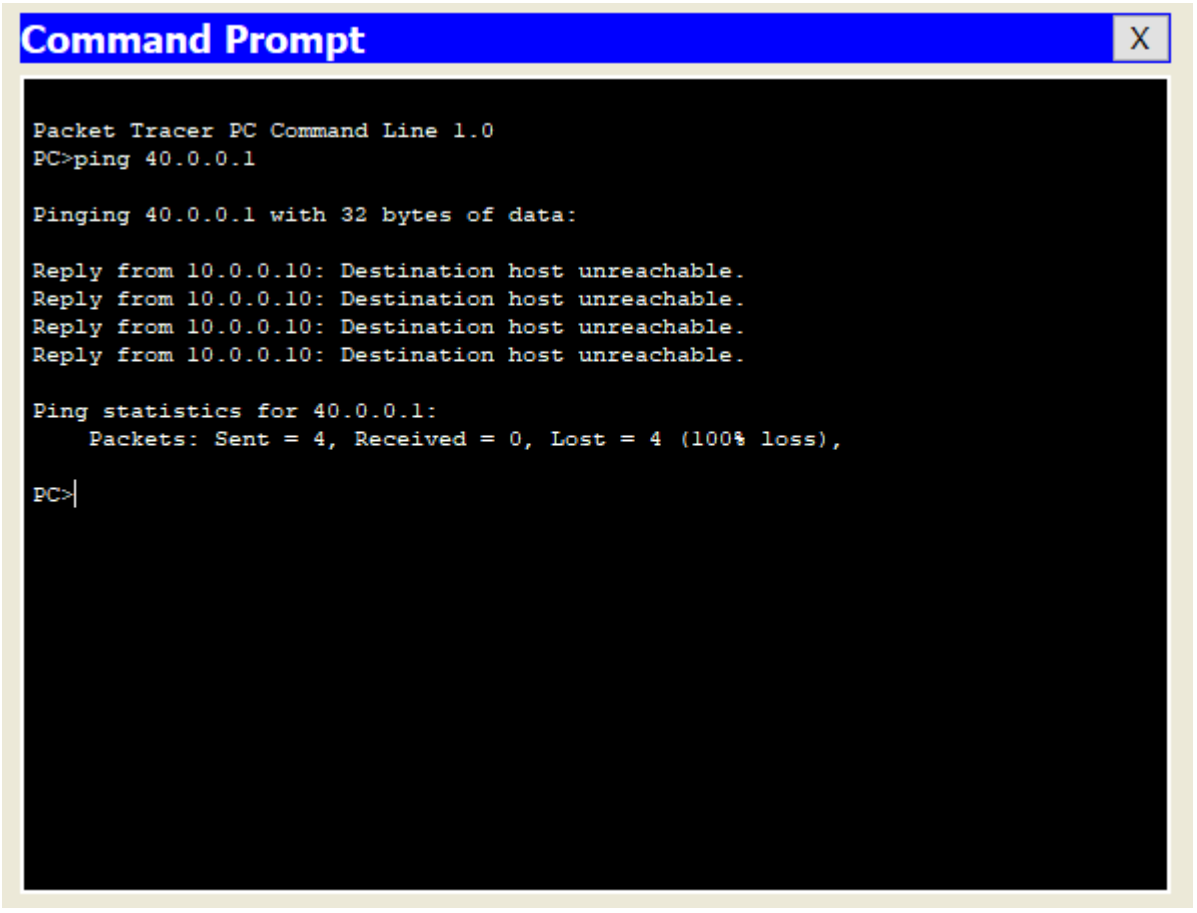
- Then, if we go to the terminal of either PCs, and try to ping to the other one; The message fails to deliver, as due to not setting up the Network Static Routes & Next Hop

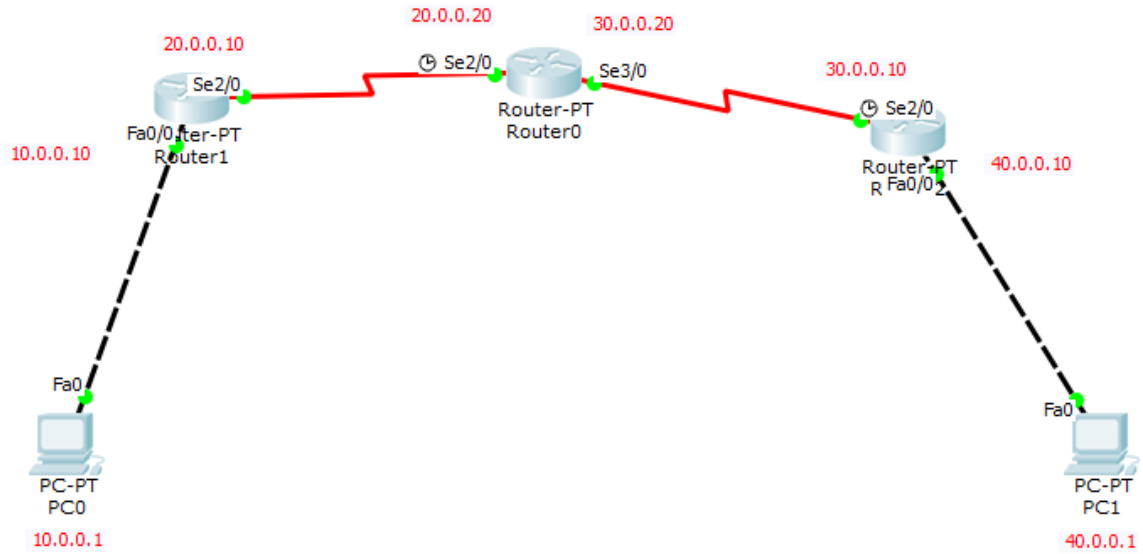
- We again go the CLI of each router and setup the "next hop" using the commands:

```
> 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 recognizes which pathway to take when packet is received for a particular destination.

OUTPUT :


Command Prompt
X
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>


20.0.0.20
30.0.0.20
20.0.0.10
Se2/0
Se2/0
Se3/0
30.0.0.10
Se2/0
Router-PT
Router0
Fa0/0
Router1
10.0.0.10
Router-PT
Fa0/0
40.0.0.10
Fa0
Fa0
PC-PT
PC0
PC-PT
PC1
10.0.0.1
40.0.0.1

OBSERVATION:

Observation:

- The router connects LAN to the internet. It connects "different networks" with different network ids
- Packets are forwarded to the destination through network hopping
- Serial ports are used to connect 2 routers & the connecting cables are serial connectors.
- At first, it shows destination unreachable, as we didn't have any pathway, i.e; we hadn't set up the "next hop" connecting the different networks
- Next, it shows Request timed out for the first request, as it takes time for the routers to find the correct destination route.
- Finally, the packet destination is set and our ping is successful and we get a reply from our destination PC.