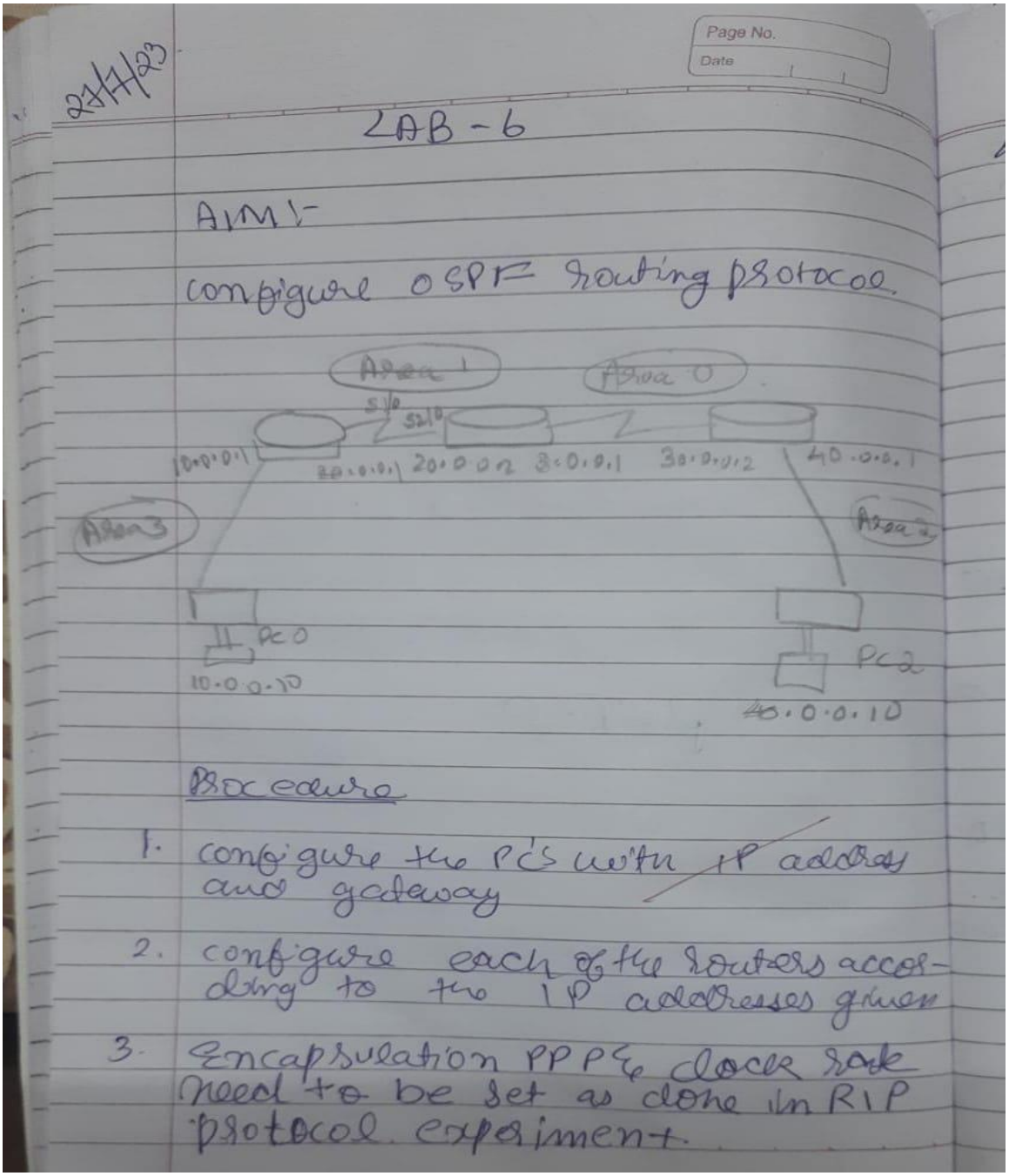
WEEK7

Configure OSPF routing protocol.

OBSERVATION:



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4. Now Enable IP Routing by configuring OSPF routing protocol in all routers.

In Router R_1

```
R1(config)# router ospf 1

R1(config-router)#router-id 1.1.1.1
R1(config-router)# network 10.0.0.0
                    0.255.255.255 area 3
R1(config-router)#network 20.0.0.0
                    0.255.255.255 area 1
R1(config-router)#exit
```

In Router R2

```
R2(config)# router ospf 1
R2(config-router)# router-id 2.2.2.2
R2(config-router)#network 20.0.0.0
                    0.255.255.255 area 1
R2(config-router)#network 30.0.0.0
                    0.255.255.255 area 0
R2(config-router)#exit
```

In Router R3

```
R3(config)# router ospf 1
R3(config-router)# router-id 3.3.3.3
R3(config-router)#network 30.0.0.0
                    0.255.255.255 area 0
```

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R3 (config-router) # network 40.0.0.0
0.255.255.253 area
R3 (config-routes) # exit

4) Loopback:-

R1 (config-if) # interface loopback 0
R1 (config-if) # ip address 172.16.1.252
255.255.0.0
R1 (config-if) # no shutdown

R2 (config-if) # interface loopback
R2 (config-if) # ip address 172.16.1.
253 255.255.0

R2 (config-if) # no shutdown

R3 (config-if) # interface loopback
R3 (config-if) # ip address 172.16.
1.254 255.255.0
R3 (config-if) # no shut

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5] Virtual link.

→ In R1

R1(config)# router ospf 1
R1(config-router)# area 1 virtual-link 2.2.2.2.
~~R1(config-router)#~~
#

→ In Router R2

R2(config)# router ospf 1.
R2(config-router)# area 1 virtual-link 1.1.1.1
R2(config-router)#ex^t

→ Show IP routes.

O IA 10.0.0.0/8 [110/128] via 30.0.0.1 serial 3/0
O IA 20.0.0.0/8 [110/128] via 30.0.0.1 serial 3/0
30.0.0.0/8 is variably subnetted
2 is subnets, 2 masks

C 30.0.0.0/8 is directly connected
serial 3/0
C 30.0.0.1/32 is directly connected, serial 3/0
C 40.0.0.0/8 is directly connected fastethernet 0/0
C 172.16.0.0/16 is directly connected
Loop back 0

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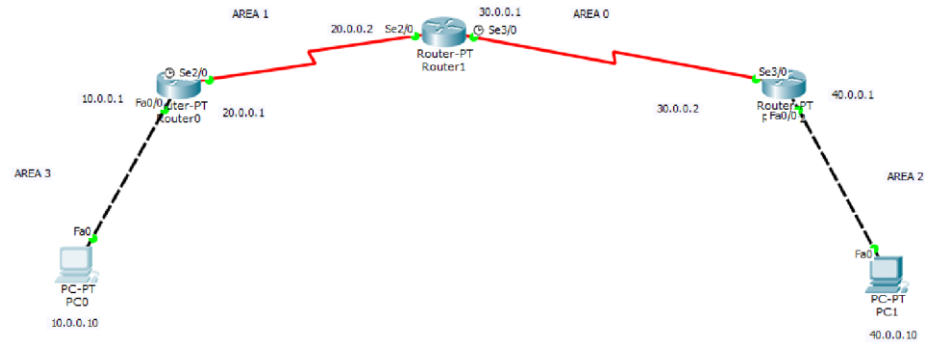
Ping output

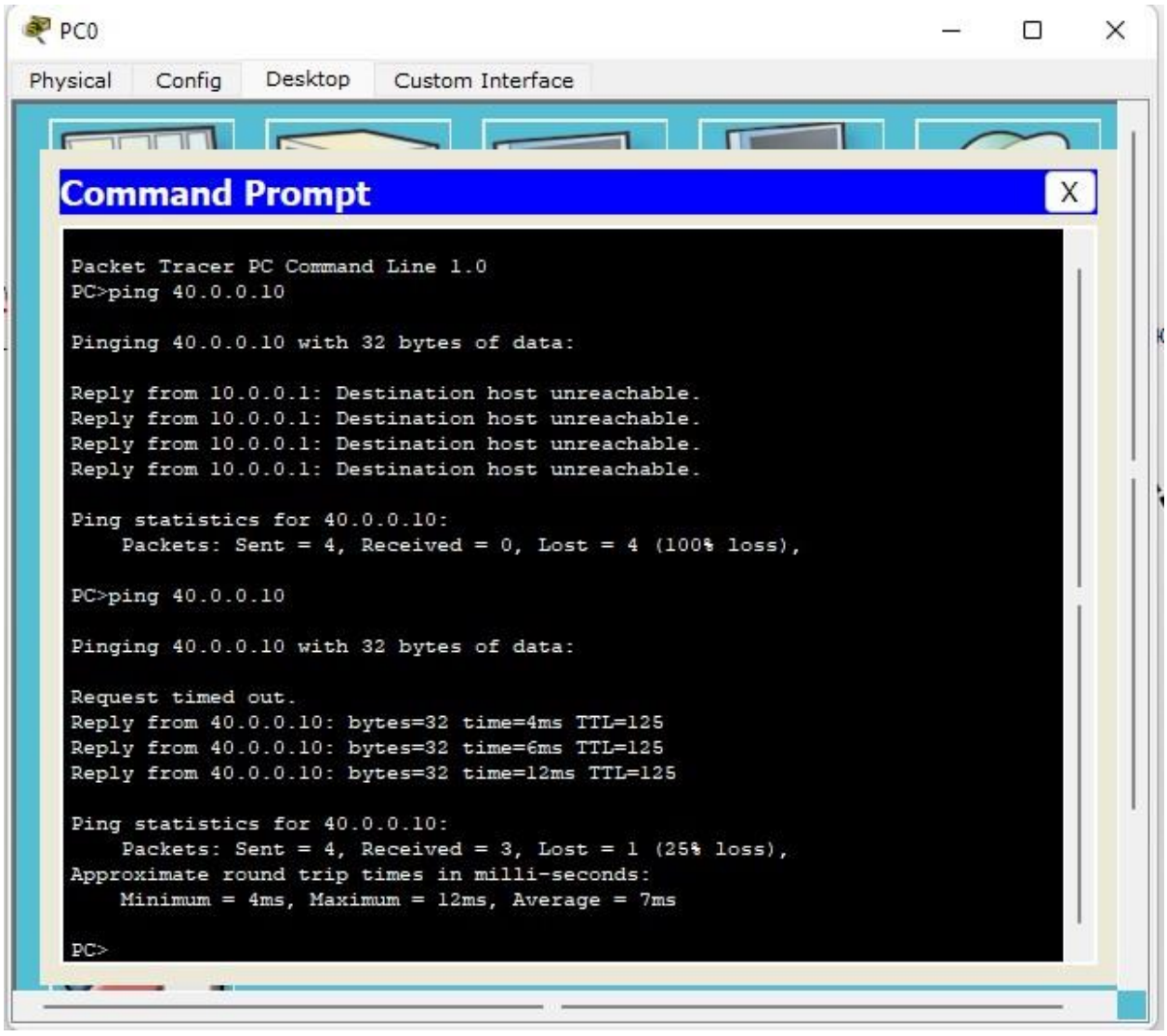
pinging 40.0.0.10 with 32 bytes of data
Request timimed out
Reply from 40.0.0.10 bytes = 32 time = 2ms TTL=128
Reply from 40.0.0.10 bytes = 32 time = 2ms TTL=128
Reply from 40.0.0.10 bytes = 32 time = 20ms TTL=128
Pinging statistics for 40.0.0.10:
Packets: Sent = 4, Recieved = 3, Lost = 1 (25% loss) Approx round trip in Ms
min = 2ms max = 20ms Average = 7ms

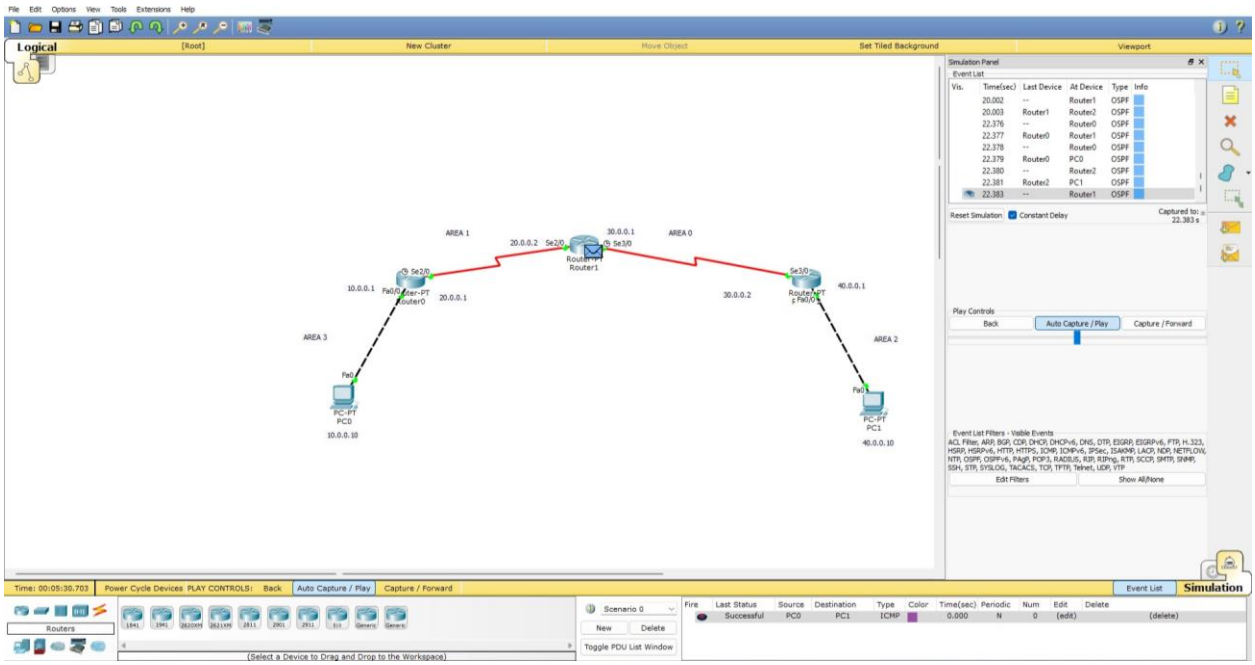
Lee
1/8/23

TOPOLOGY:



OUTPUT:




File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
AREA 1
AREA 0
AREA 3
AREA 2
20.0.0.2
Se2/0
30.0.0.1
Se3/0
Router1
10.0.0.1
20.0.0.1
30.0.0.2
40.0.0.1
PC0
10.0.0.10
PC1
40.0.0.10
Simulation Panel
Event List
Reset Simulation
Constant Delay
Play Controls
Back
Auto Capture / Play
Capture / Forward
Edit Filters
Show All/None
Time: 00:05:30.703
Power Cycle Devices
PLAY CONTROLS:
Routers
(Select a Device to Drag and Drop to the Workspace)
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
Successful
PC0
PC1
ICMP
0.000
N
0
(edit)
(delete)