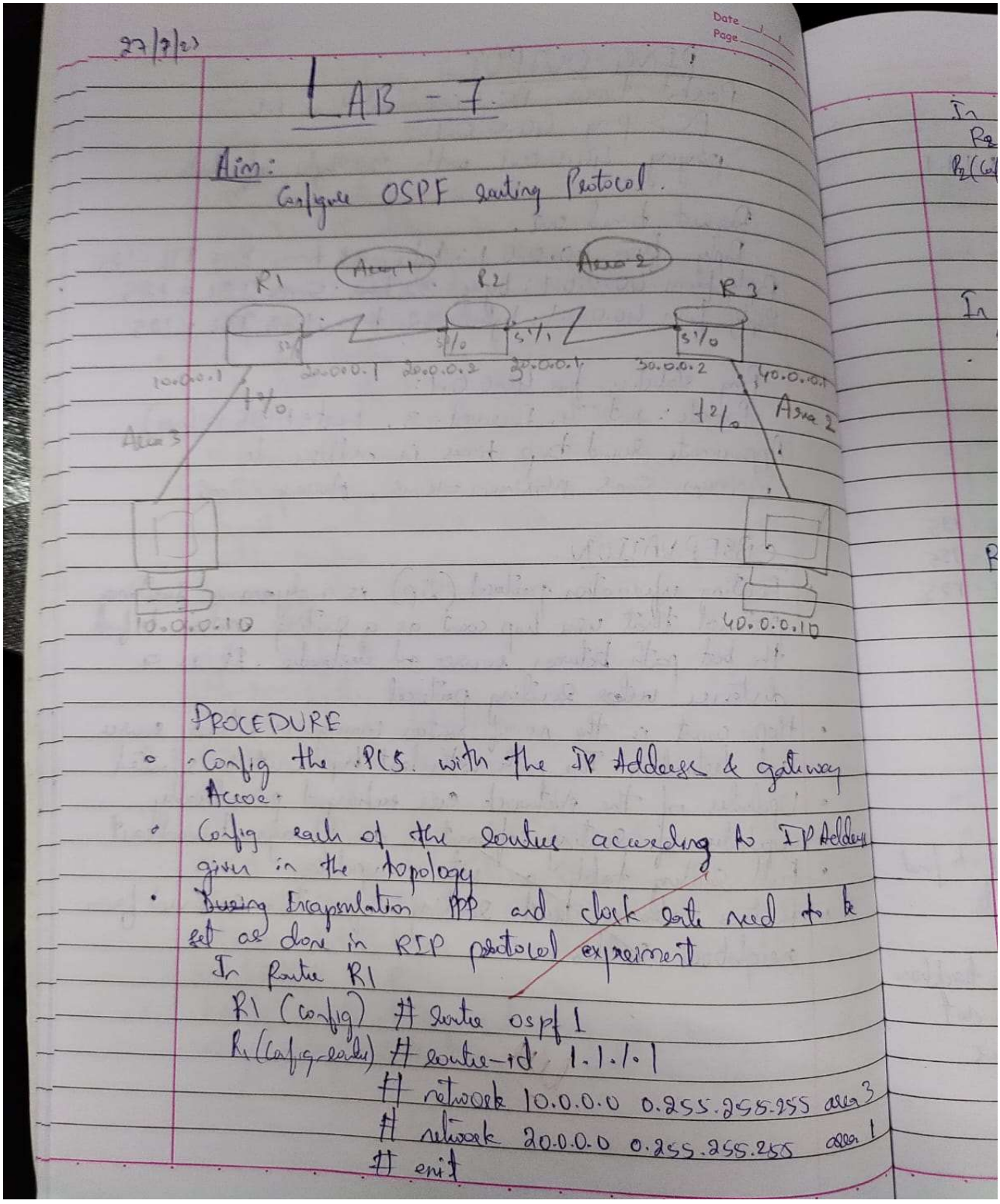
WEEK 7

Configure OSPF routing protocol.

OBSERVATION:



In Router R2

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

In Router R3

R3(config)# router ospf 1
router-id 3.3.3.3
network 30.0.0.0 0.255.255.255 area 0
network 40.0.0.0 0.255.255.255 area 2.
exit.

R1(config-if)# interface loopback 0
ip add 172.16.1.252.255.255.0.0
no shutdown

R2(config-if)# interface loopback 0
ip add 172.16.1.253.255.255.0.0
no shutdown

R3(config-if)# interface loopback 0
ip add 172.16.1.254.255.255.0.0
no shutdown.

In Router 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
" # exit

R2 (config) #

Checking the routing table, show ip route
Lastly ping messages from PC to PC

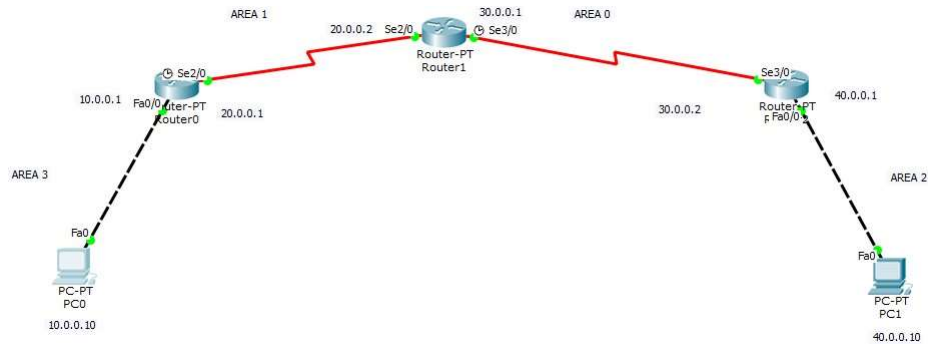
PING OUTPUT
Packet Tracer PC - Command Line 1.0
PC> ping 40.0.0.10
pinging 40.0.0.10 with 32 bytes of data
Request timed out
Reply from 40.0.0.10 : bytes = 32 times = 11ms TTL = 125
Reply from 40.0.0.10 : bytes = 32 times = 16ms TTL = 125
Reply from 40.0.0.10 : bytes = 32 times = 8ms TTL = 125

Ping statistics for 40.0.0.10
Packets sent = 4 Received = 3, lost = 1 (25% loss),
Approximate round trip times in milliseconds
Minimum = 8ms, Maximum = 11ms Average = 10ms

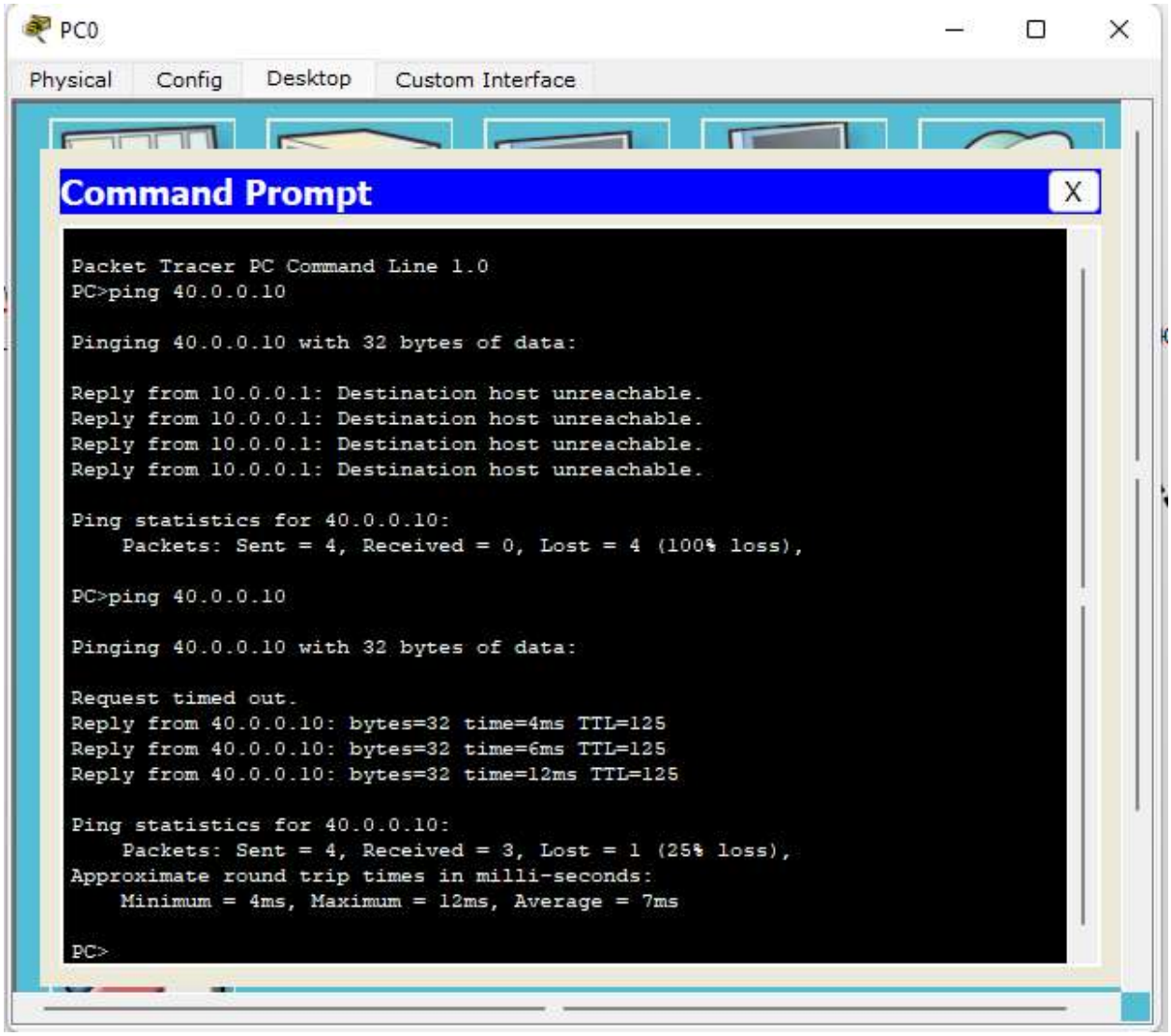
OBSERVATION.
- OSPF is a link-state routing protocol that is used to find the best path between source & destination router using its own SPF algorithm.
- This network is divided into 4 areas. where area 0 is the backbone
- After we make the virtual-link between the area which is not connected to the backbone area, we can ping messages successfully

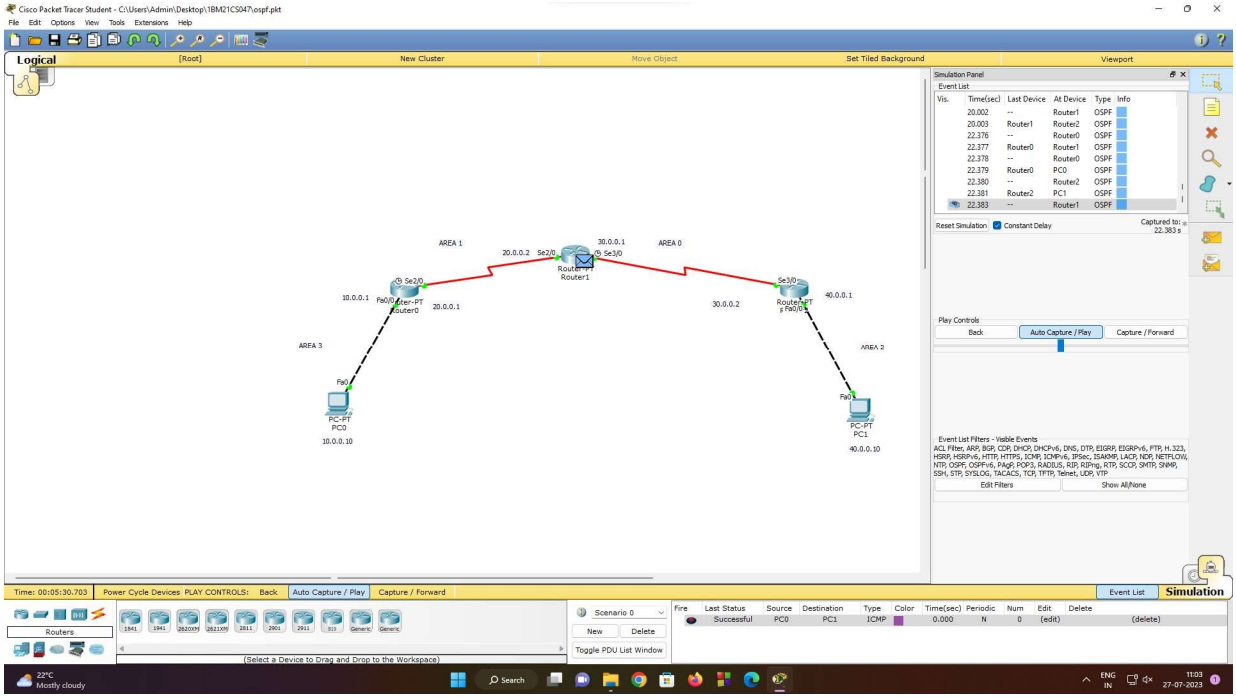
3/08/23

TOPOLOGY:



OUTPUT:




Cisco Packet Tracer Student - C:\Users\Admin\Desktop\1BM21CS047\ospf.pkt
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
30.0.0.1
20.0.0.2
Se2/0
Se3/0
Router1
Router0
10.0.0.1
20.0.0.1
30.0.0.2
40.0.0.1
Fa0
PC-PT
PC0
10.0.0.10
PC1
40.0.0.10
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type Info
20.002 -- Router1 OSPF
20.003 Router1 Router2 OSPF
22.376 -- Router0 OSPF
22.377 Router0 Router1 OSPF
22.378 -- Router0 OSPF
22.379 Router0 PC0 OSPF
22.380 -- Router2 OSPF
22.381 Router2 PC1 OSPF
22.383 -- Router1 OSPF
Reset Simulation
Constant Delay
Captured to: 22.383 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
Edit Filters
Show All/None
Time: 00:05:30.703
Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward
Event List
Simulation
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)
22°C
Mostly cloudy
Search
ENG
IN
11:03
27-07-2023