

Date: 04/06/2024

1.BINARY TO DECIMAL CONVERSION

1	0	0	1	0	0	1	0	146
0	1	1	1	0	1	1	1	119
1	1	1	1	1	1	1	1	255
1	1	0	0	0	1	1	1	197
1	1	1	1	0	1	1	0	246
0	0	0	1	0	0	0	1	19
1	0	0	0	0	0	0	0	129
0	0	1	1	0	0	0	1	49
0	1	1	1	1	0	0	0	120
1	1	1	1	0	0	0	0	240
0	0	1	1	1	0	1	1	59
0	0	0	0	0	1	1	1	7
0	0	0	1	1	0	1	1	27
1	0	1	0	1	0	1	0	170

2.ADDRESS CLASS IDENTIFICATION

RULES

A->1-126
B->128-191
C->192-223
D->224-239

10.250.1.1 -----@A

150.10.15.0 -----□B
 192.14.2.0 -----□C
 148.17.9.1 -----□B
 193.42.1.1 -----□C
 126.8.156.0 -----□B
 230.230.45.58 -----□D
 177.100.18.4 -----□B
 119.18.45.0 -----□B
 249.240.80.78 -----□E

3.NETWORK HOST IDENTIFICATION

A->1-127
B->128-191 AN H H H
C->192-223 B->N N H H
D->224-239 C-> N N N H

IP ADRESS	NETWORK	HOST
177.100.18.4	177.100	18.4
119.18.45.0	119	18.45.0
209.240.80.78	209.240.80	78
199.155.77.56	199.155	77.56
117.89.56.45	117	89.56.45
215.45.45.0	215.45.45	0
192.200.15.0	192.200.15	0
95.0.21.90	95	0.21.90
33.0.0.0	33	0.0.0
158.98.80.0	158.98	80.0

217.21.56.0	217.21.56	0
10.250.1.1	10	250.1.1

4.DECIMAL TO BINARY

DECIMAL	128	64	32	16	8	4	2	1
238	1	1	1	0	1	1	1	0
34	0	0	1	0	0	0	1	0
123	0	1	1	1	1	0	1	1
50	0	0	1	1	0	0	1	0
255	1	1	1	1	1	1	1	1
200	1	1	0	0	1	0	0	0
10	0	0	0	0	1	0	1	0
138	1	0	0	0	1	0	1	0
1	0	0	0	0	0	0	0	1
13	0	0	0	0	1	1	0	1
250	1	1	1	1	1	0	1	0
107	0	1	1	0	1	0	1	1
227	0	1	1	1	1	1	1	1
114	0	1	1	1	0	0	1	0
192	1	1	0	0	0	0	0	0

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5.DEFAULT SUBNET MARKS

A->1-127
B->128-191 A250.0.0.0
C->192-223 B->255.255.0.0.
D->224-239 C-> 255.255.255.0

177.100.18.4	255.255.0.0
119.18.45.0	255.0.0.0
191.249.234.109	255.255.0.0
10.10.250.1	255.0.0.0
126.123.23.1	255.0.0.0
223.69.230.250	255.255.255.0
192.12.35.105	255.255.255.0
77.251.200.51	255.0.0.0
189.210.50.1	225.255.0.0
88.45.65.35	255.0.0.0
128.212.250.254	255.255.0.0

6.NETWORK ADDRESS

188.10.18.2 255.255.0.0	188.10.0.0
10.10.48.80 255.255.255.0	10.10.48.0
192.149.24.191 255.255.255.0	192.149.24.0
150.203.23.19 255.255.0.0	150.203.0.0
10.10.10.10	10.0.0.0

255.0.0.0	
186.13.23.110 255.255.255.0	186.13.23.0
223.69.230.250 255.255.0.0	223.69.0.0
200.120.135.15 255.255.255.0	200.120.135.0
223.169.23.20 255.255.255.0	223.169.23.0

7. HOST ADDRESS

188.10.18.2 255.255.0.0	0.0.18.2
10.10.48.80 255.255.255.0	0.0.0.80
222.49.49.11 255.255.255.0	0.0.0.11
128.23.230.19 255.255.0.0	0.0.230.19
10.10.10.10 255.0.0.0	0.10.10.10
200.113.123.11 255.255.255.0	0.0.0.11
223.169.23.20 255.255.0.0	0.0.23.20

8.BROADCAST ADDRESS ADDRESS

188.10.18.2 255.255.0.0	188.10.255.255
10.10.48.80 255.255.255.0	10.10.48.255
192.149.24.191 255.255.255.0	192.149.24.255
150.203.23.19 255.255.0.0	150.203.255.255
10.10.10.10 255.0.0.0	10.255.255.255
186.13.23.110 255.255.255.0	186.13.23.255
223.69.230.250 255.255.0.0	223.69.255.255
200.120.135.15 255.255.255.0	200.120.135.255
223.169.23.20 255.255.255.0	223.169.23.255

9.CUSTOM SUBNET PROBLEM

Number of needed subnets 6

Number of needed usable hosts 30

Network Address 195.85.8.0

Address class C

Default subnet mask 255.255.255.0

Custom subnet mask 255.255.255.224

Total number of subnets 8

Total number of host addresses 8

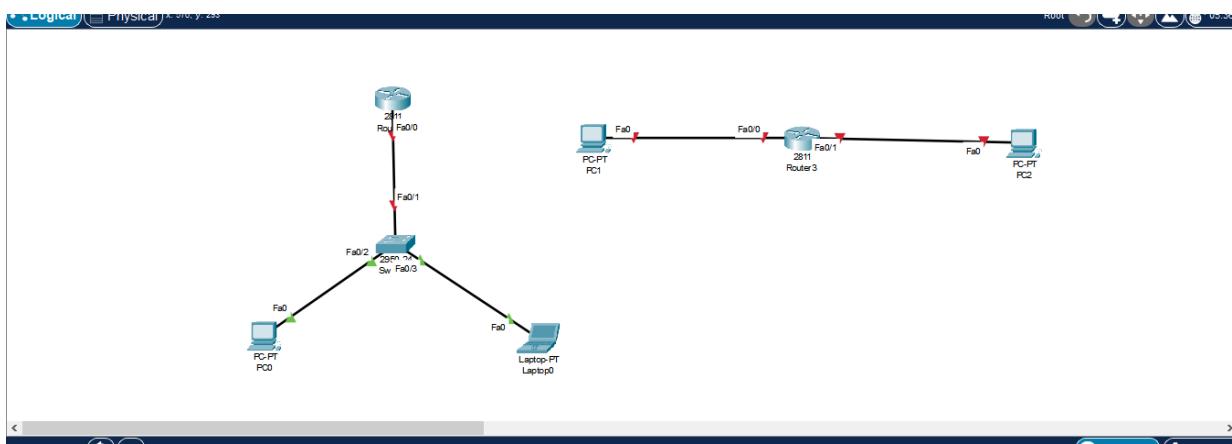
Number of usable addresses 30

Number of bits borrowed 3

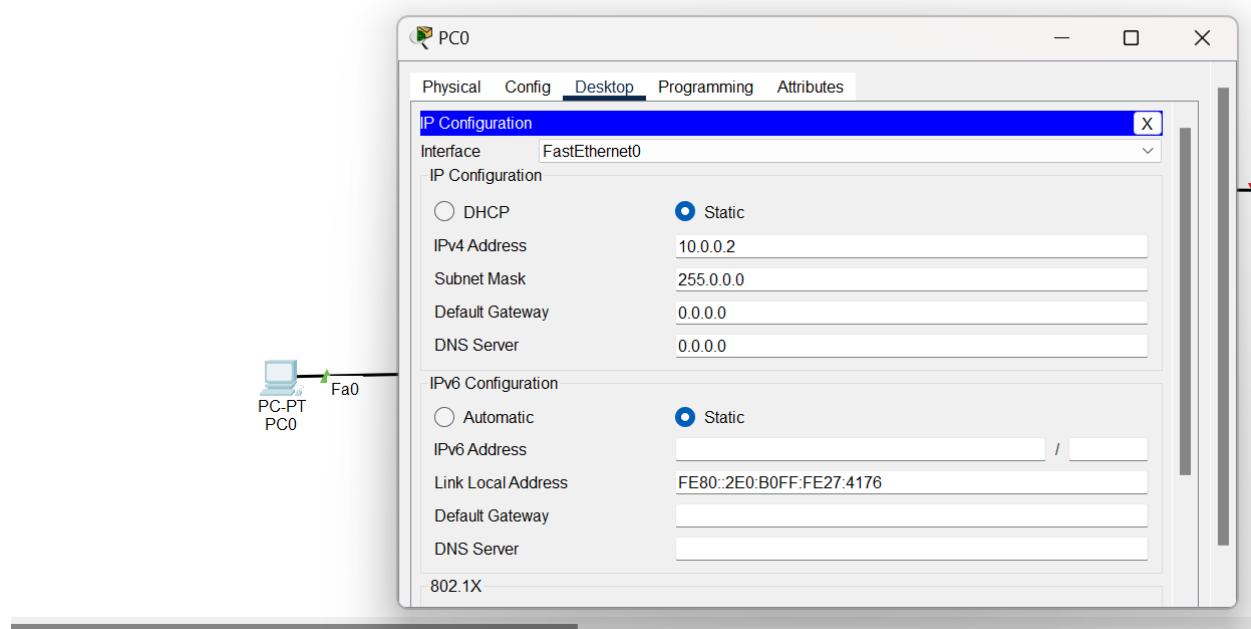
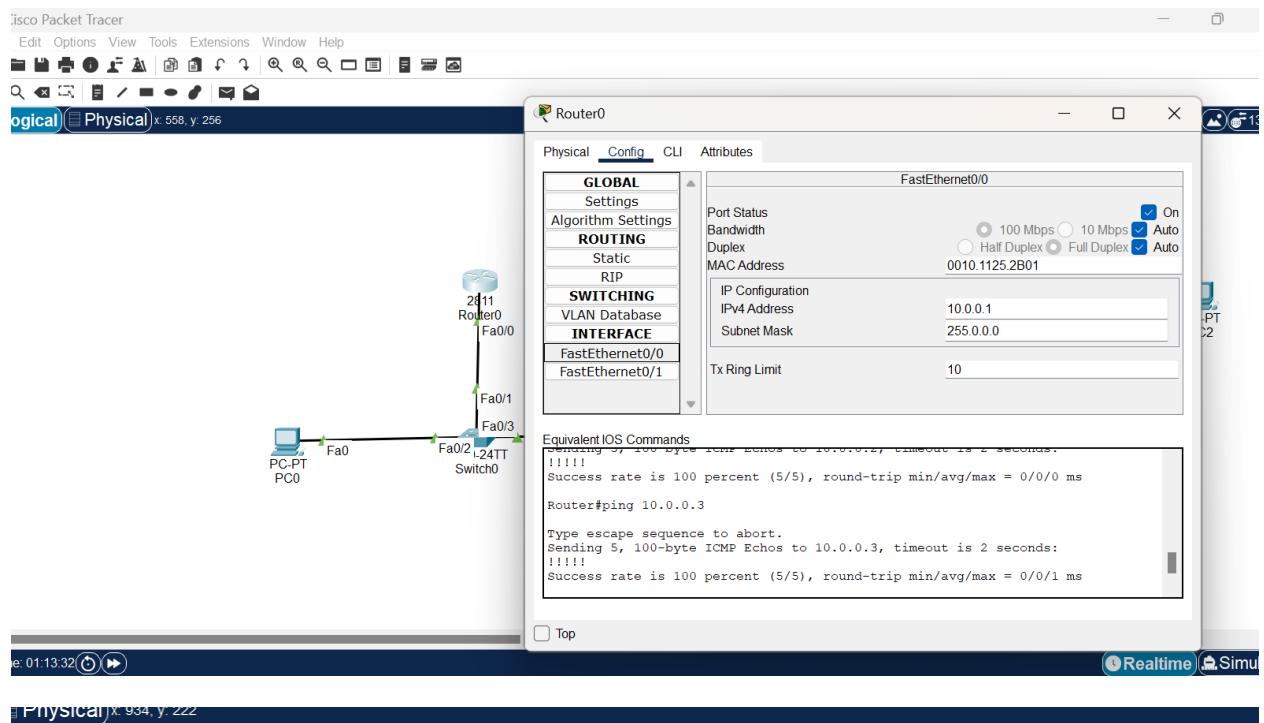
Cisco Packet Tracer

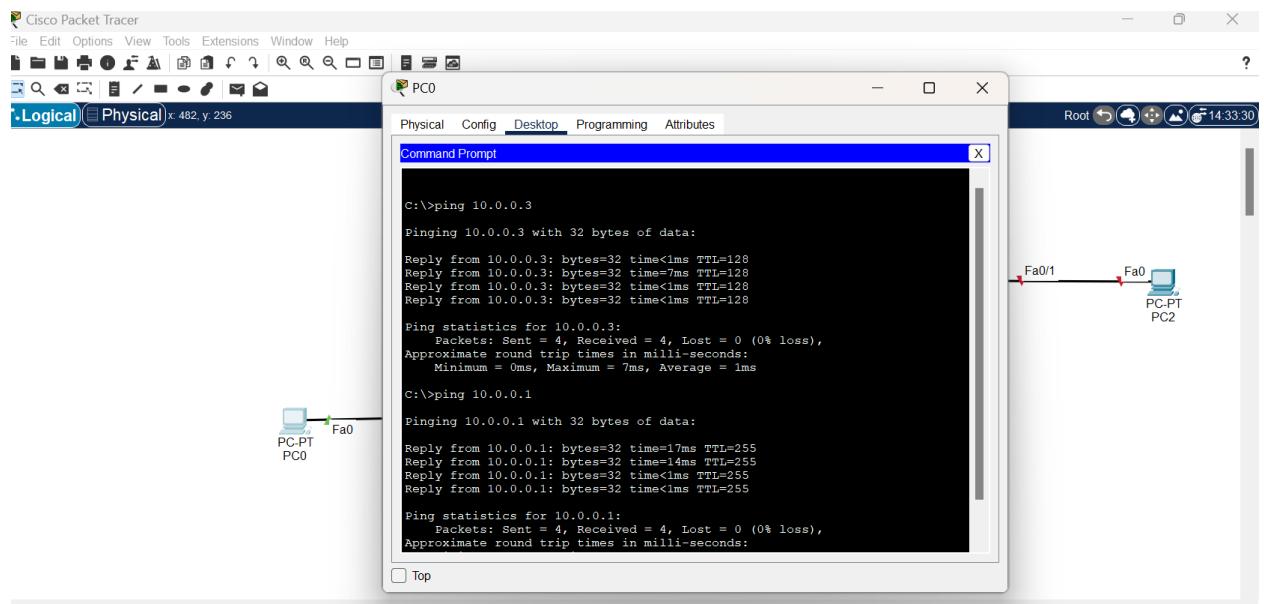
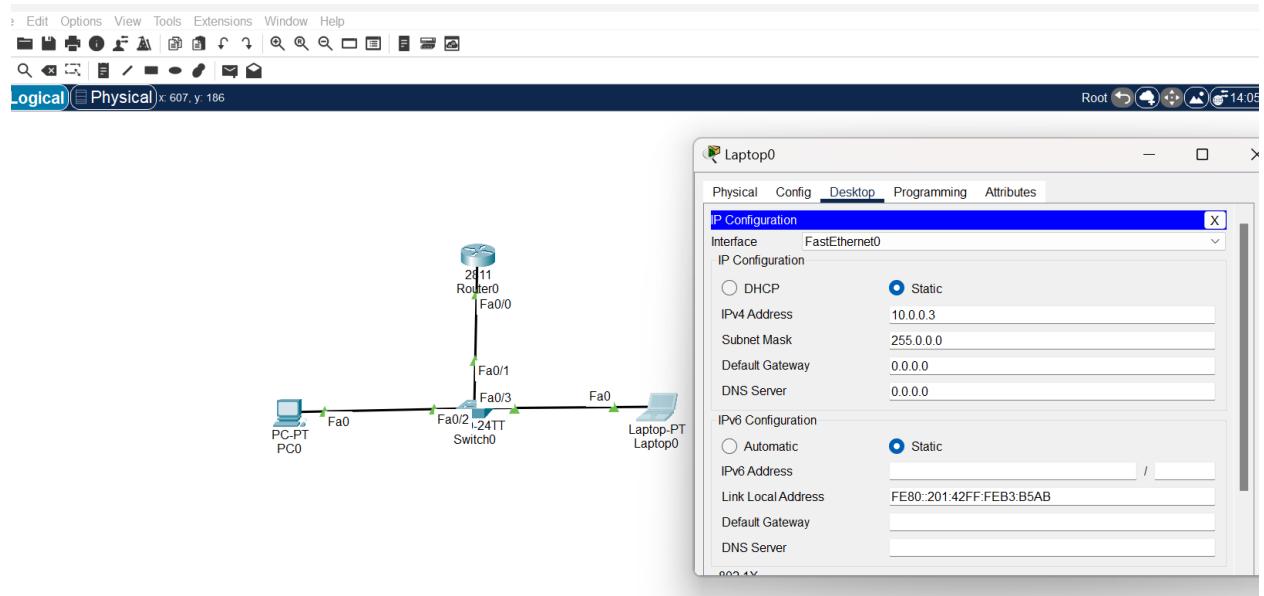
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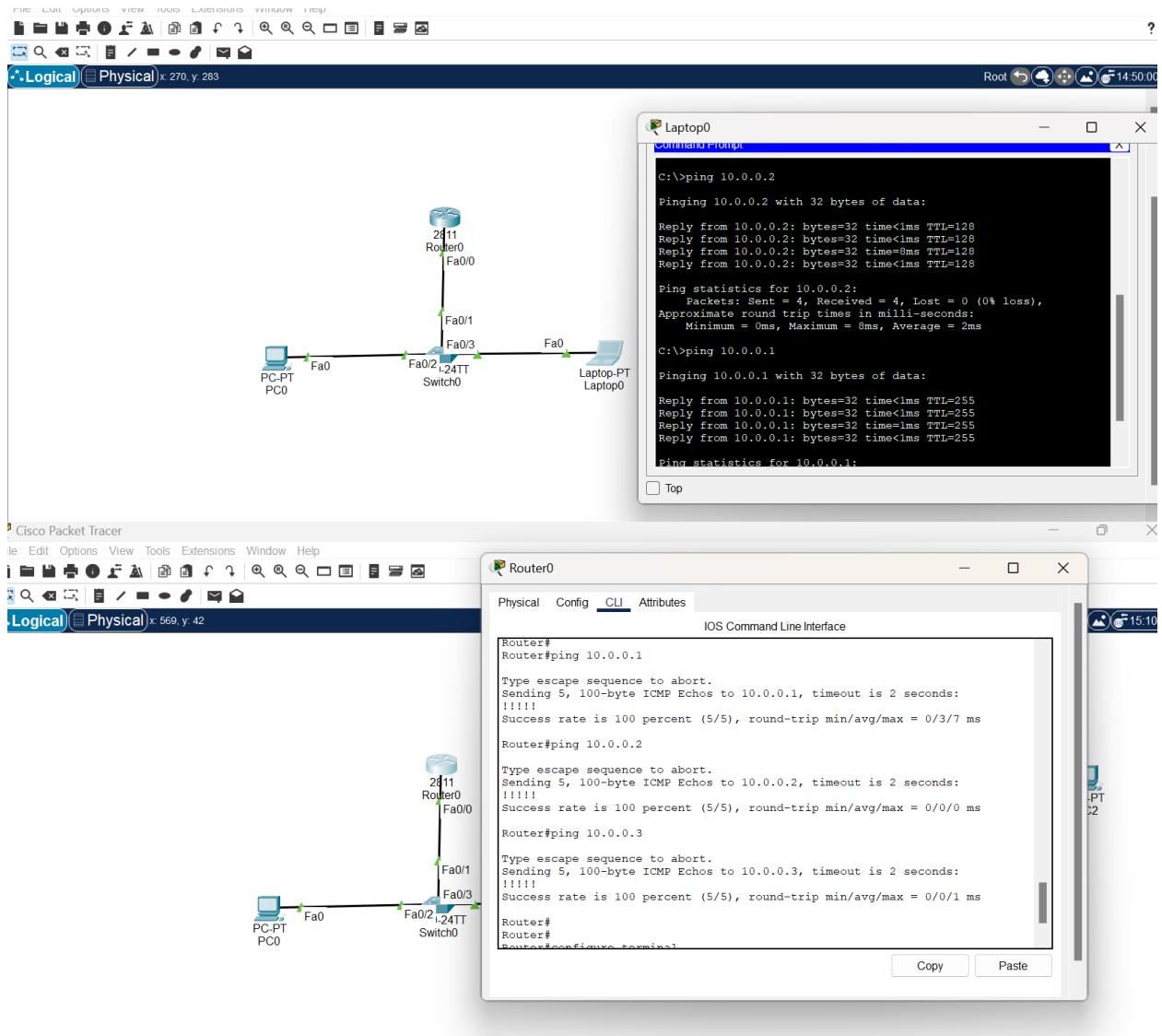
Lab 1: Connecting the Devices

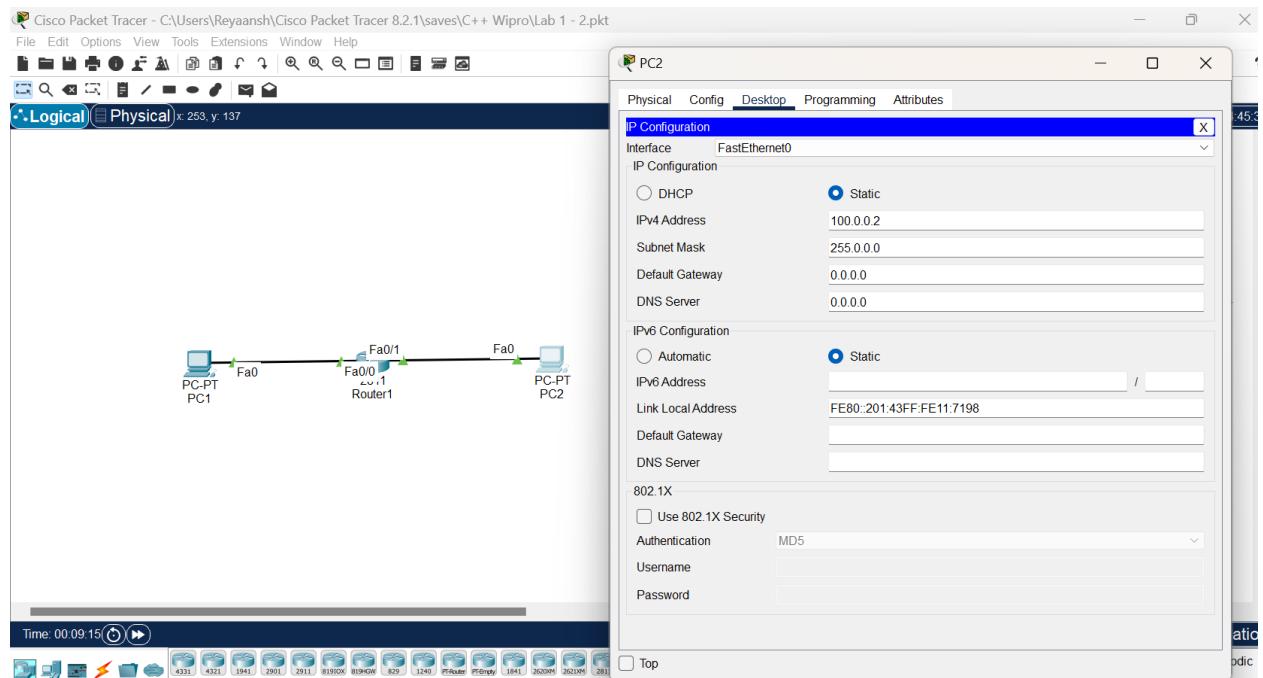
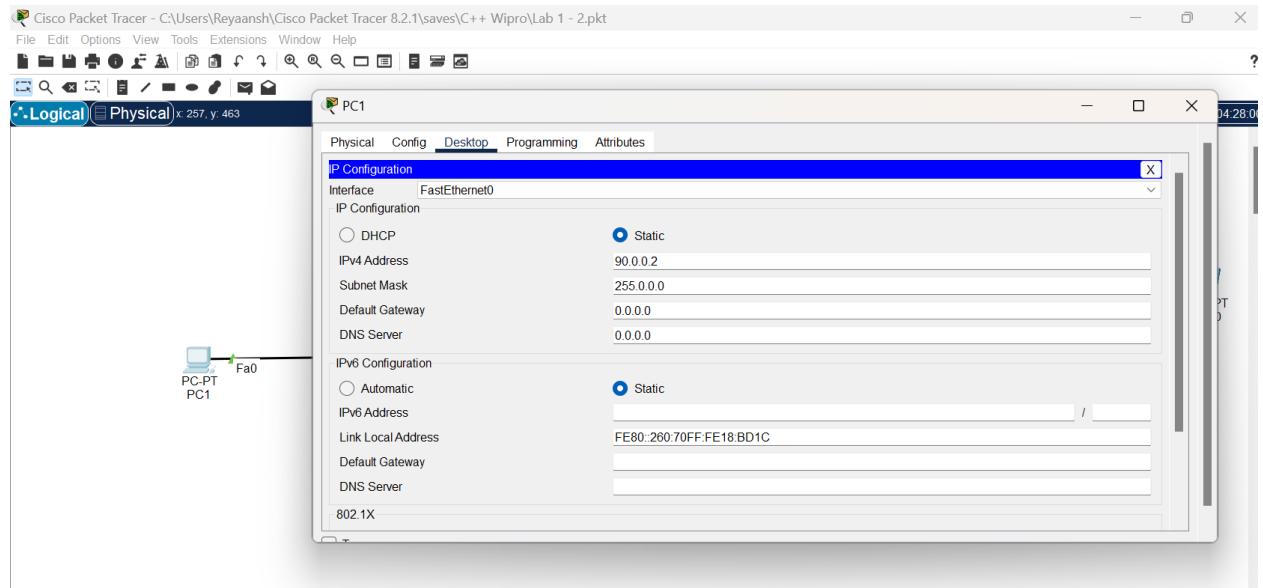


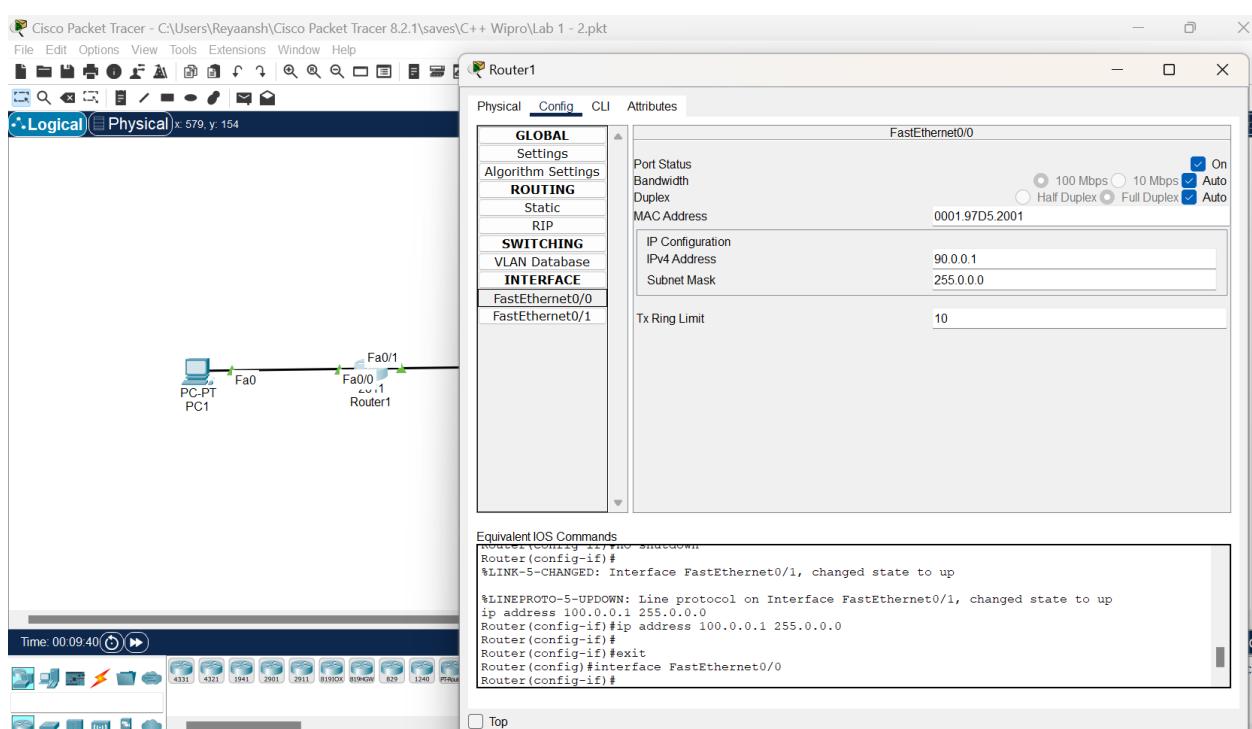
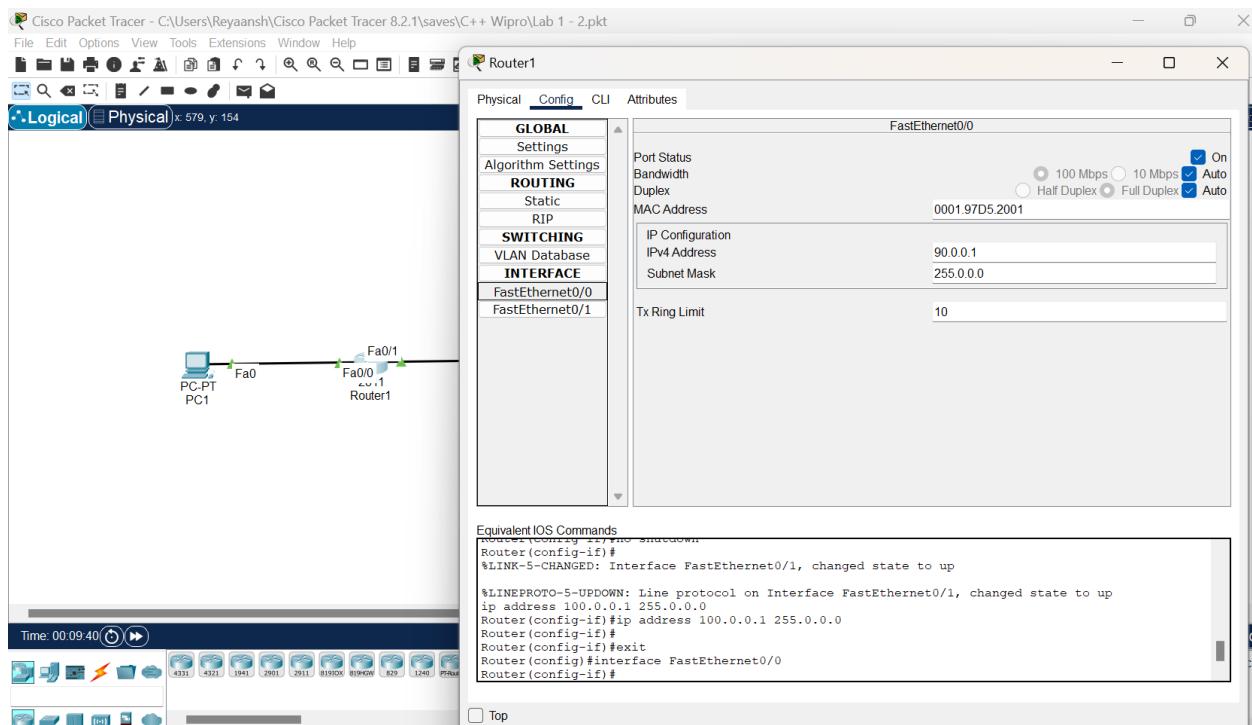
Lab 2: IP address Configuration and Ping check

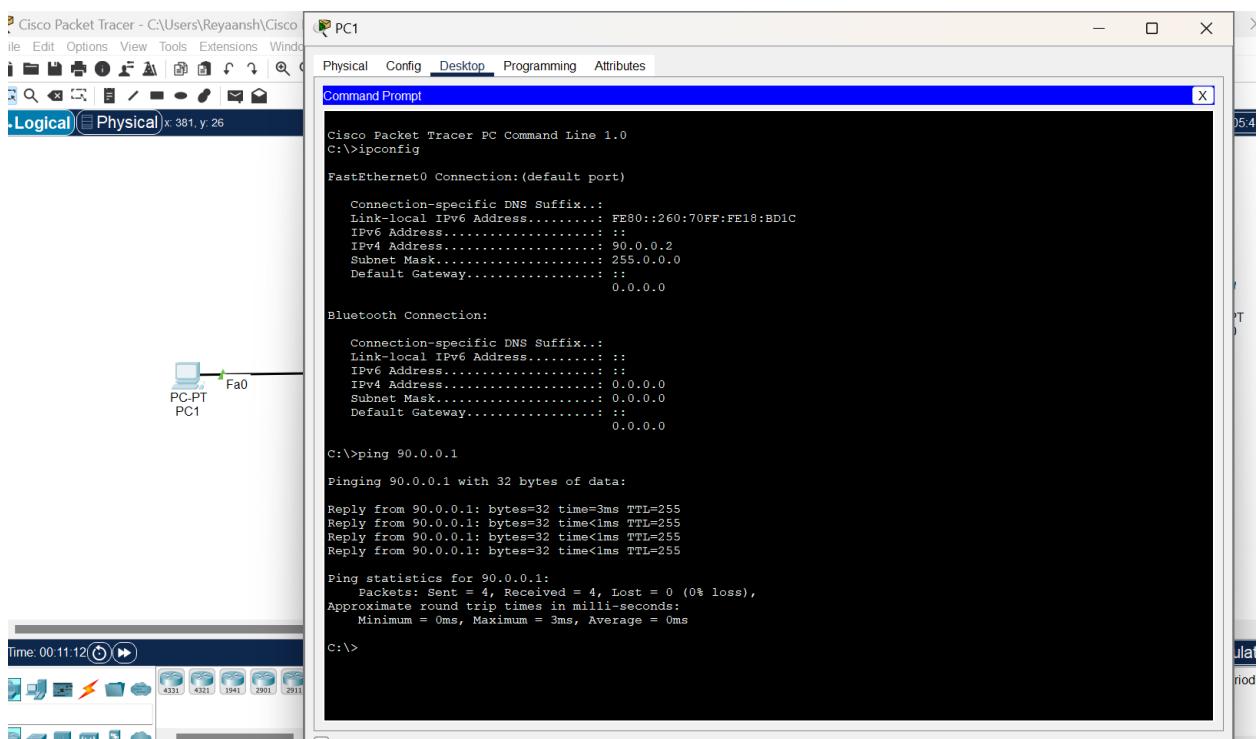
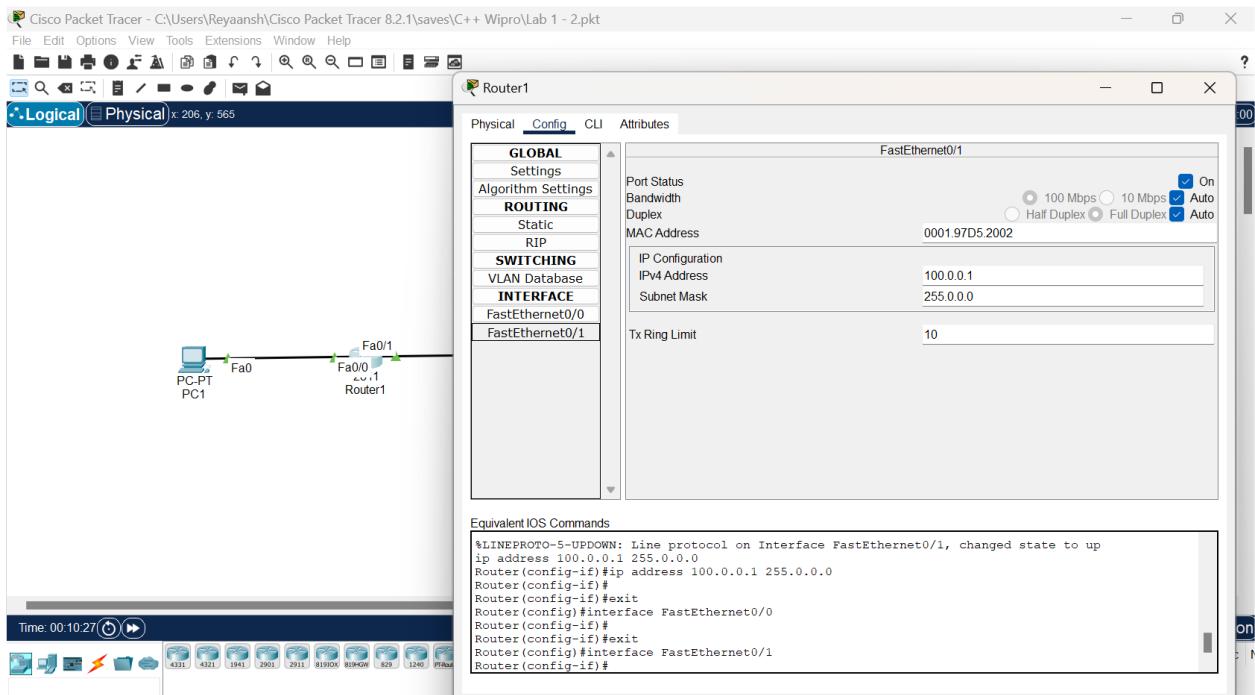




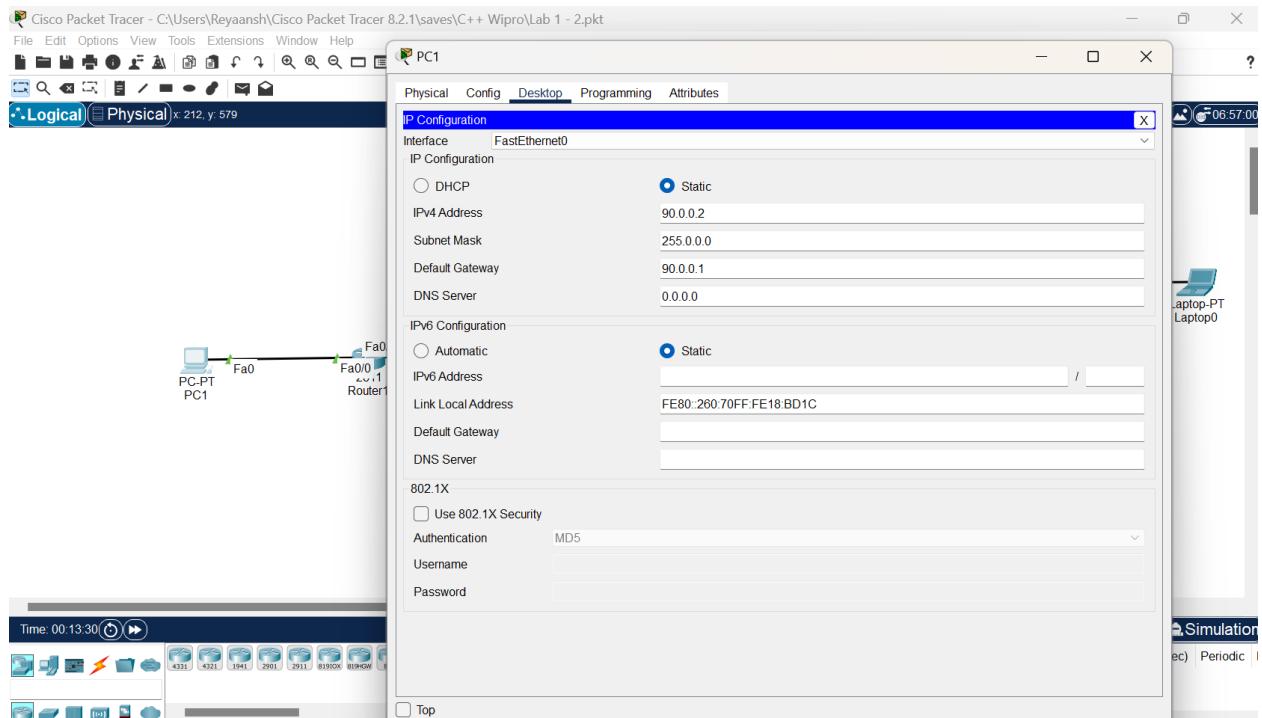
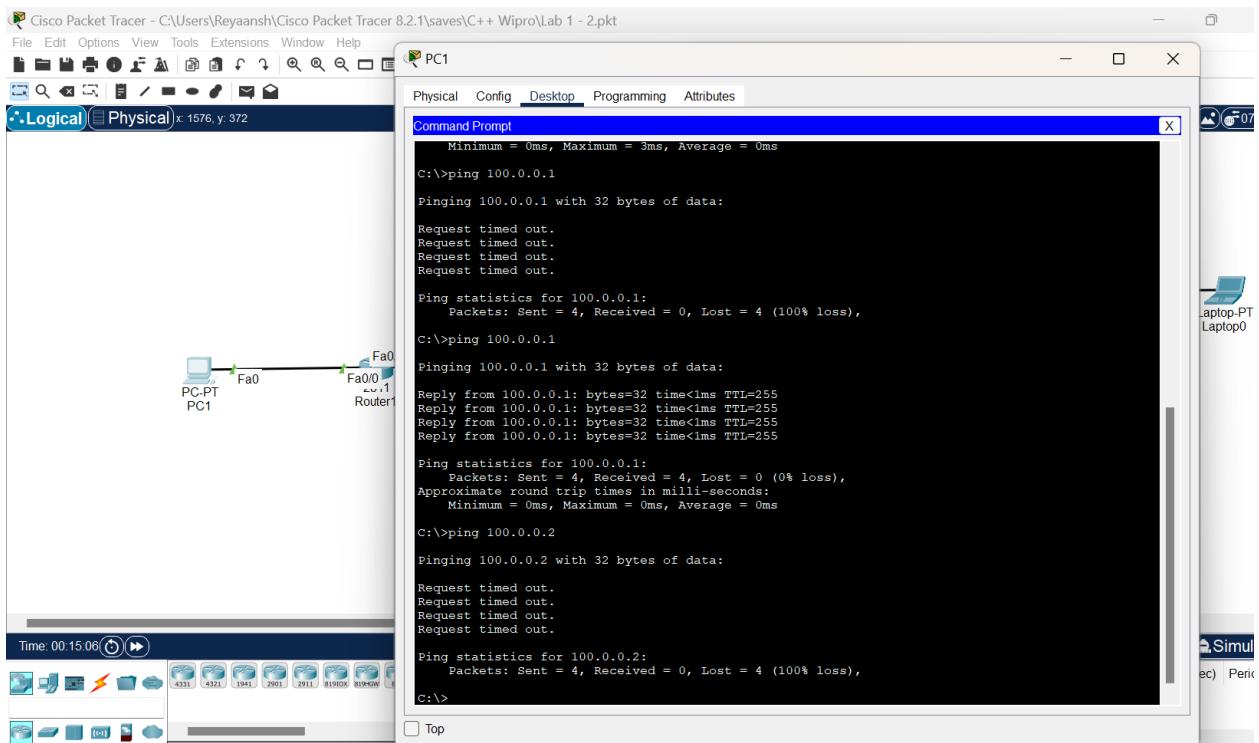


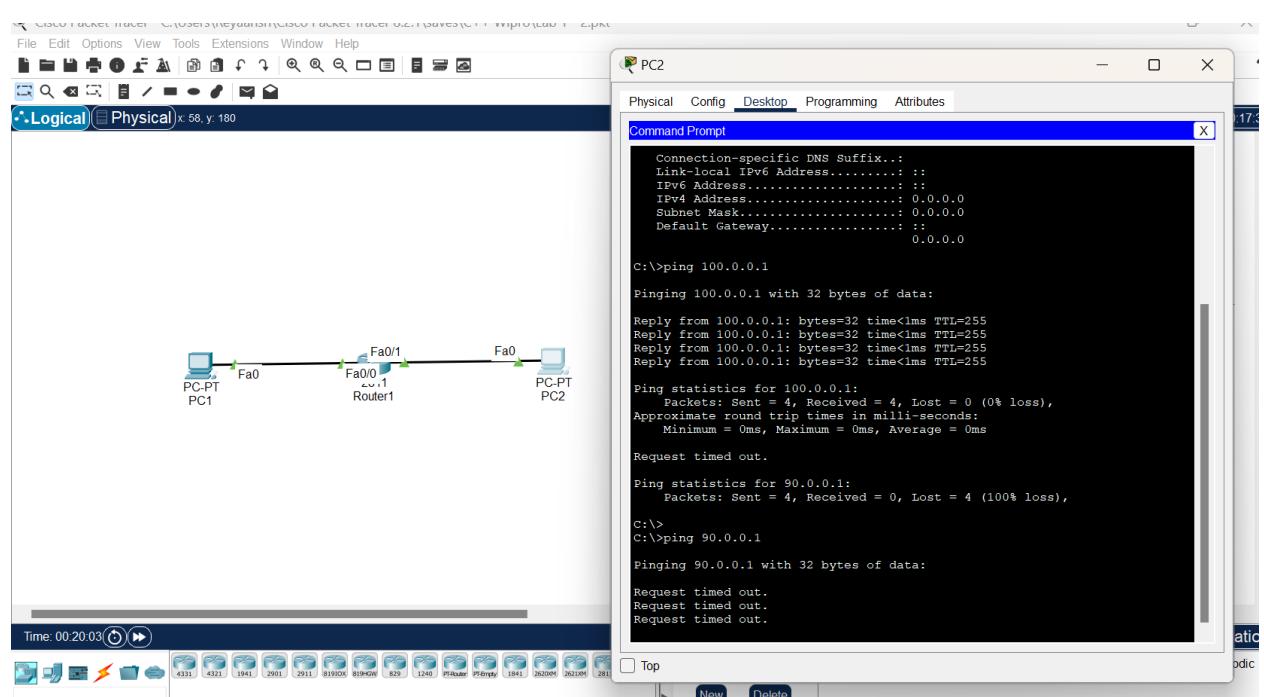
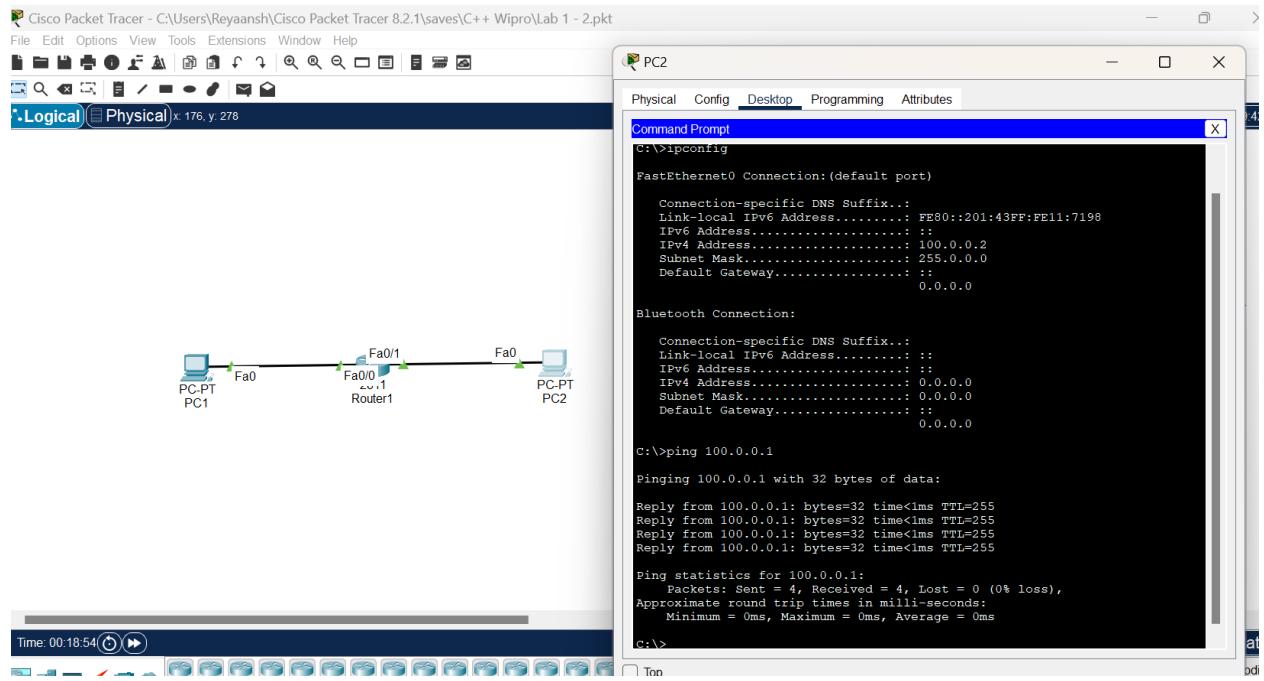


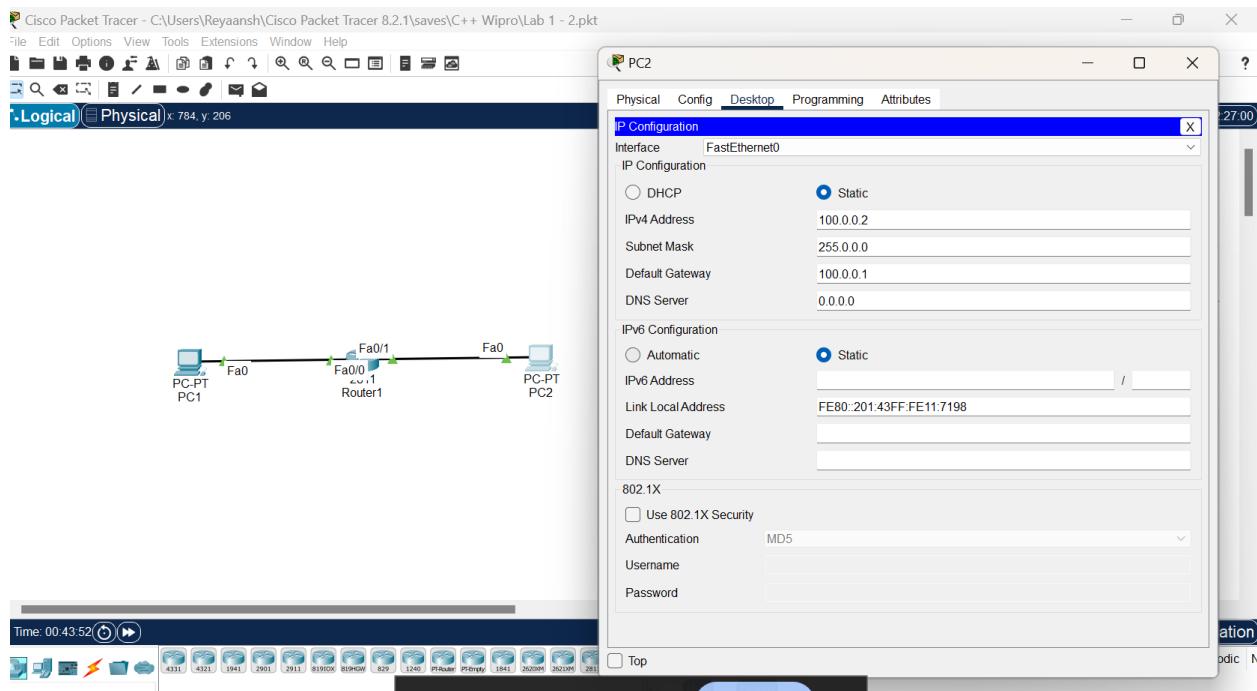
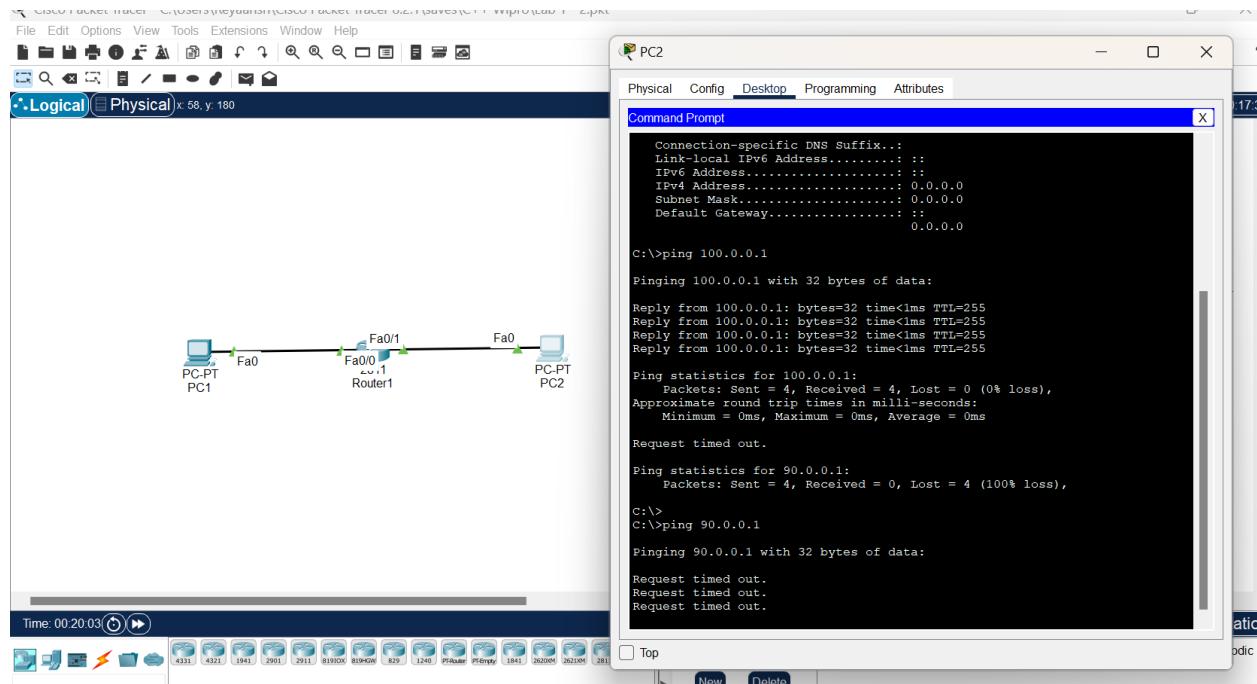




Lab 3: Configuring Default Gateway

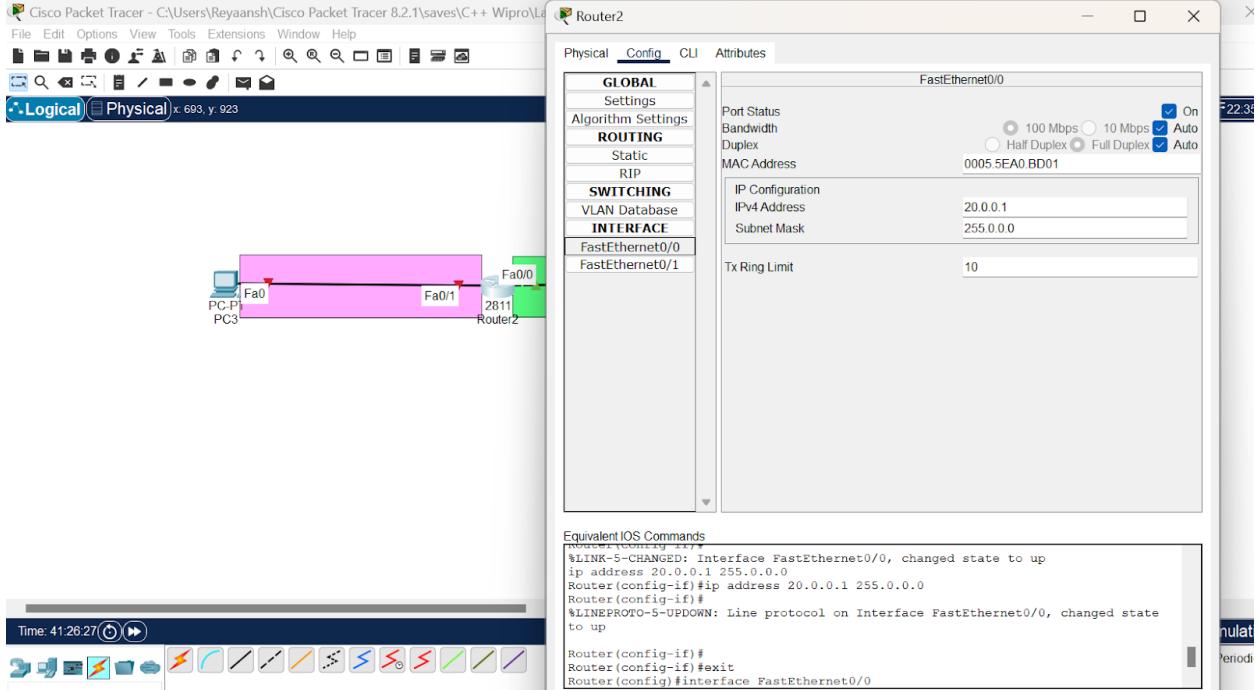
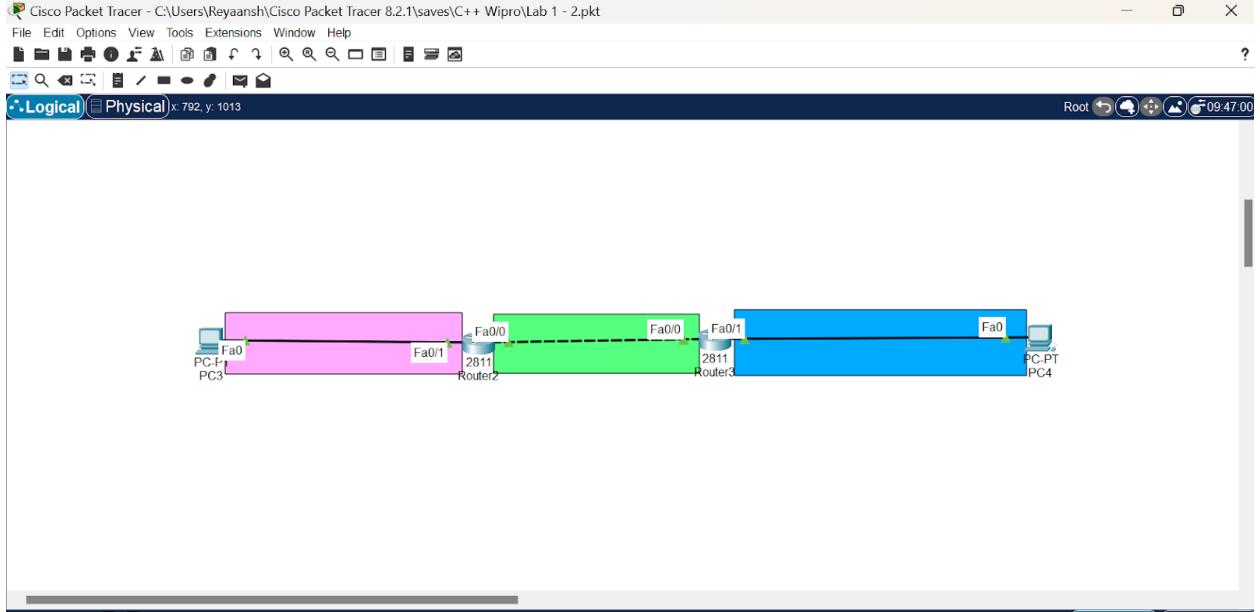


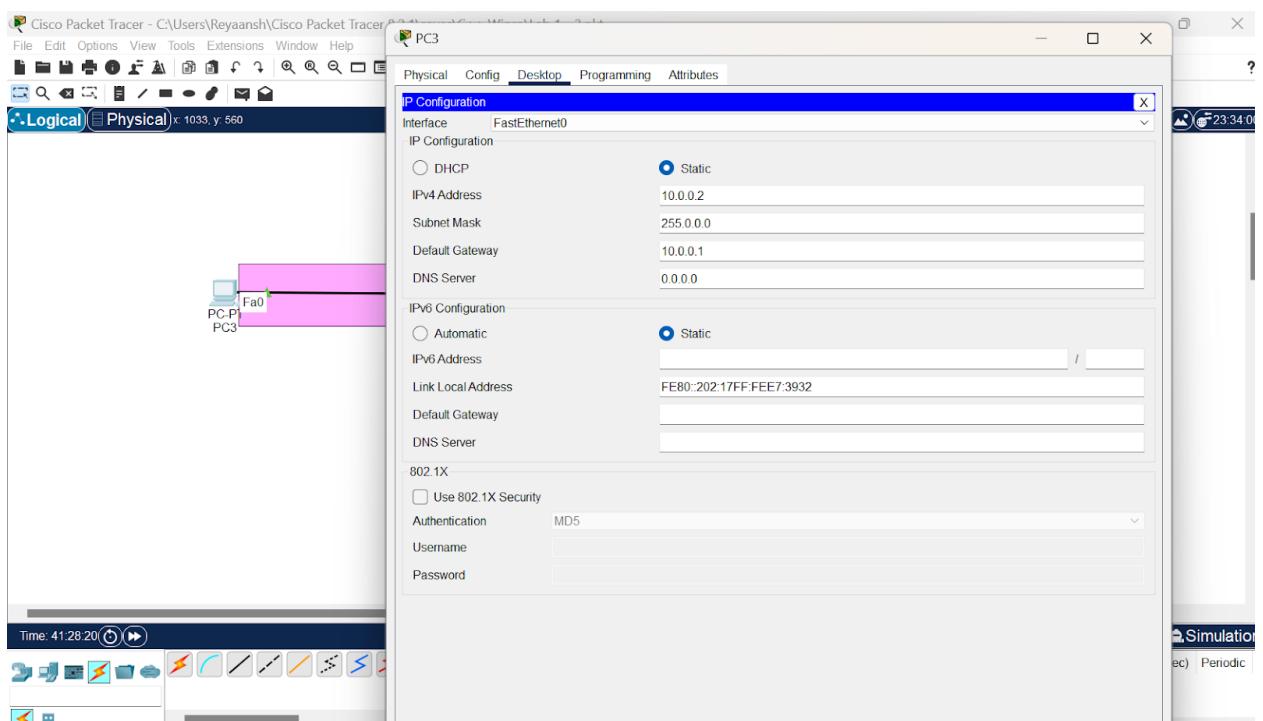
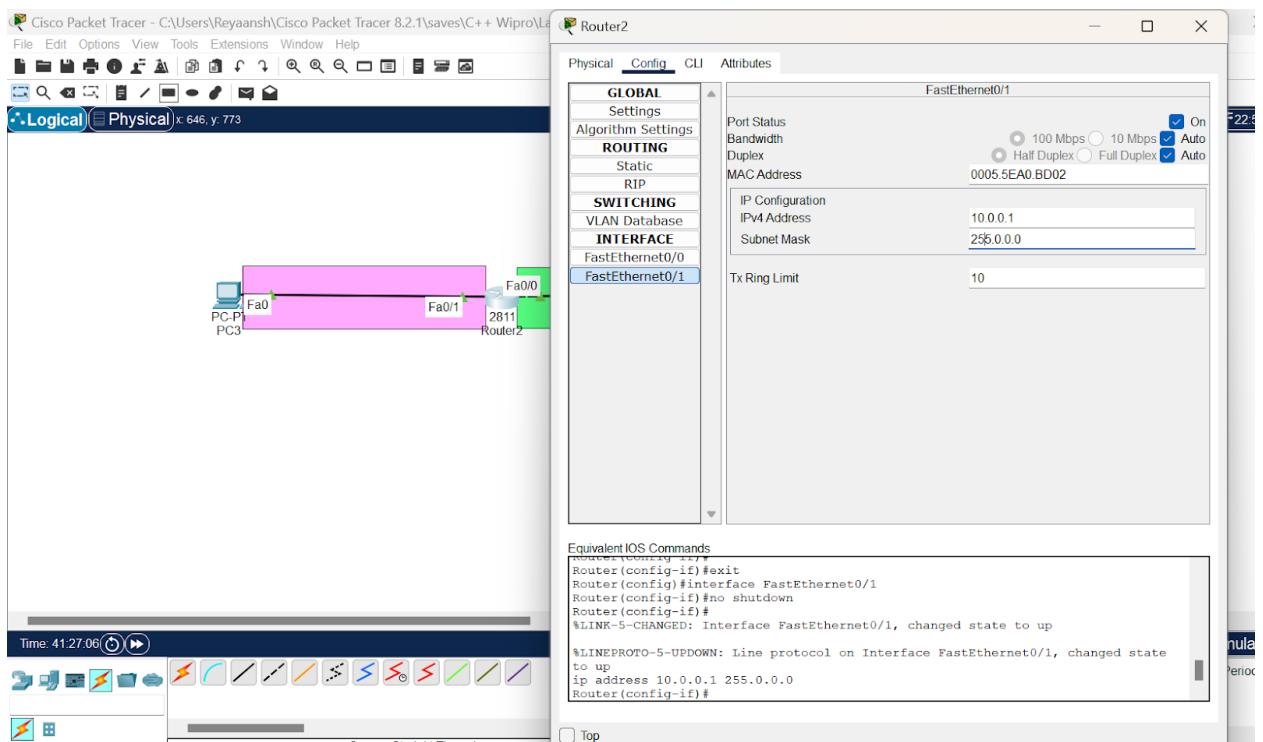


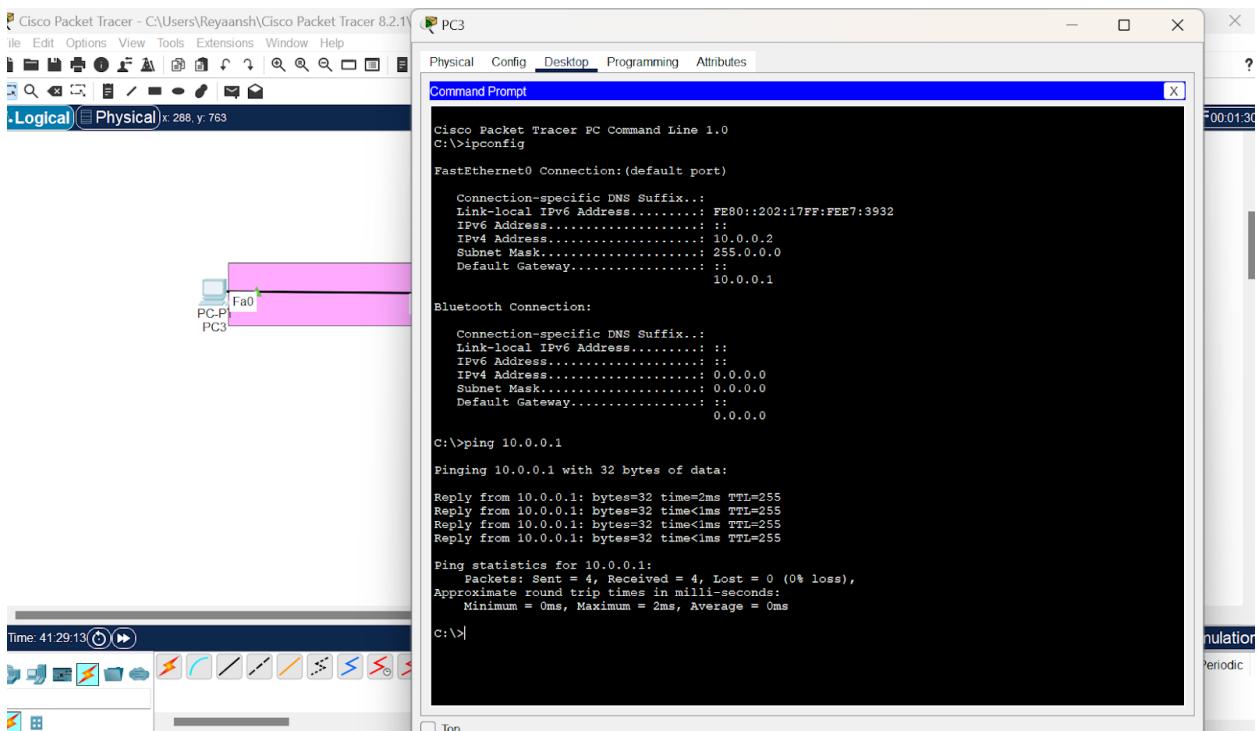
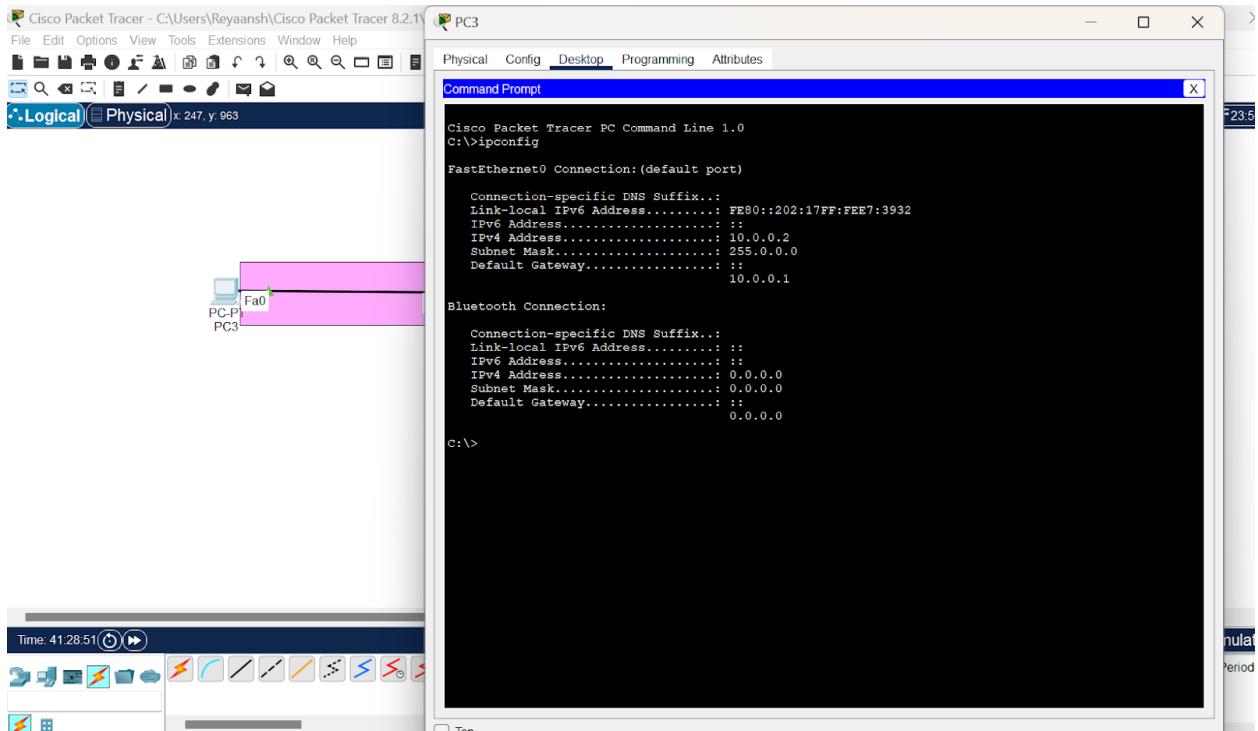


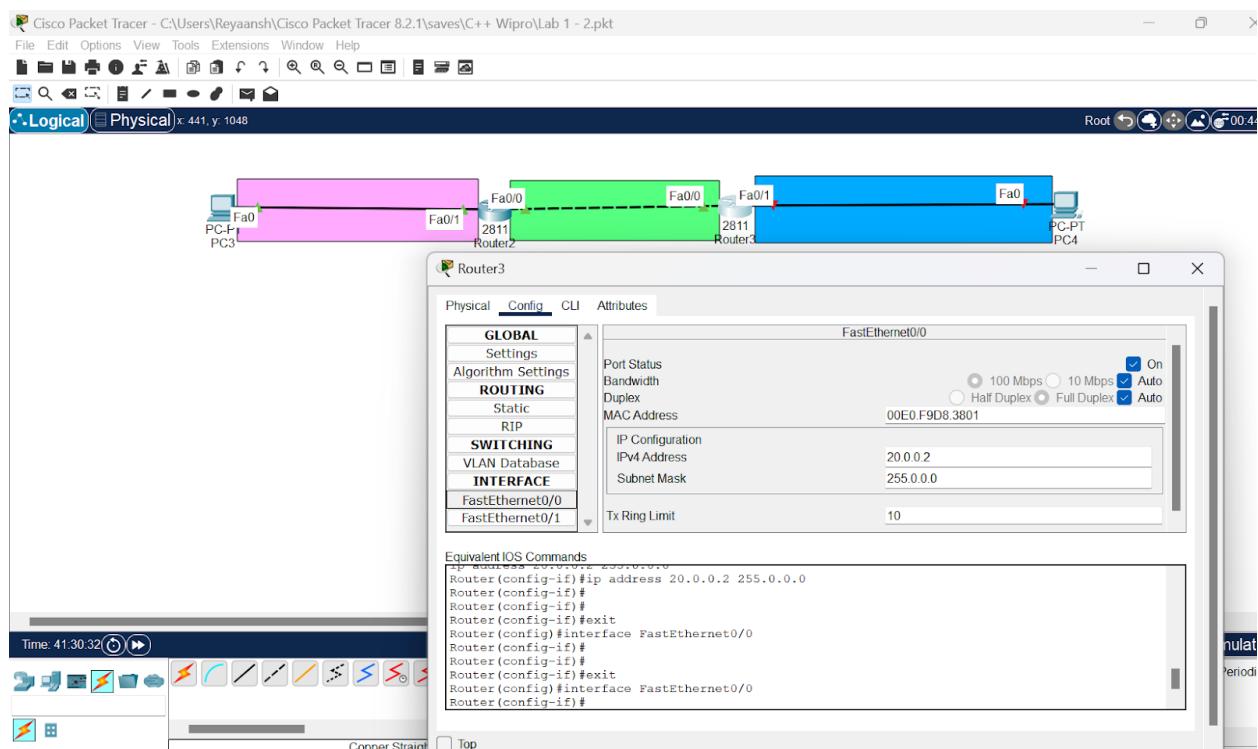
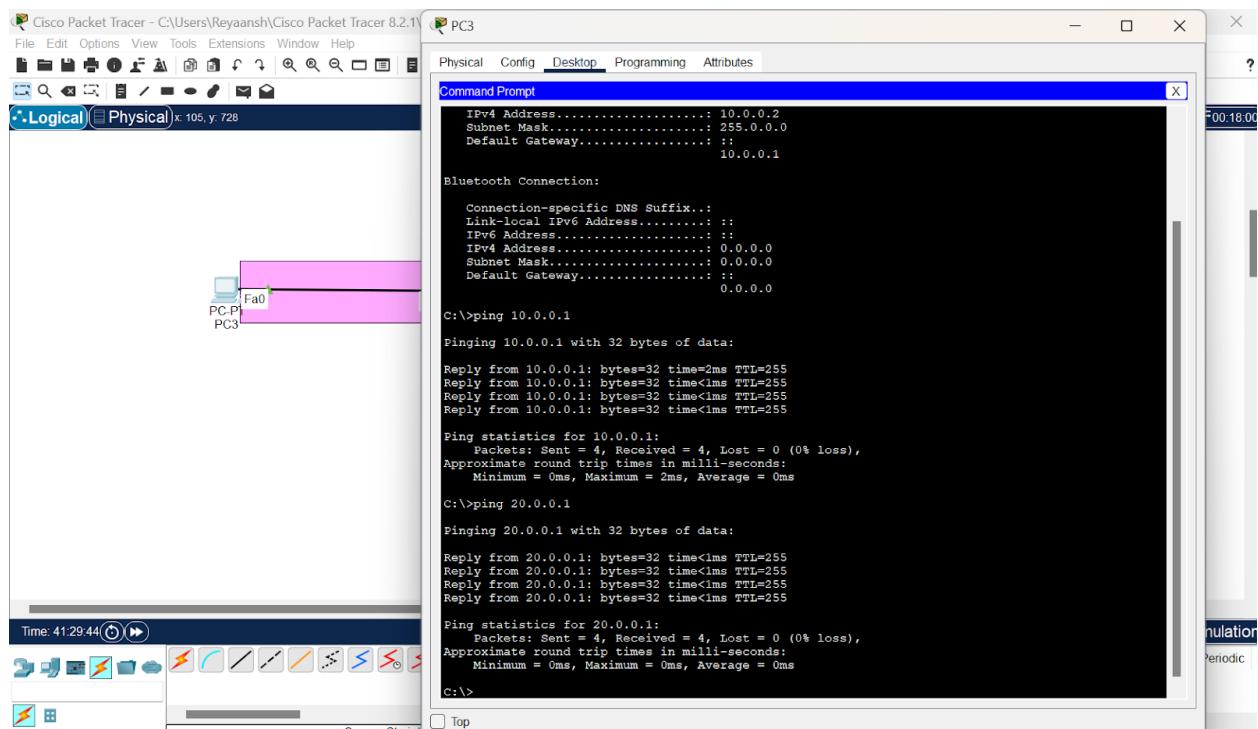
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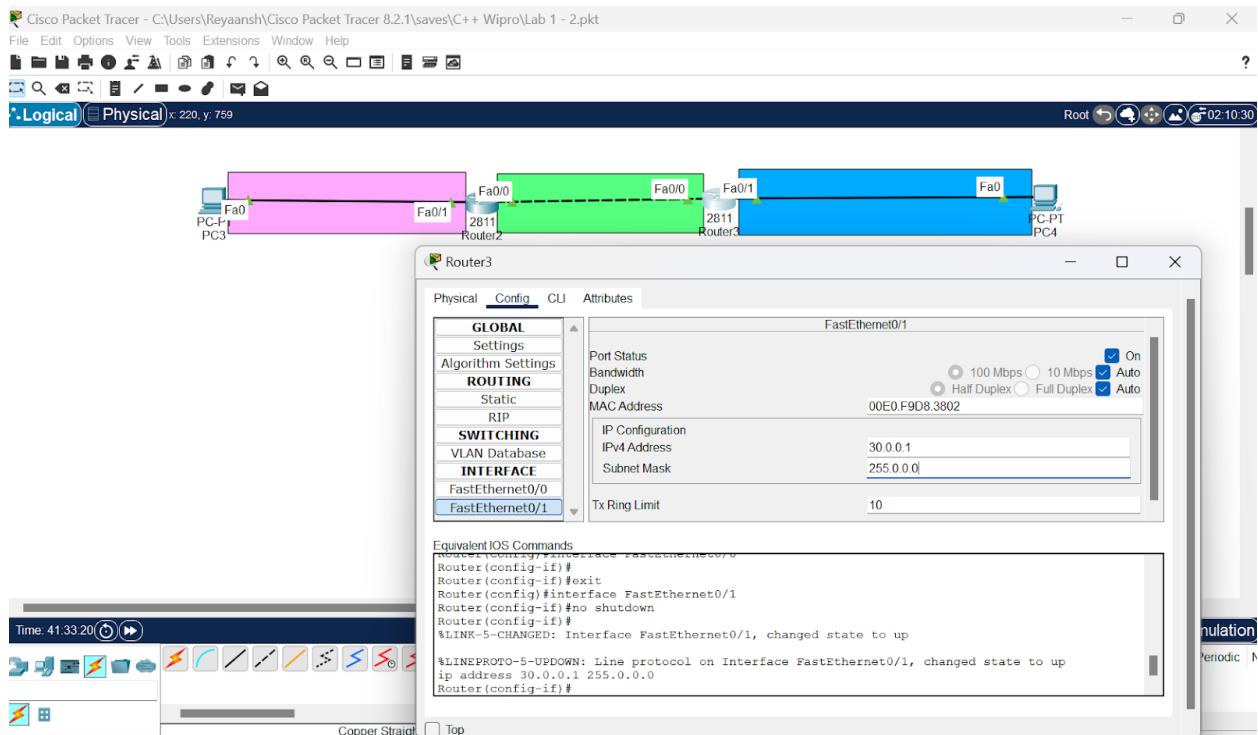
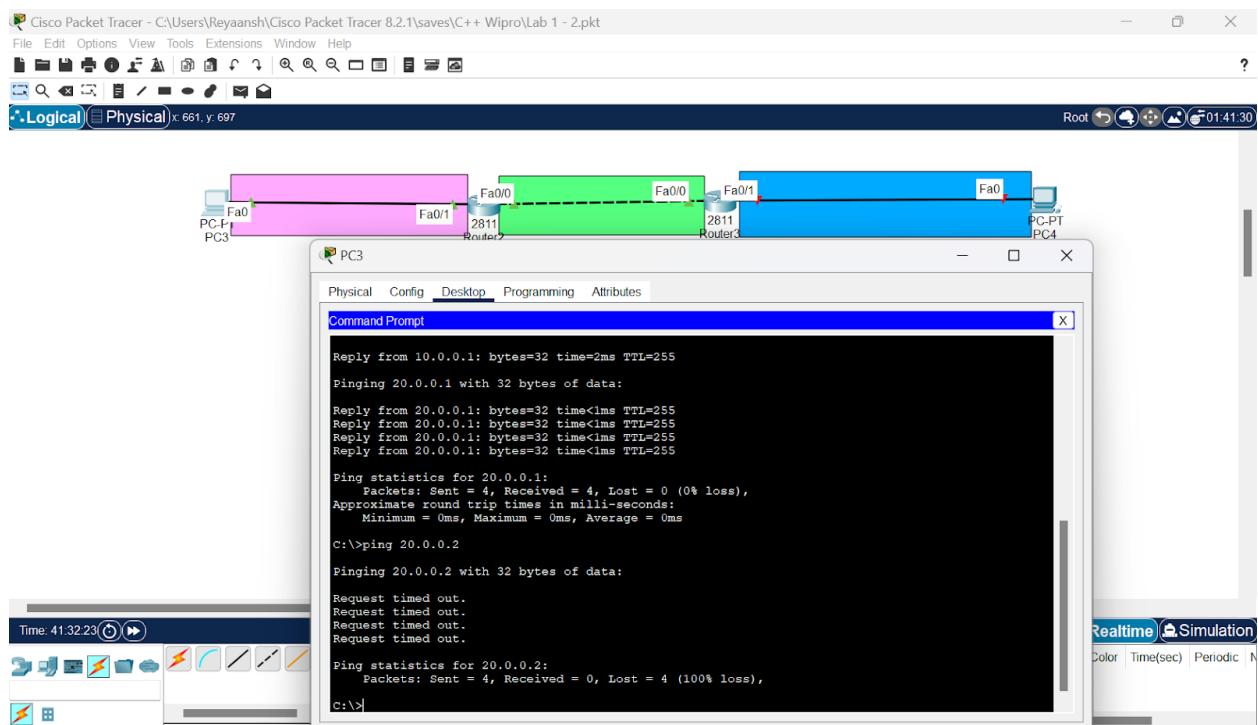
Lab 4: Static Routing (on two routers)

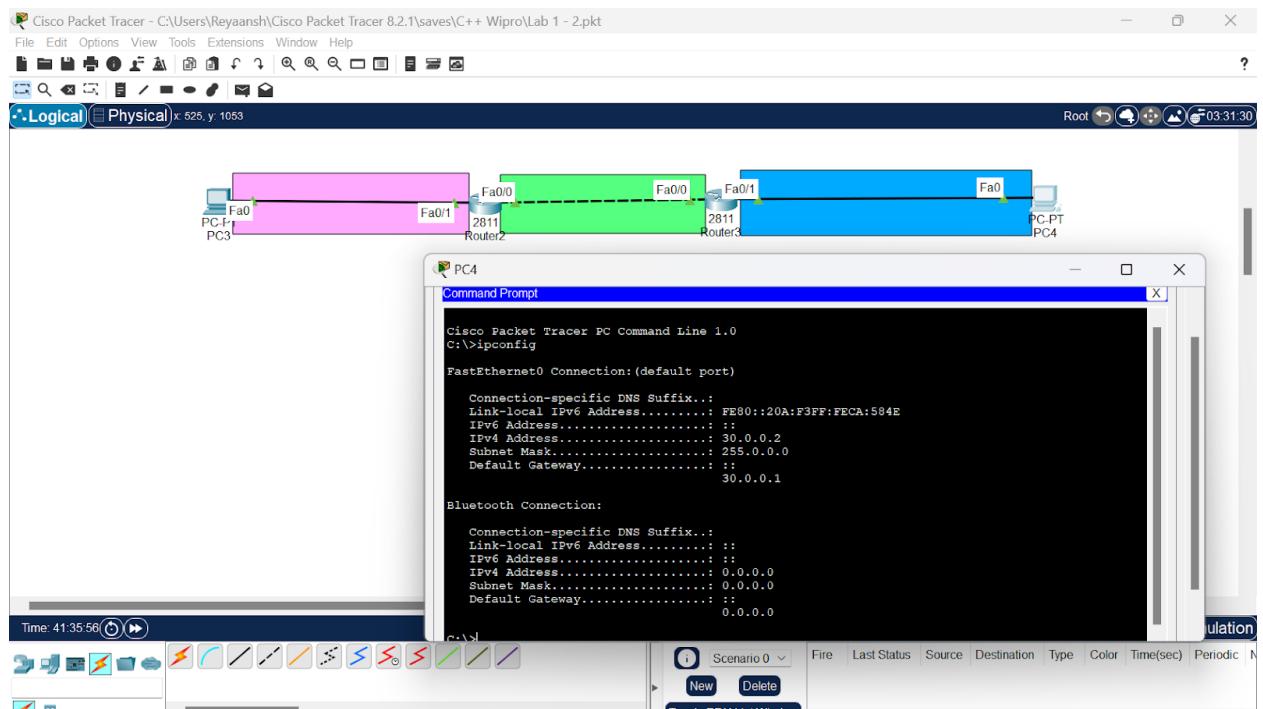
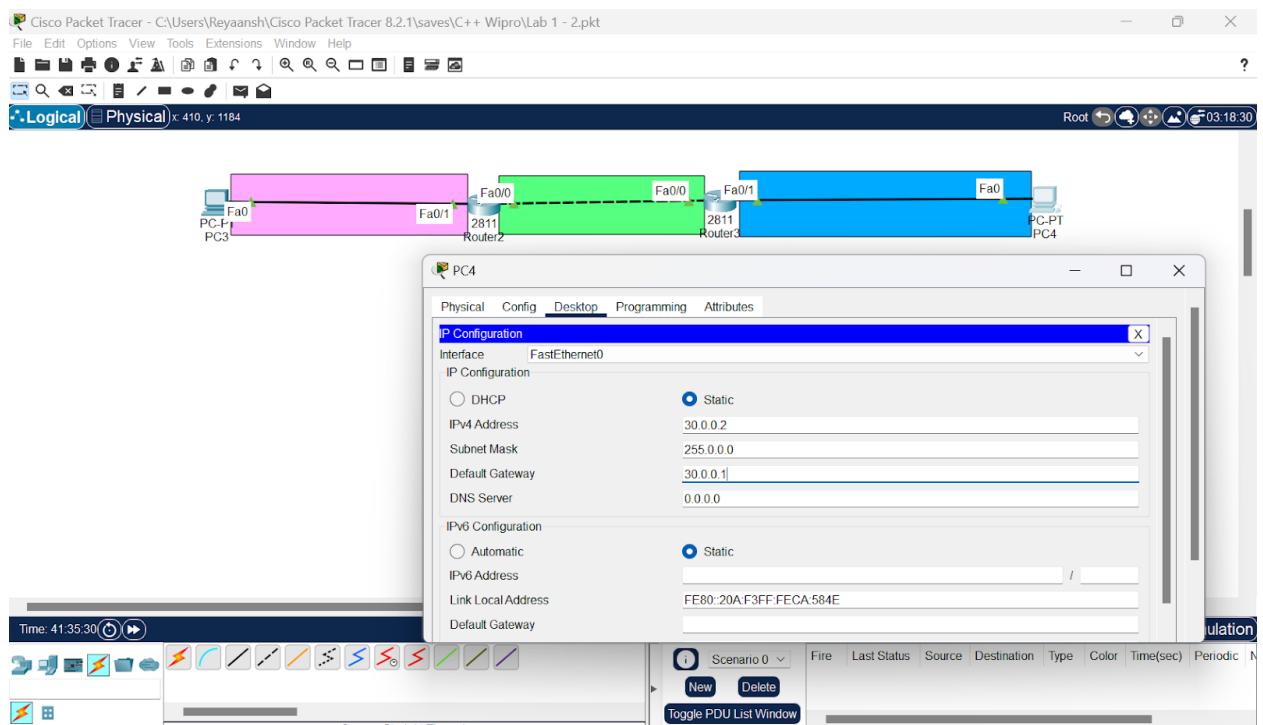


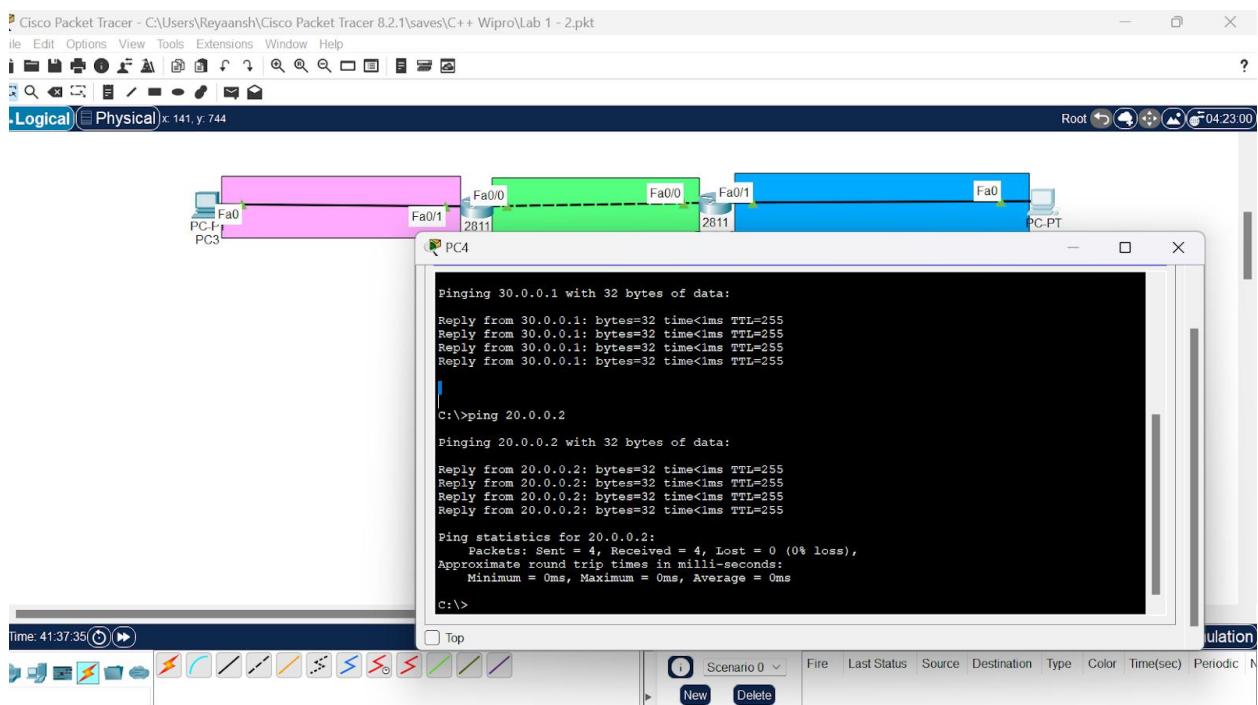
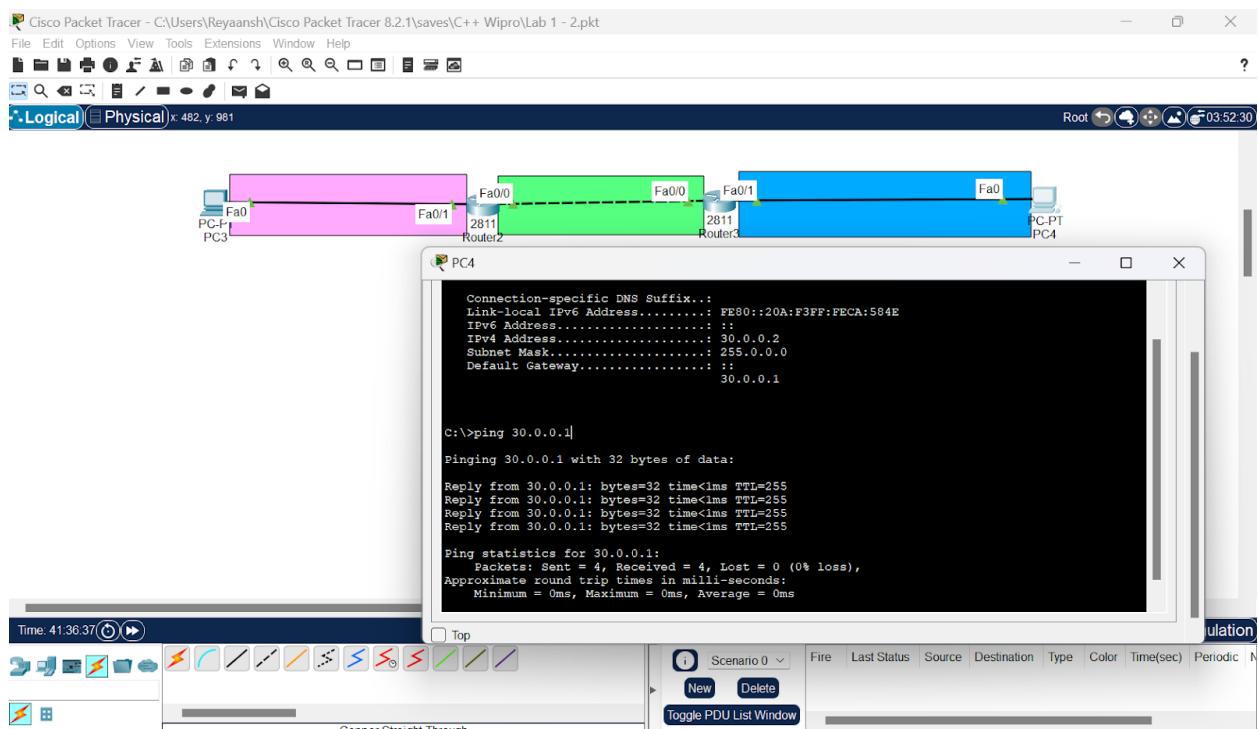


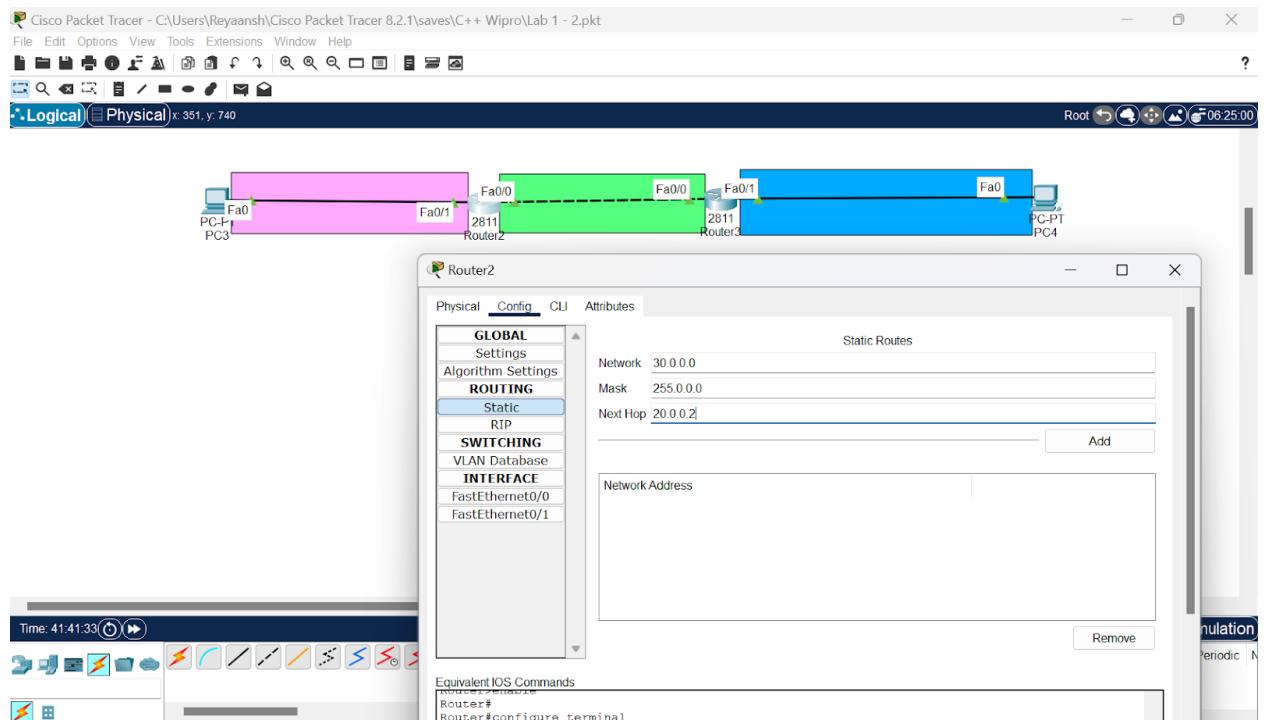
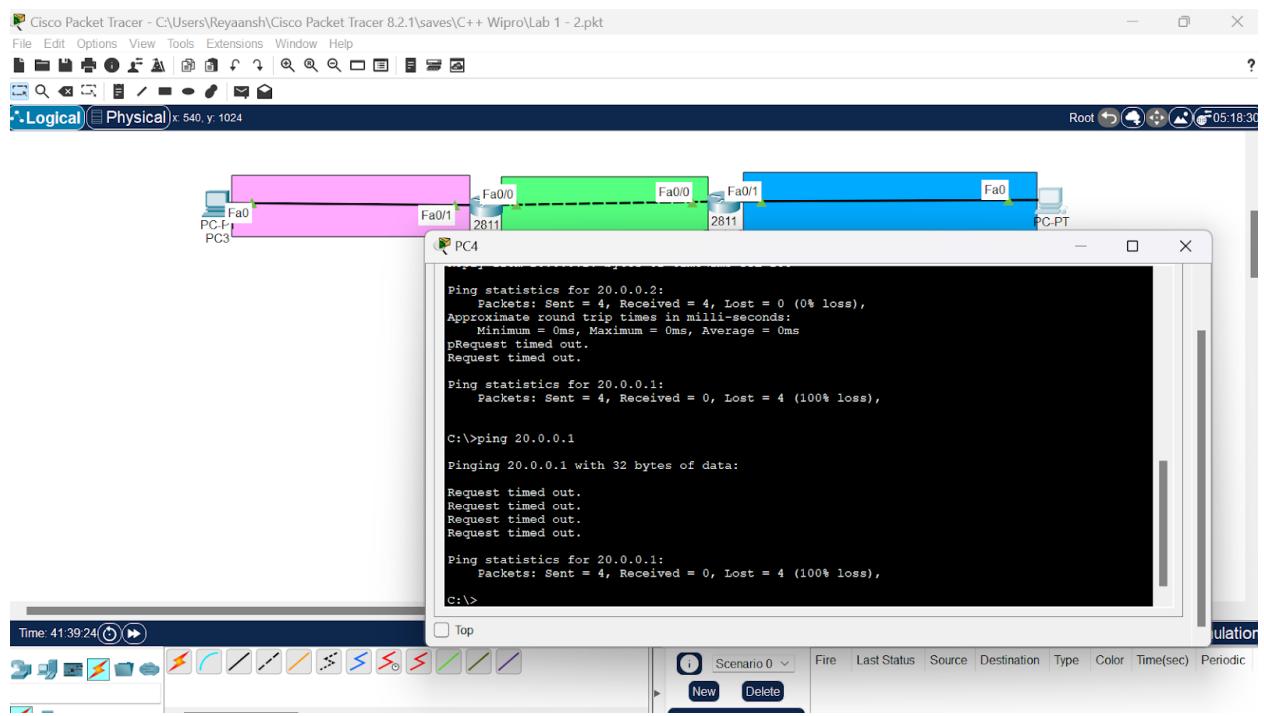


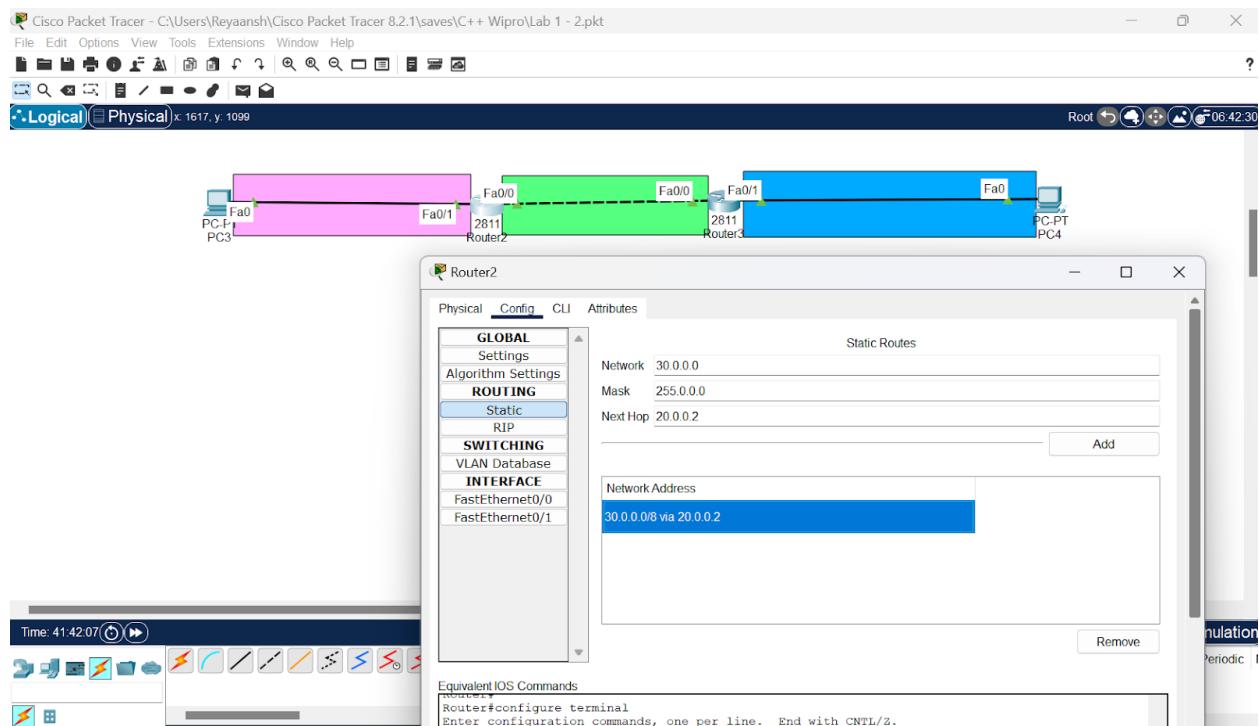
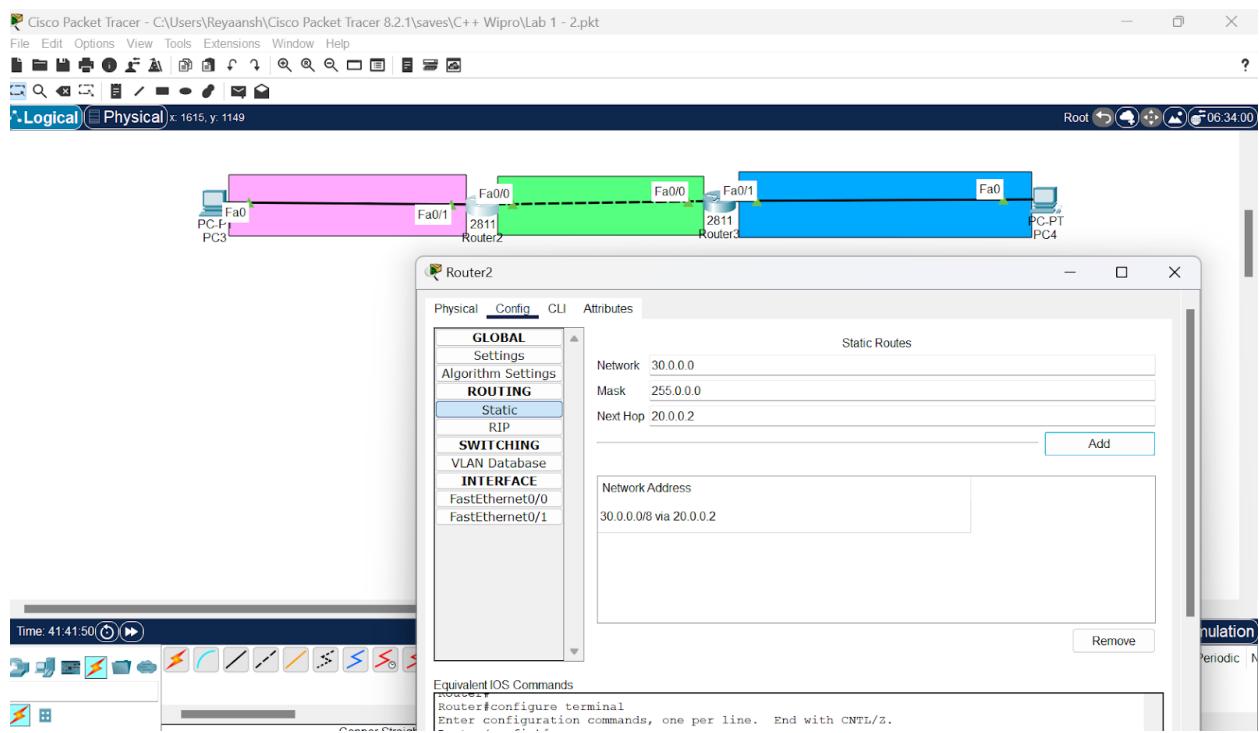


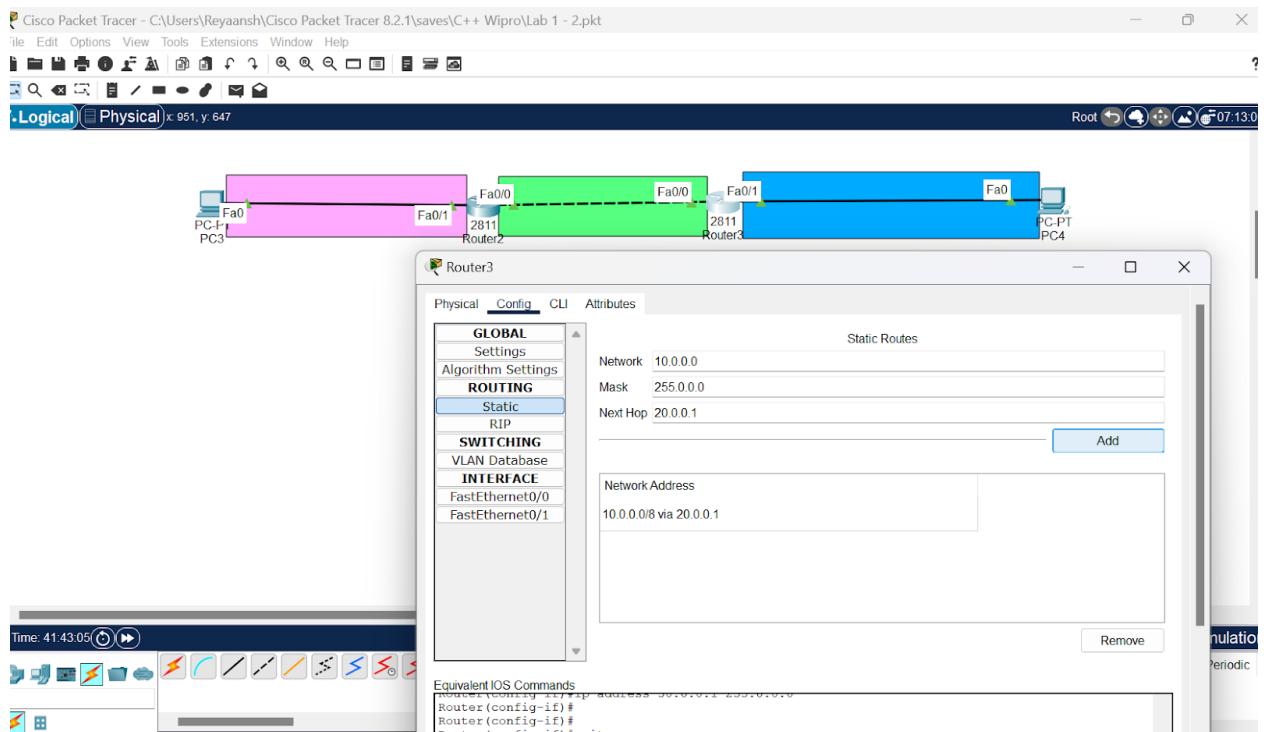
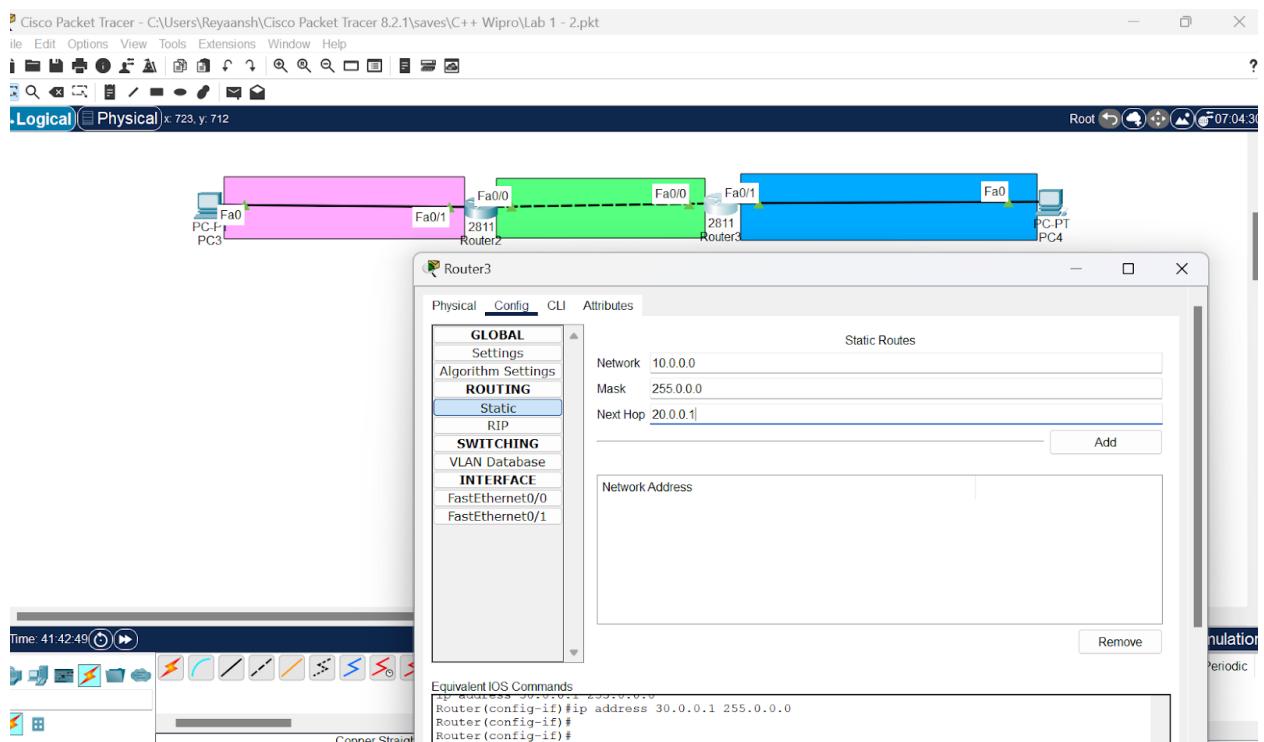


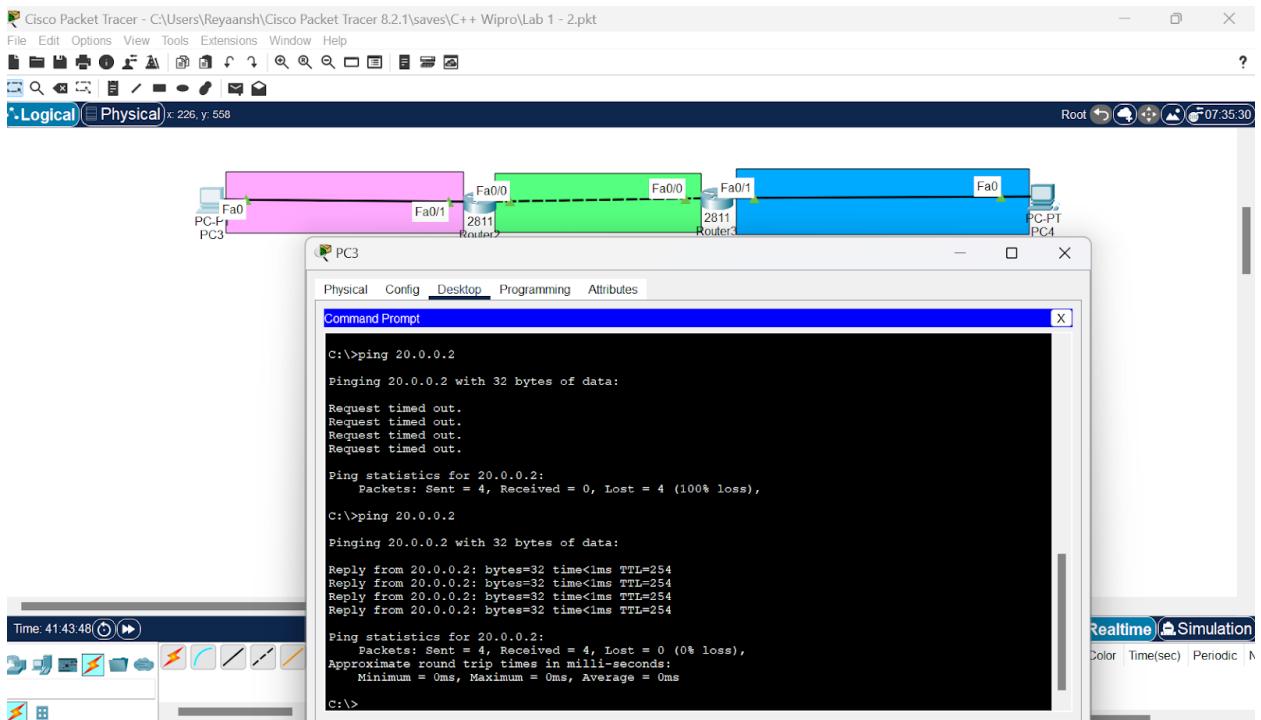
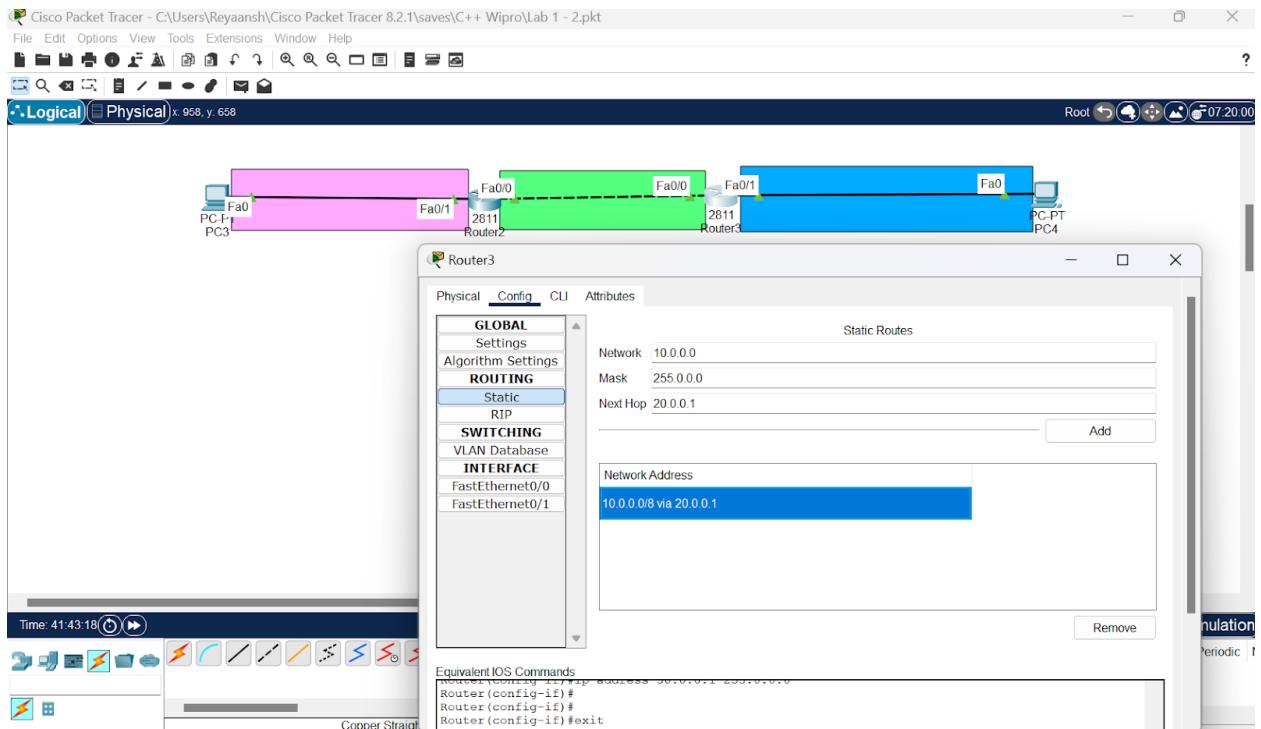


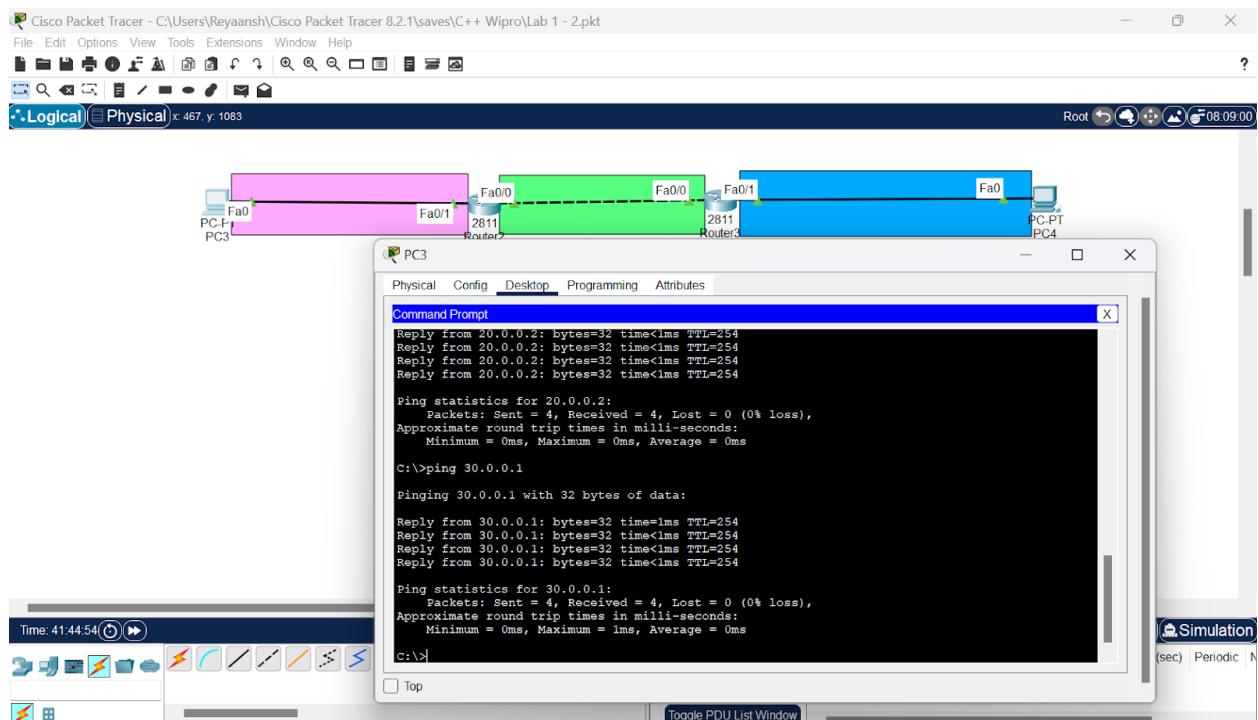
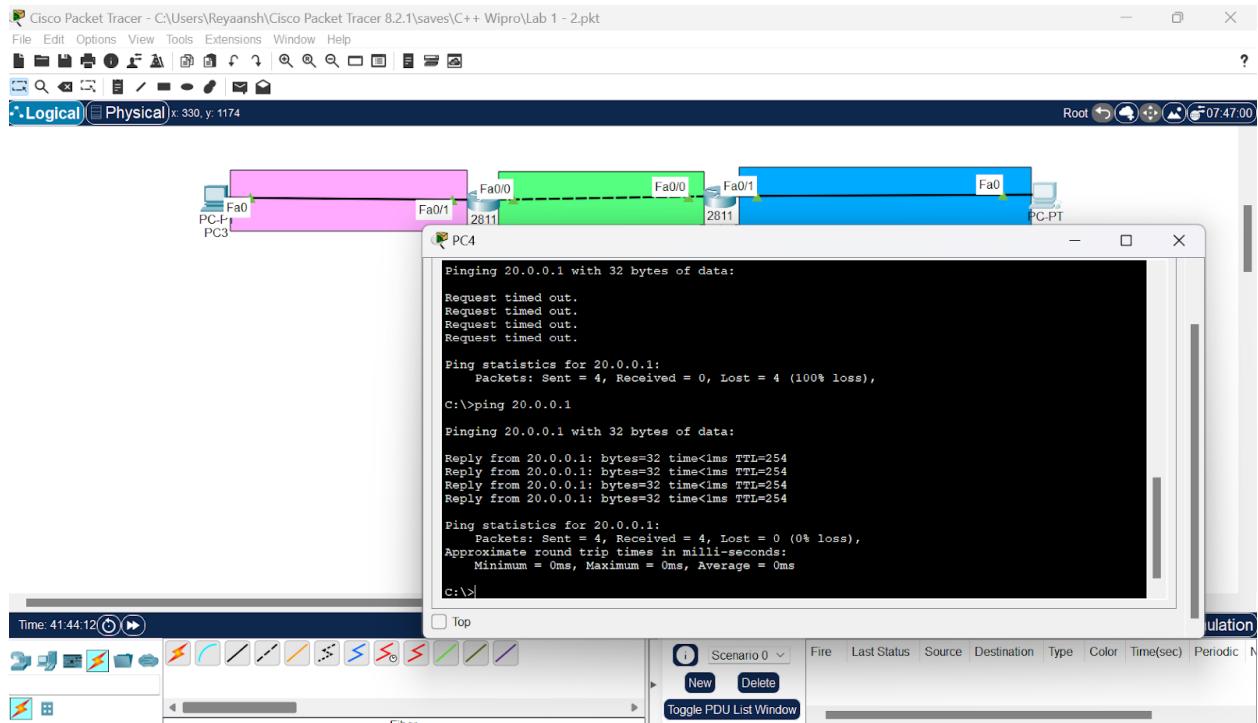


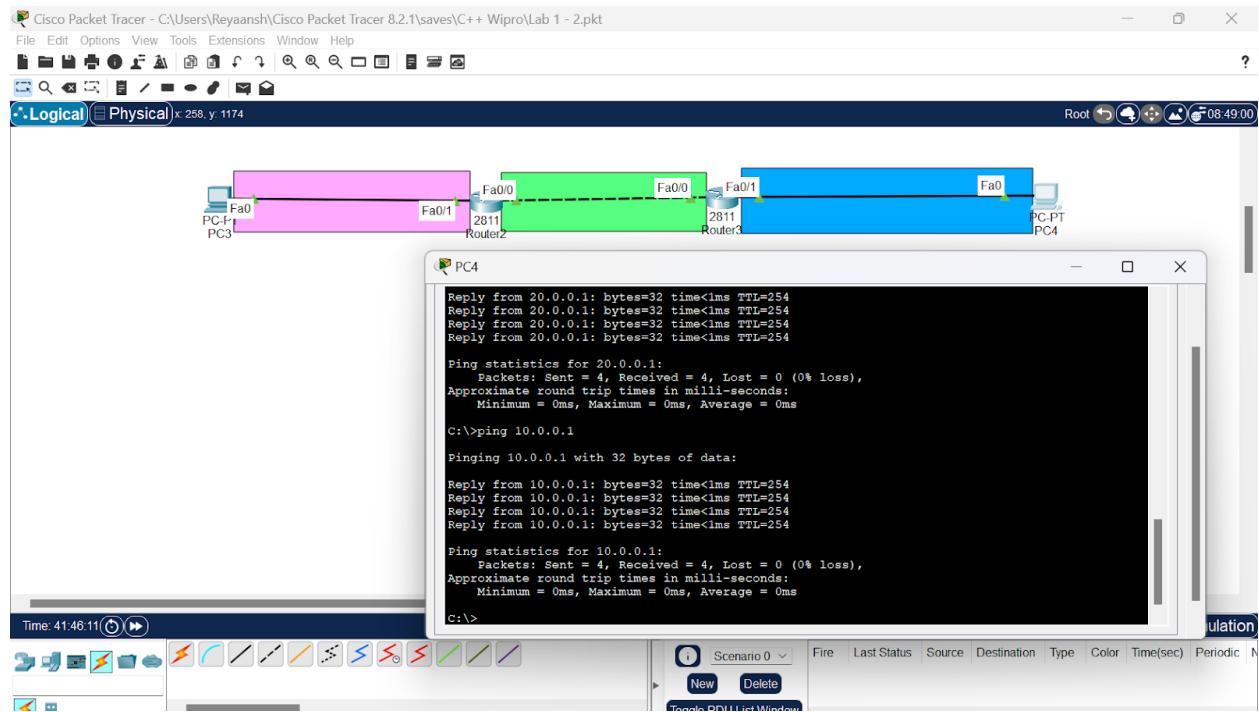
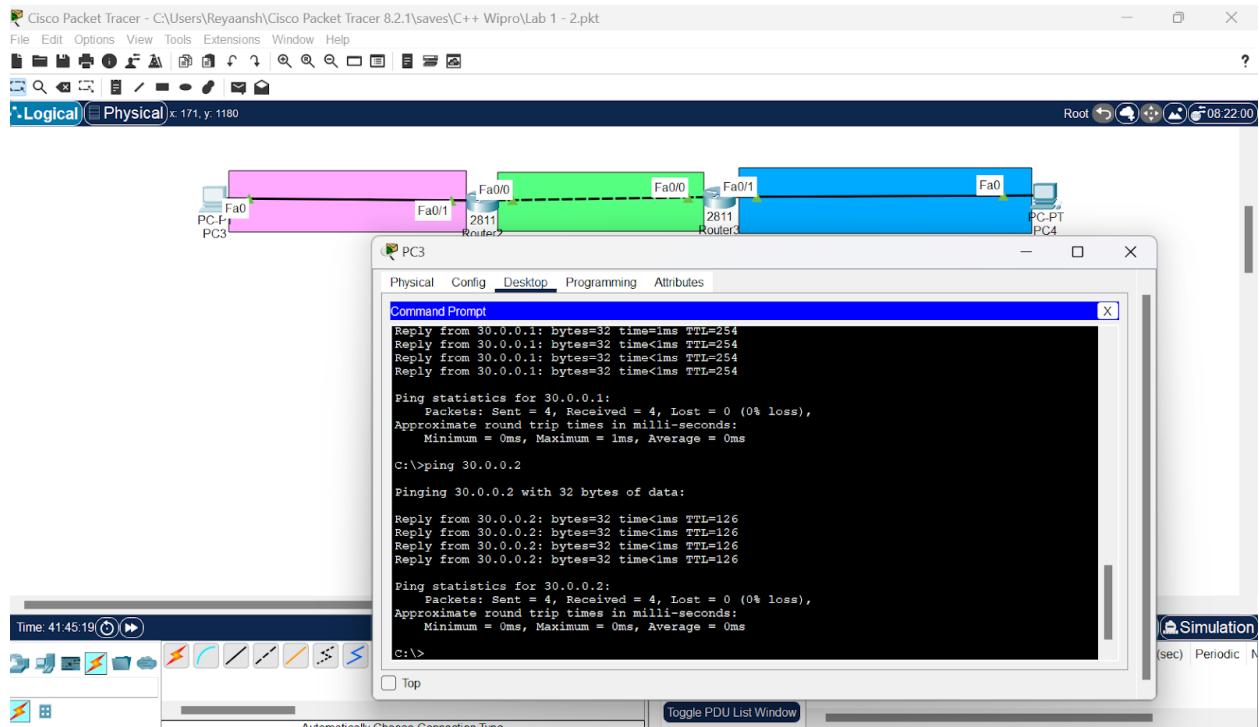


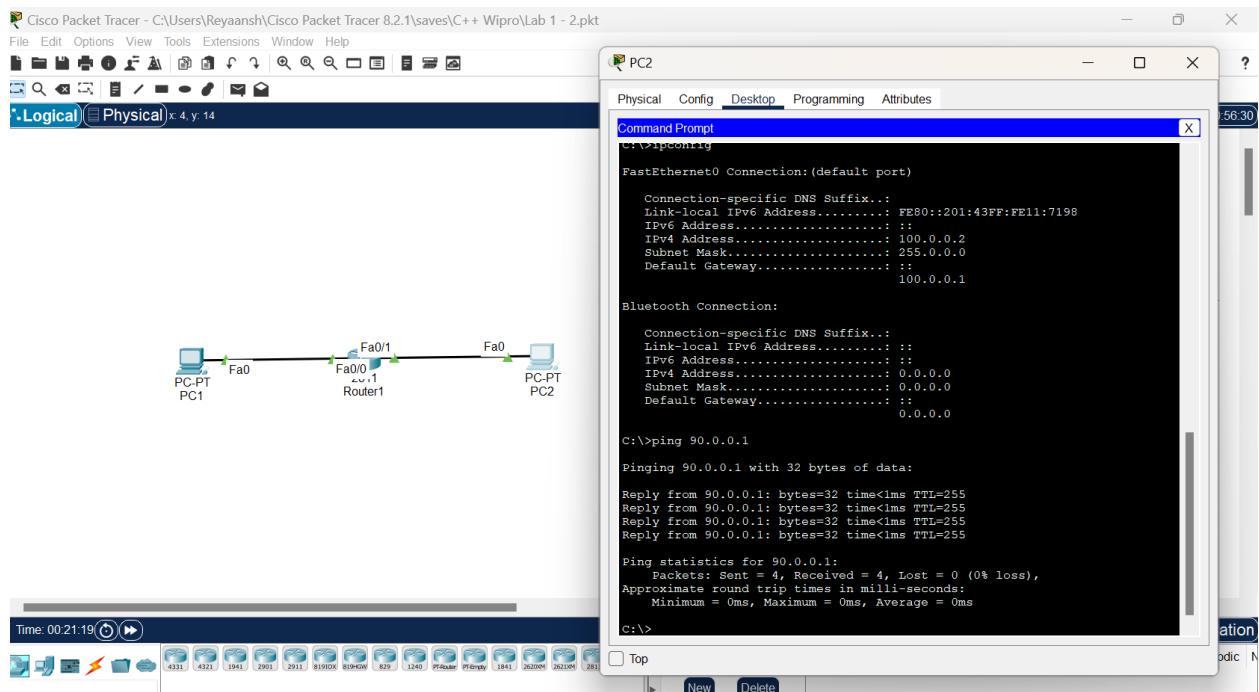
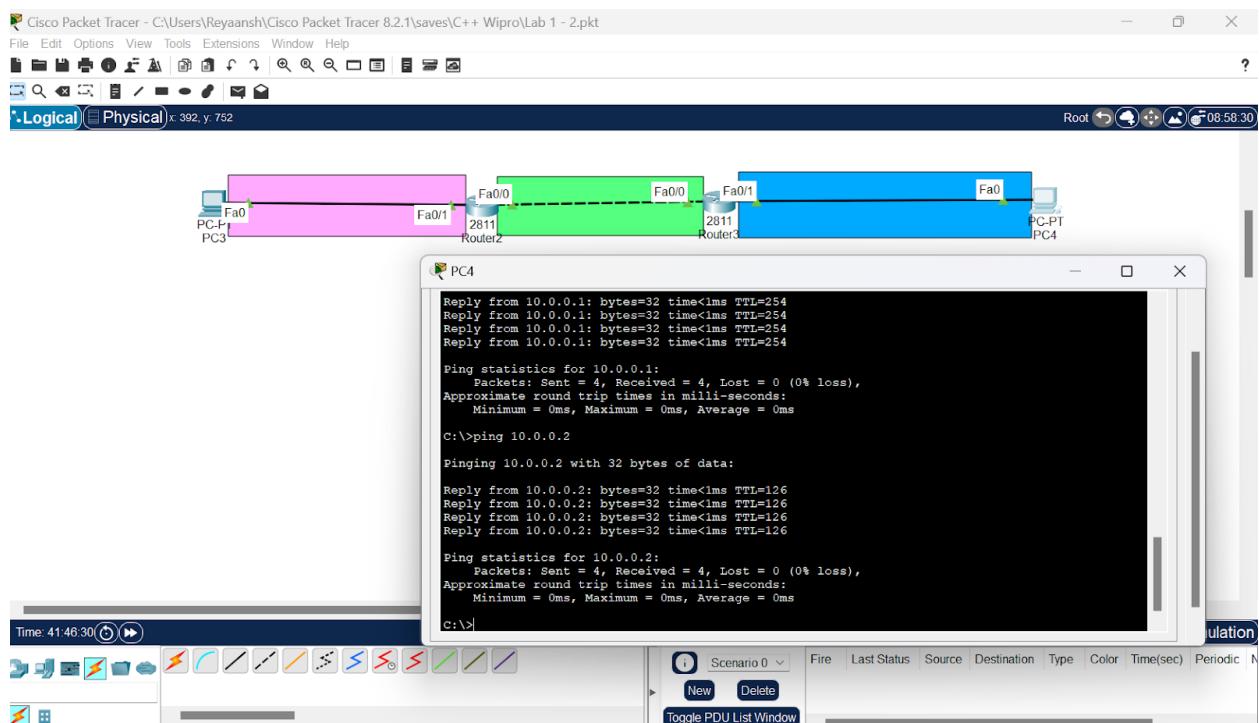




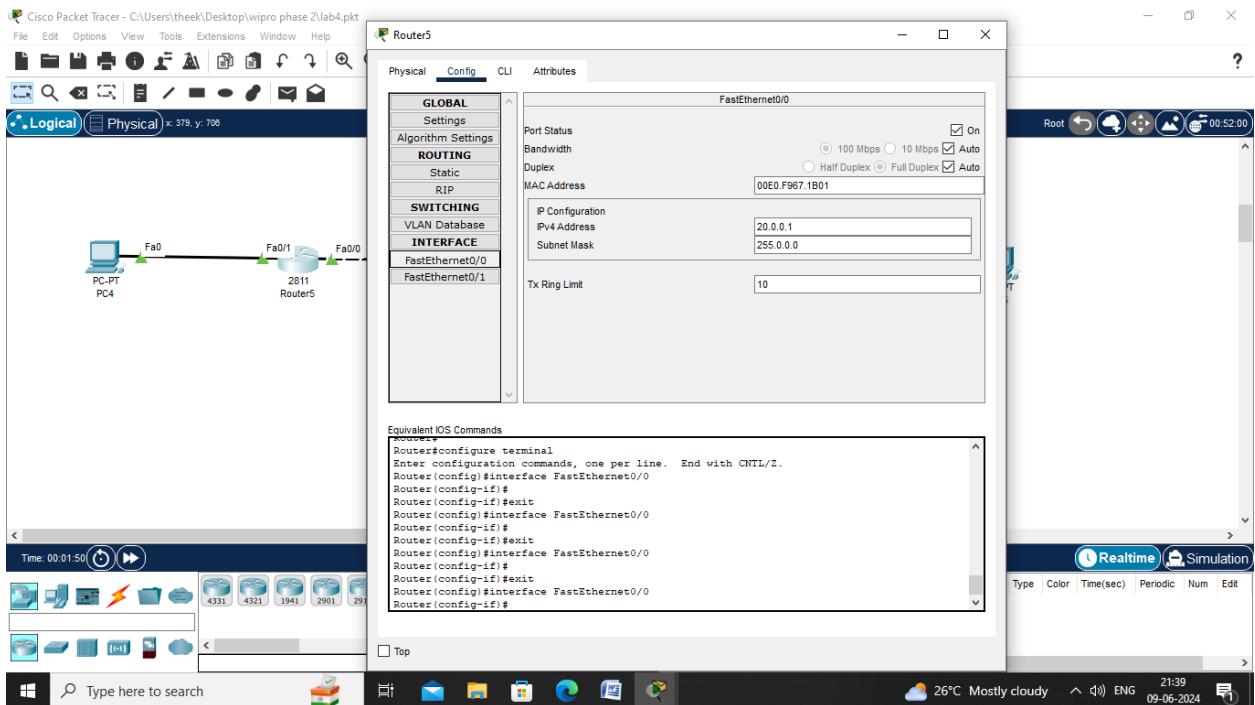


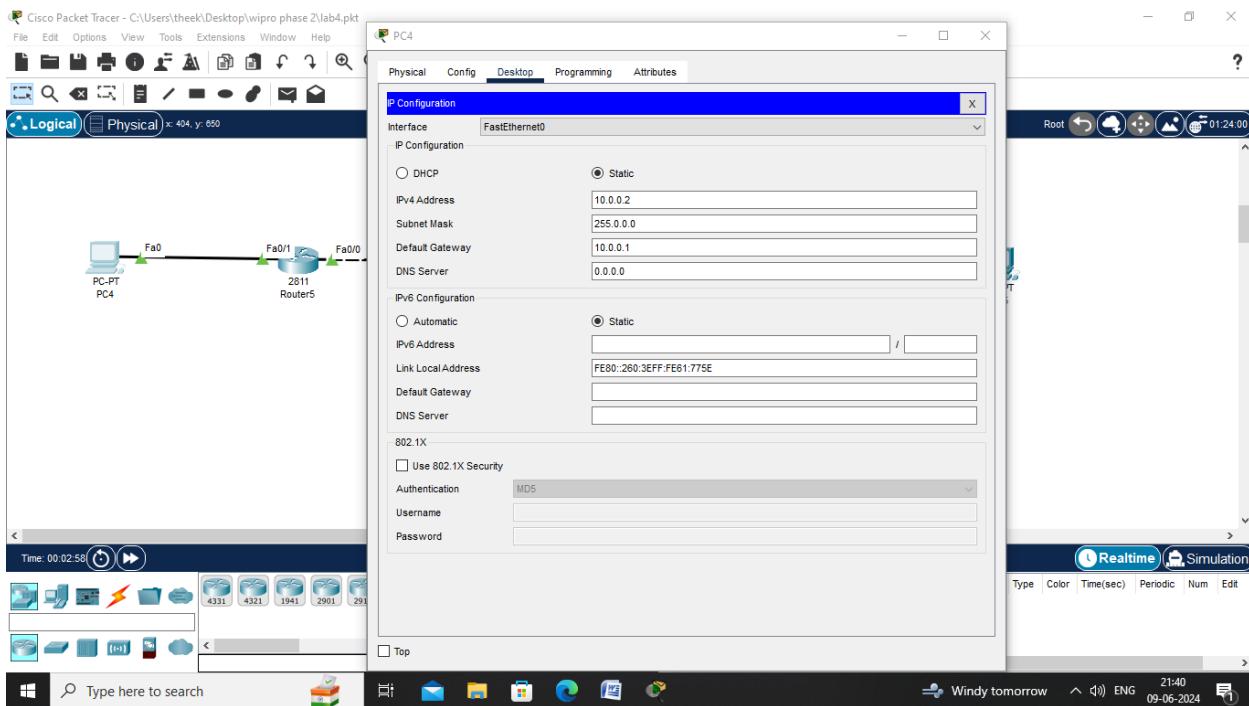
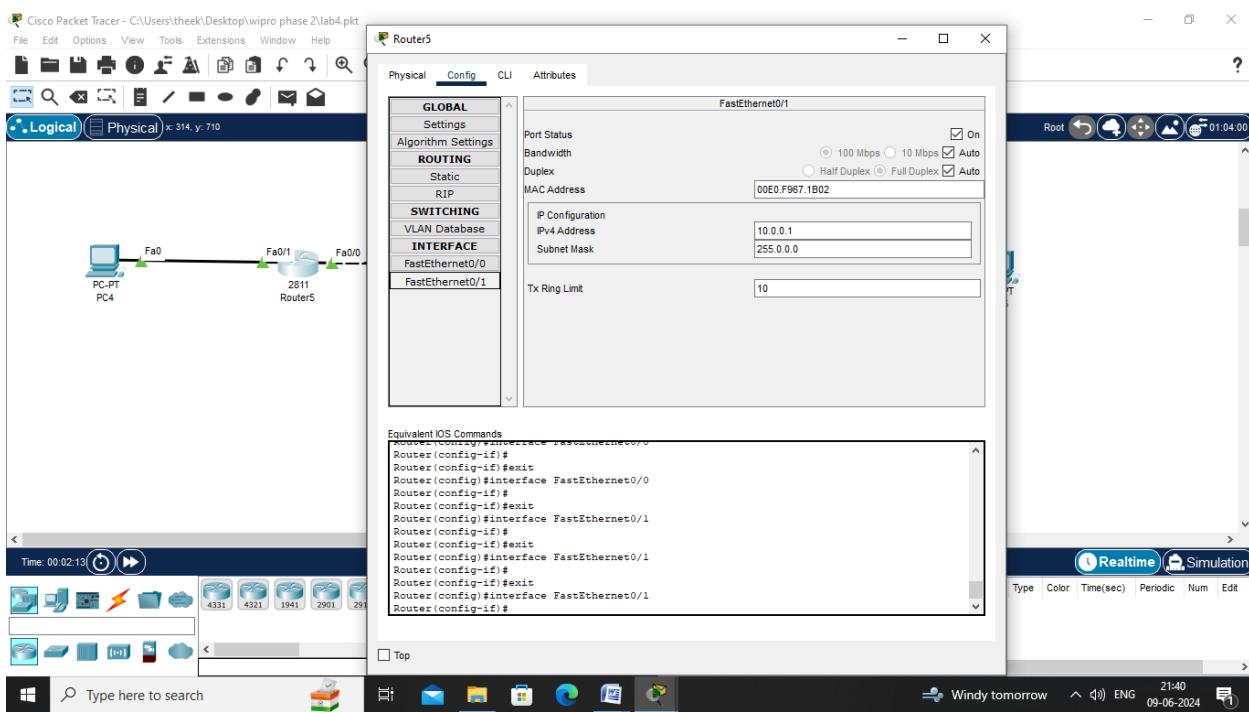


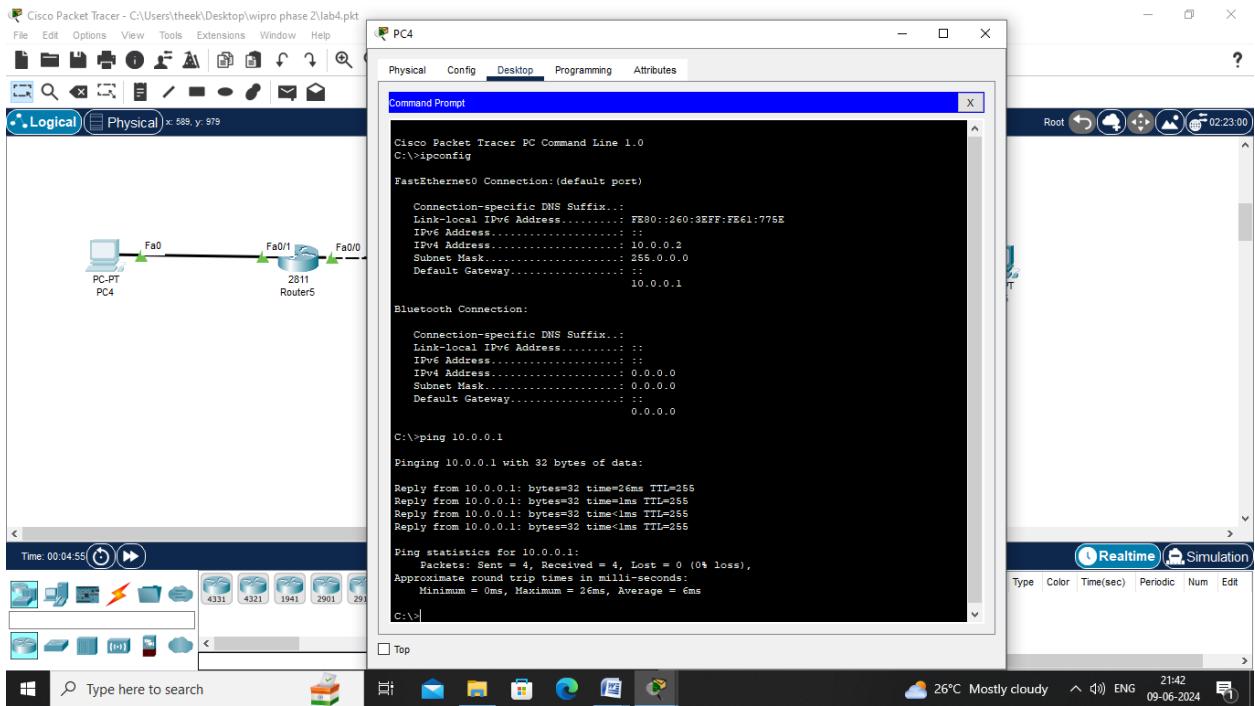
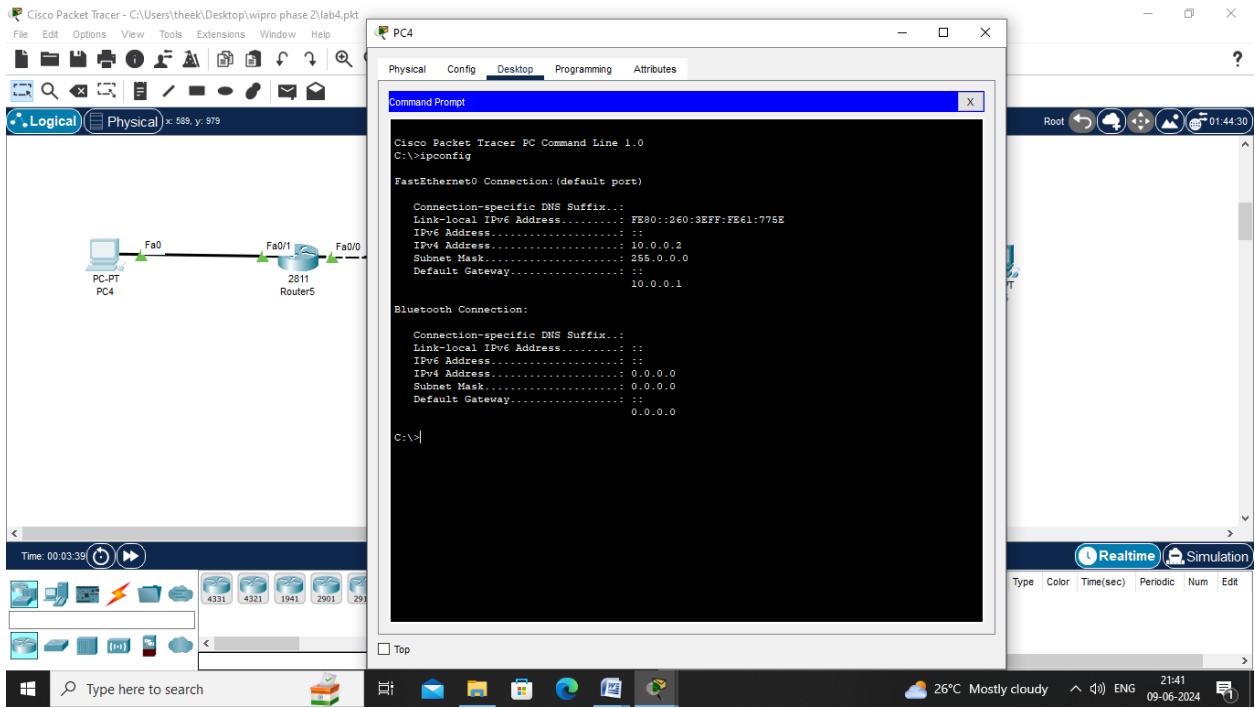


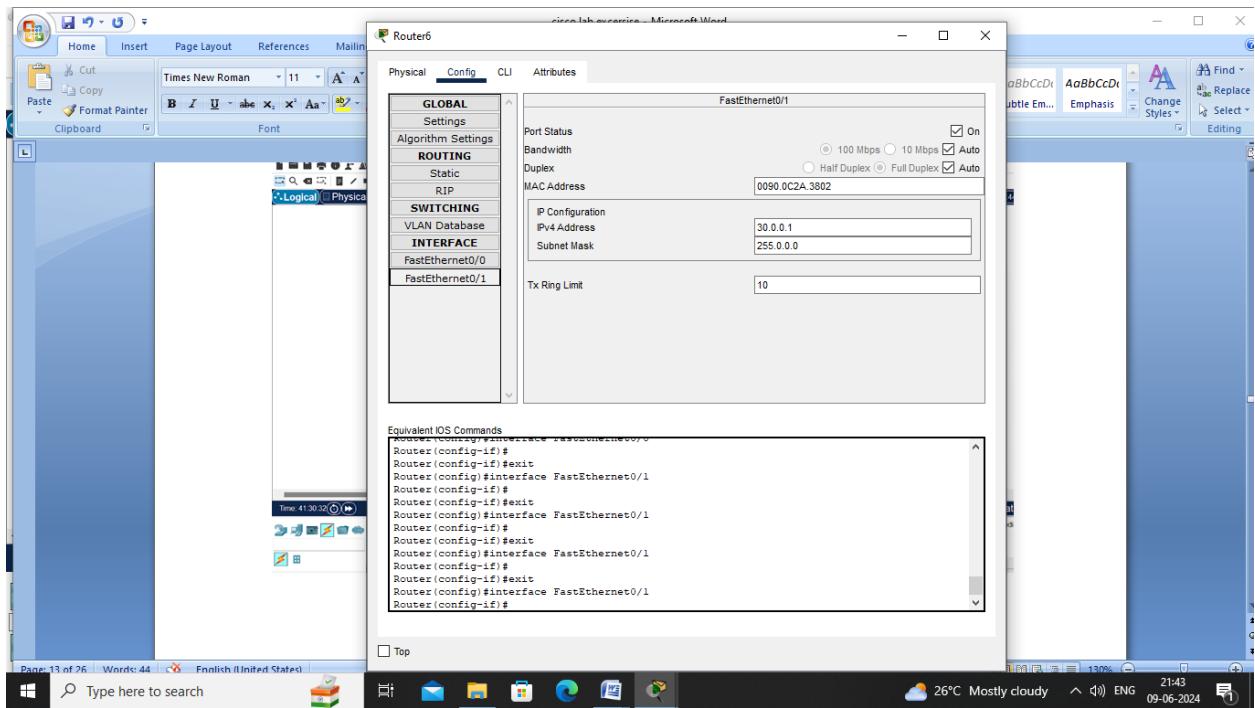
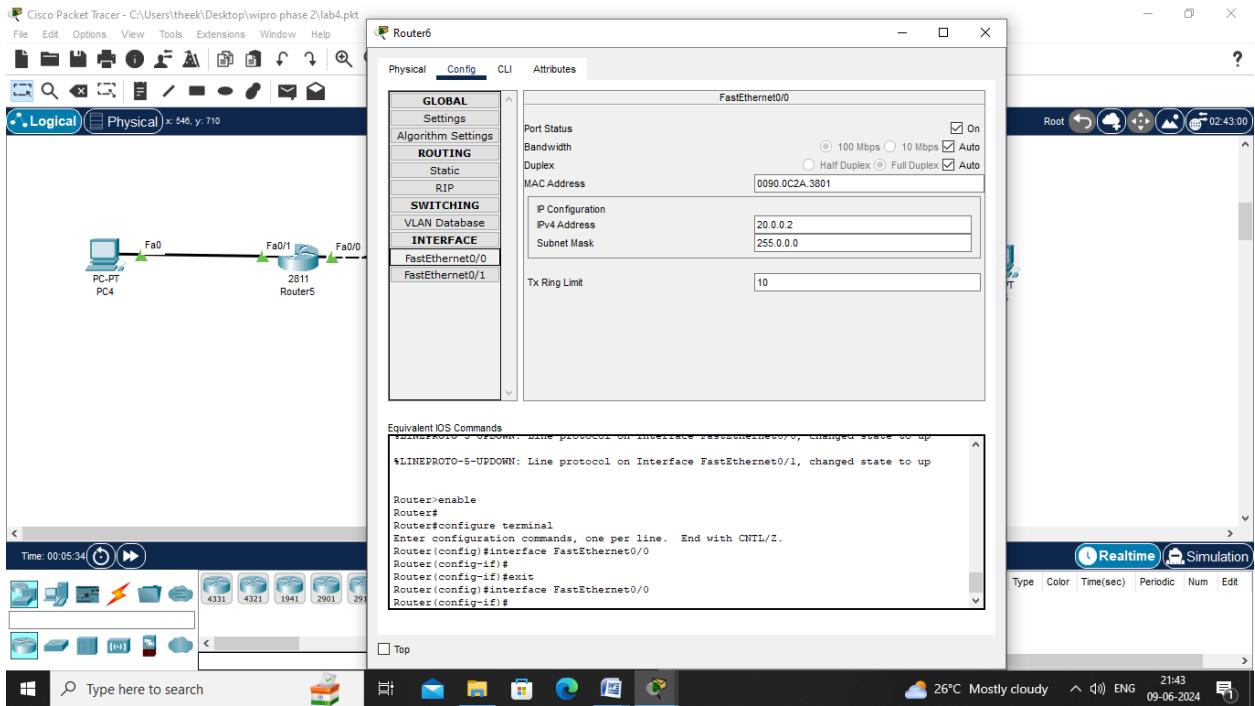


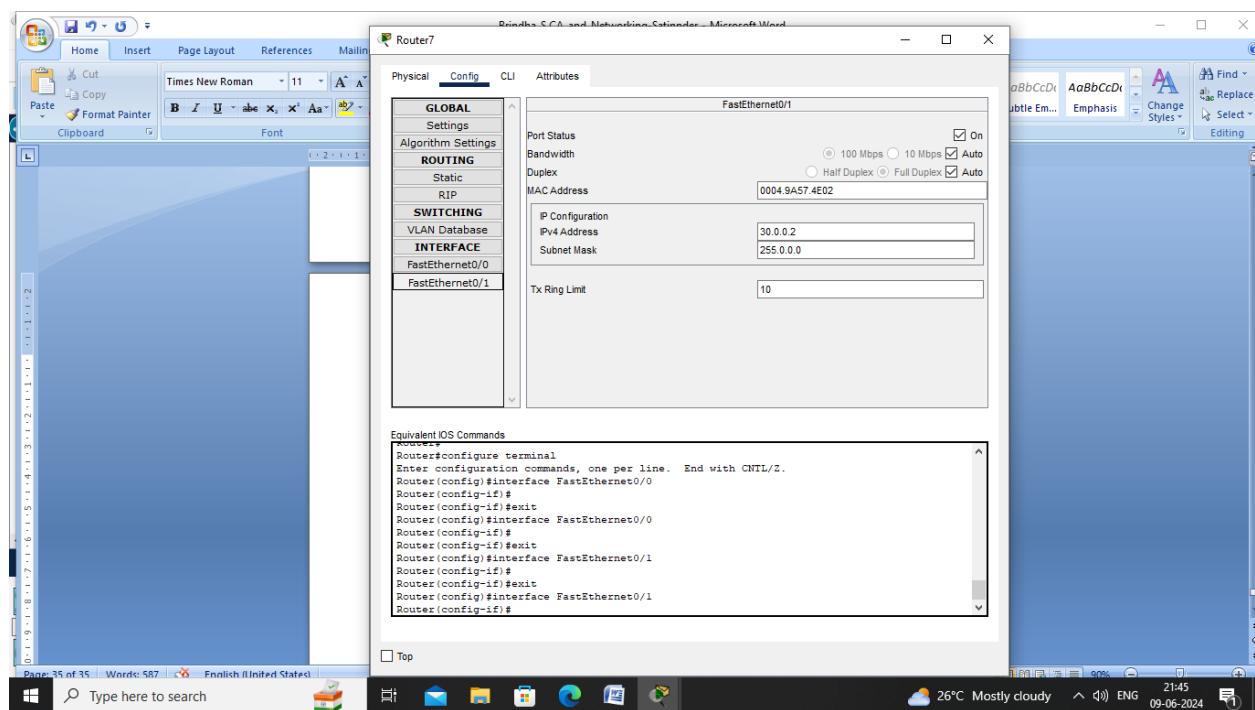
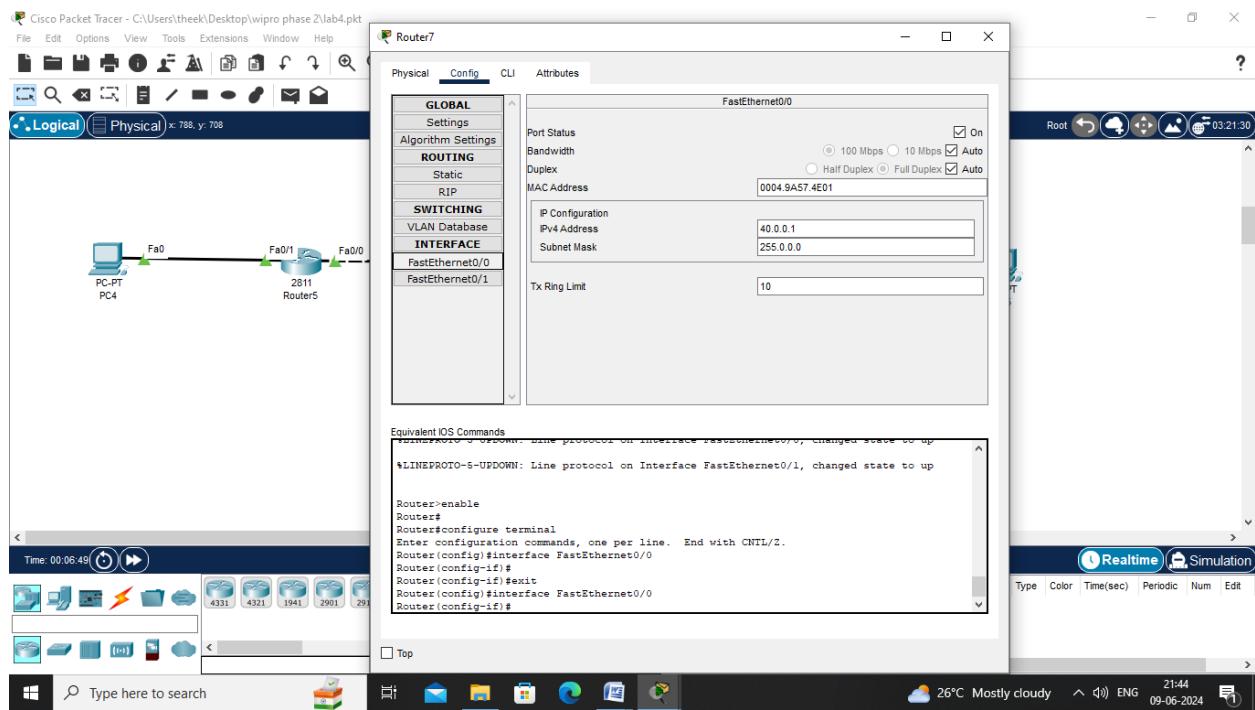
Lab 5: Static Routing (on three routers)

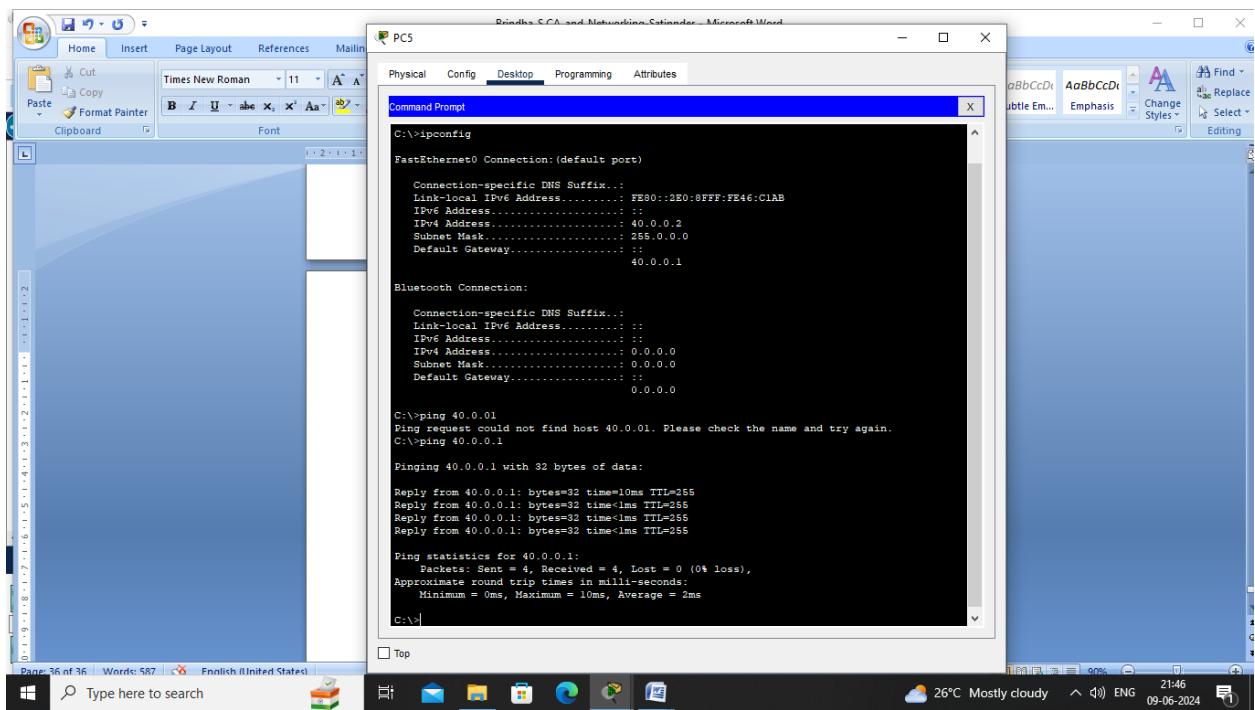
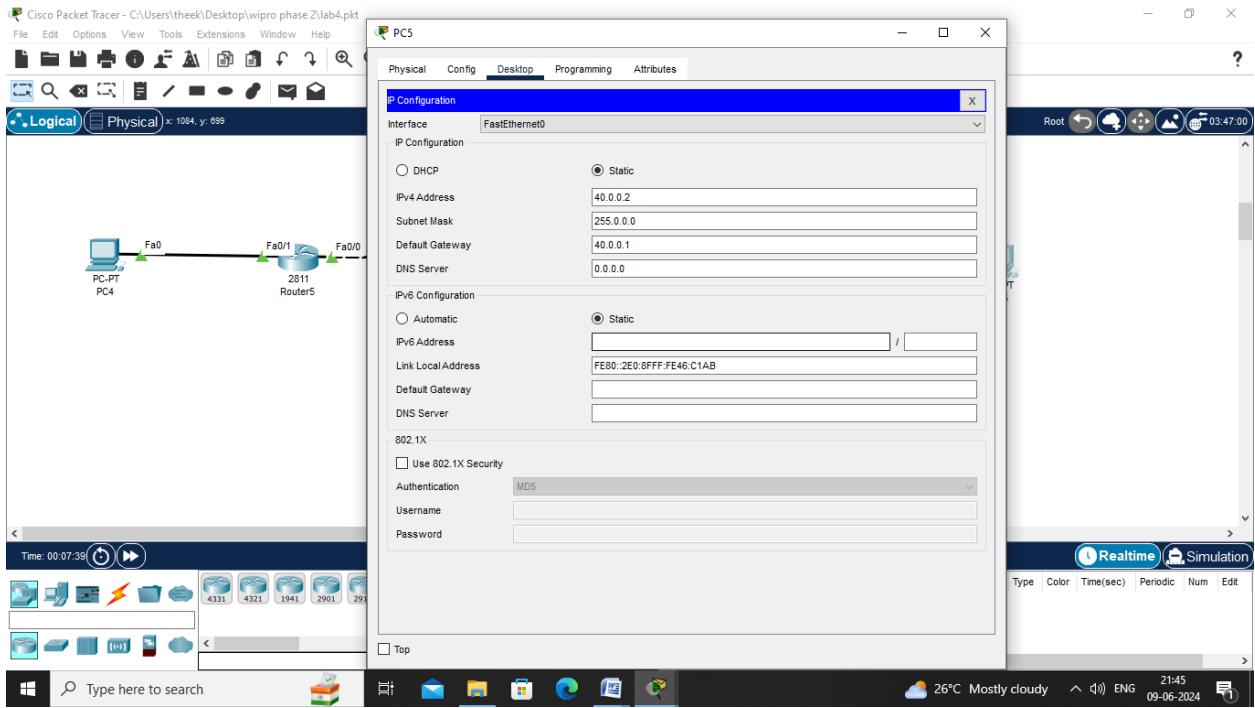


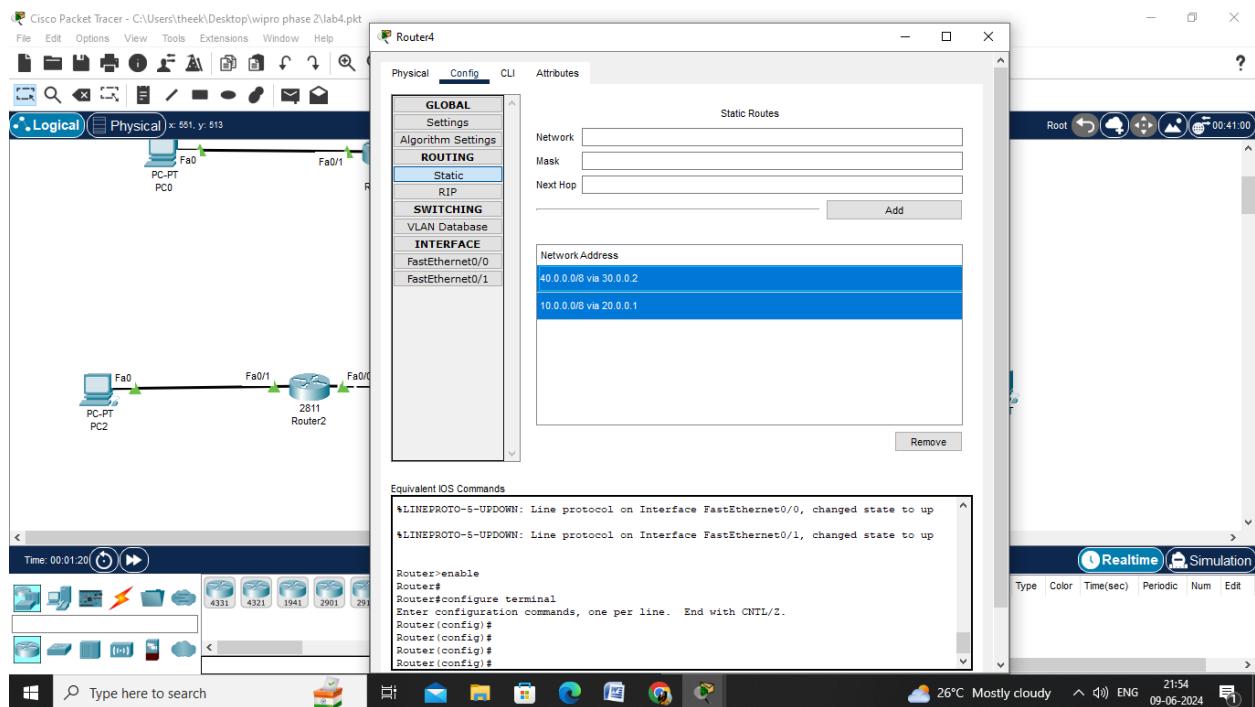
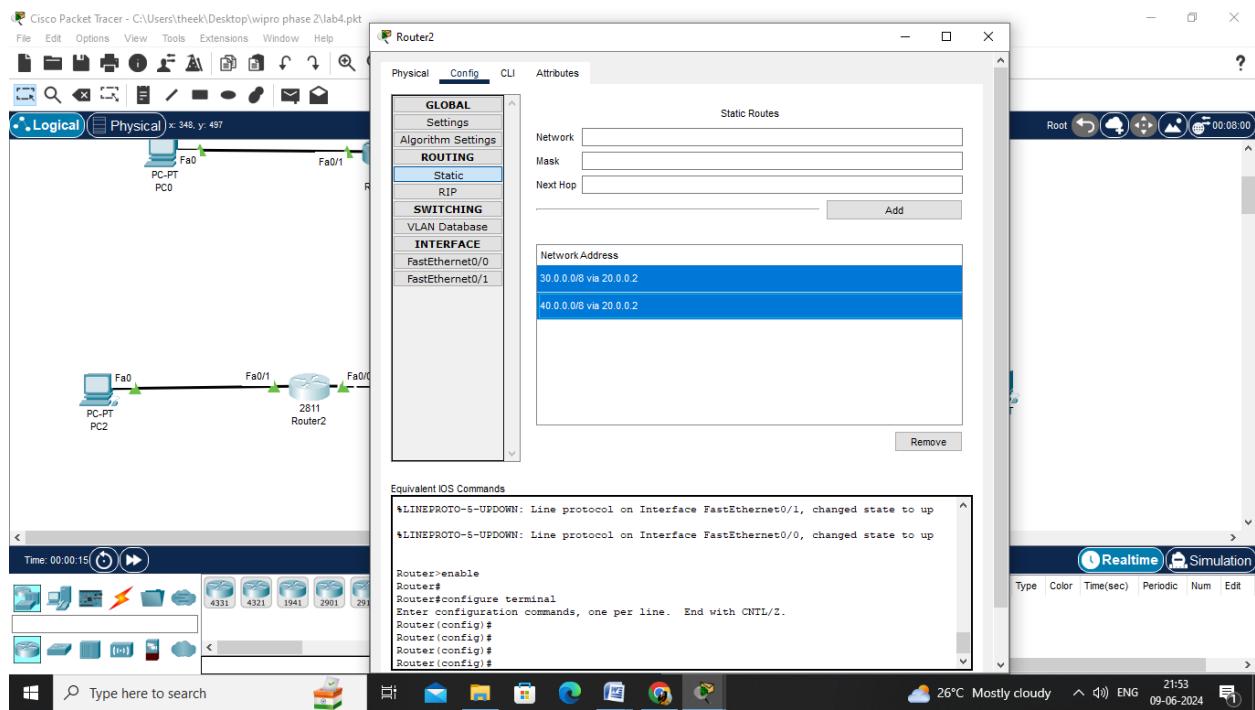


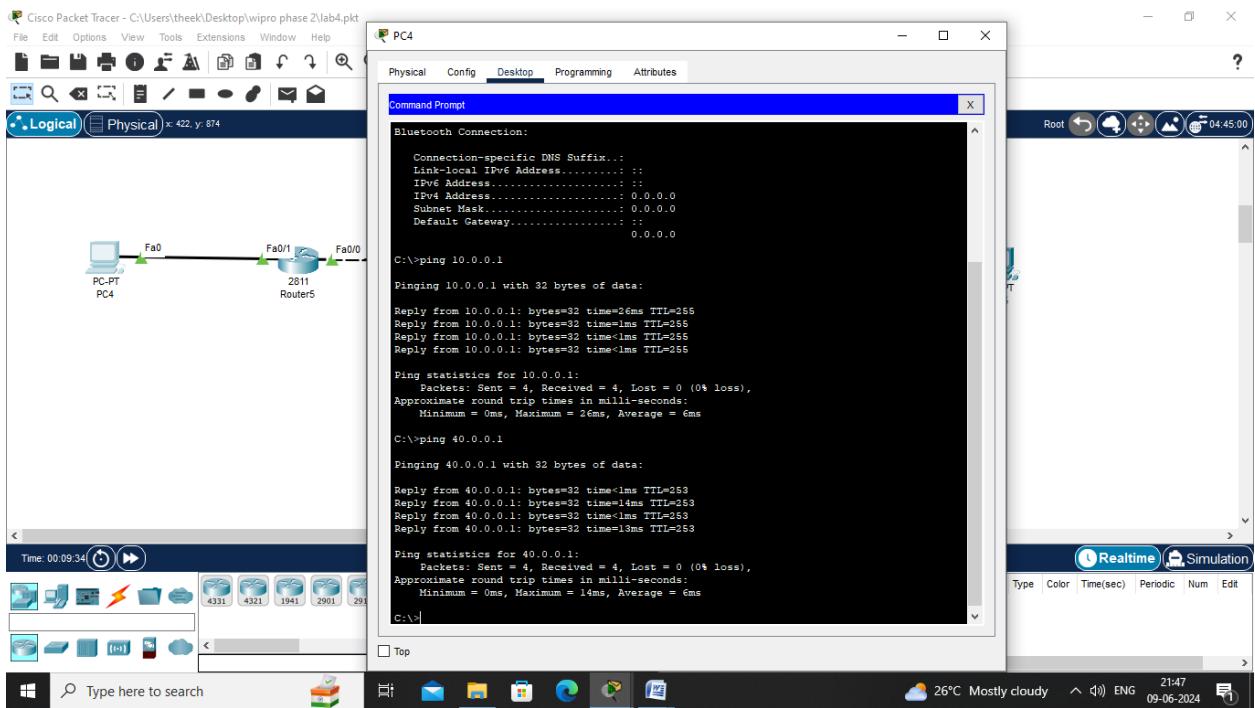
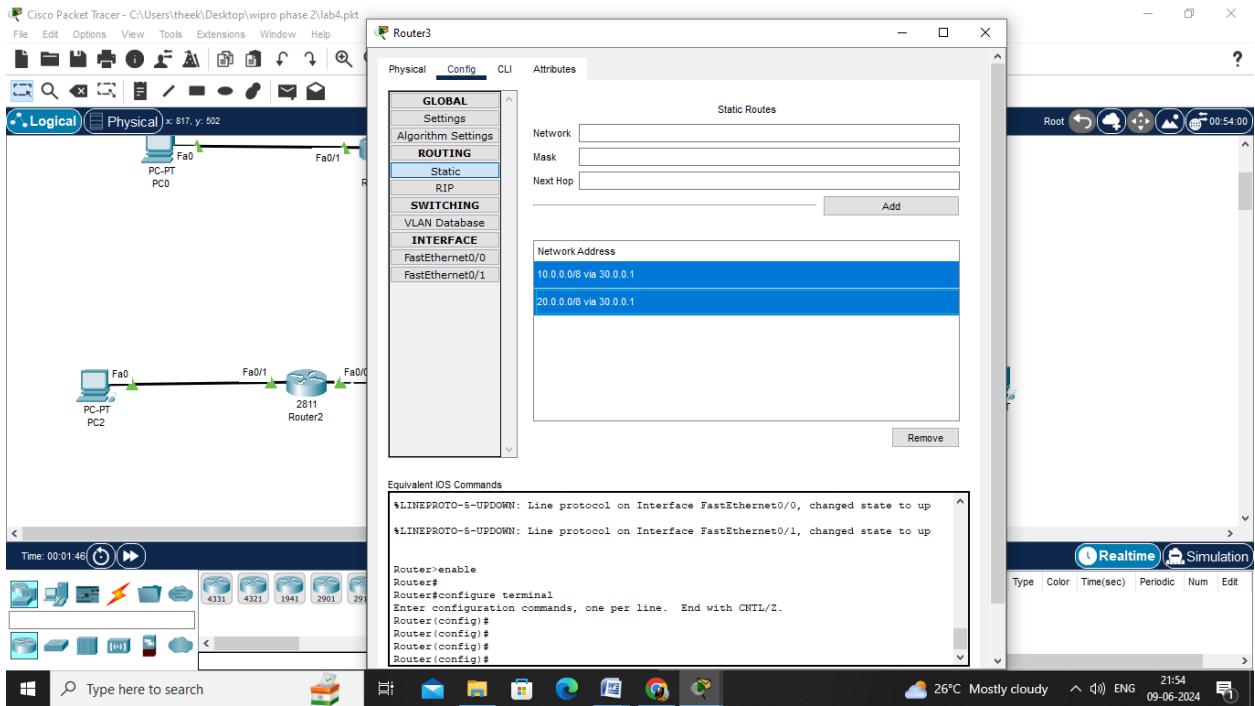


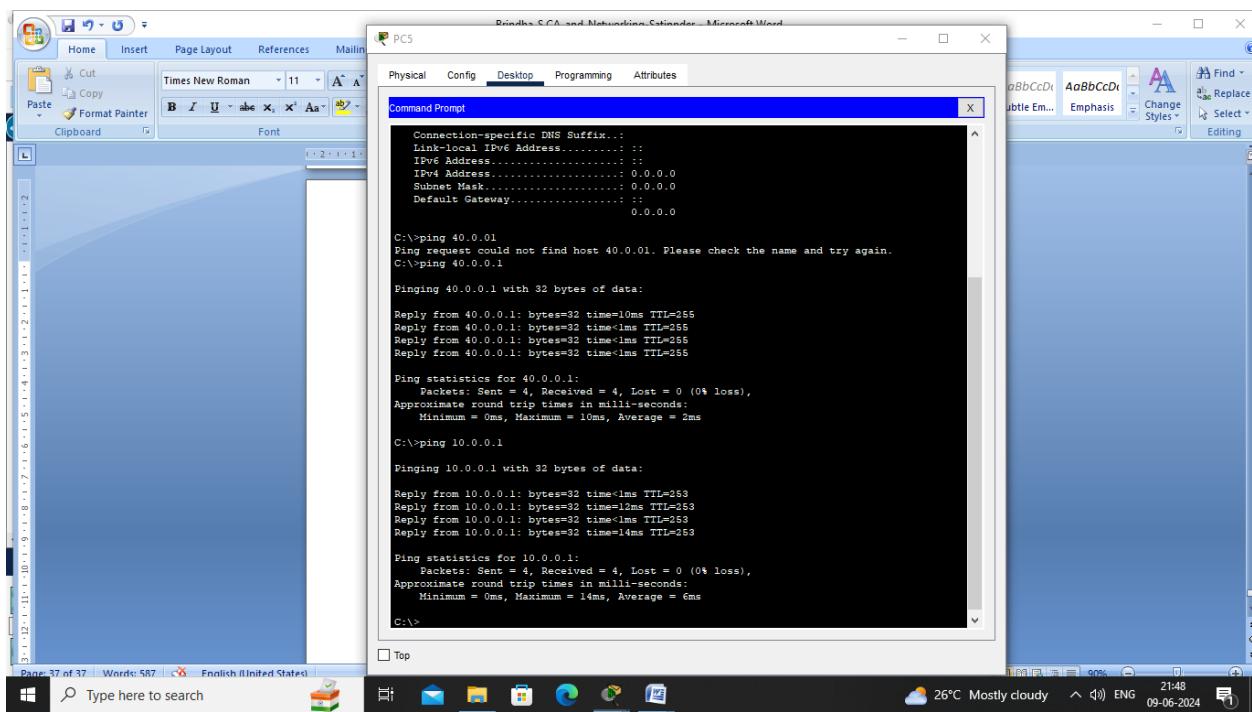












Lab 6: Dynamic Routing (on three routers)



