

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

<b>A-&gt;1-126</b>
<b>B-&gt;128-191</b>
<b>C-&gt;192-223</b>
<b>D-&gt;224-239</b>

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**

<b>A-&gt;1-127</b>
<b>B-&gt;128-191 AN H H H</b>
<b>C-&gt;192-223 B-&gt;N N H H</b>
<b>D-&gt;224-239 C-&gt; N N N H</b>

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

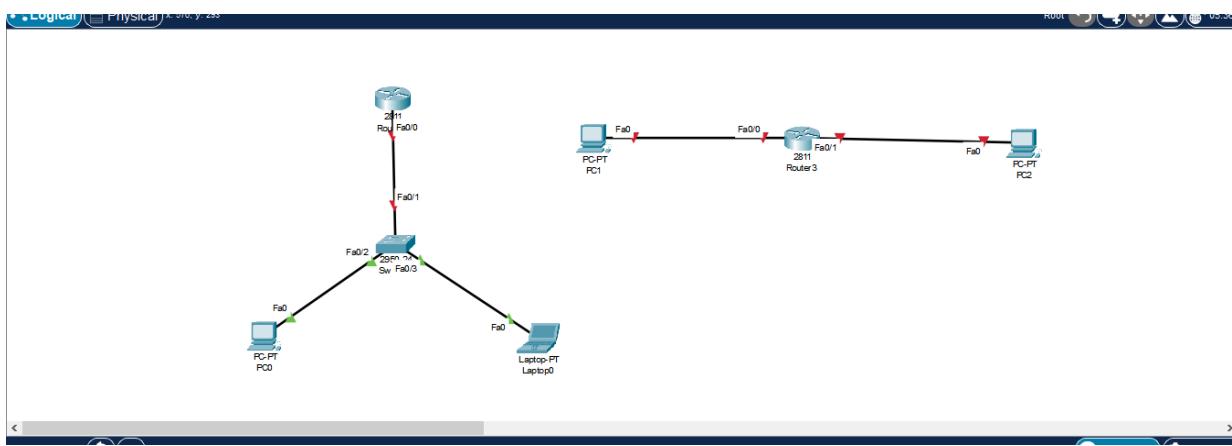
Number of usable addresses 30

Number of bits borrowed 3

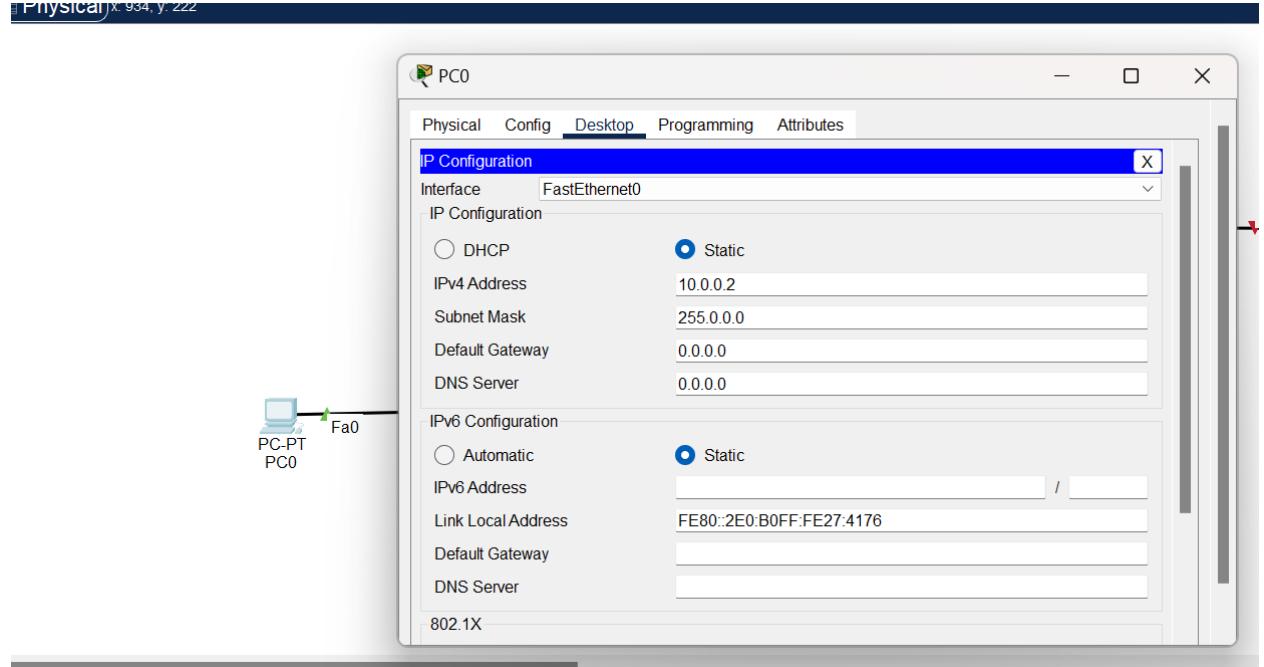
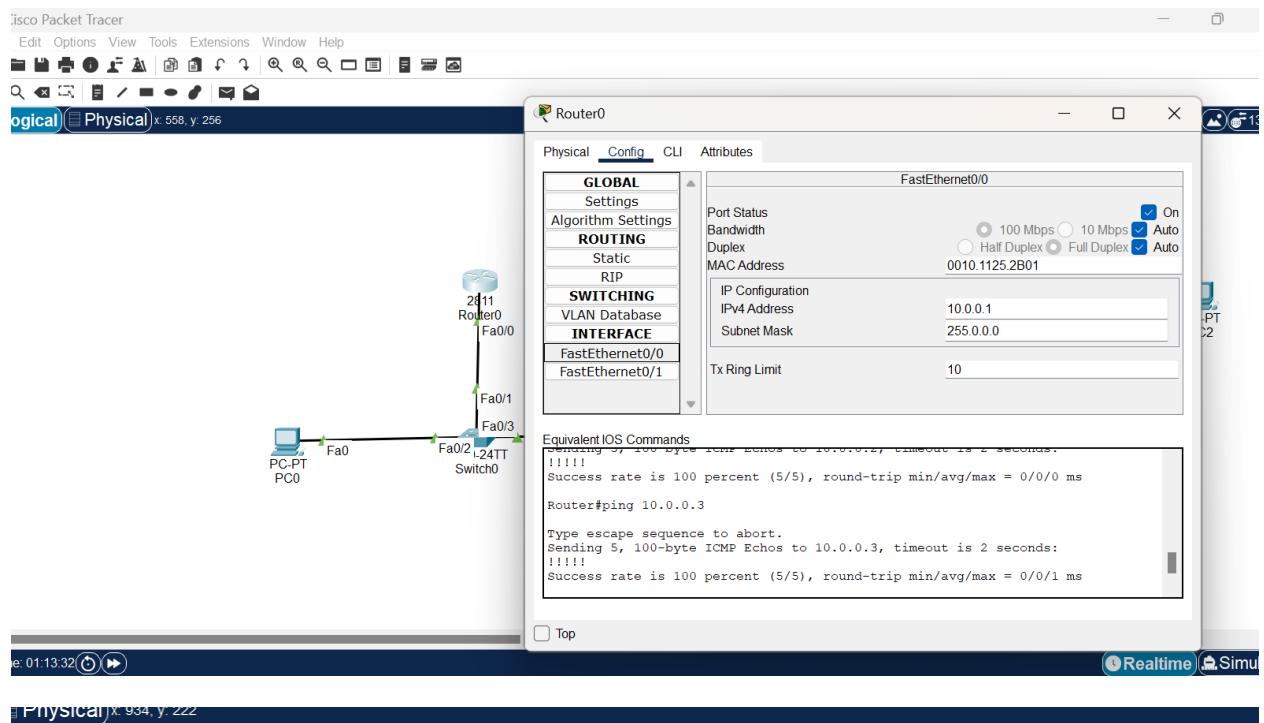
## Cisco Packet Tracer

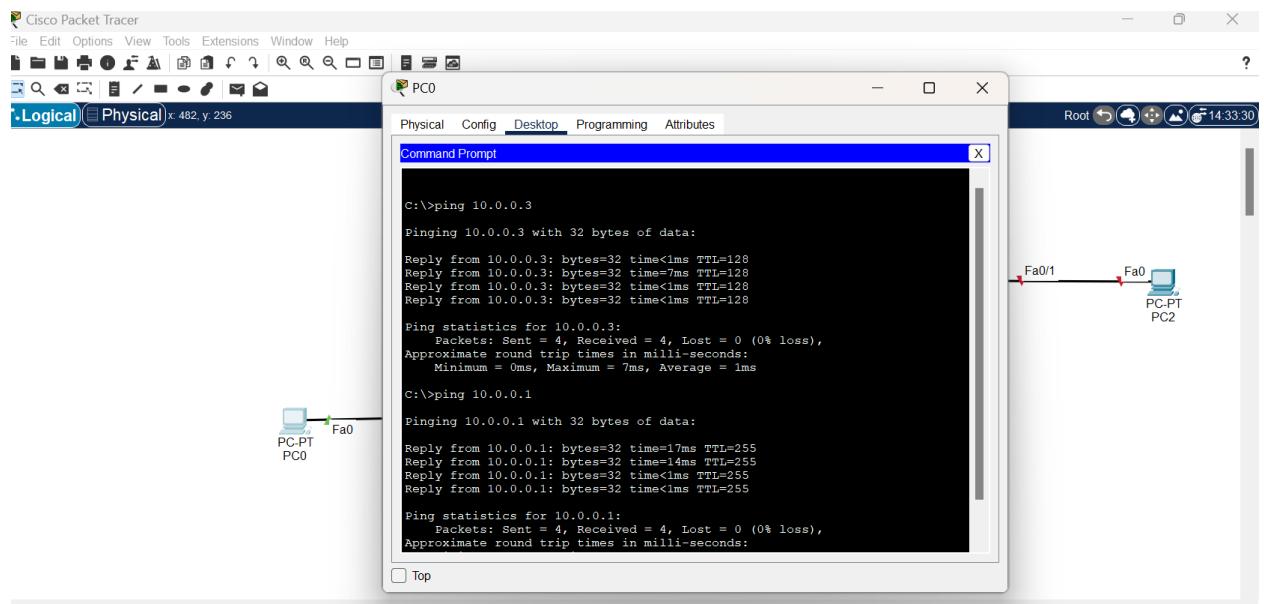
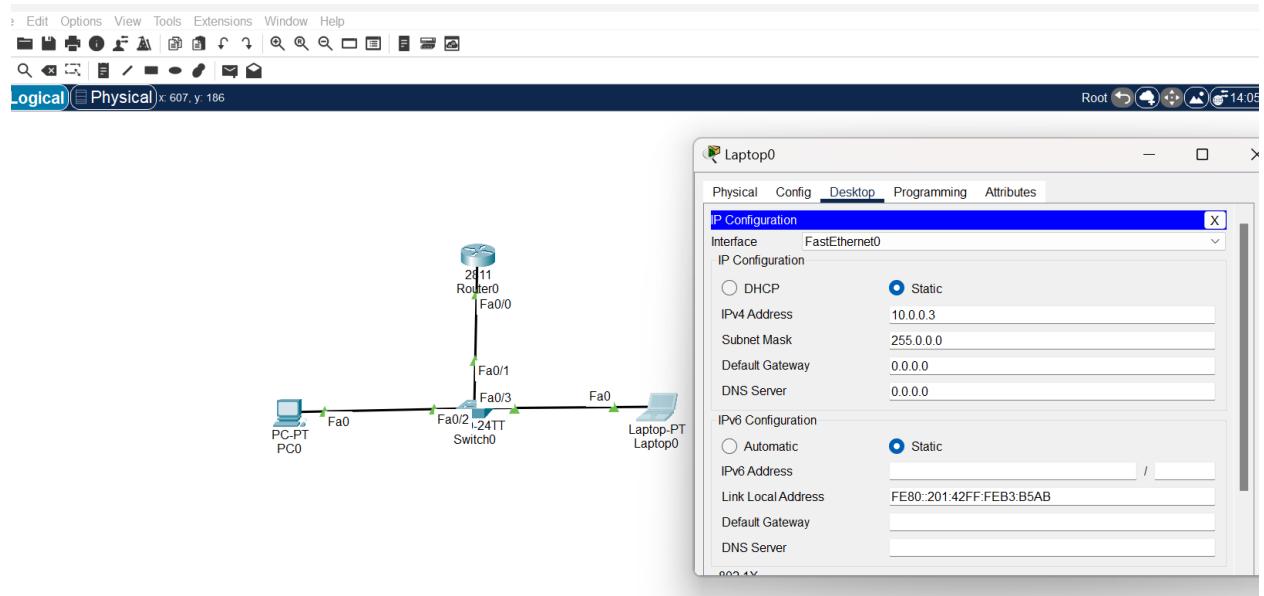
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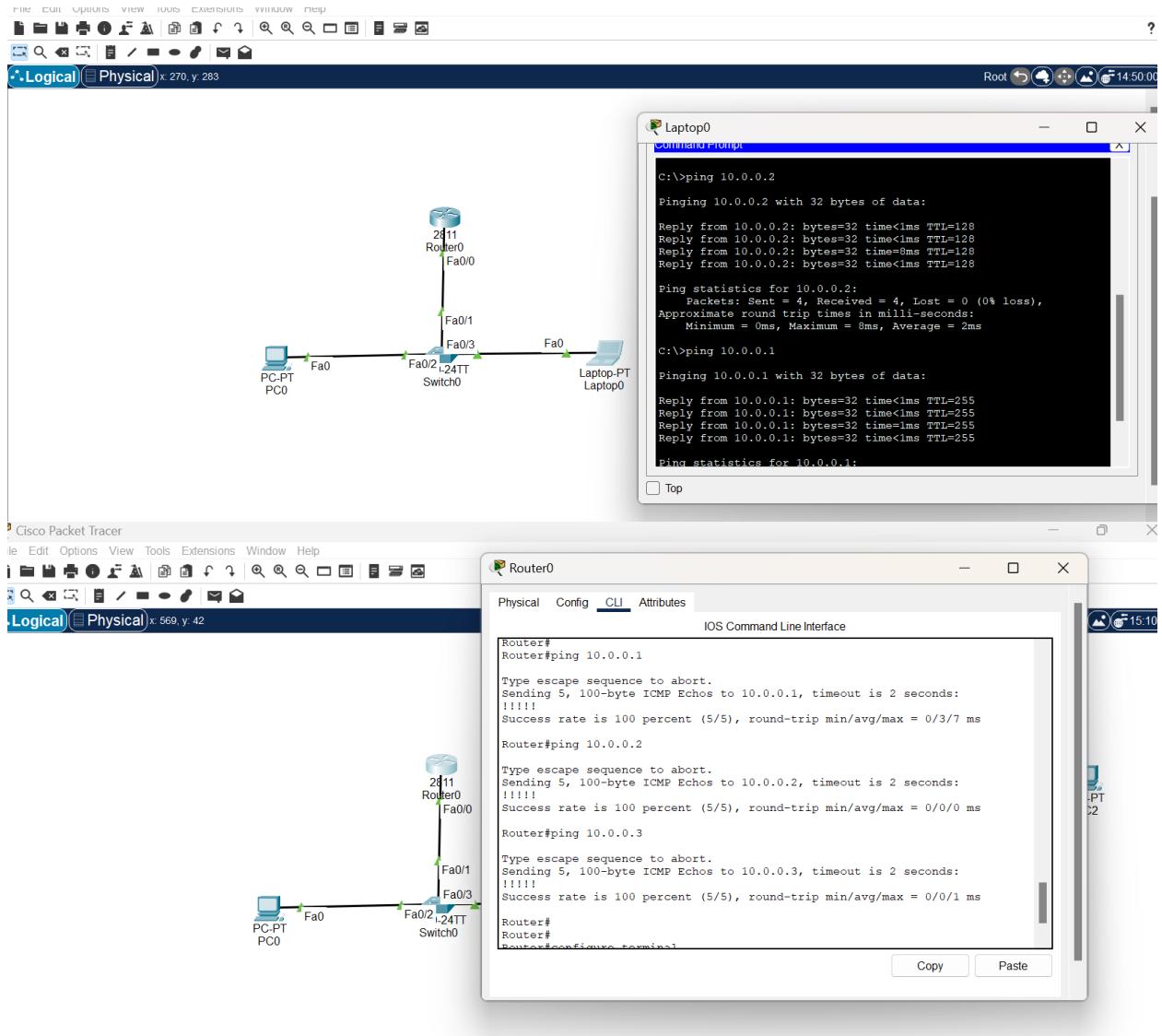
Lab 1: Connecting the Devices

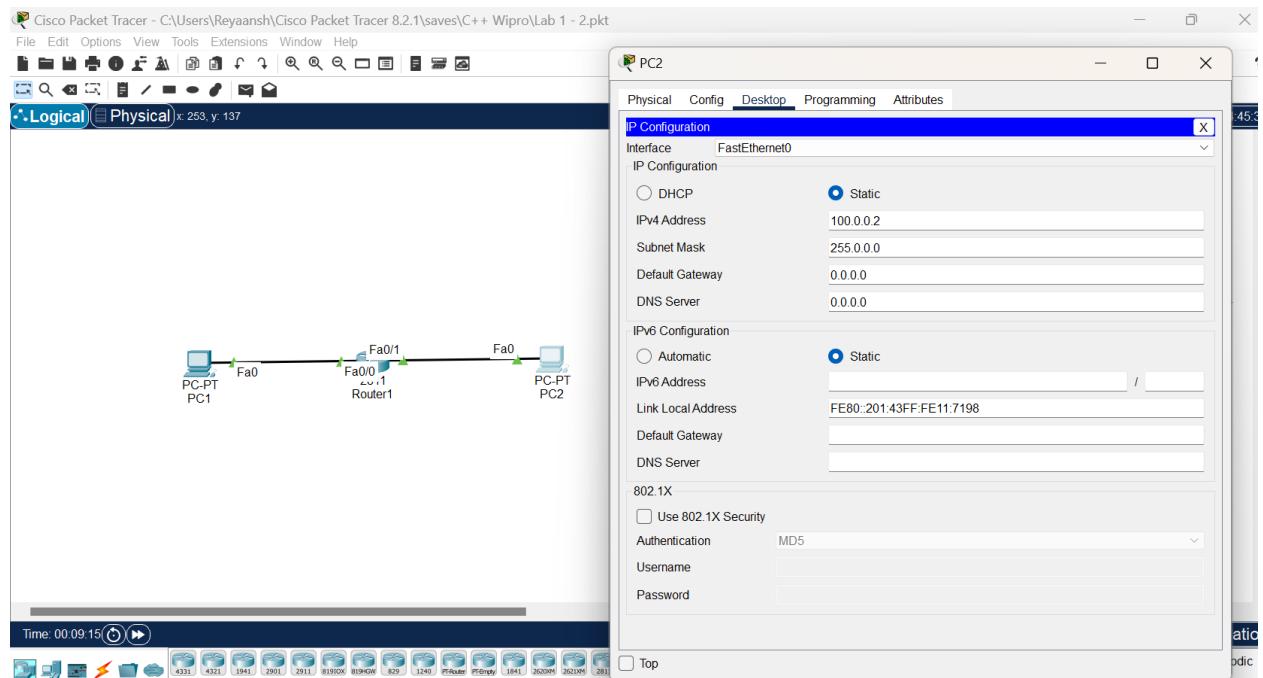
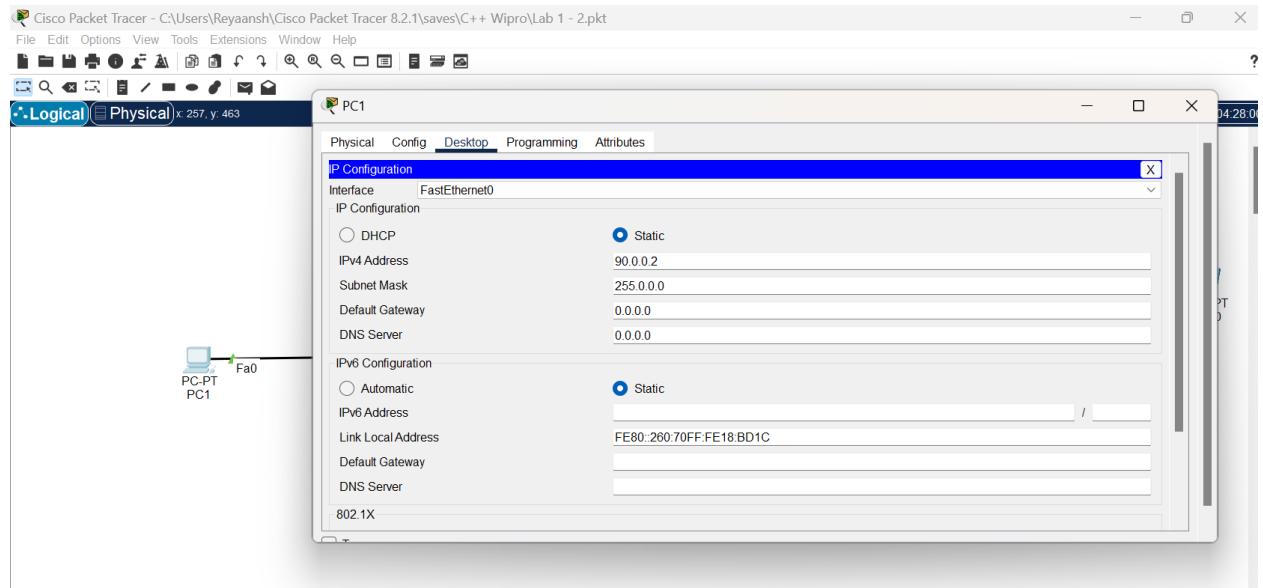


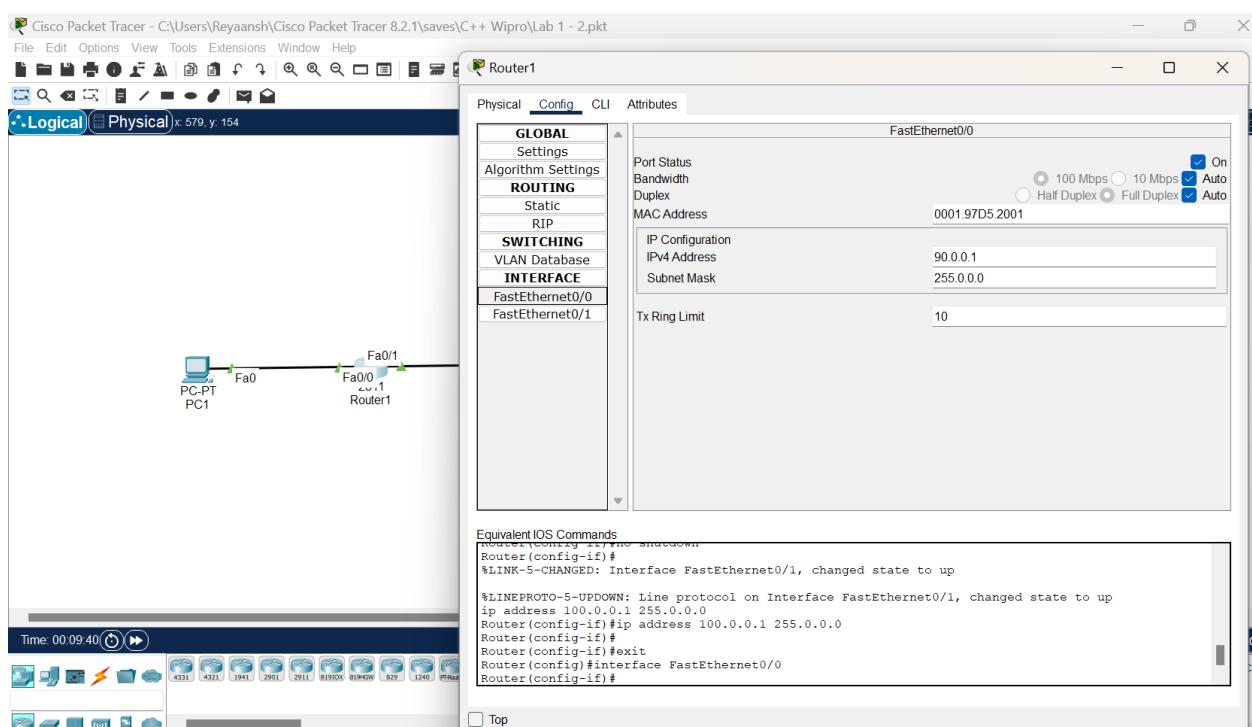
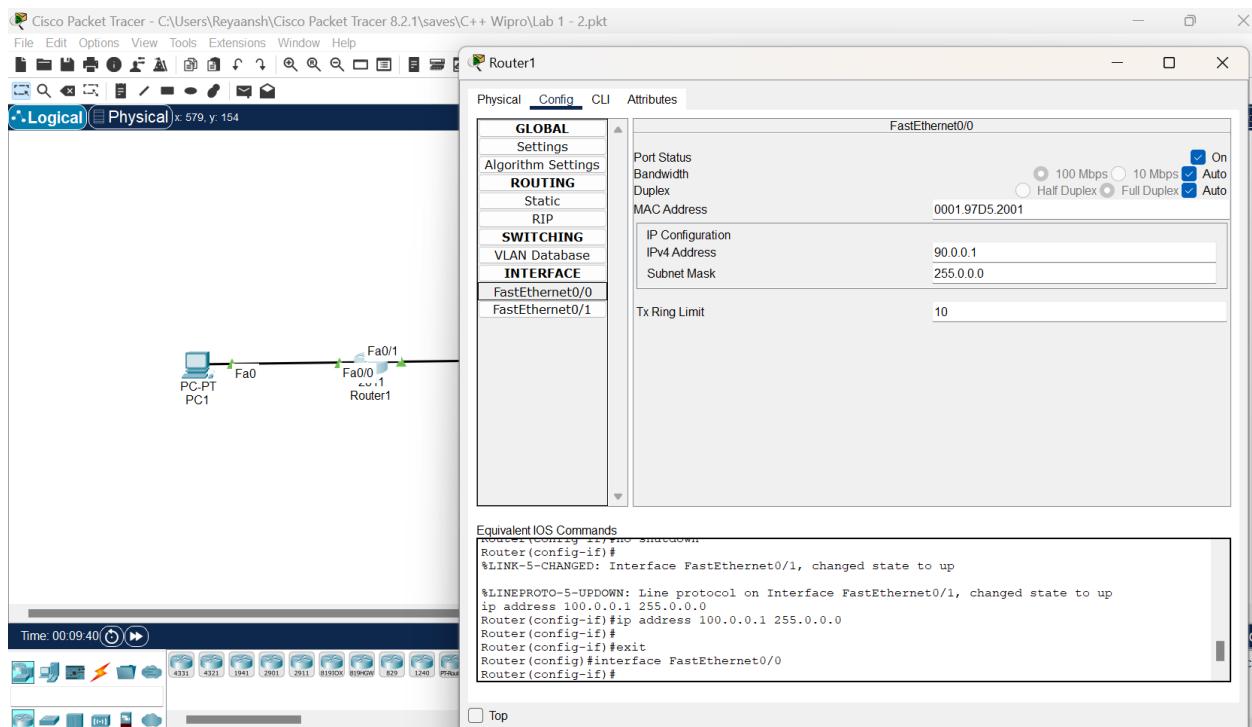
Lab 2: IP address Configuration and Ping check

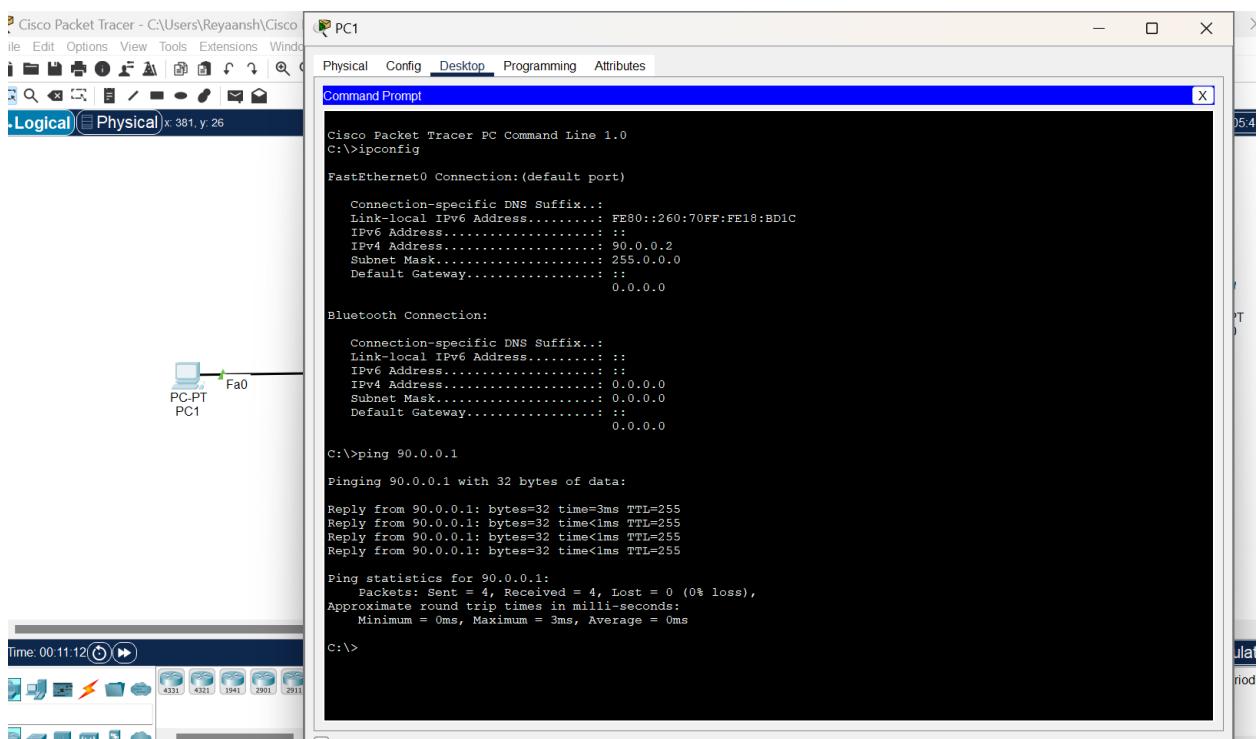
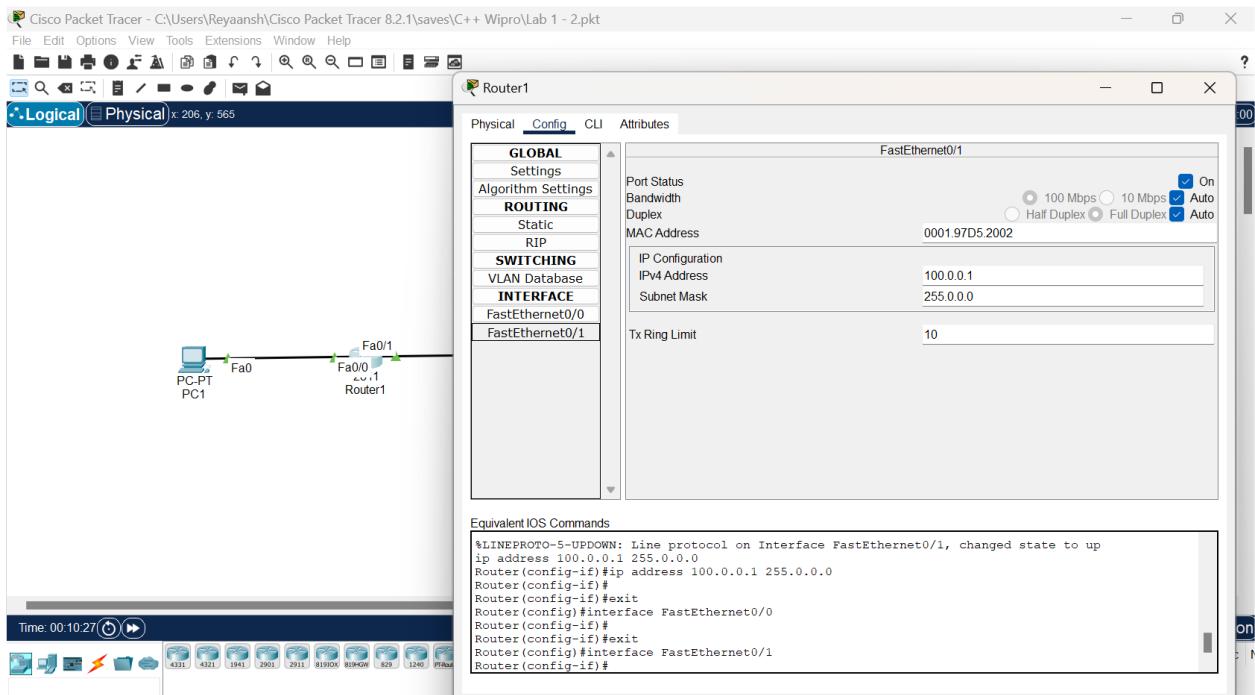




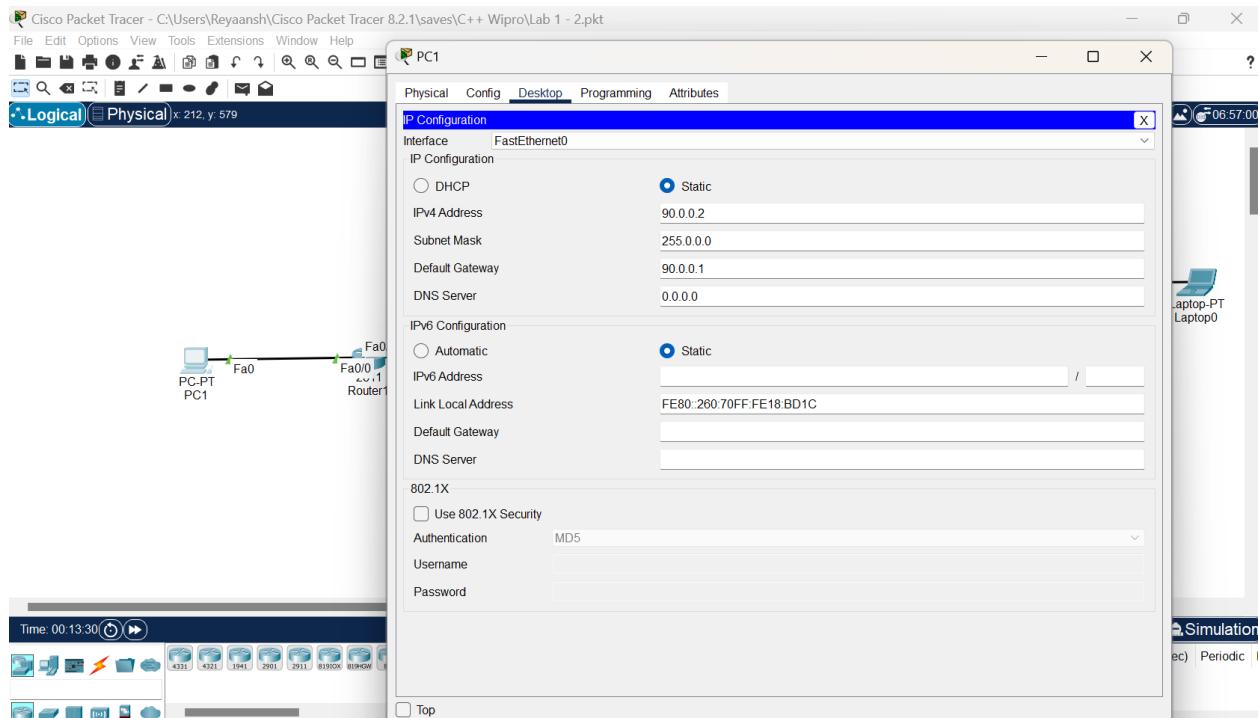
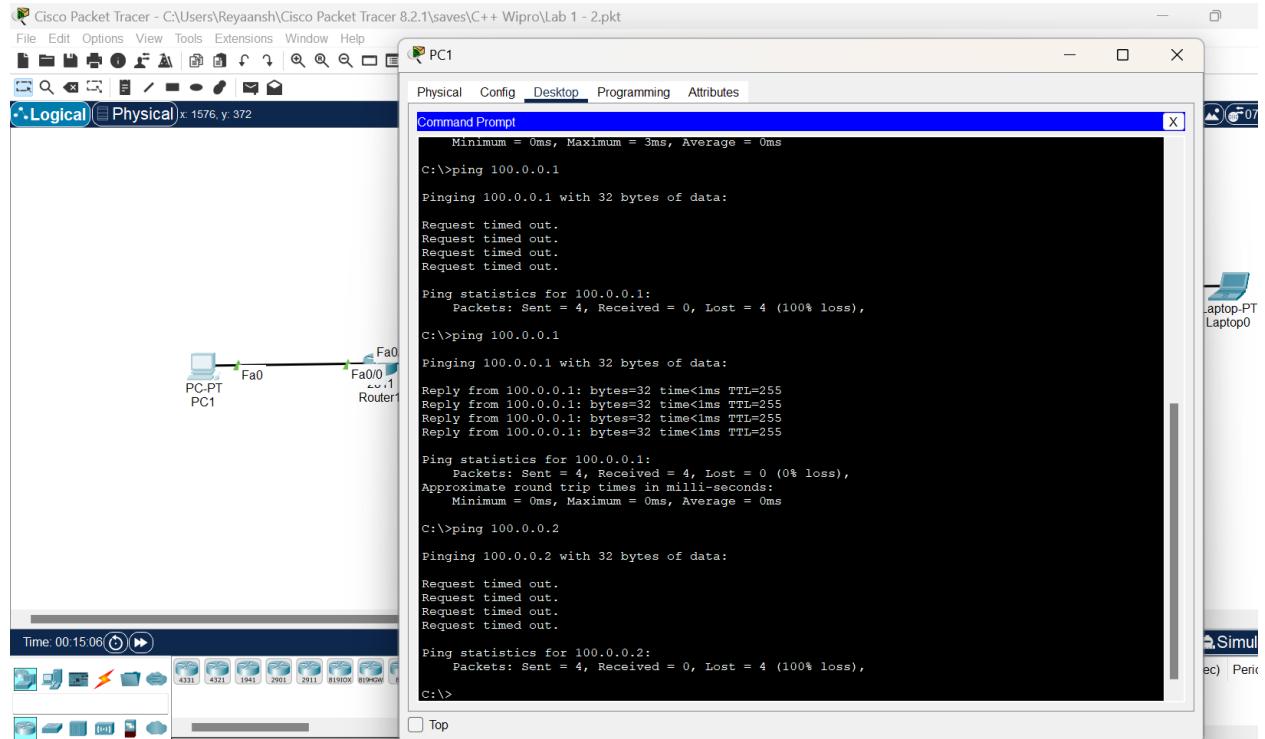


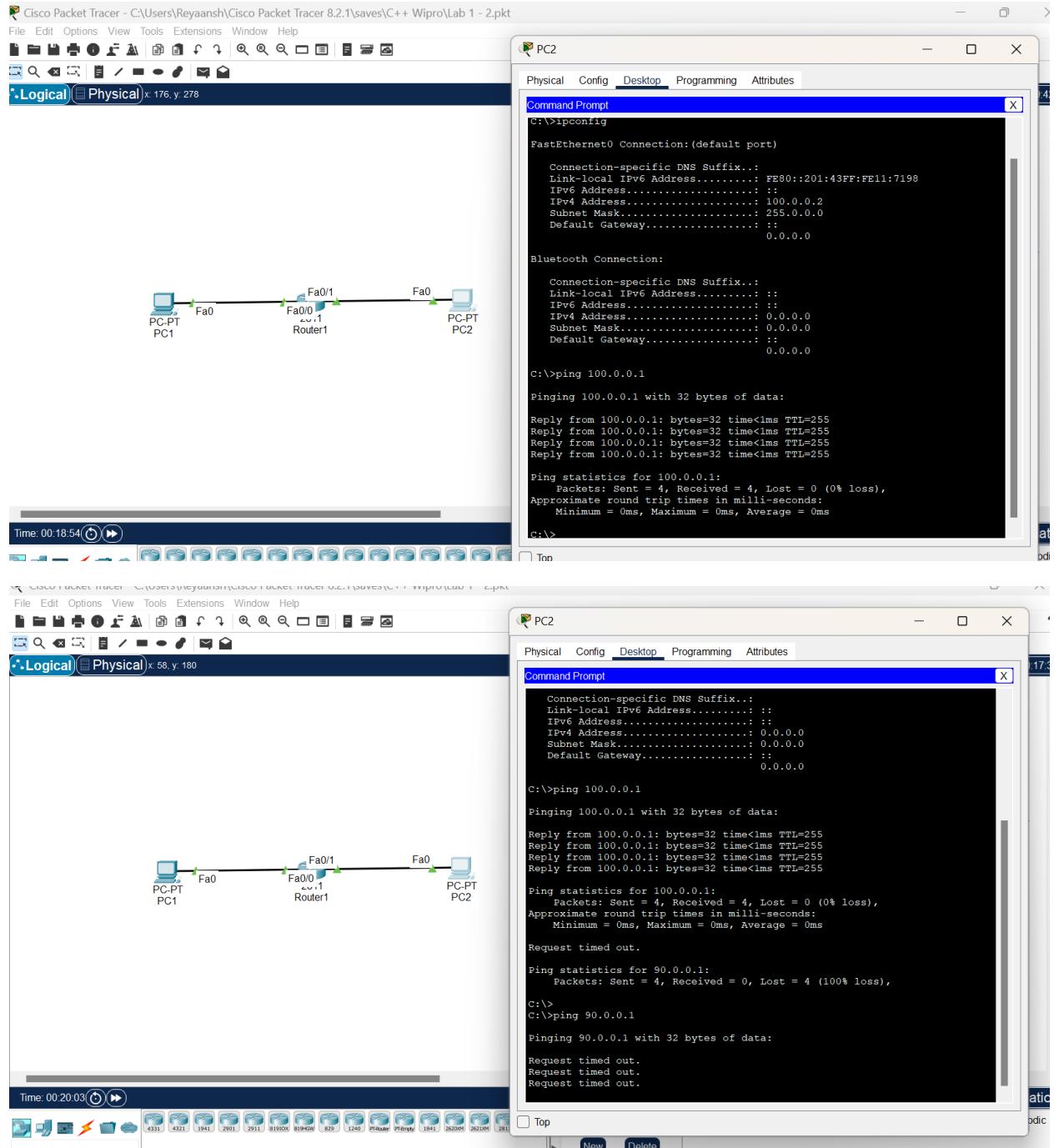


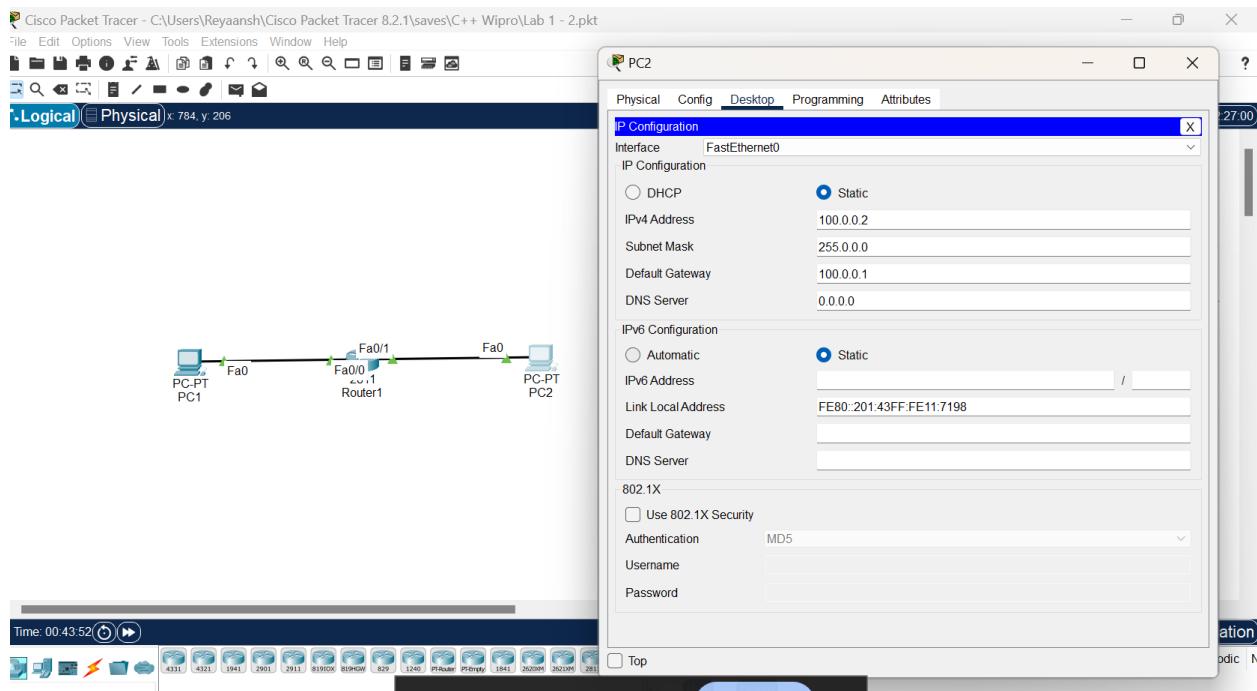
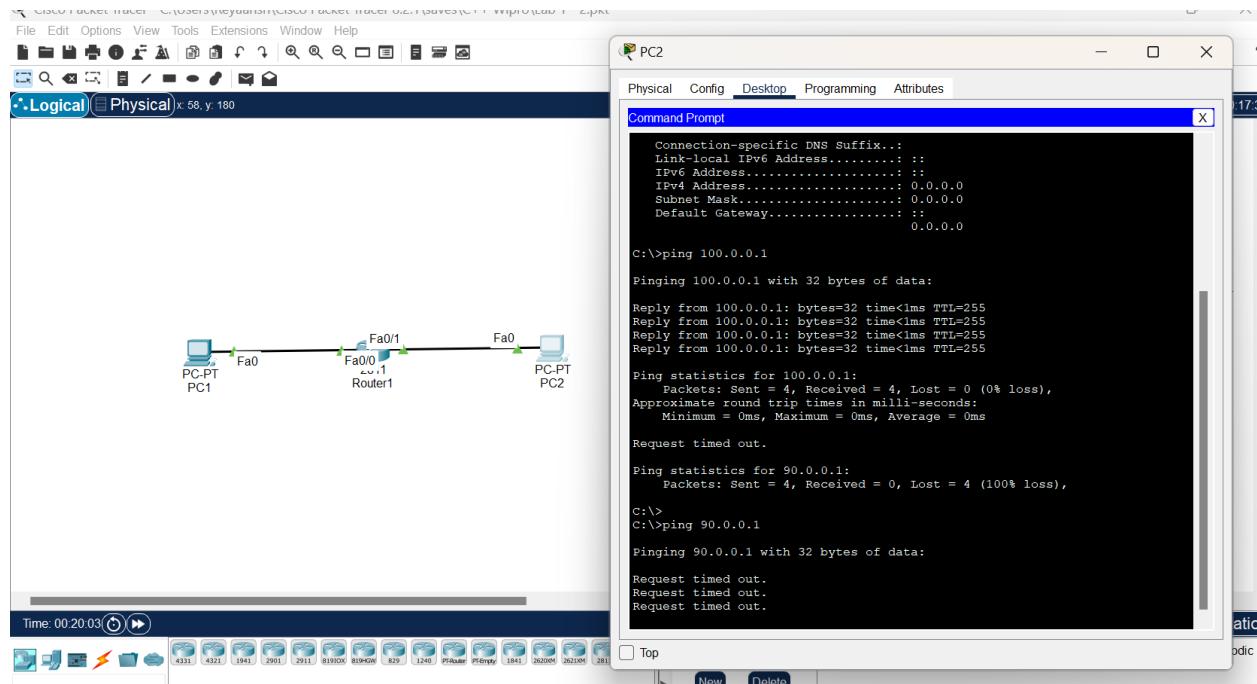




### Lab 3: Configuring Default Gateway

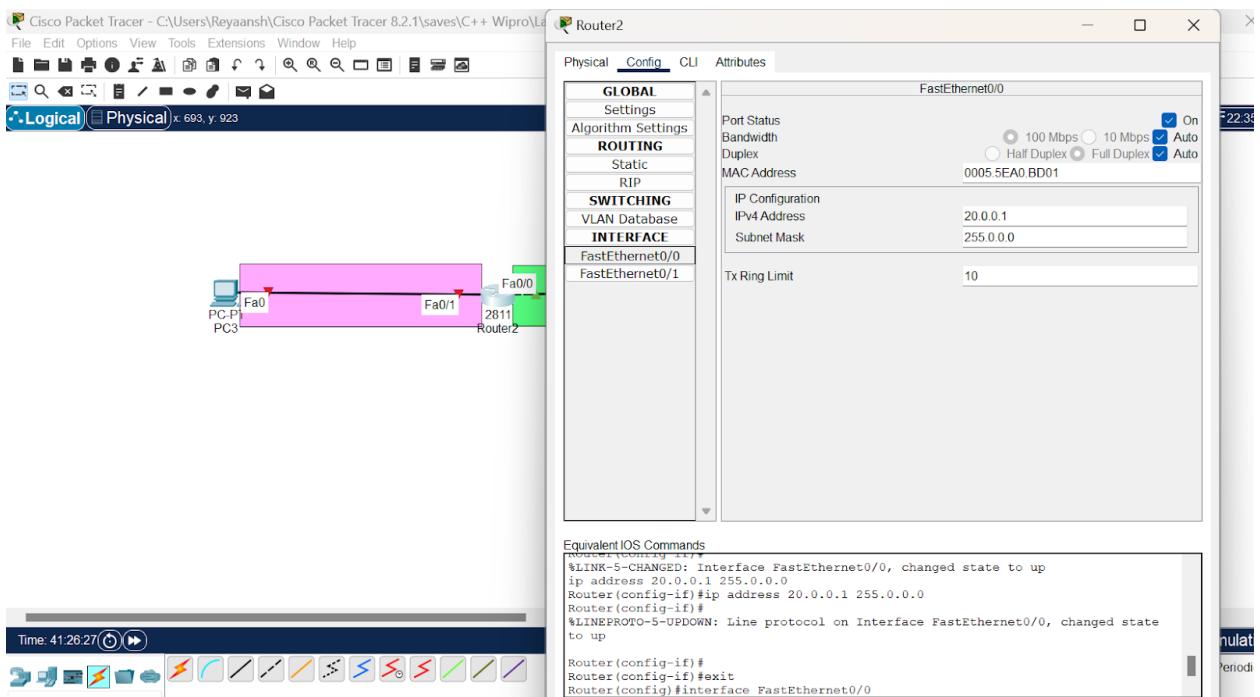
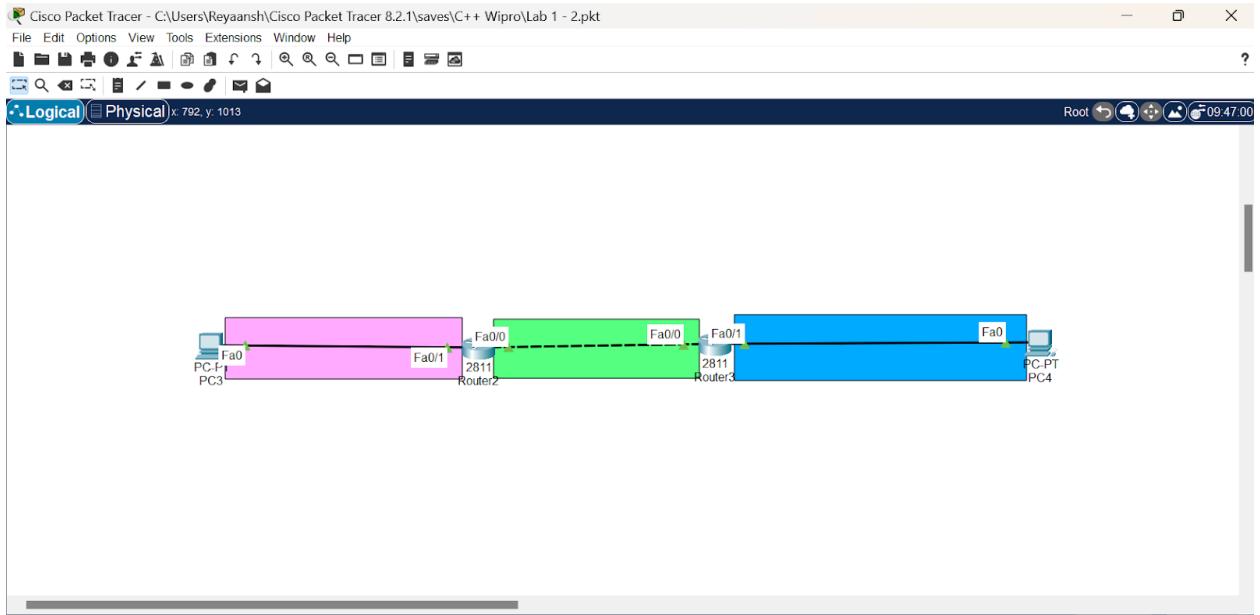


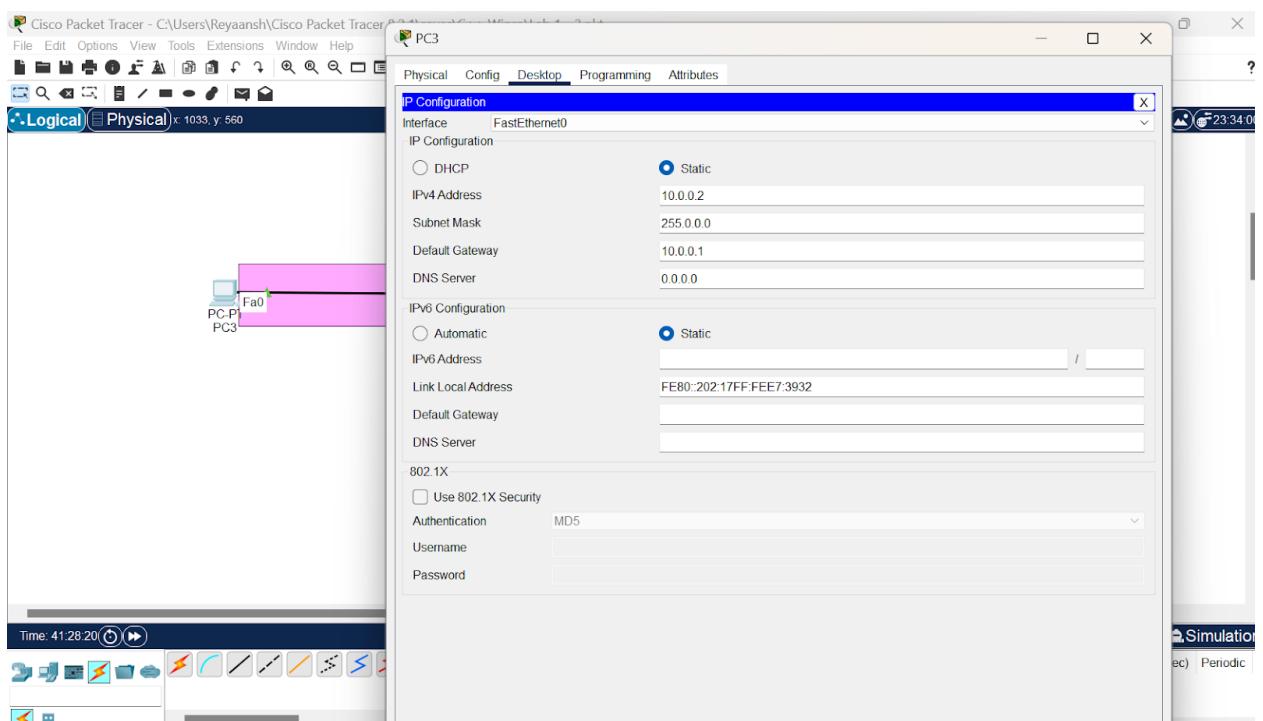
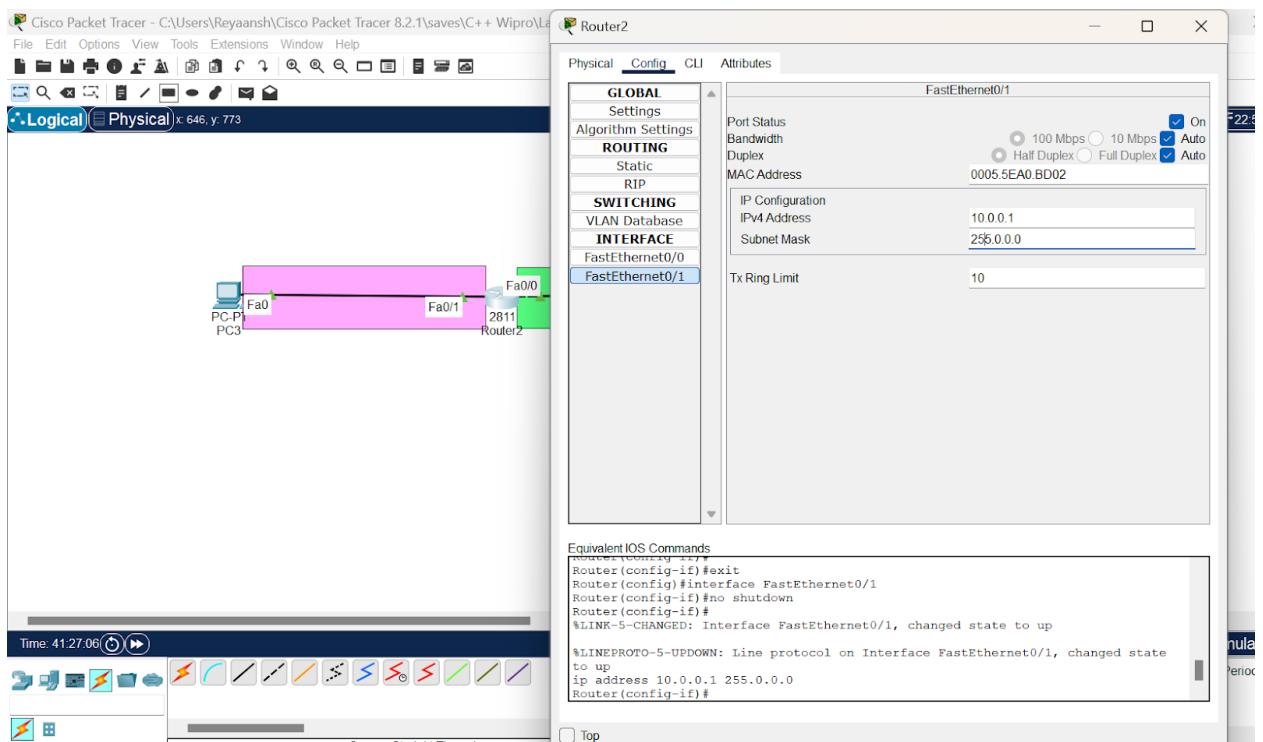


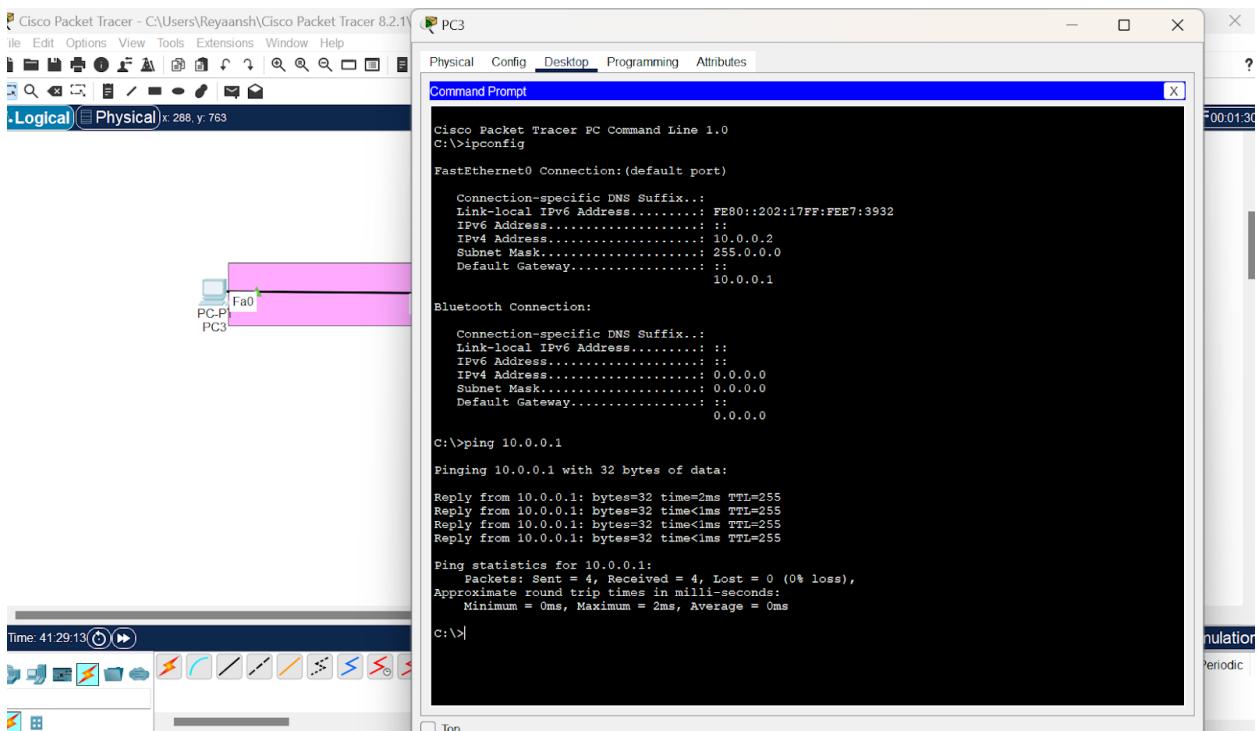
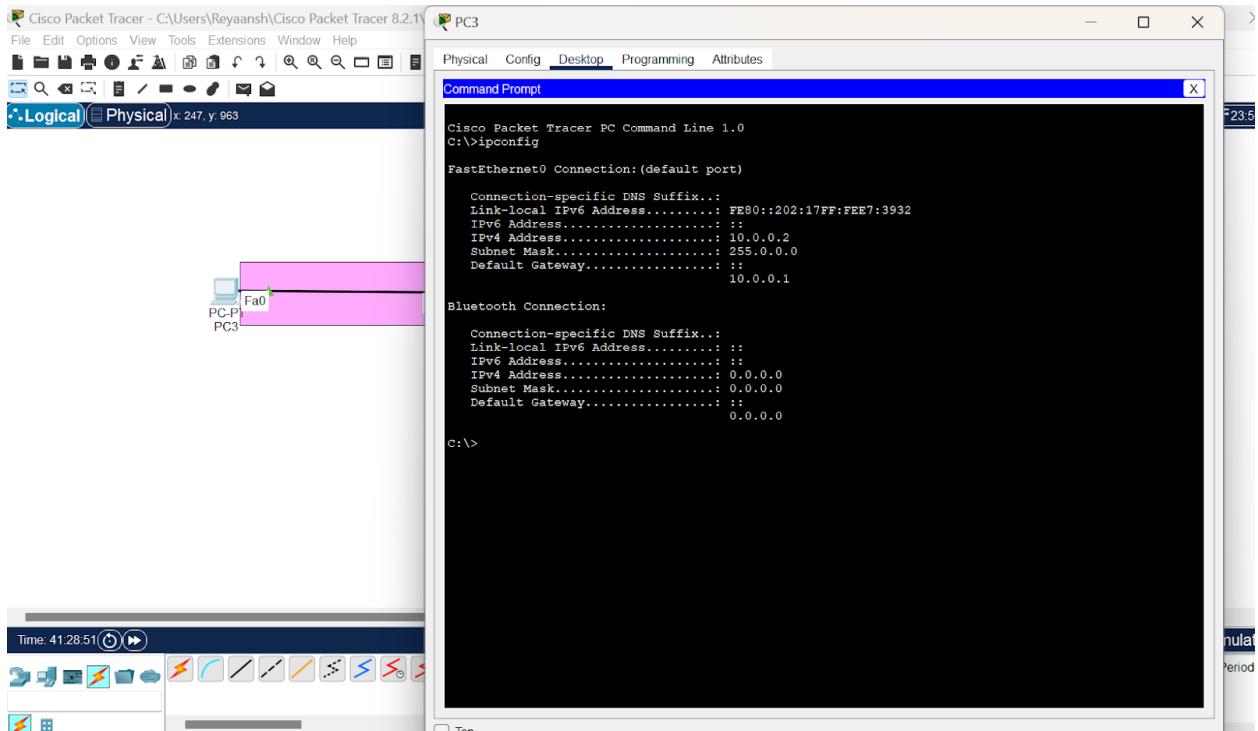


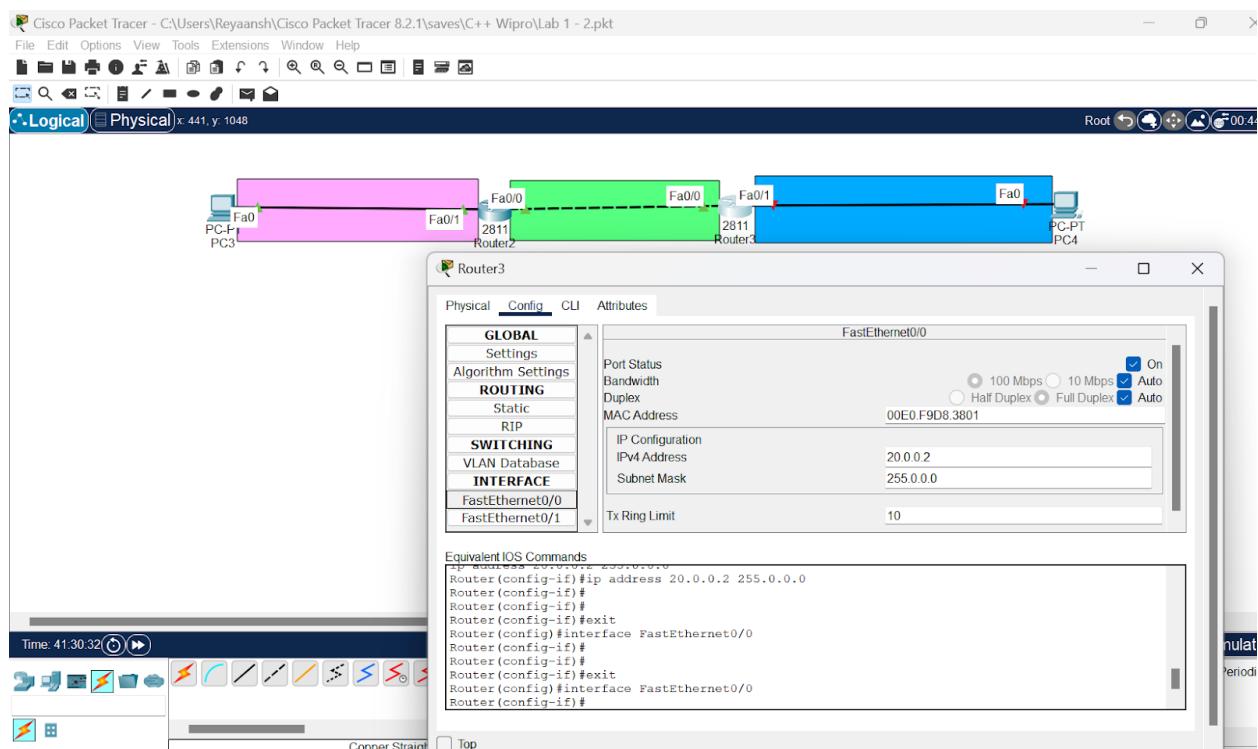
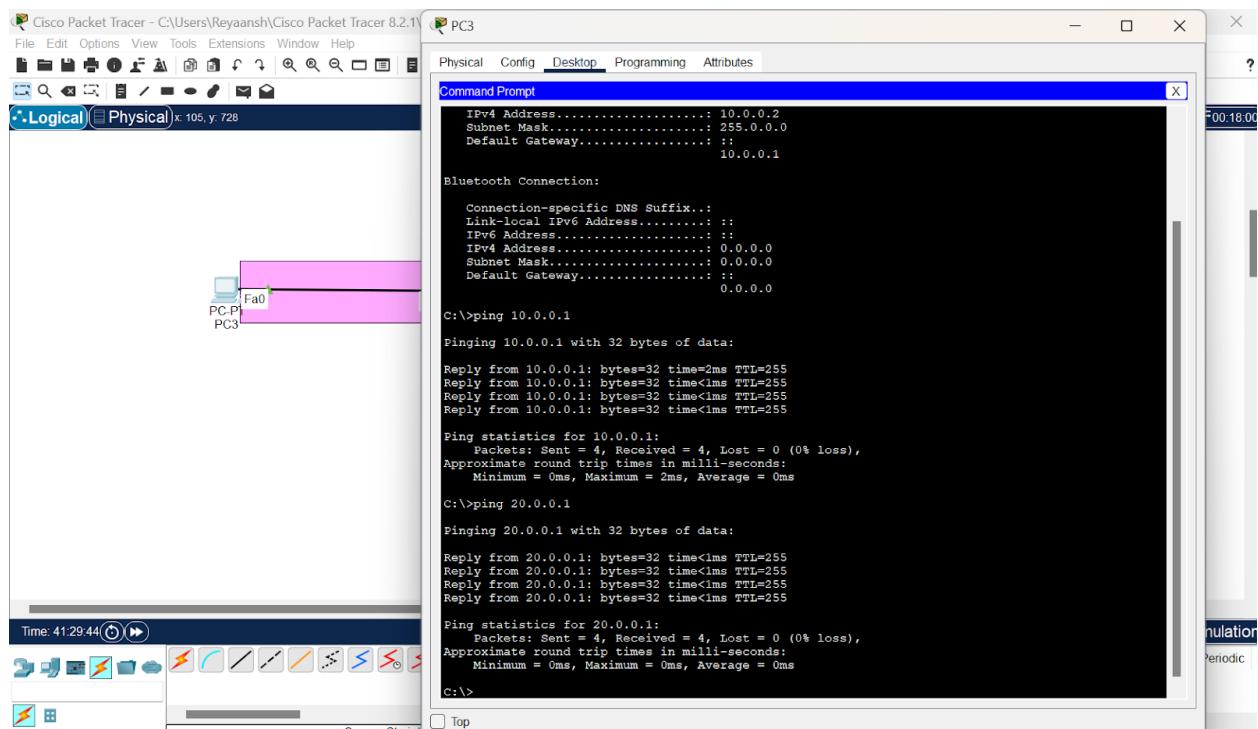
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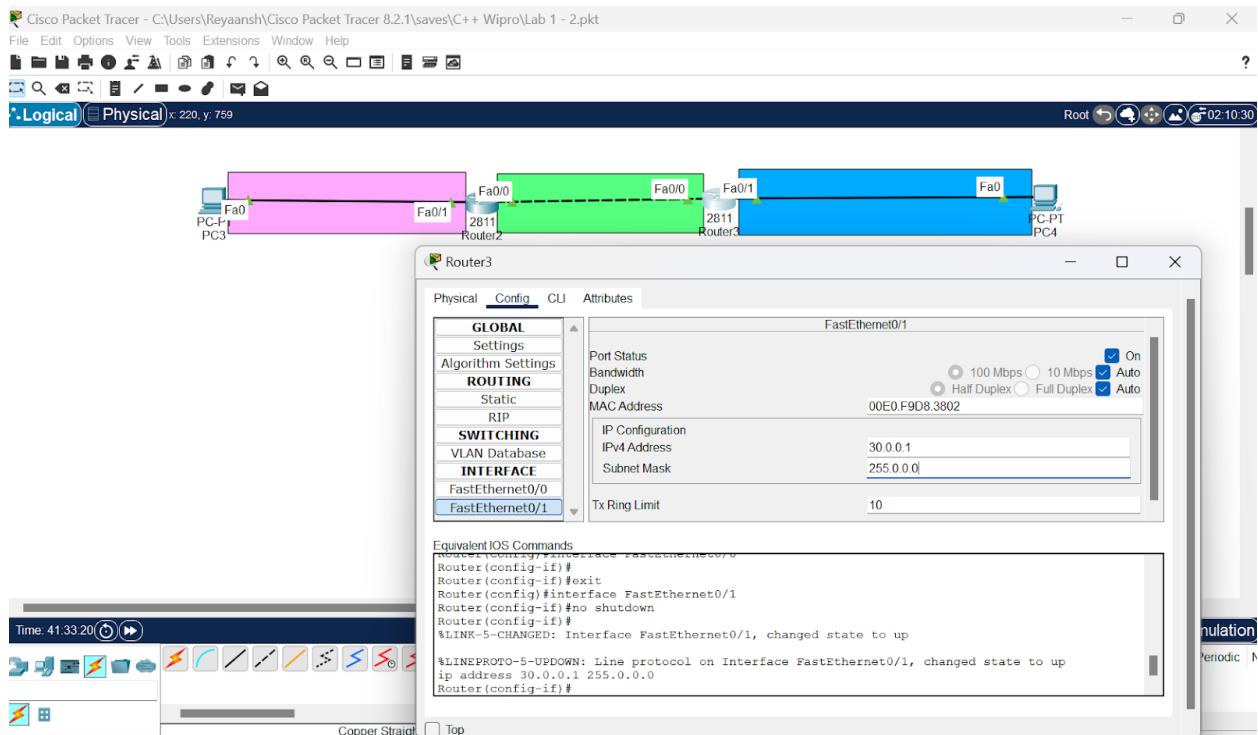
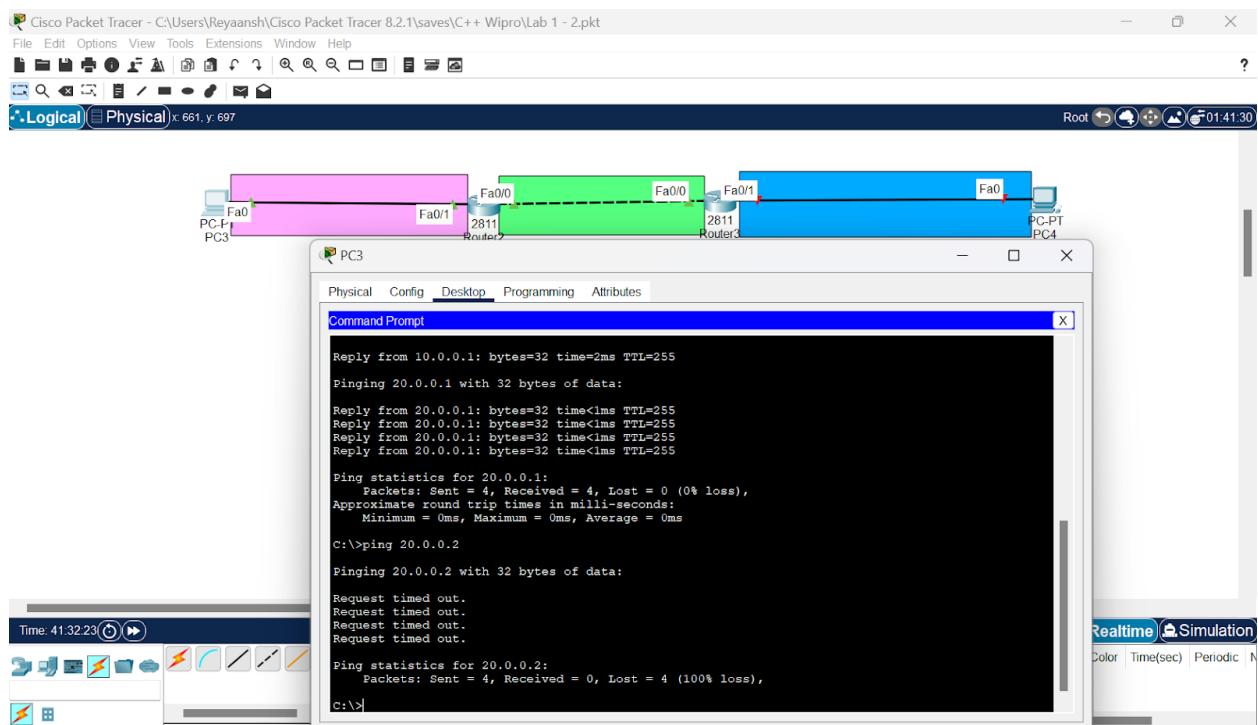
## Lab 4: Static Routing (on two routers)

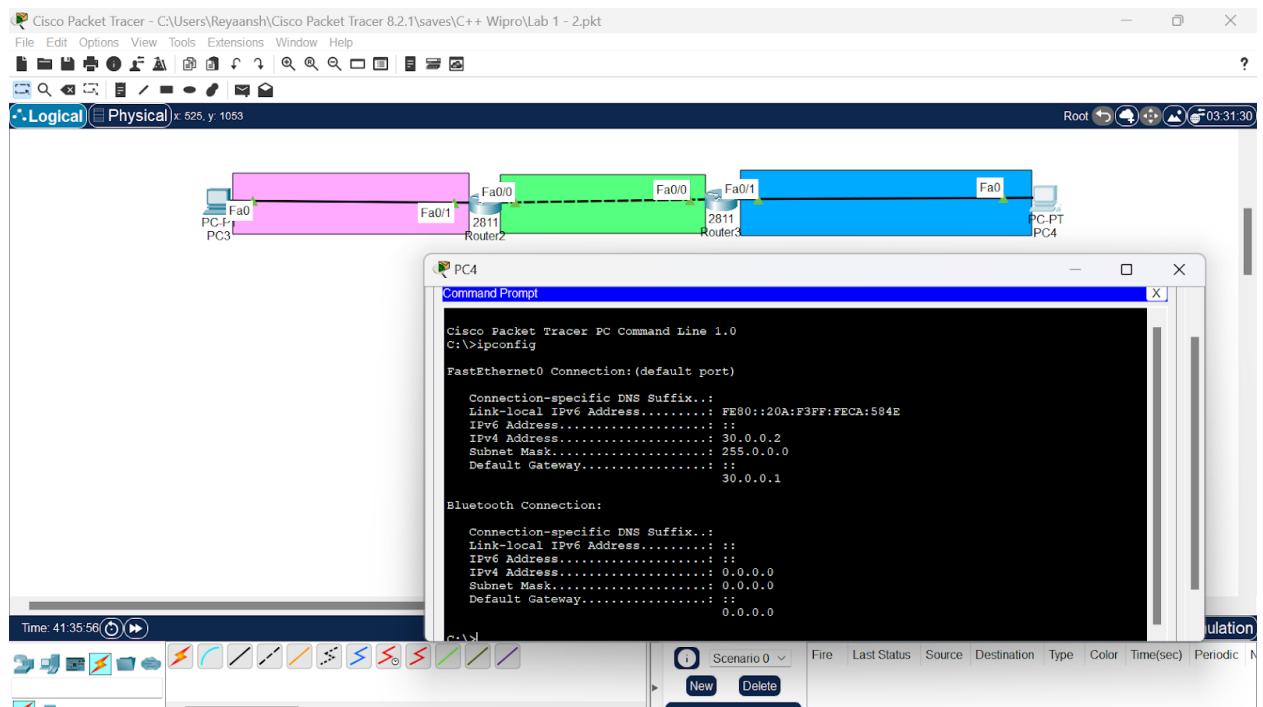
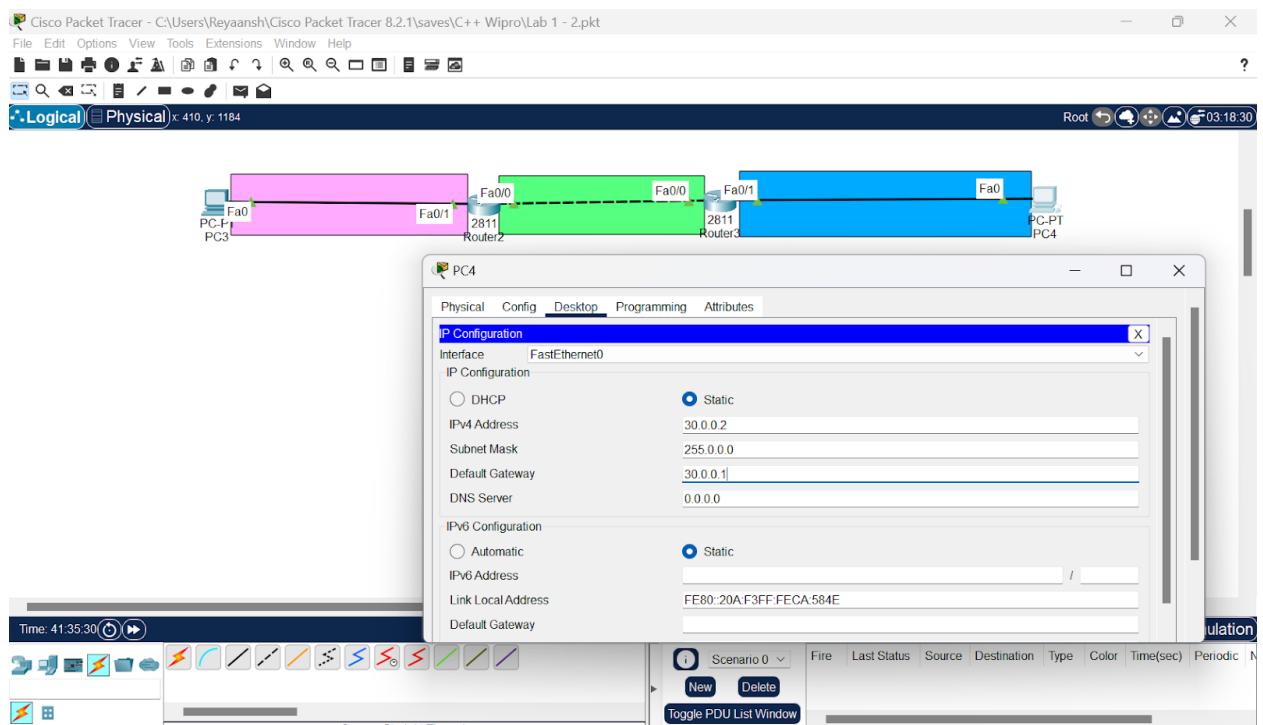


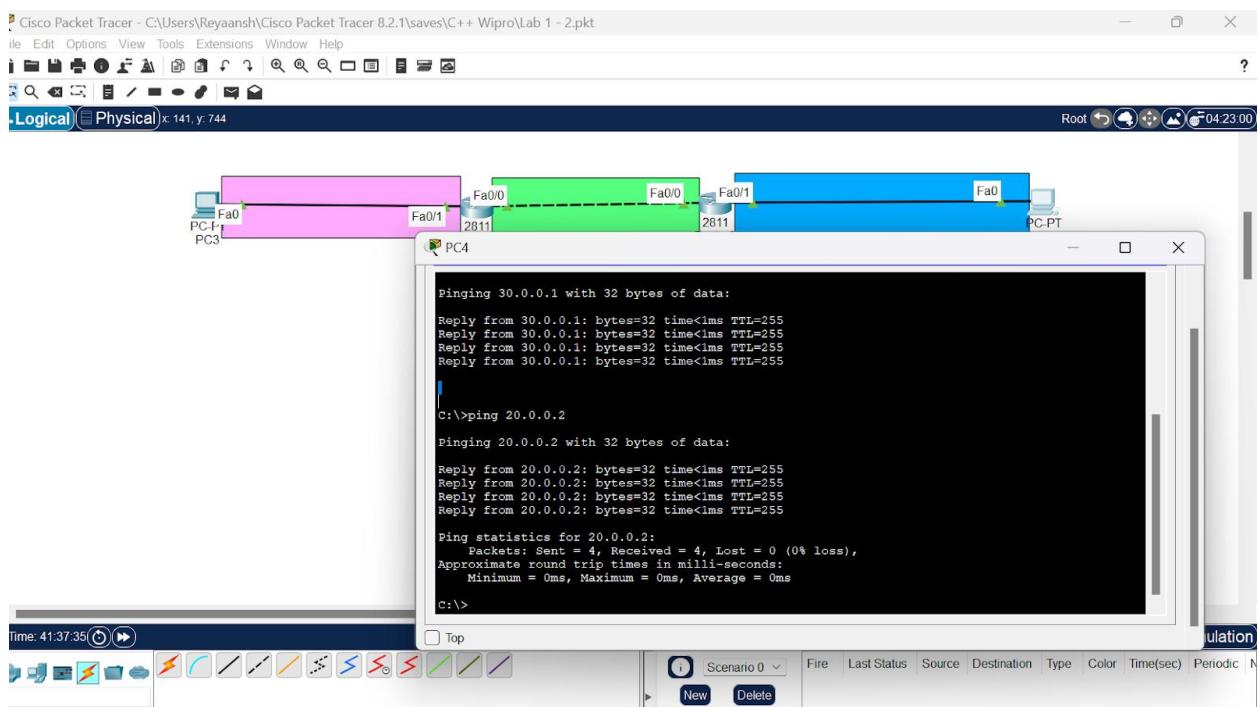
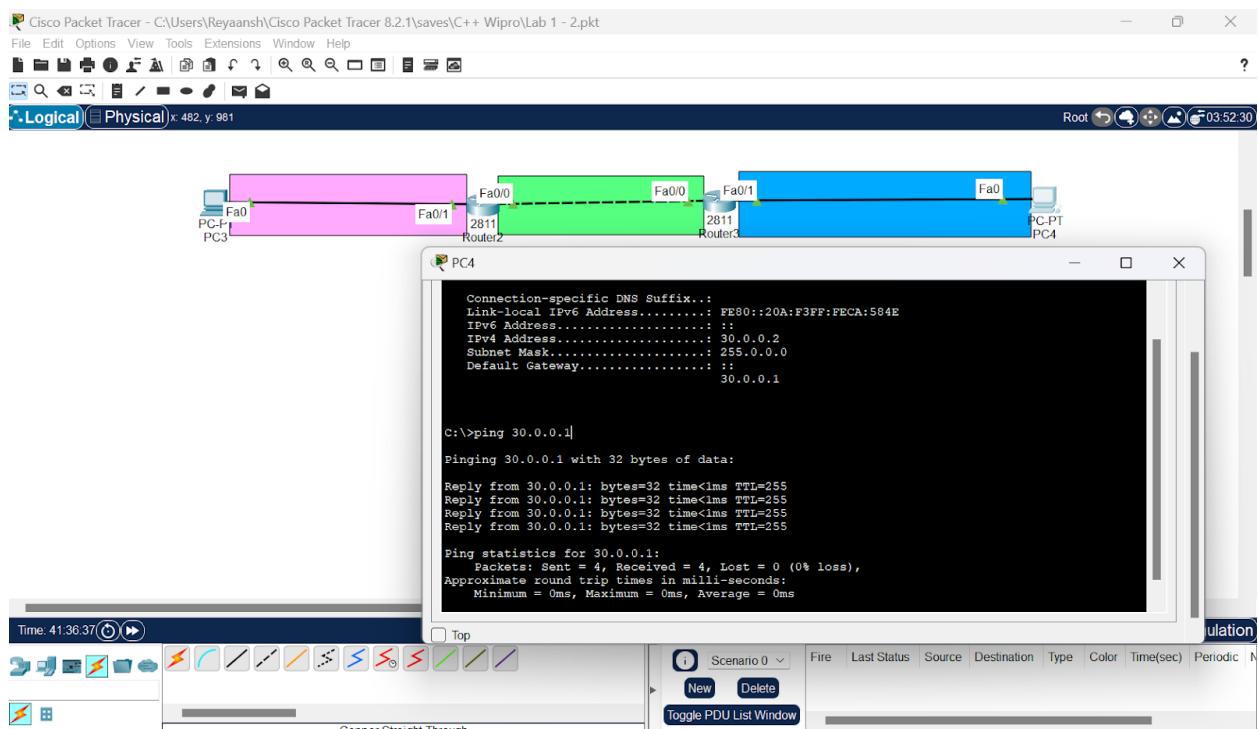


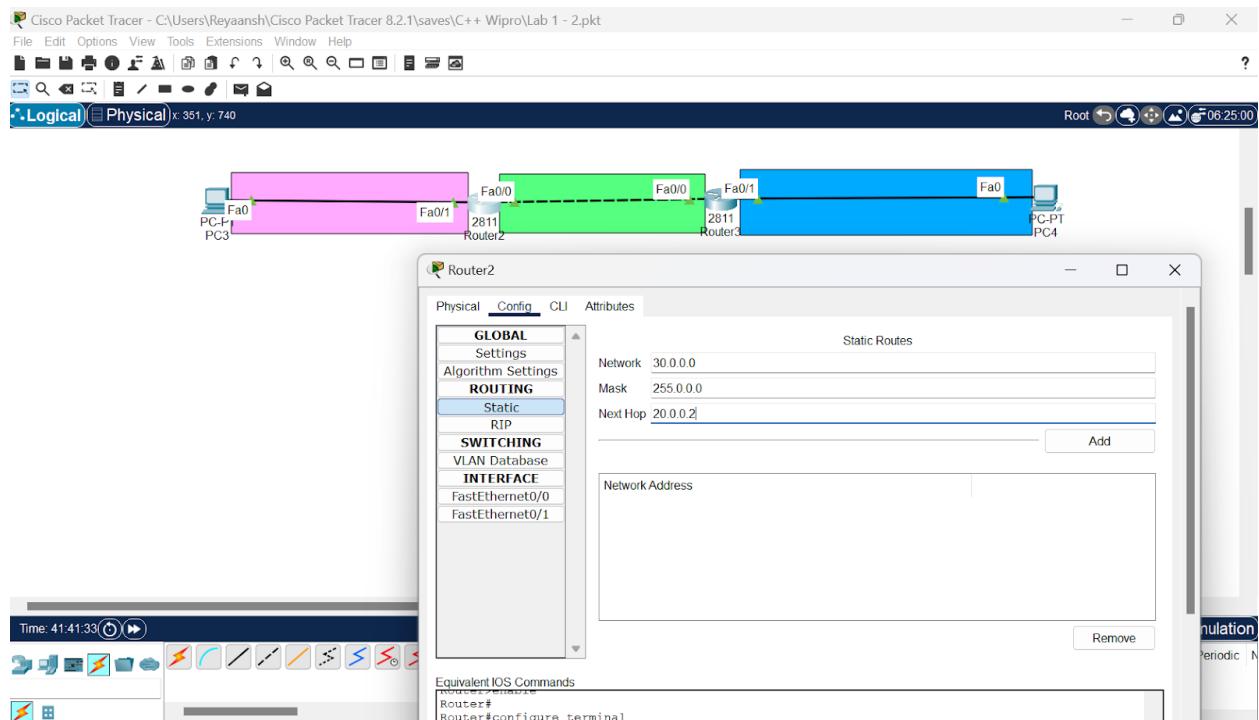
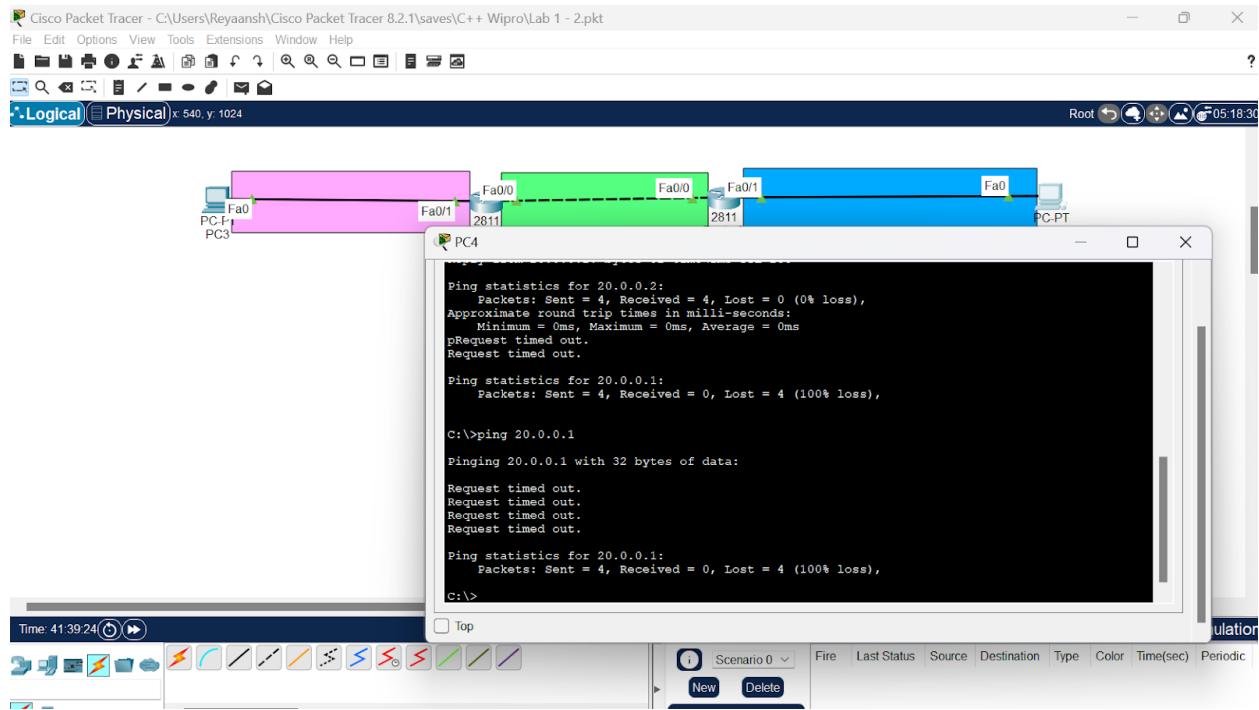


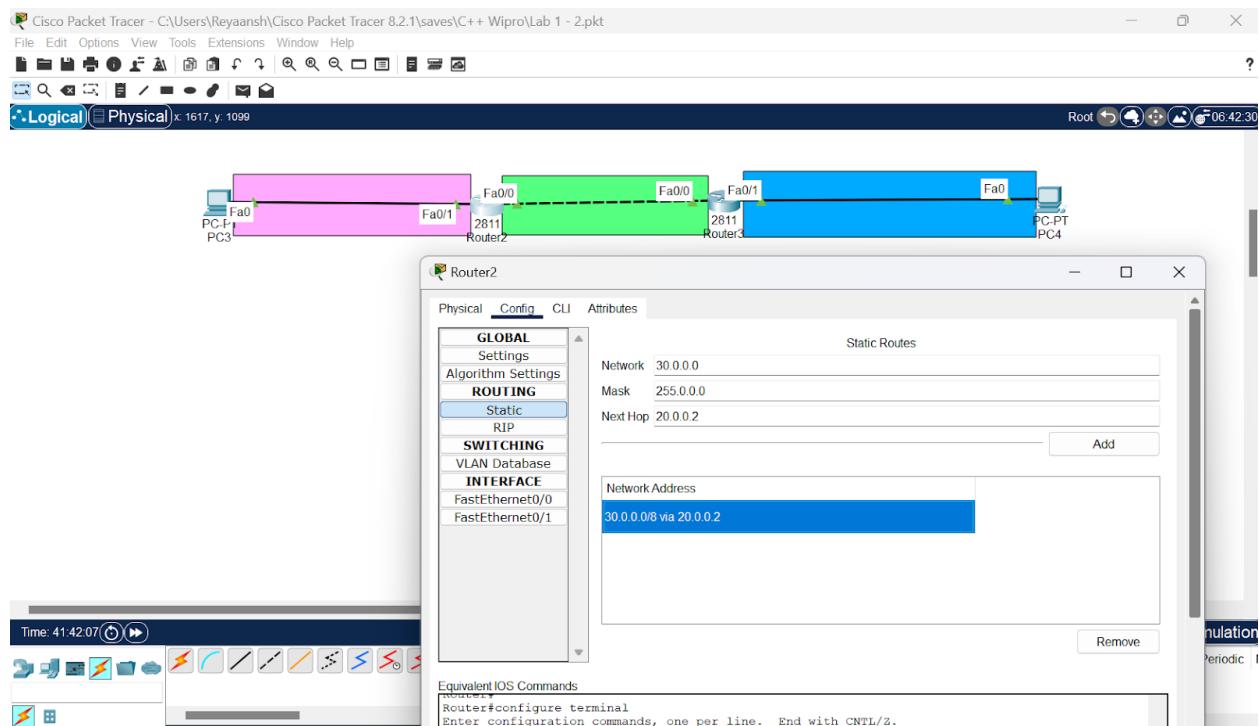
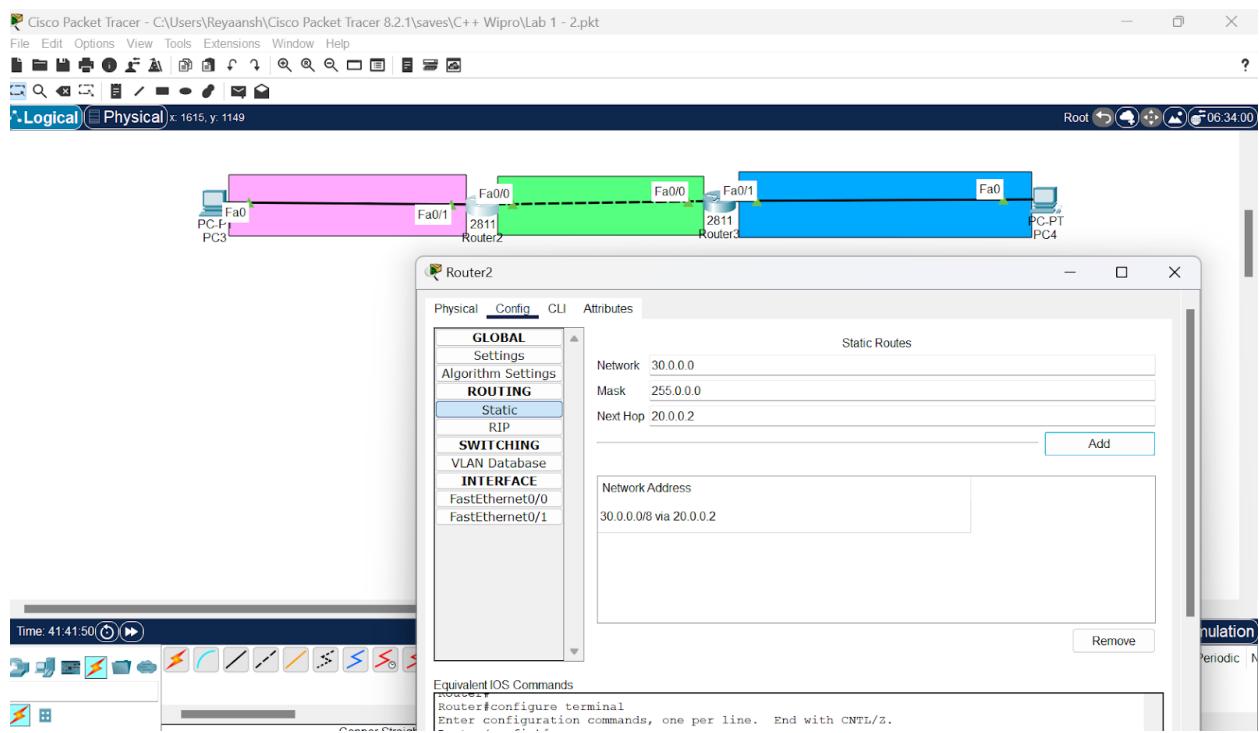


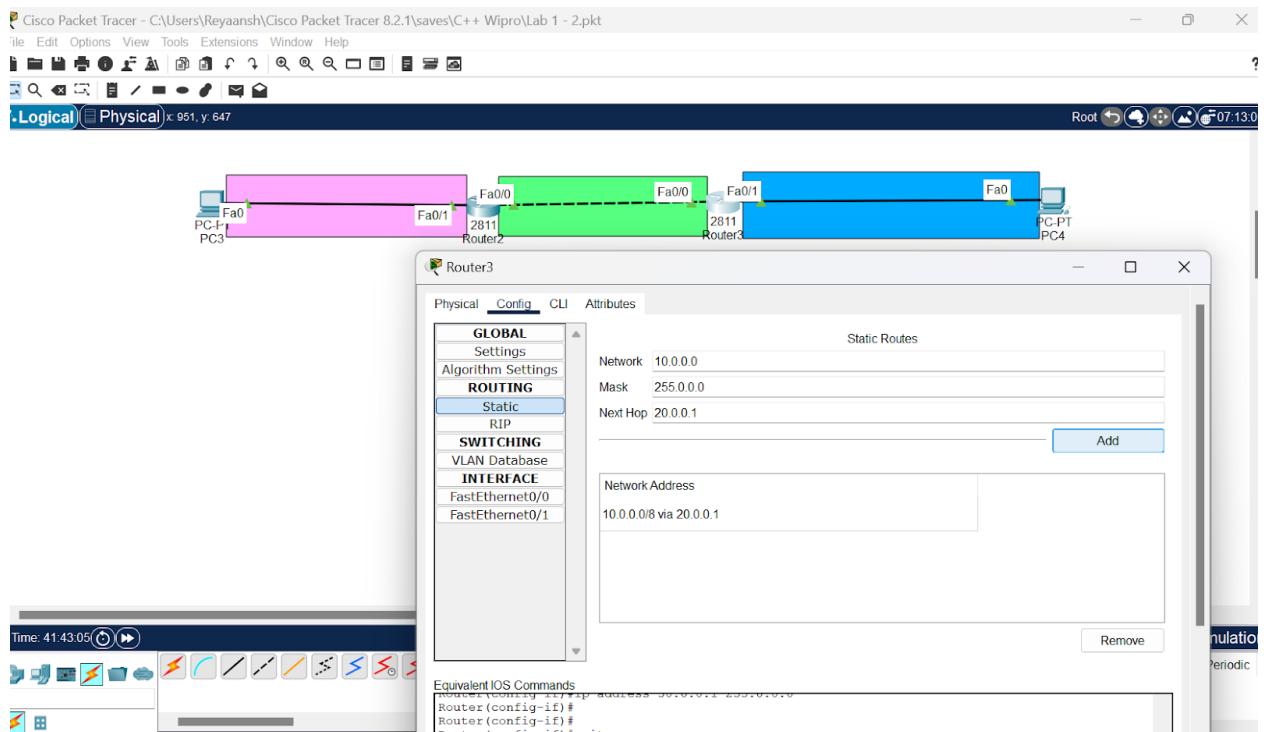
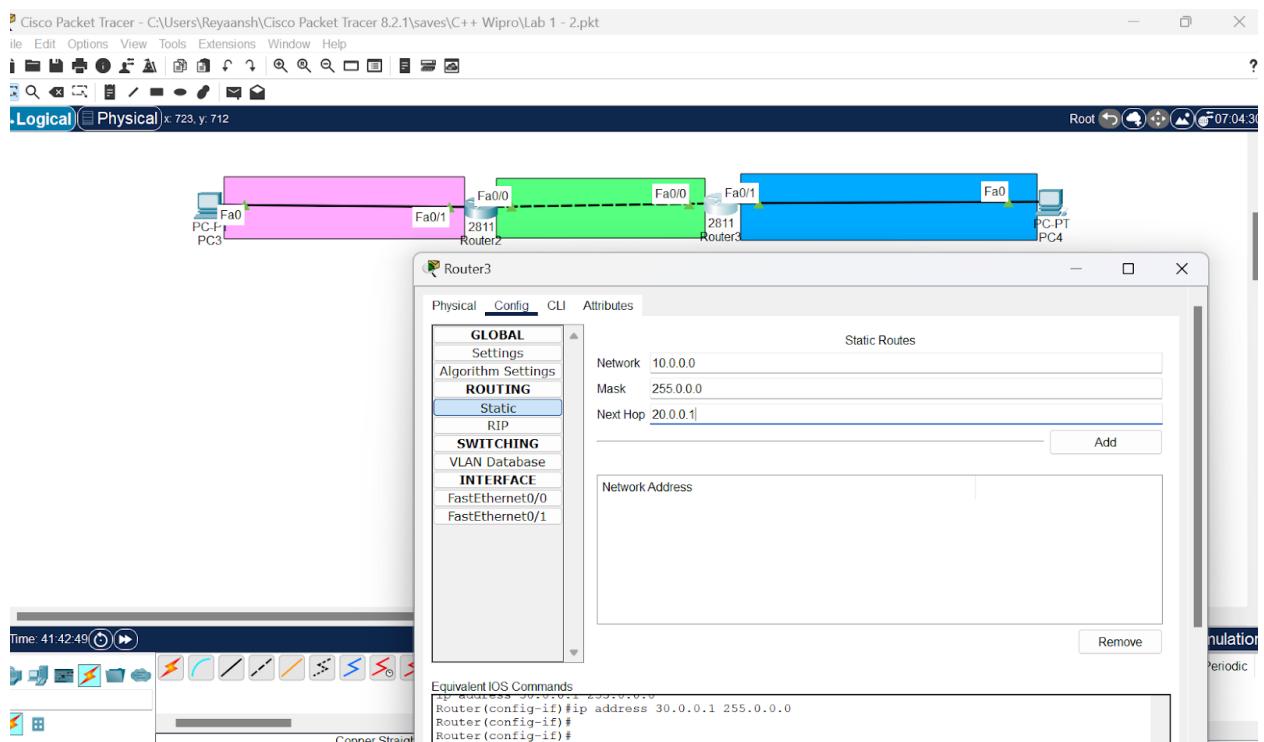


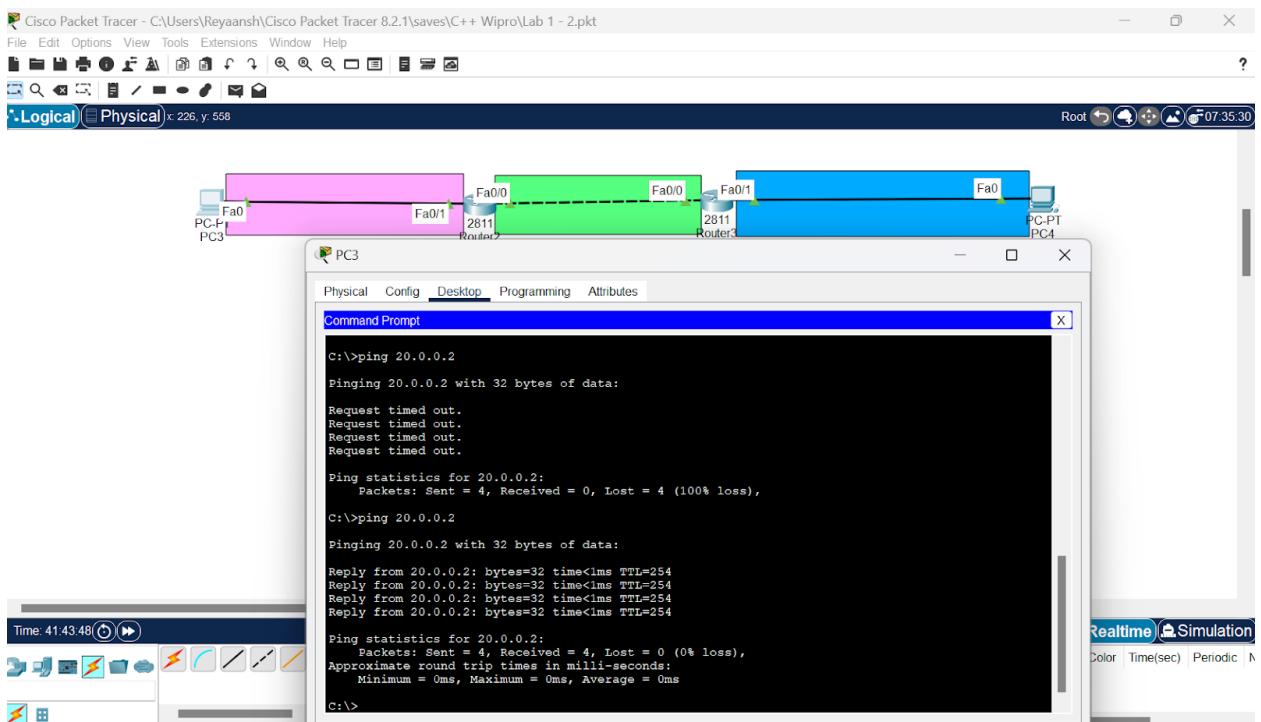
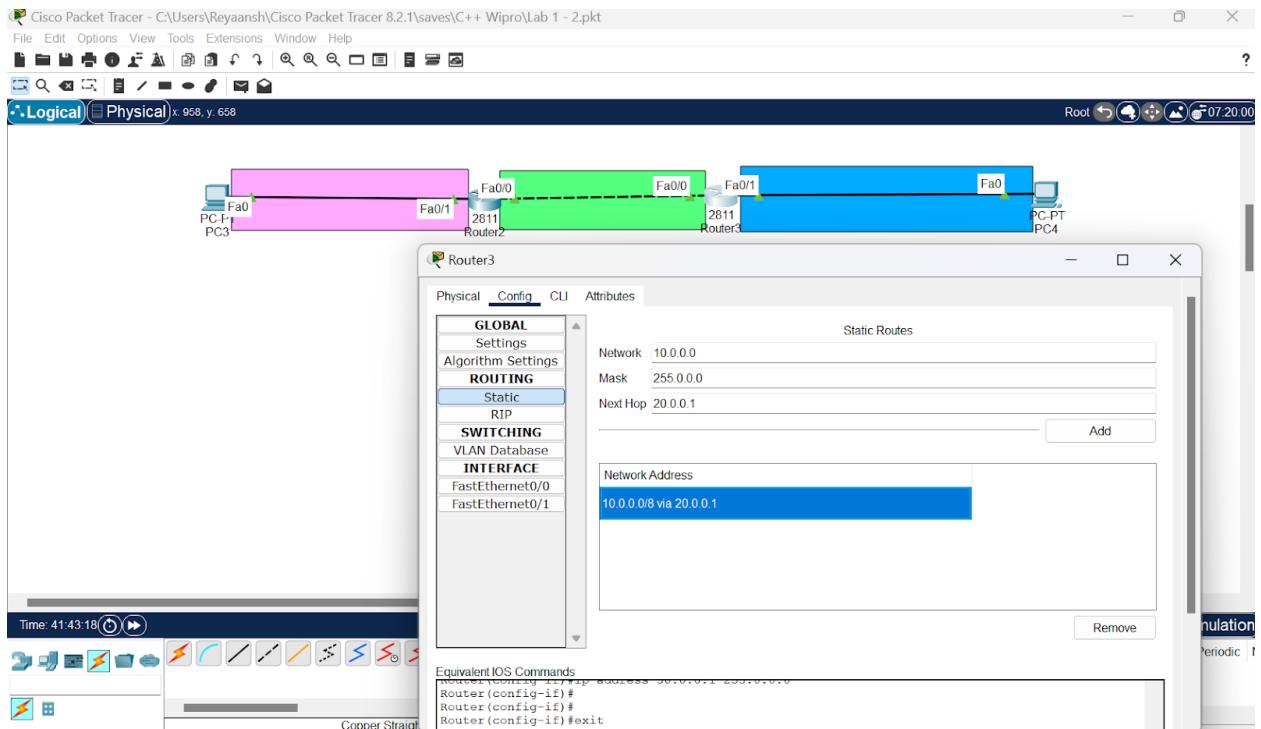


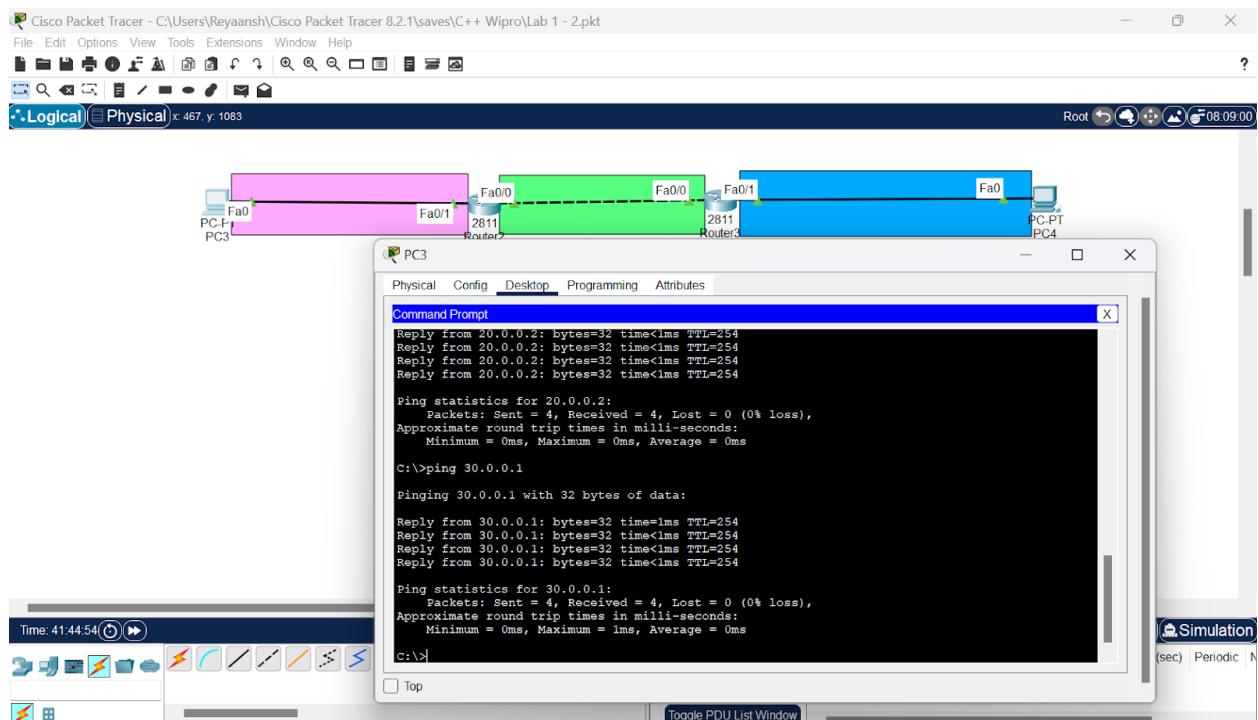
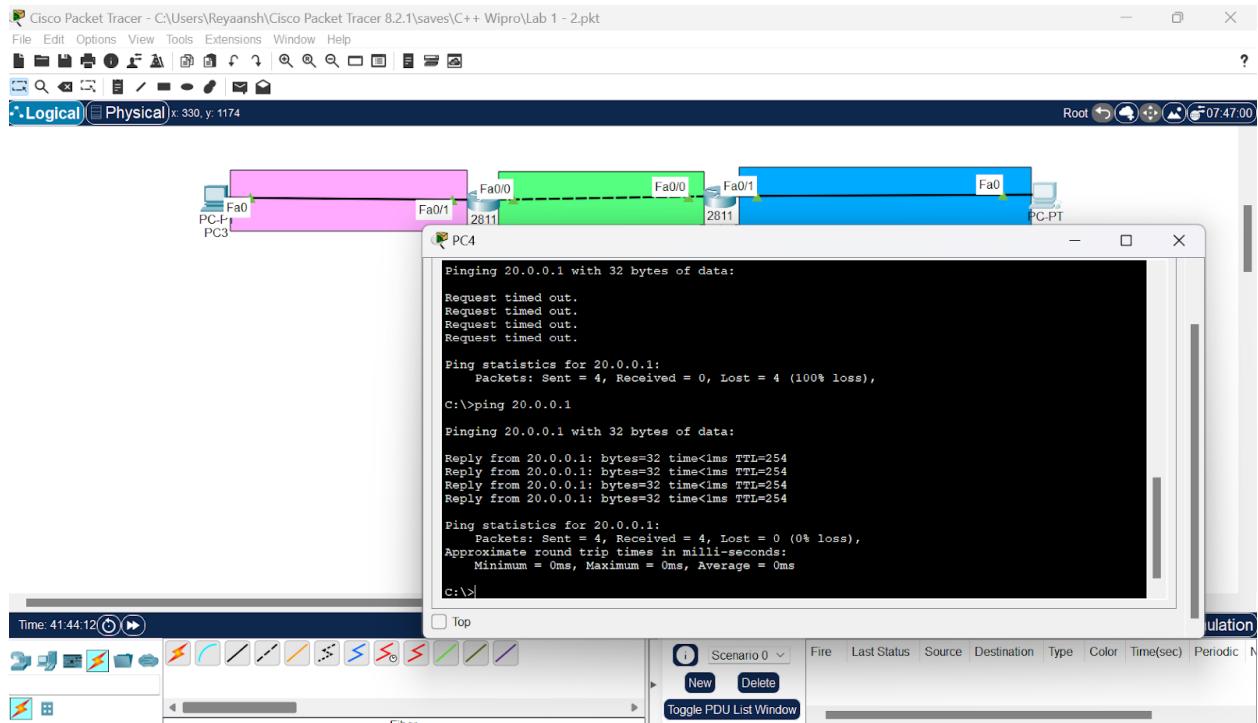


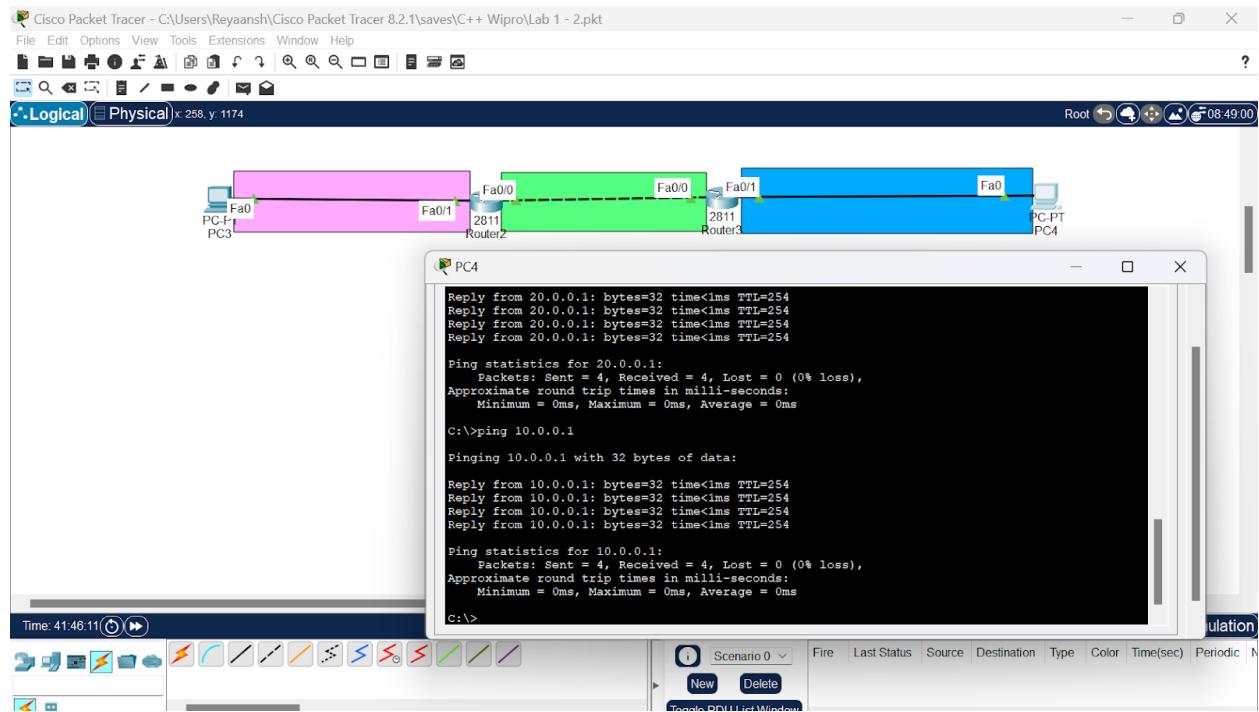
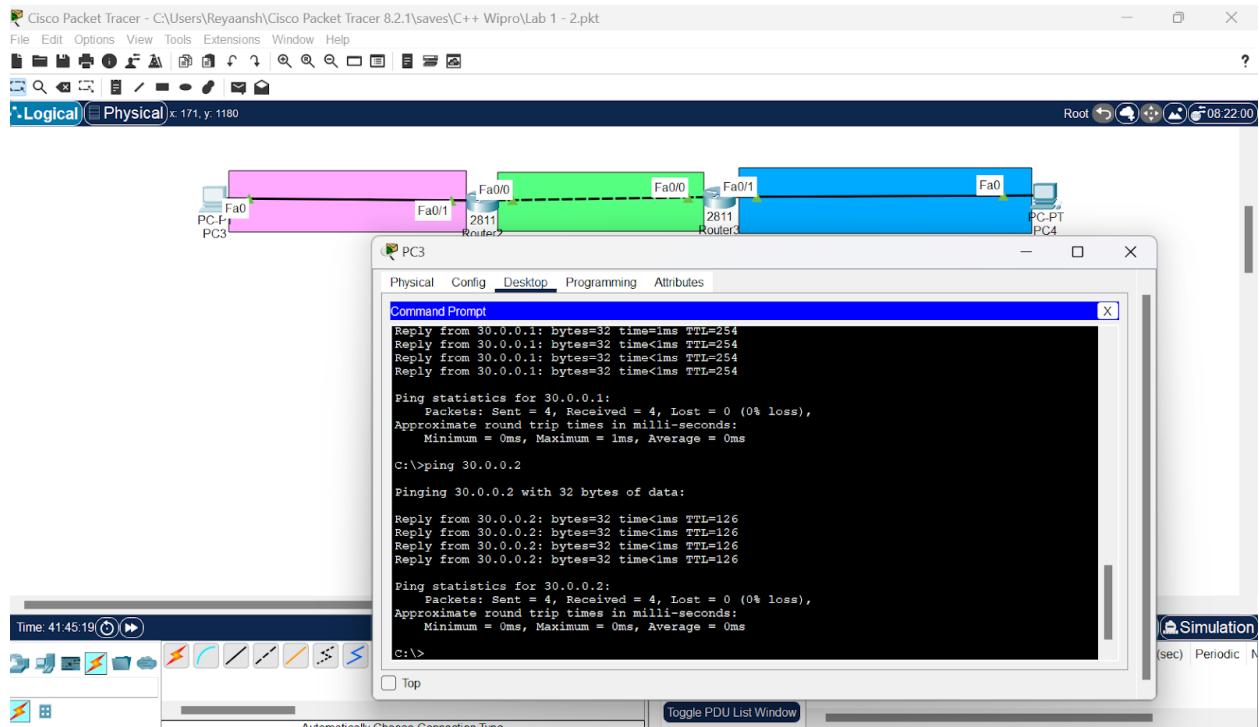


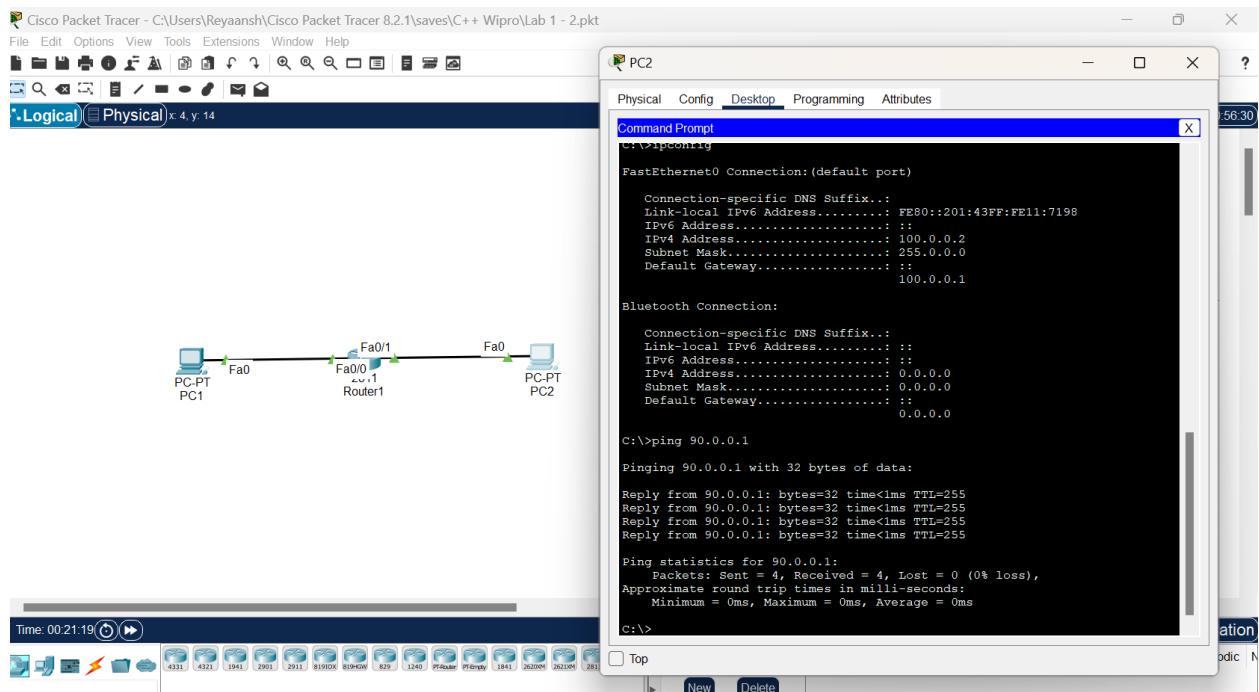
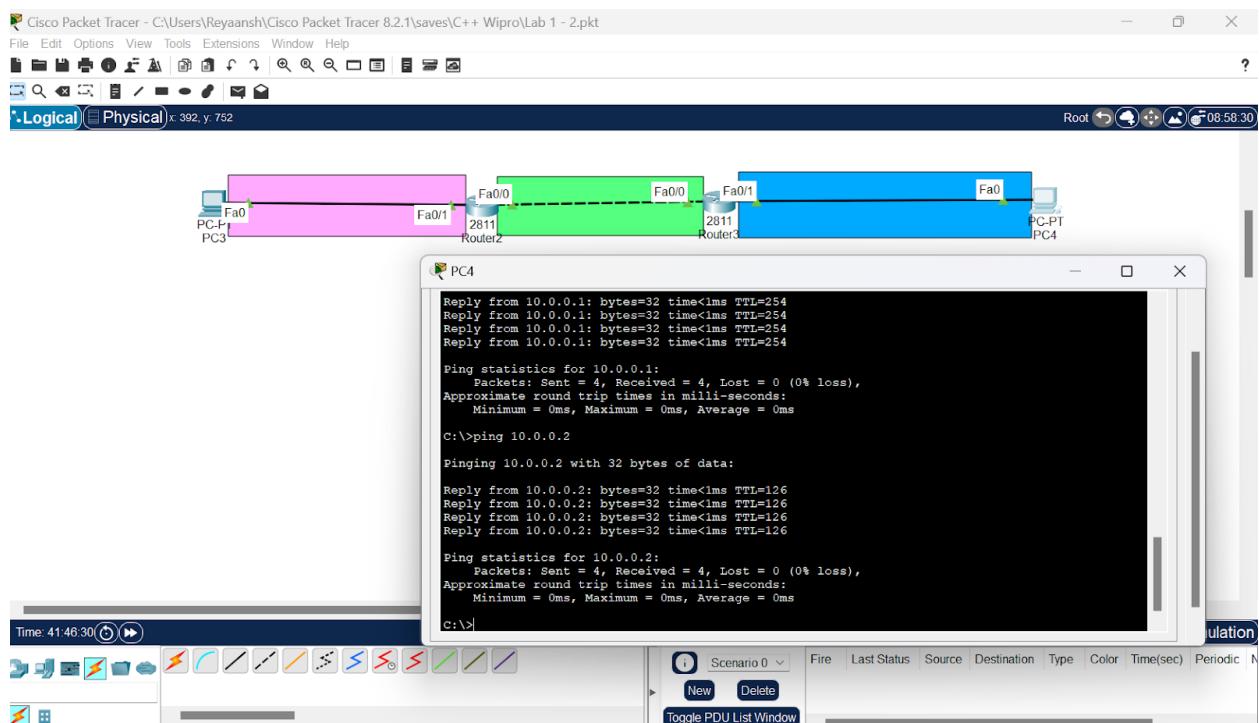




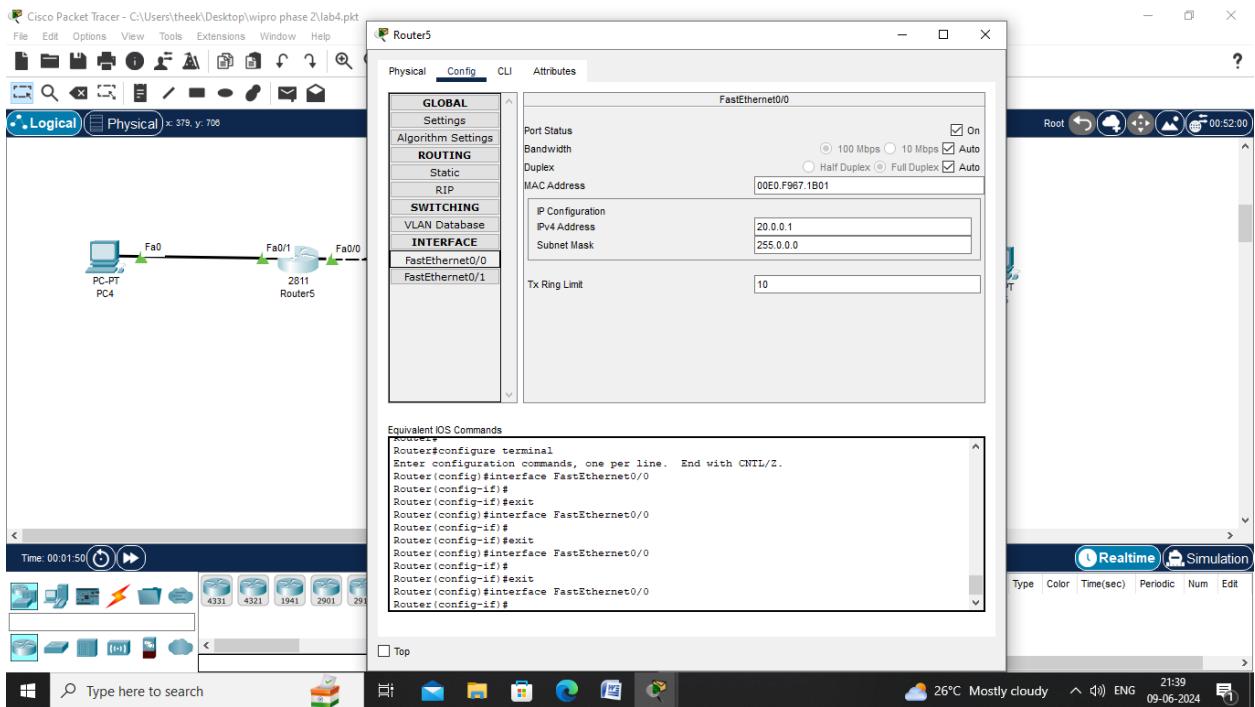


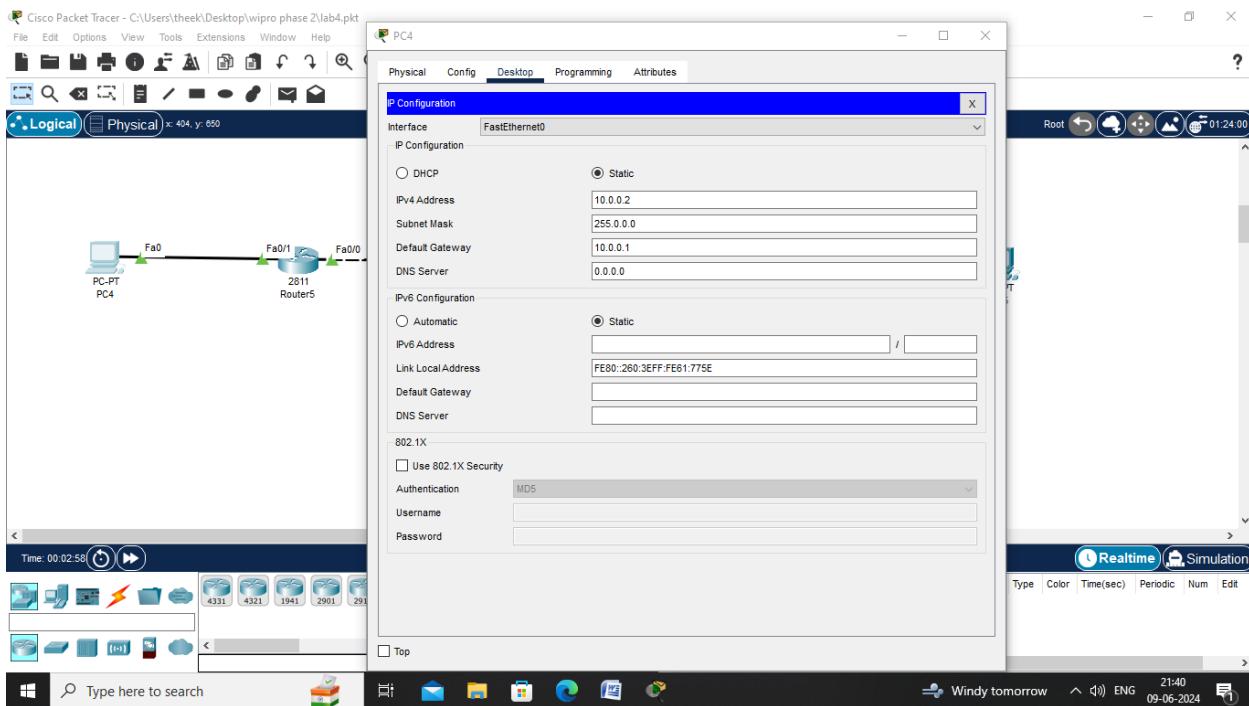
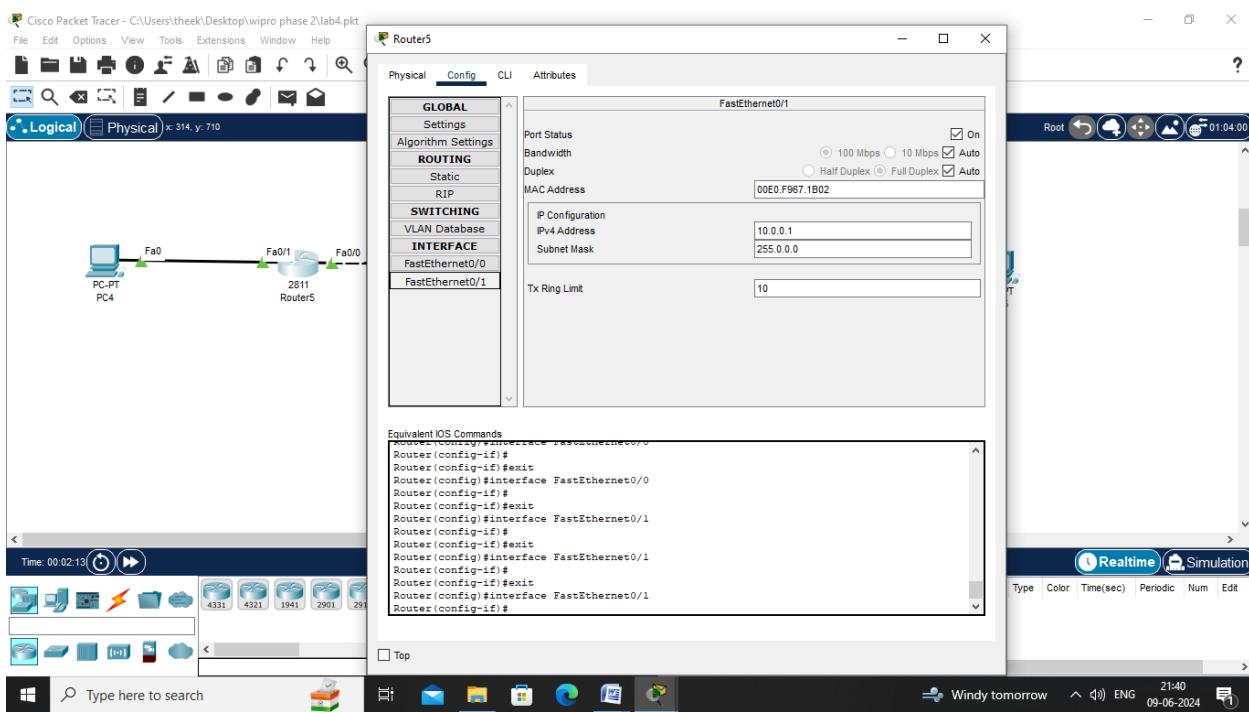


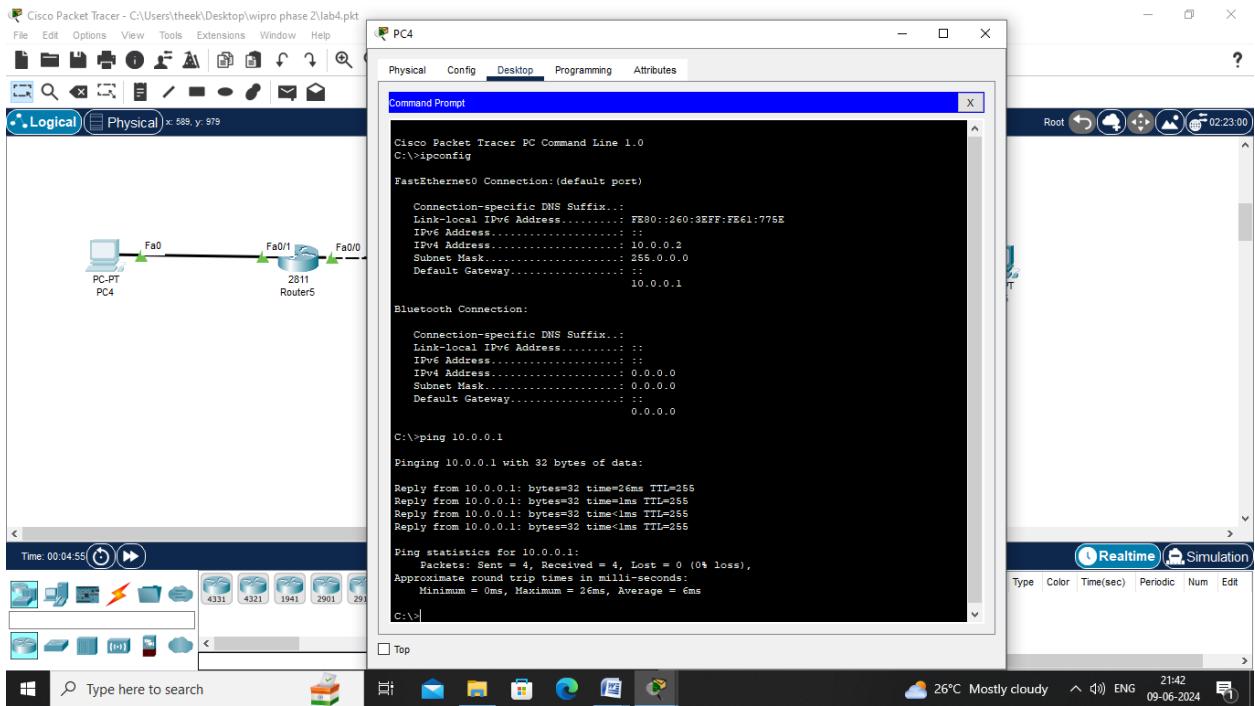
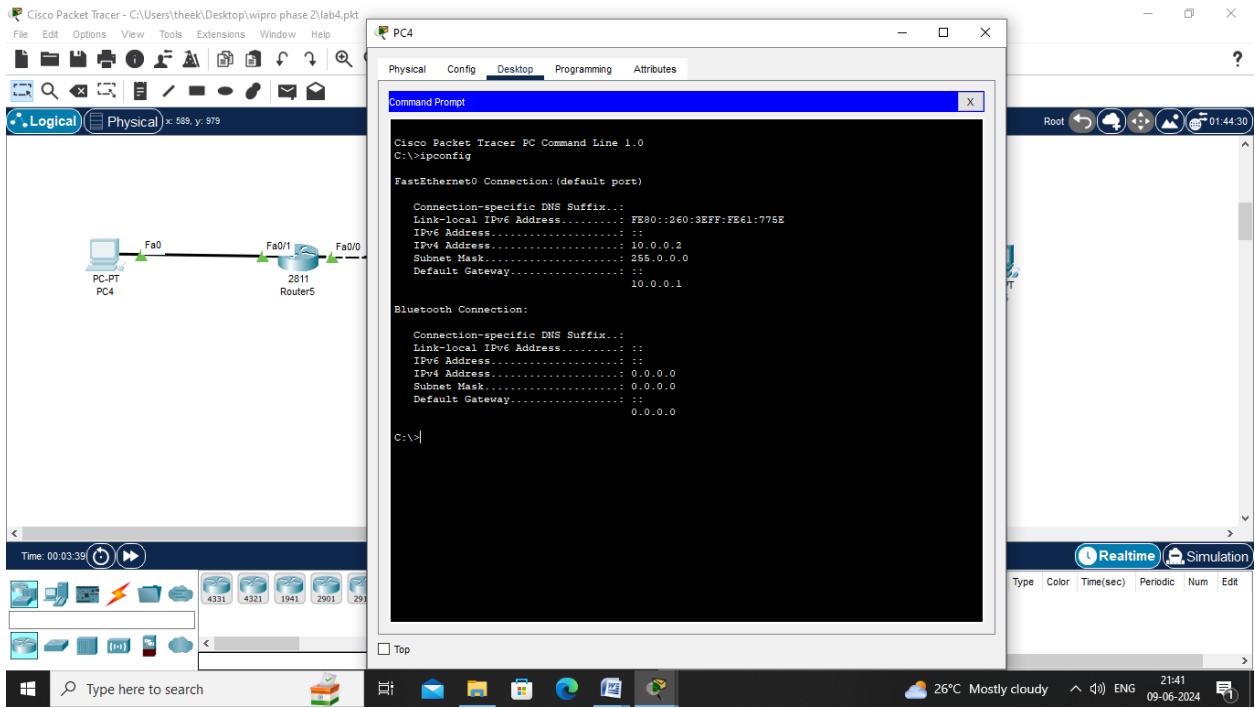


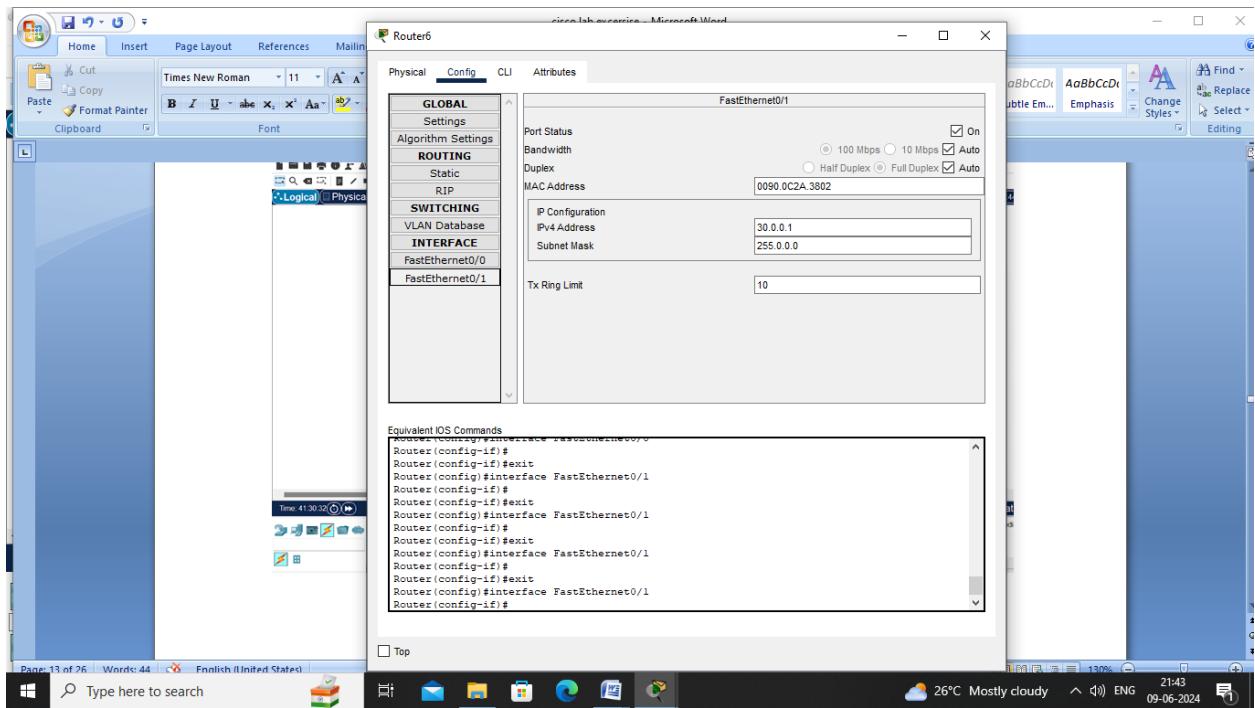
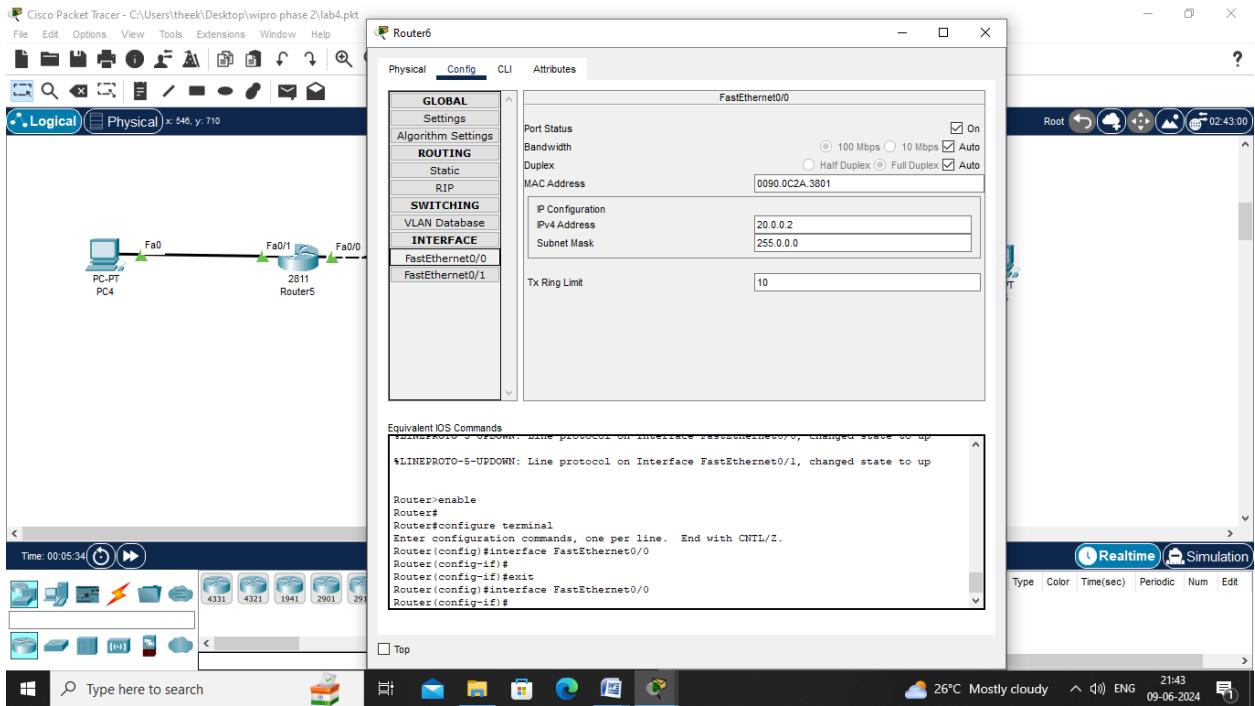


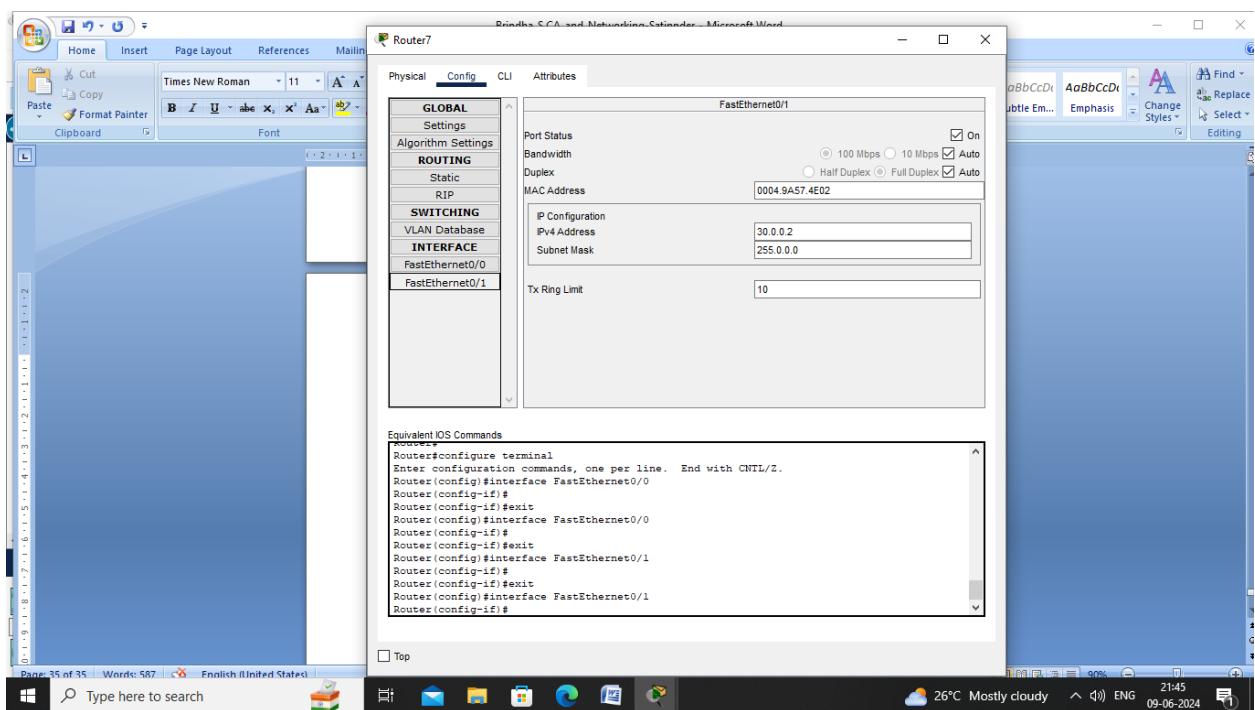
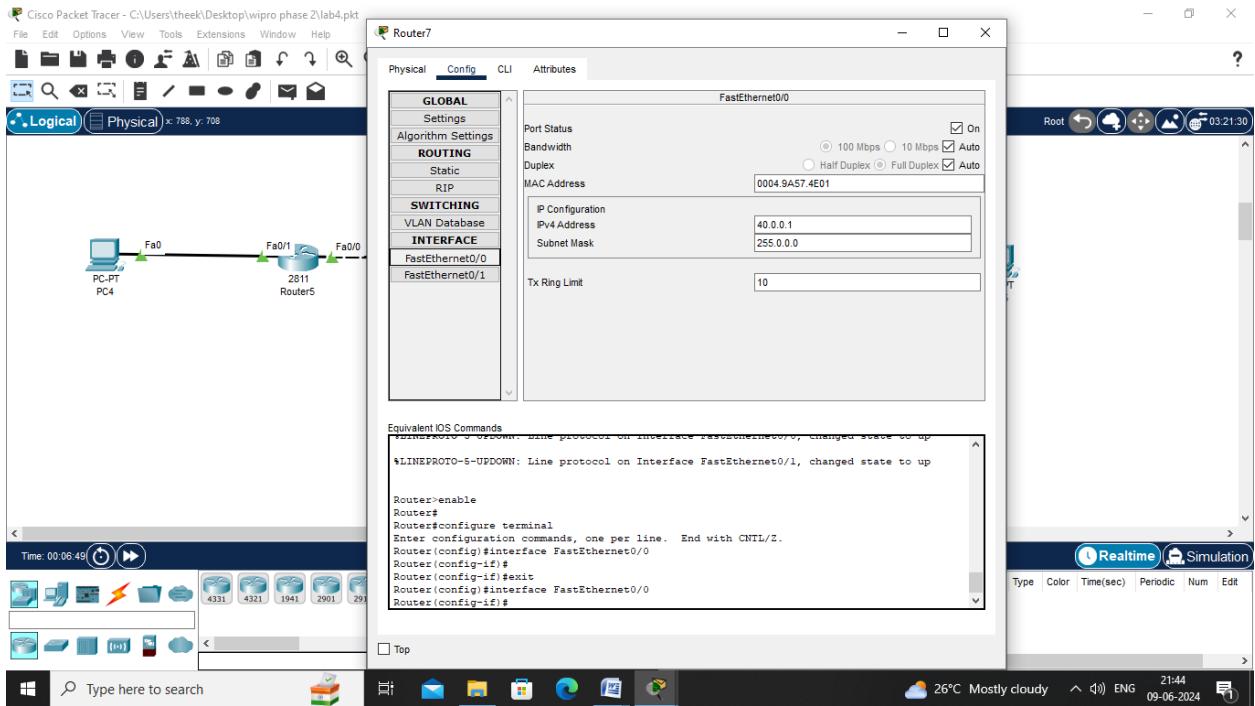
## Lab 5: Static Routing (on three routers)

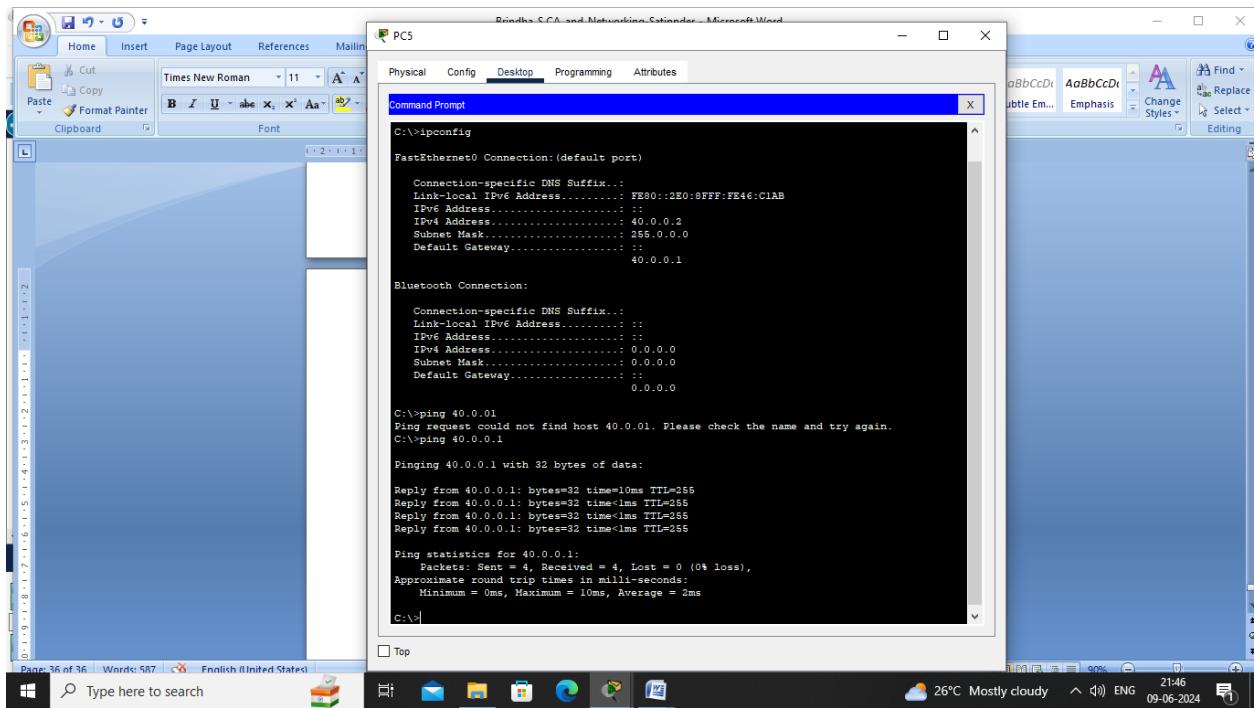
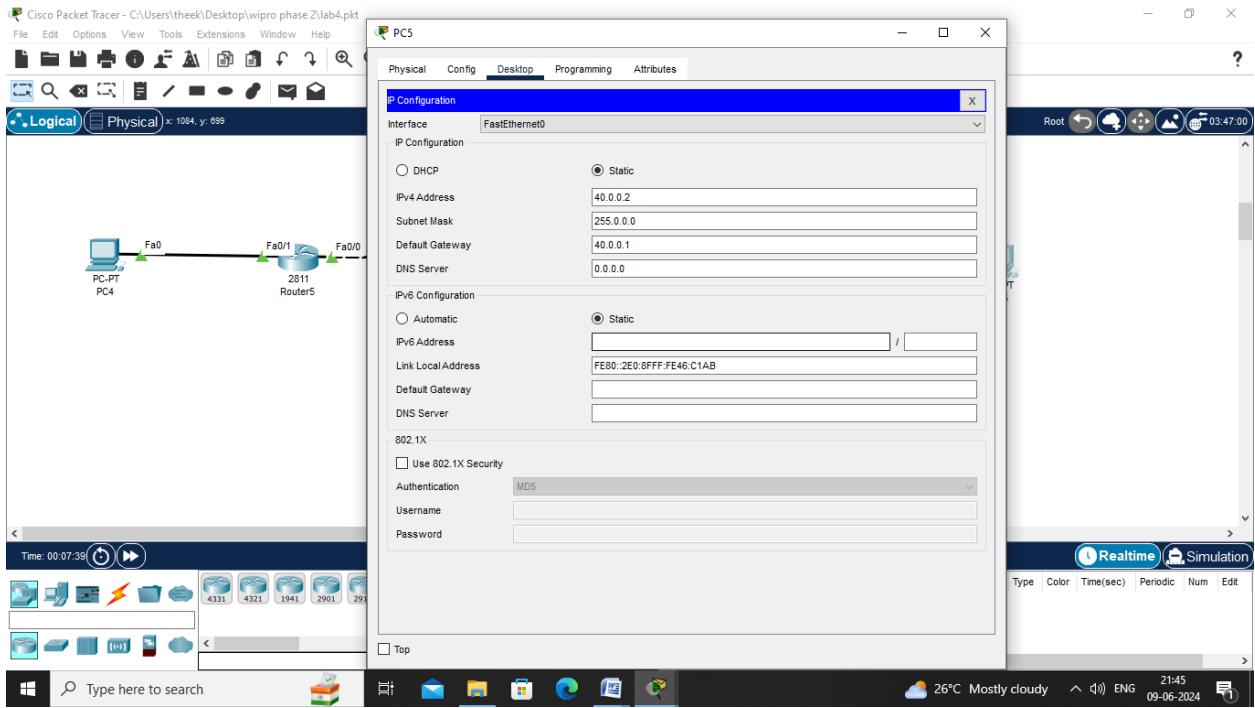


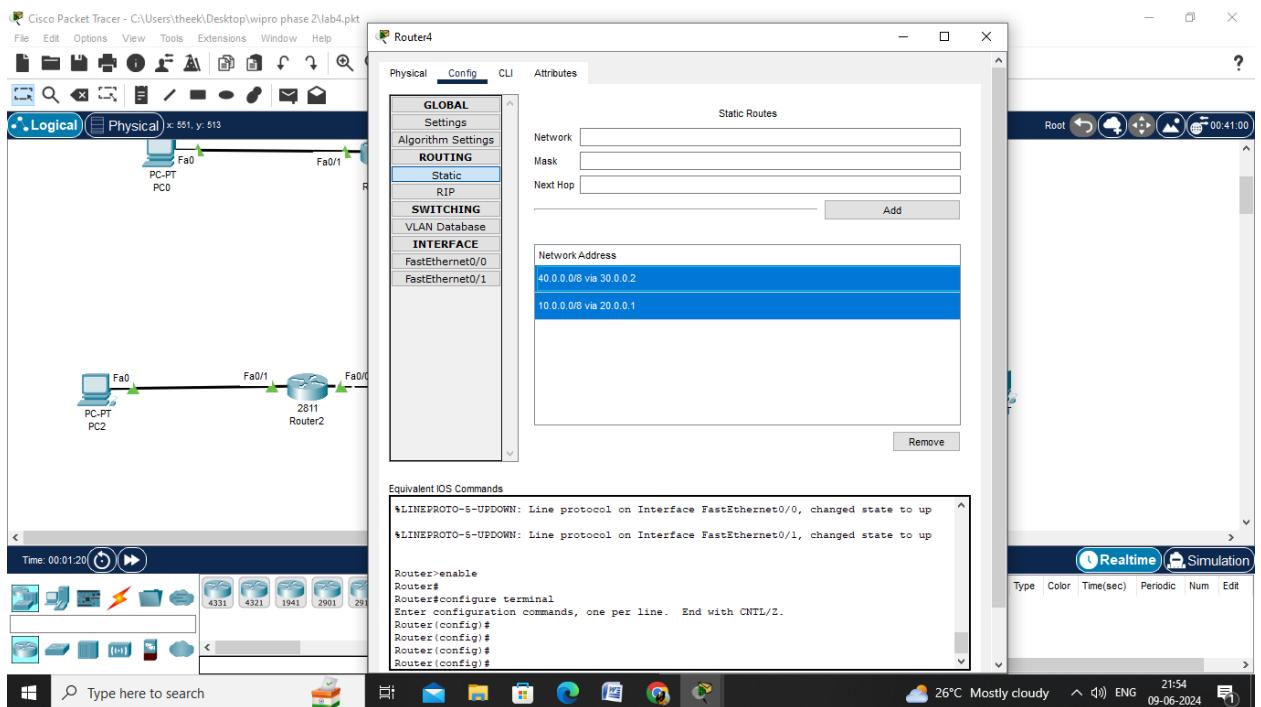
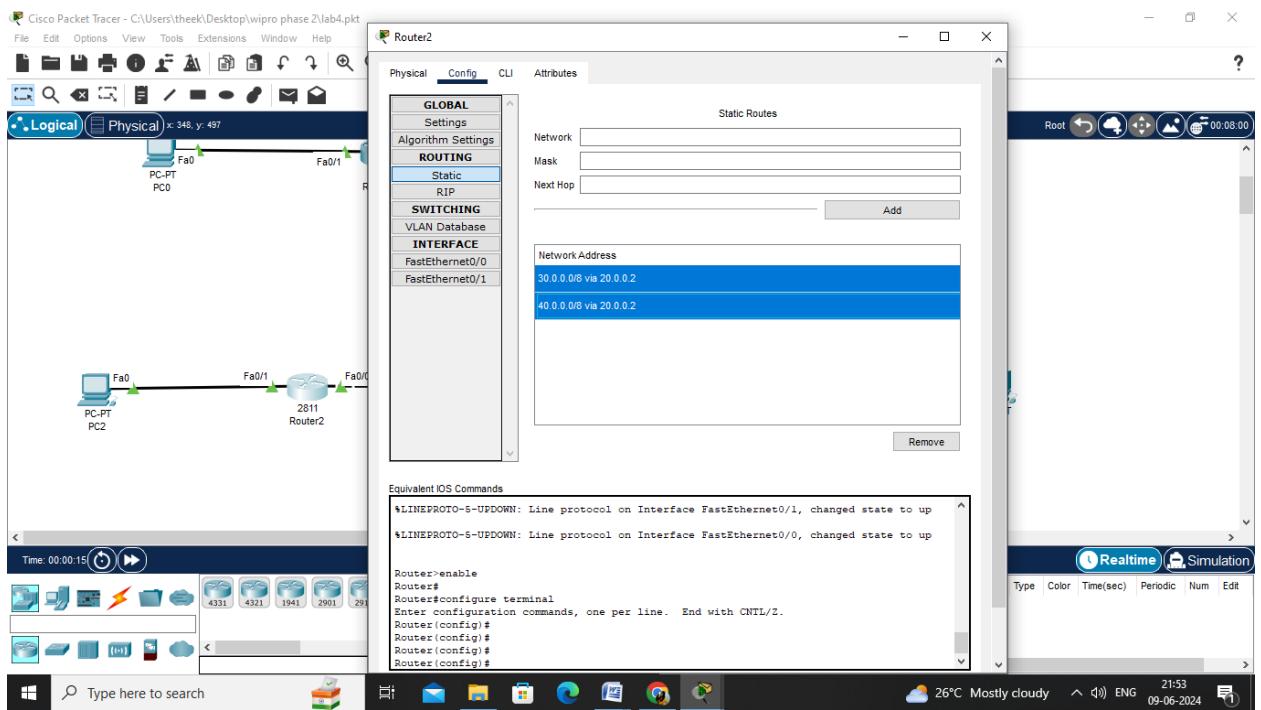


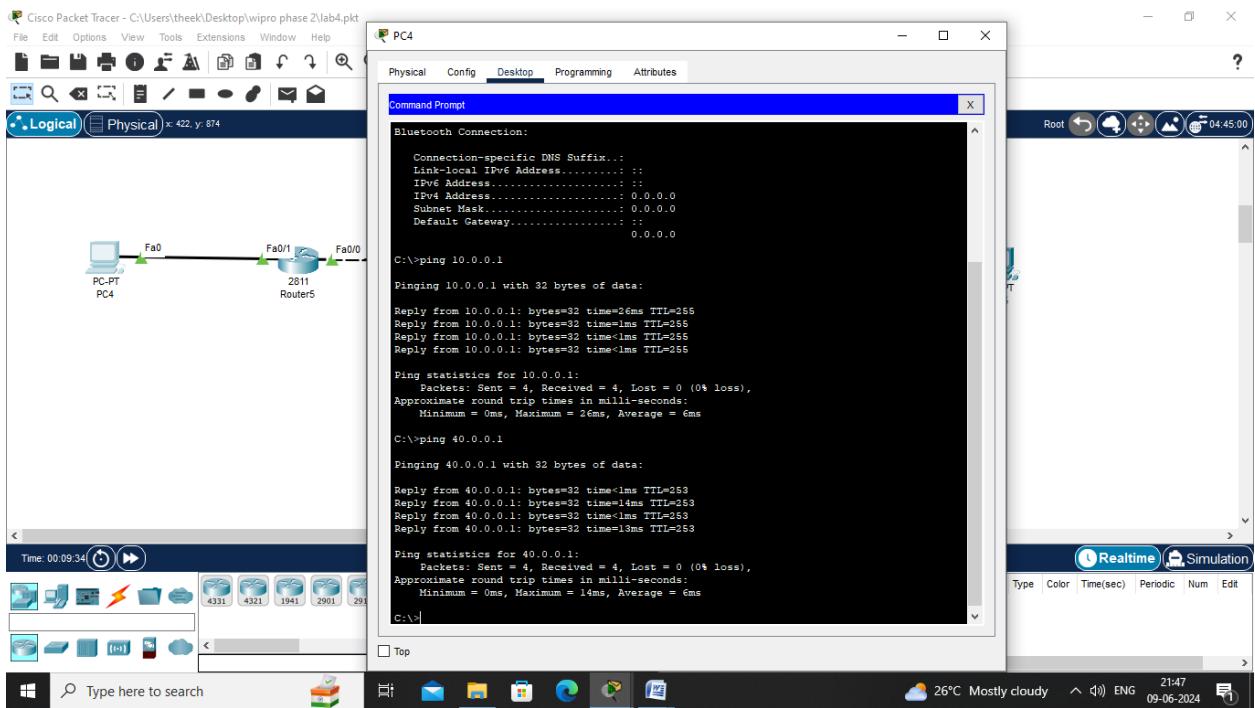
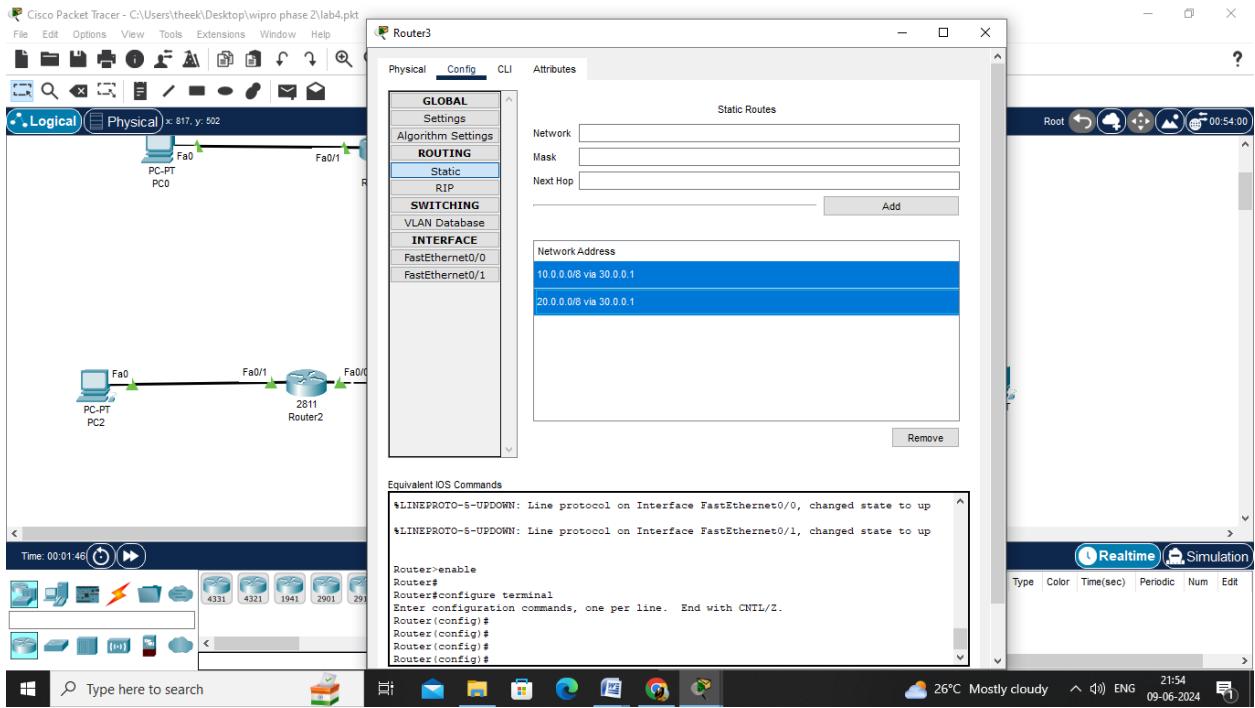


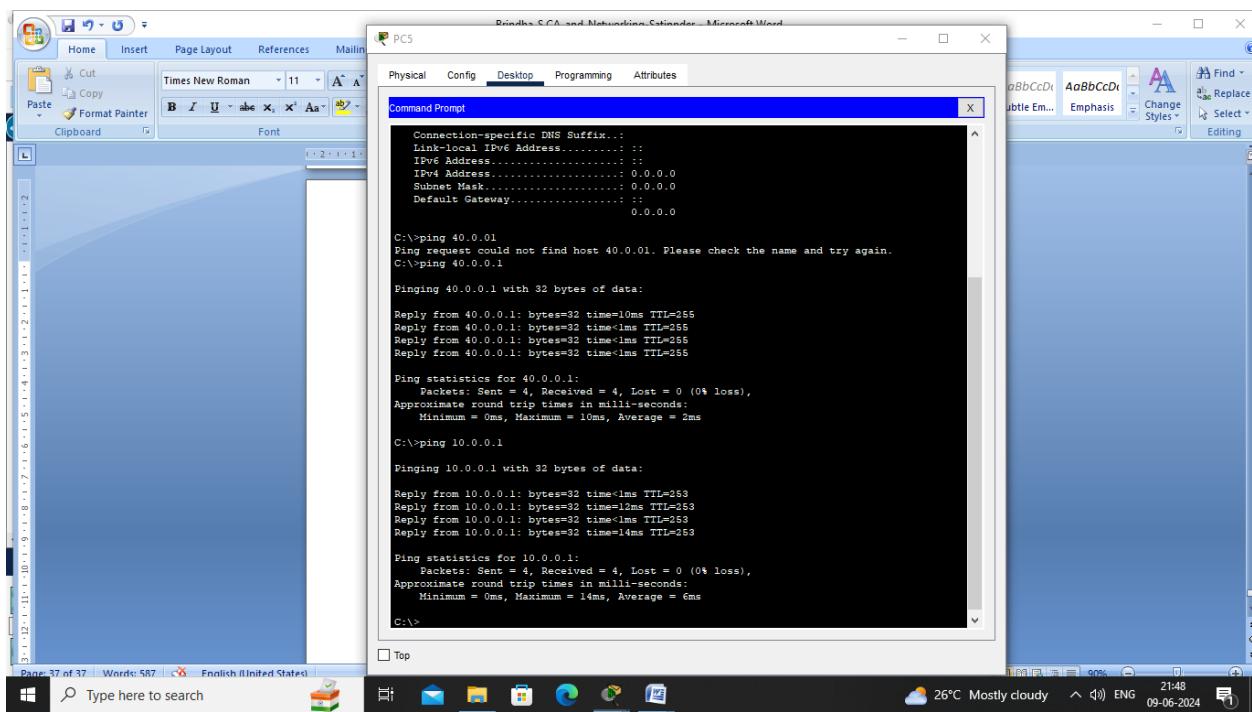












## Lab 6: Dynamic Routing



