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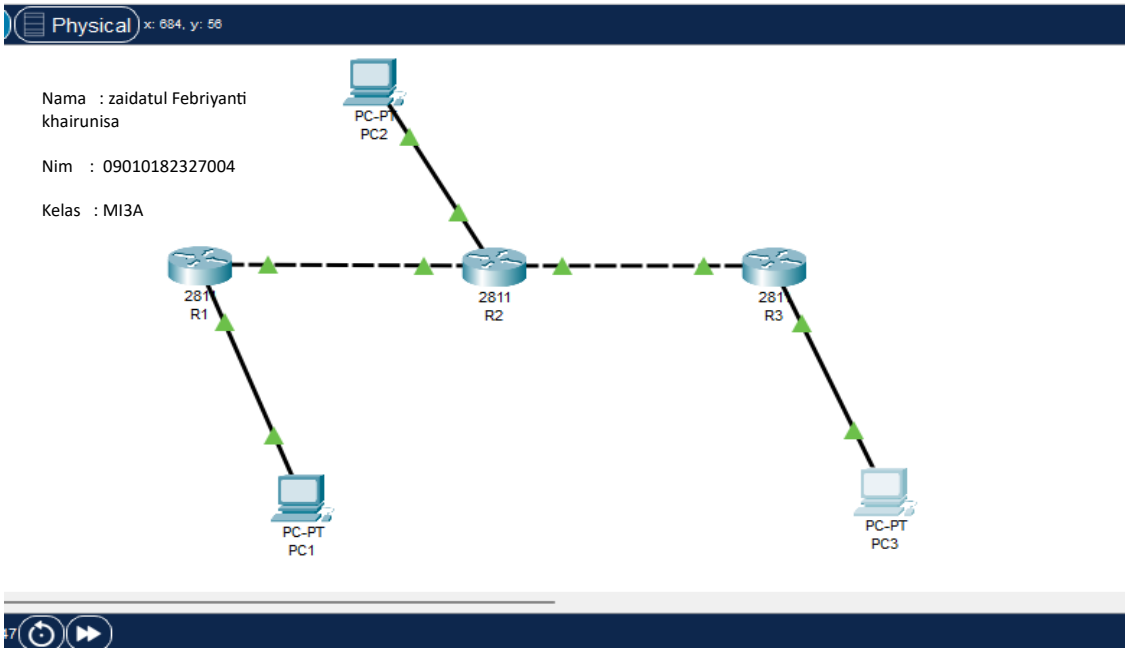
NIM : 09010182327004

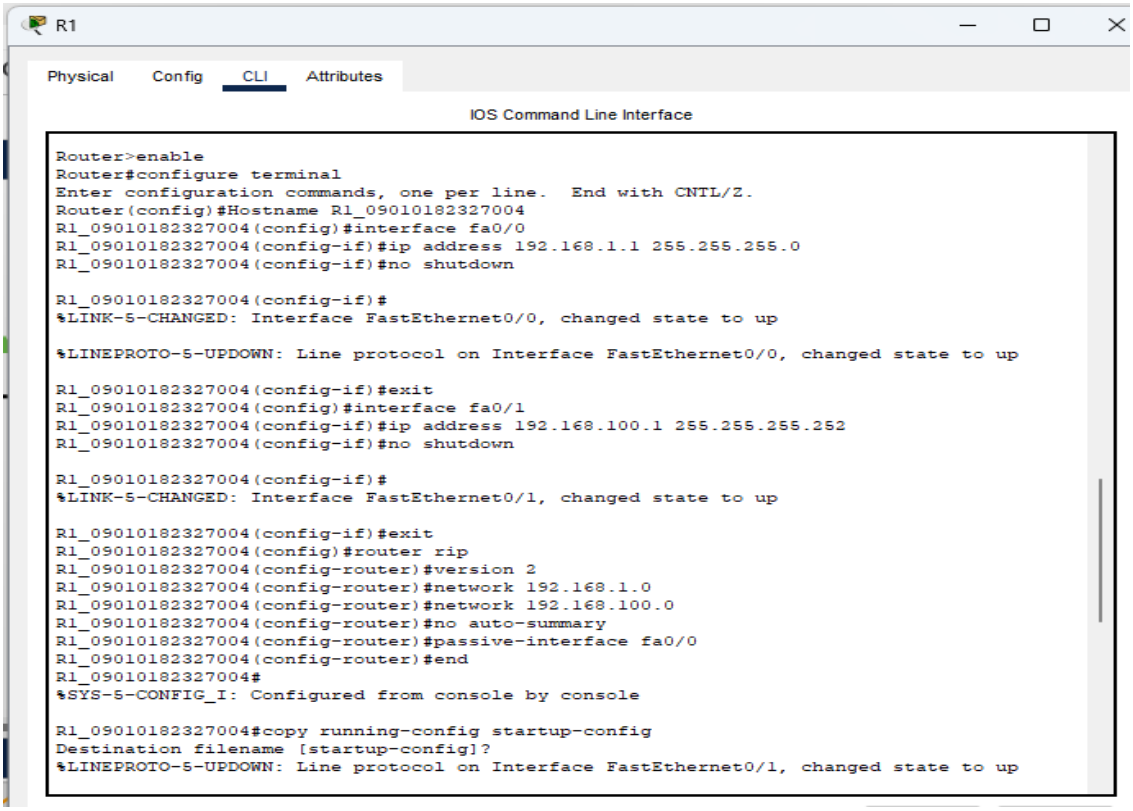
Kelas : MI3A

Laprak Praktikum jarkom RIP & EIGRP Dynamic Routing

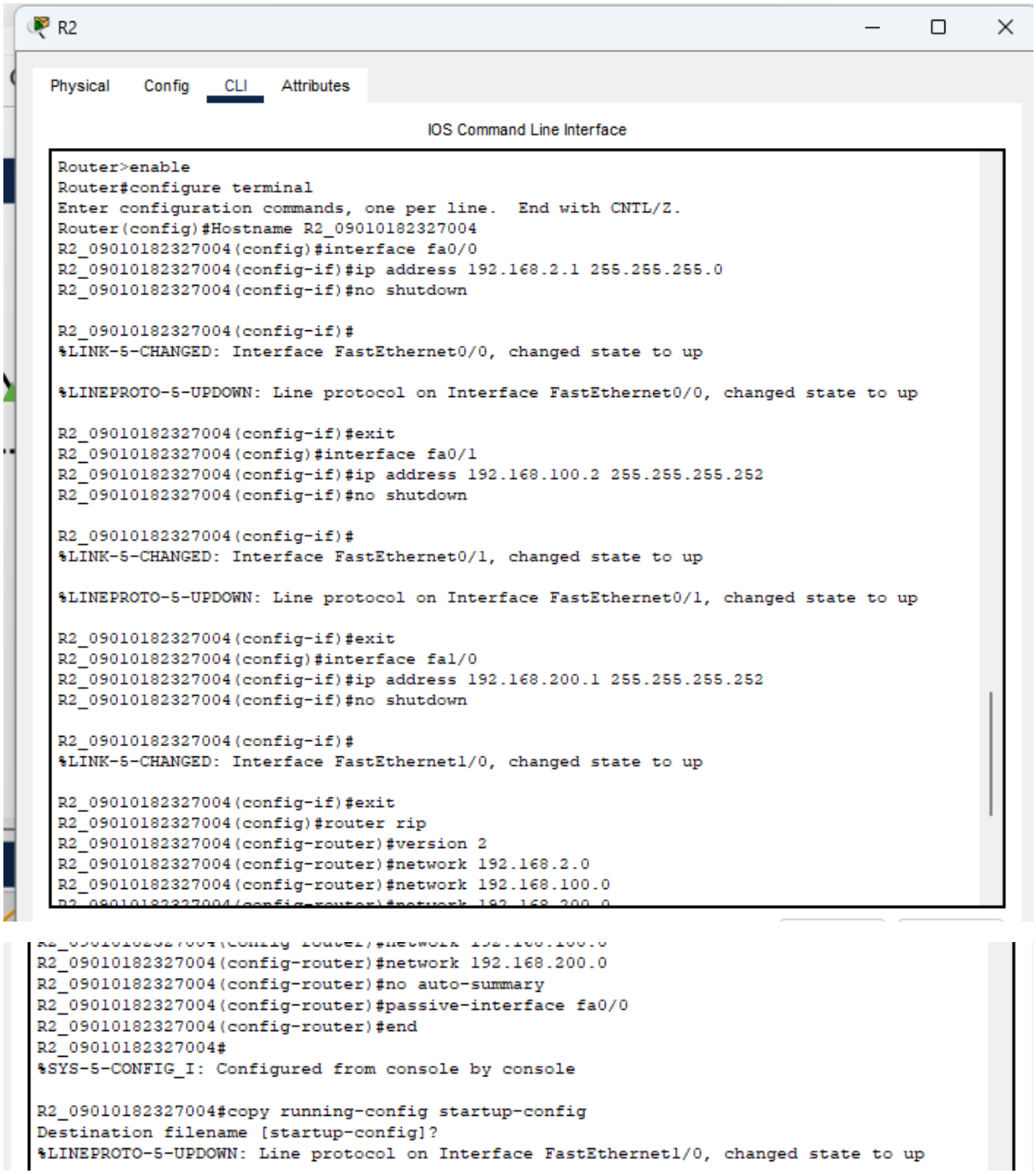
Topologi RIP



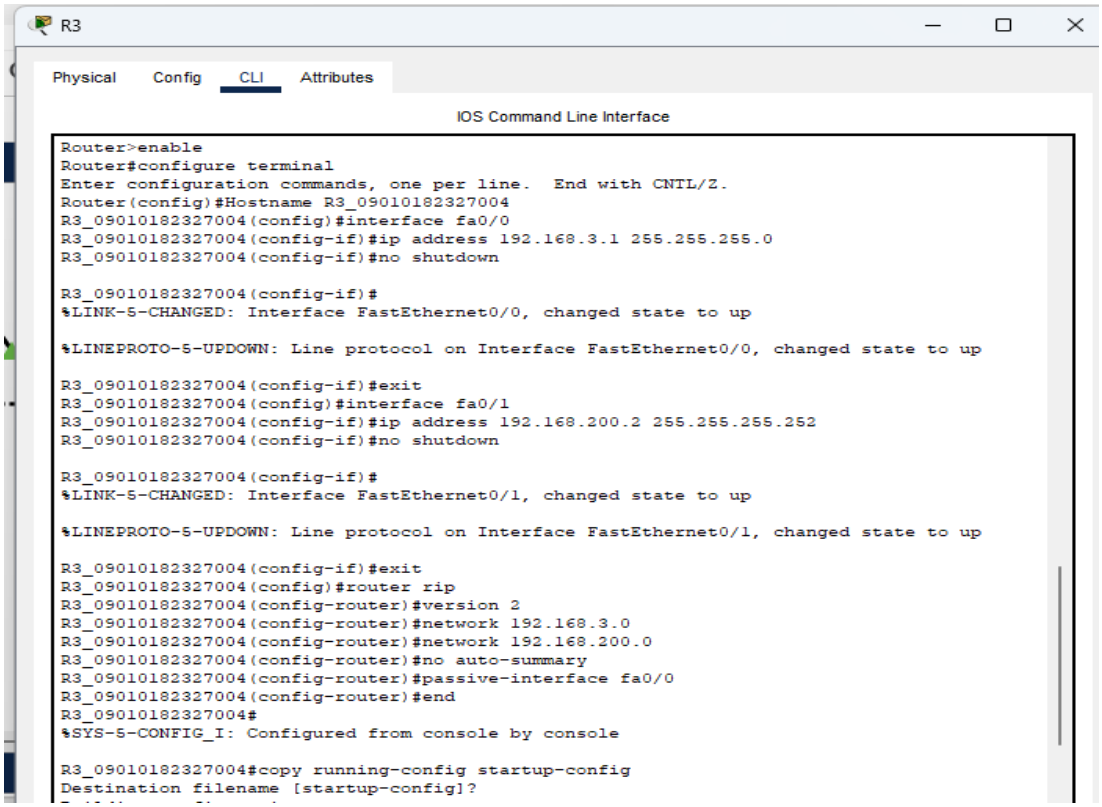
Konfigurasi R1



Konfigurasi R2



Konfigurasi R3



- Show ip route rip R1

```
R1_09010182327004#show ip route rip
     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
R    192.168.2.0/24 [120/1] via 192.168.100.2, 00:00:25, FastEthernet0/1
R    192.168.3.0/24 [120/2] via 192.168.100.2, 00:00:25, FastEthernet0/1
     192.168.200.0/30 is subnetted, 1 subnets
R       192.168.200.0 [120/1] via 192.168.100.2, 00:00:25, FastEthernet0/1

R1_09010182327004#
```

- Show ip route rip R2

```
R2_09010182327004#show ip route rip
R    192.168.1.0/24 [120/1] via 192.168.100.1, 00:00:22, FastEthernet0/1
     192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
R    192.168.3.0/24 [120/1] via 192.168.200.2, 00:00:07, FastEthernet1/0

R2_09010182327004#
```

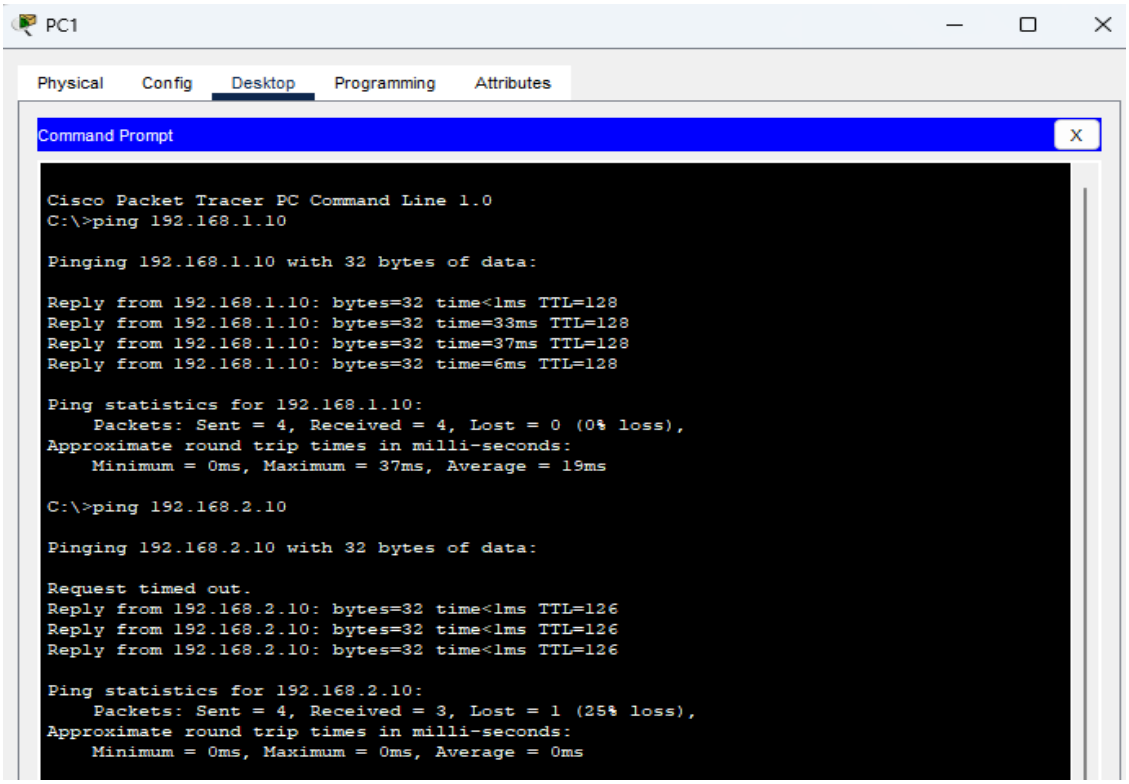
- Show ip route rip R3

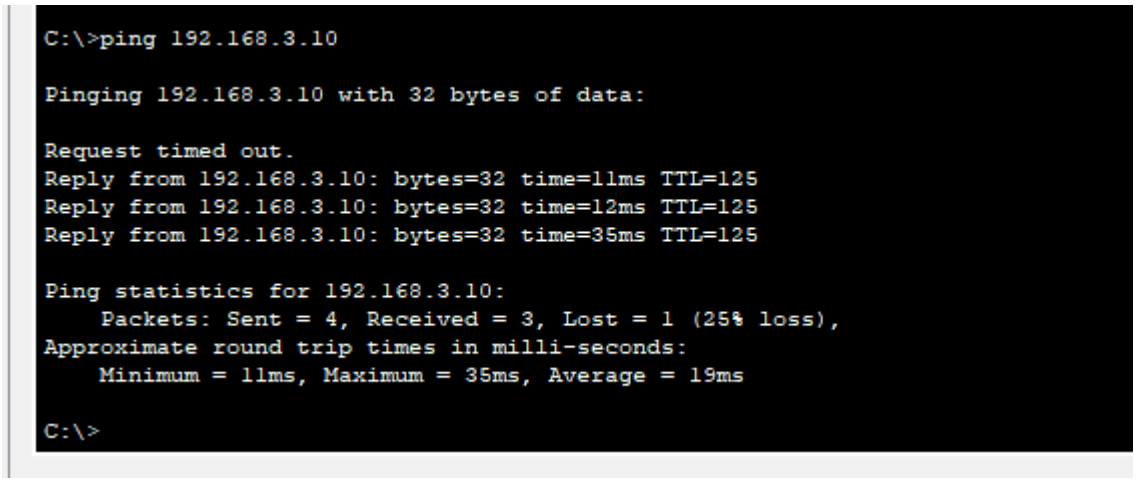
```
R3_09010182327004#show ip route rip
R    192.168.1.0/24 [120/2] via 192.168.200.1, 00:00:19, FastEthernet0/1
R    192.168.2.0/24 [120/1] via 192.168.200.1, 00:00:19, FastEthernet0/1
     192.168.100.0/30 is subnetted, 1 subnets
R       192.168.100.0 [120/1] via 192.168.200.1, 00:00:19, FastEthernet0/1

R3_09010182327004#
```

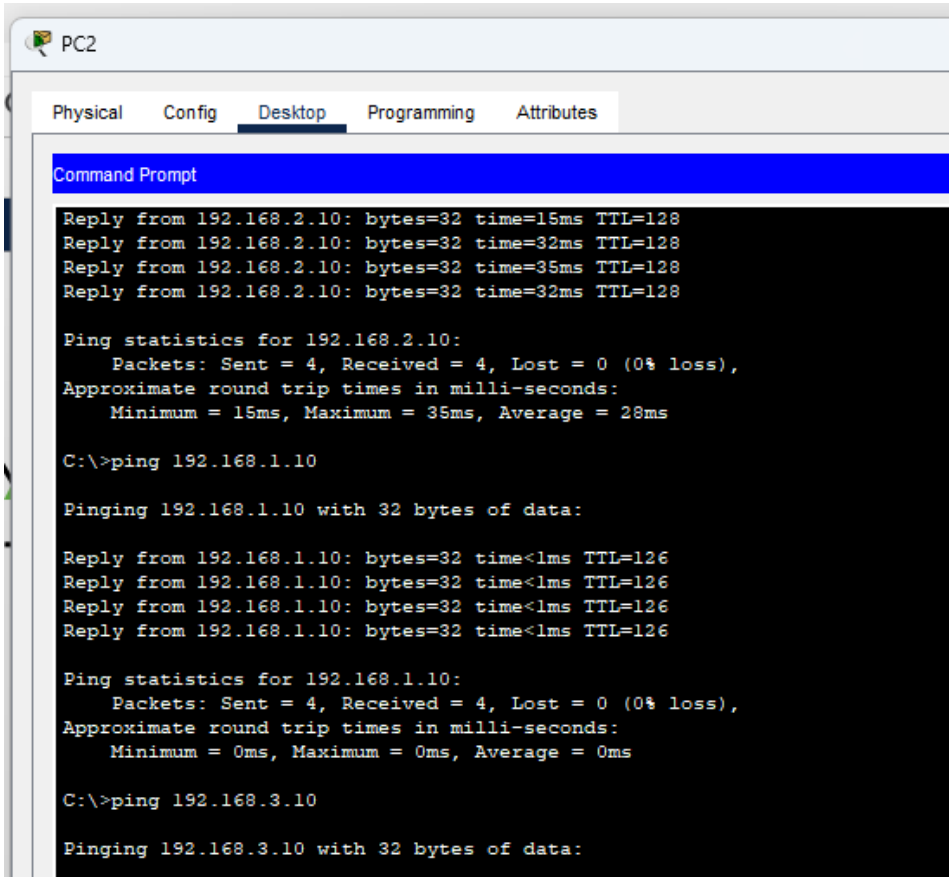
No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PC1	PC2	Ya	
		PC3	Ya	
2	PC2	PC1	Ya	
		PC3	Ya	
3	PC3	PC1	Ya	
		PC2	Ya	

Hasil Ping dari PC 1 ke PC2 dan 3

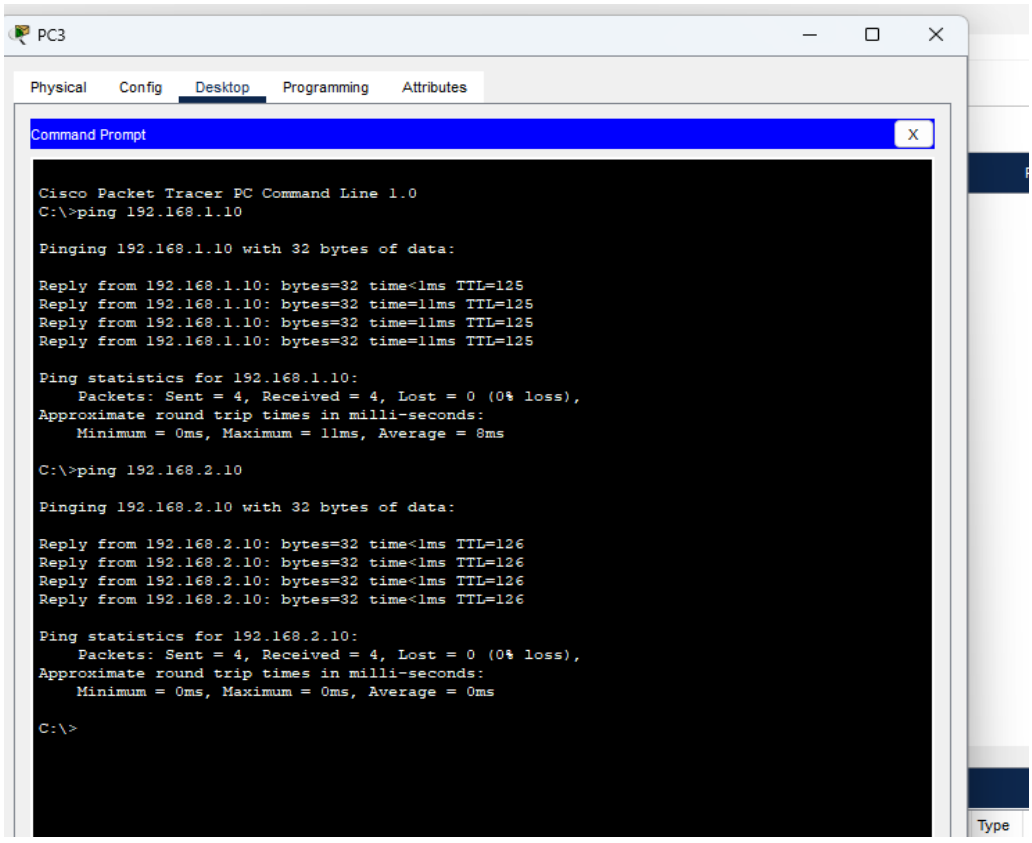




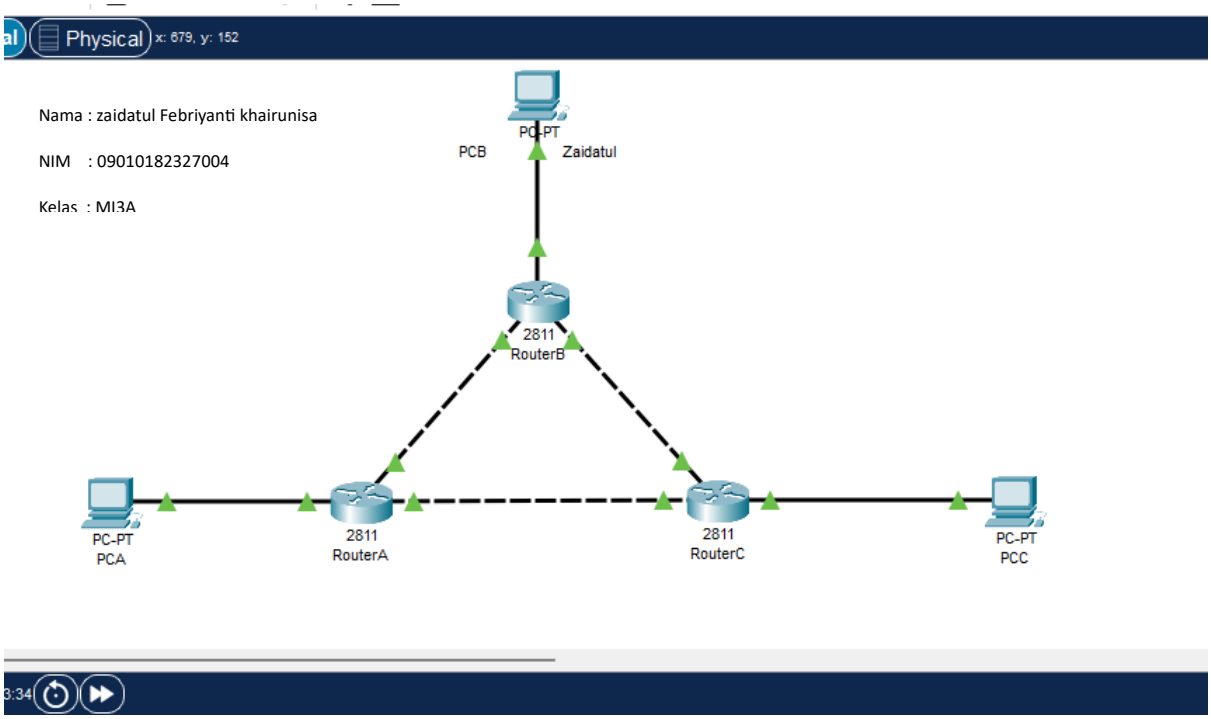
Hasil Ping dari PC2 ke Pc1 dan PC 3



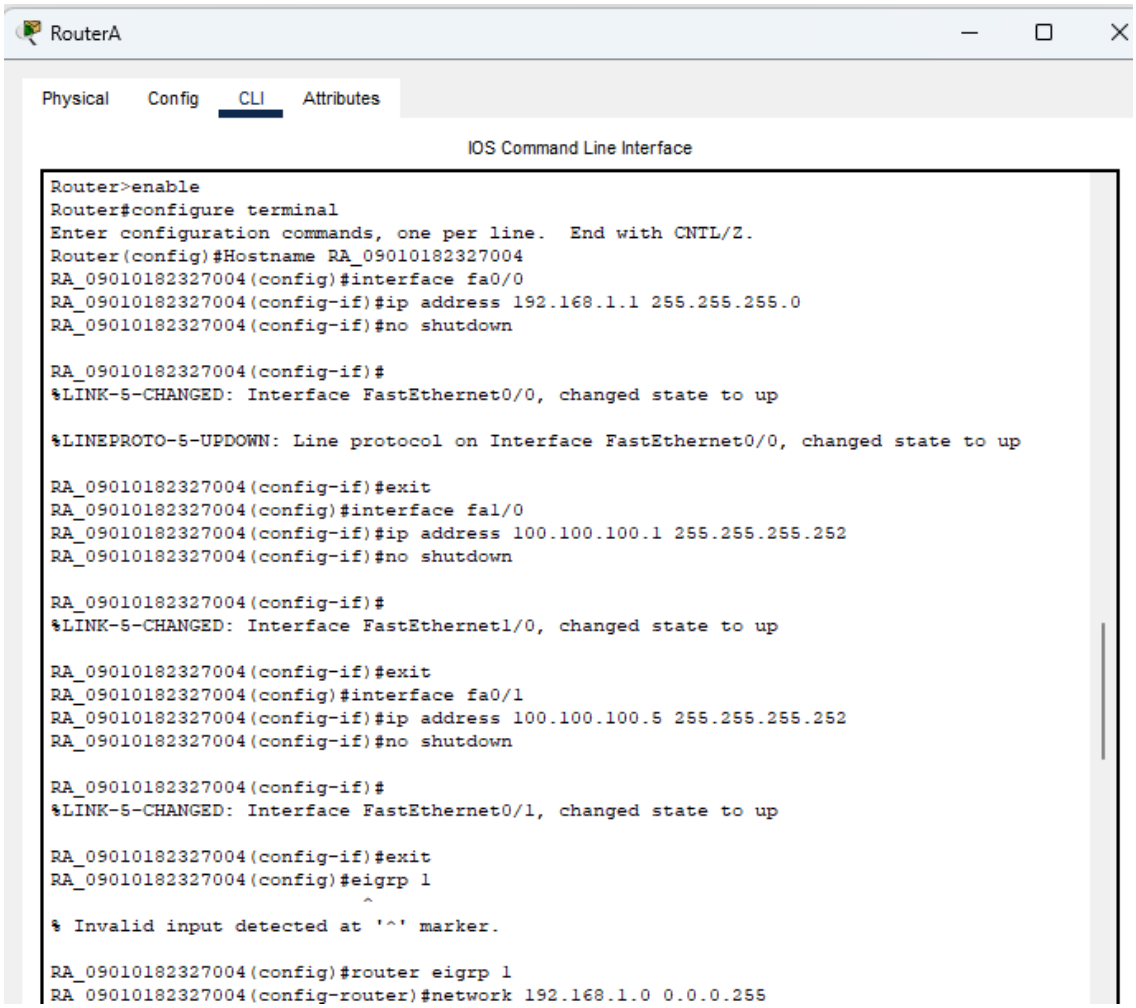
Hasil ping PC3 ke PC1 dan PC2



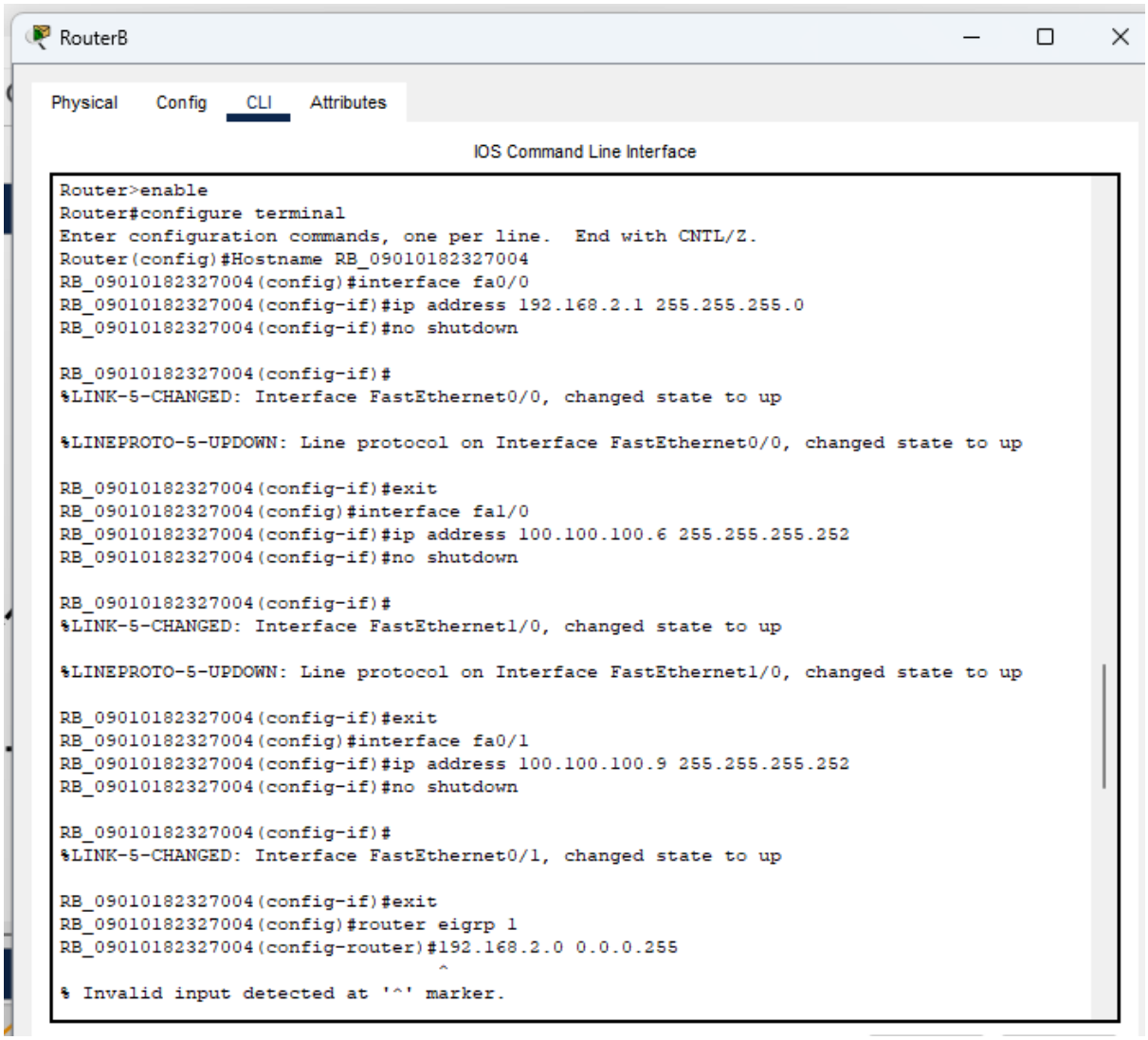
Topologi EIGRP



Konfigurasi router A



Konfigurasi router B



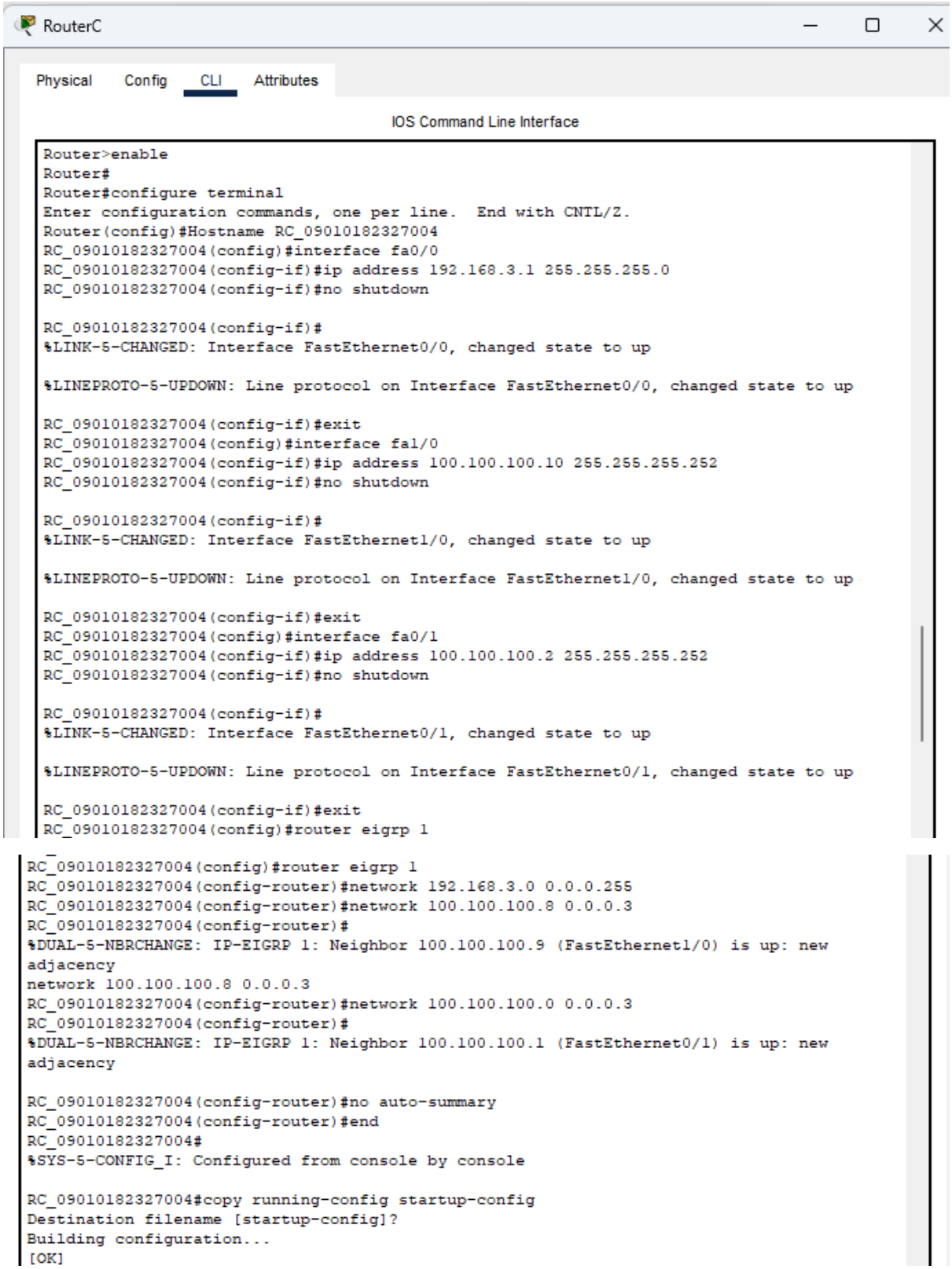

```
RB_09010182327004(config-router)#network 192.168.2.0 0.0.0.255
RB_09010182327004(config-router)#network 100.100.100.4 0.0.0.3
RB_09010182327004(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 100.100.100.5 (FastEthernet1/0) is up: new
adjacency

RB_09010182327004(config-router)#network 100.100.100.8 0.0.0.3
RB_09010182327004(config-router)#no auto-summary
RB_09010182327004(config-router)#exit
RB_09010182327004(config)#copy running-config startup-config
                         ^
% Invalid input detected at '^' marker.

RB_09010182327004(config)#exit
RB_09010182327004#
%SYS-5-CONFIG_I: Configured from console by console

RB_09010182327004#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

Konfigurasi router C



Show ip route rip Router A

```
RA_09010182327004#show ip route eigrp
     100.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
D       100.100.100.8/30 [90/30720] via 100.100.100.6, 00:04:35, FastEthernet0/1
                         [90/30720] via 100.100.100.2, 00:01:41, FastEthernet1/0
     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
D    192.168.2.0/24 [90/30720] via 100.100.100.6, 00:11:11, FastEthernet0/1
D    192.168.3.0/24 [90/30720] via 100.100.100.2, 00:01:41, FastEthernet1/0

RA_09010182327004#
```

Show ip route rip Router B

```
RB_09010182327004#show ip route eigrp
     100.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
D    192.168.1.0/24 [90/30720] via 100.100.100.5, 00:02:19, FastEthernet1/0

RB_09010182327004#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
```

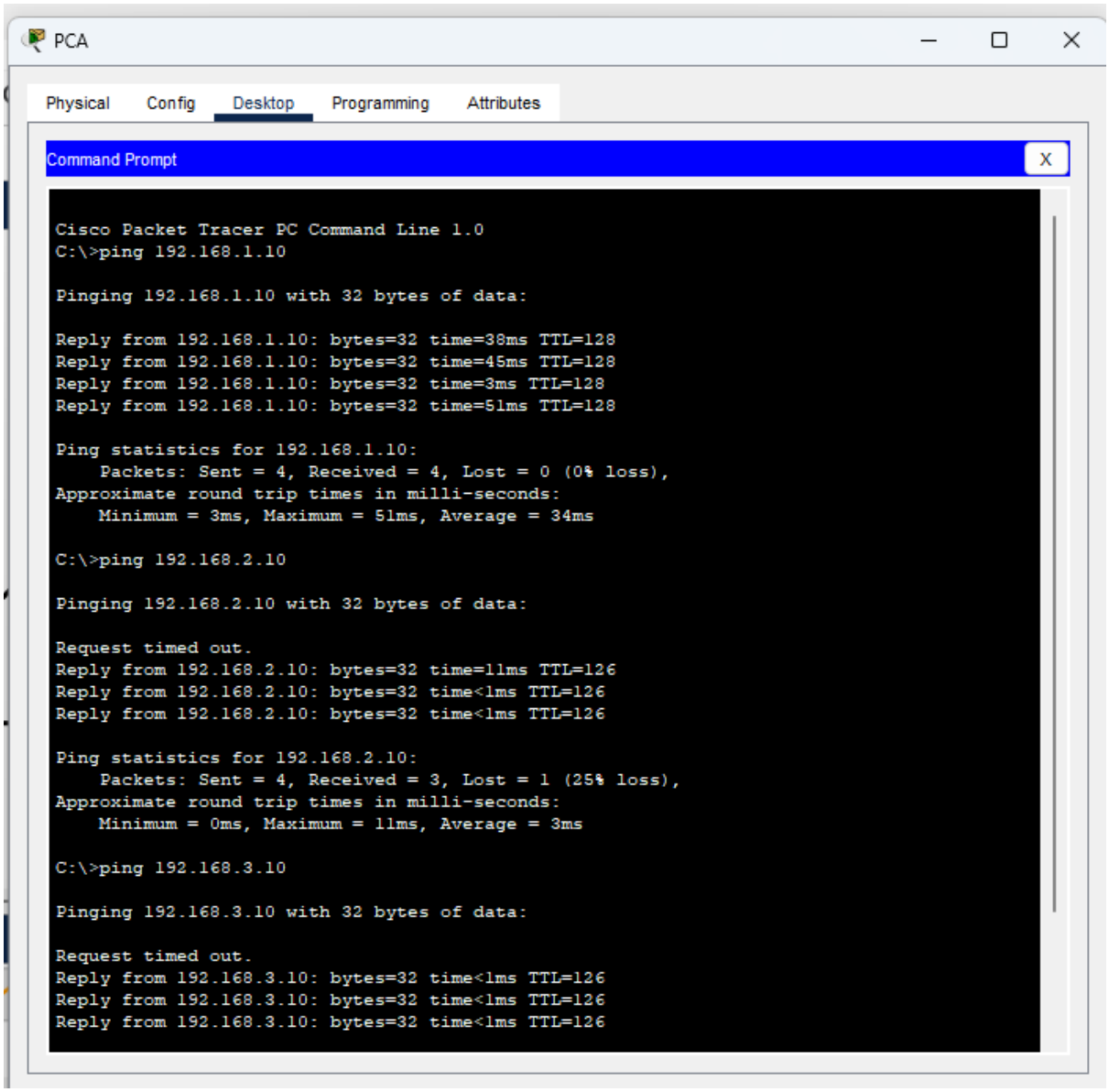
Show ip route rip Router C

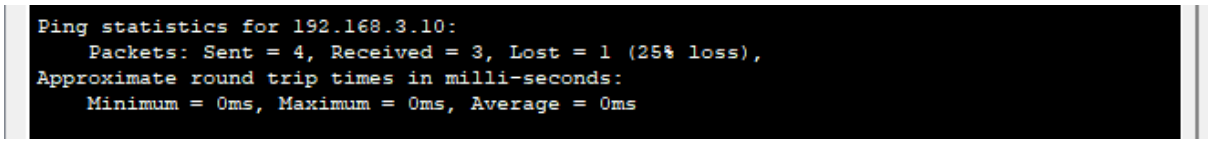
```
RC_09010182327004#show ip route eigrp
     100.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
D       100.100.100.4/30 [90/30720] via 100.100.100.9, 00:01:24, FastEthernet1/0
                         [90/30720] via 100.100.100.1, 00:01:05, FastEthernet0/1
D    192.168.1.0/24 [90/30720] via 100.100.100.1, 00:01:05, FastEthernet0/1
D    192.168.2.0/24 [90/30720] via 100.100.100.9, 00:01:24, FastEthernet1/0
```

Ping

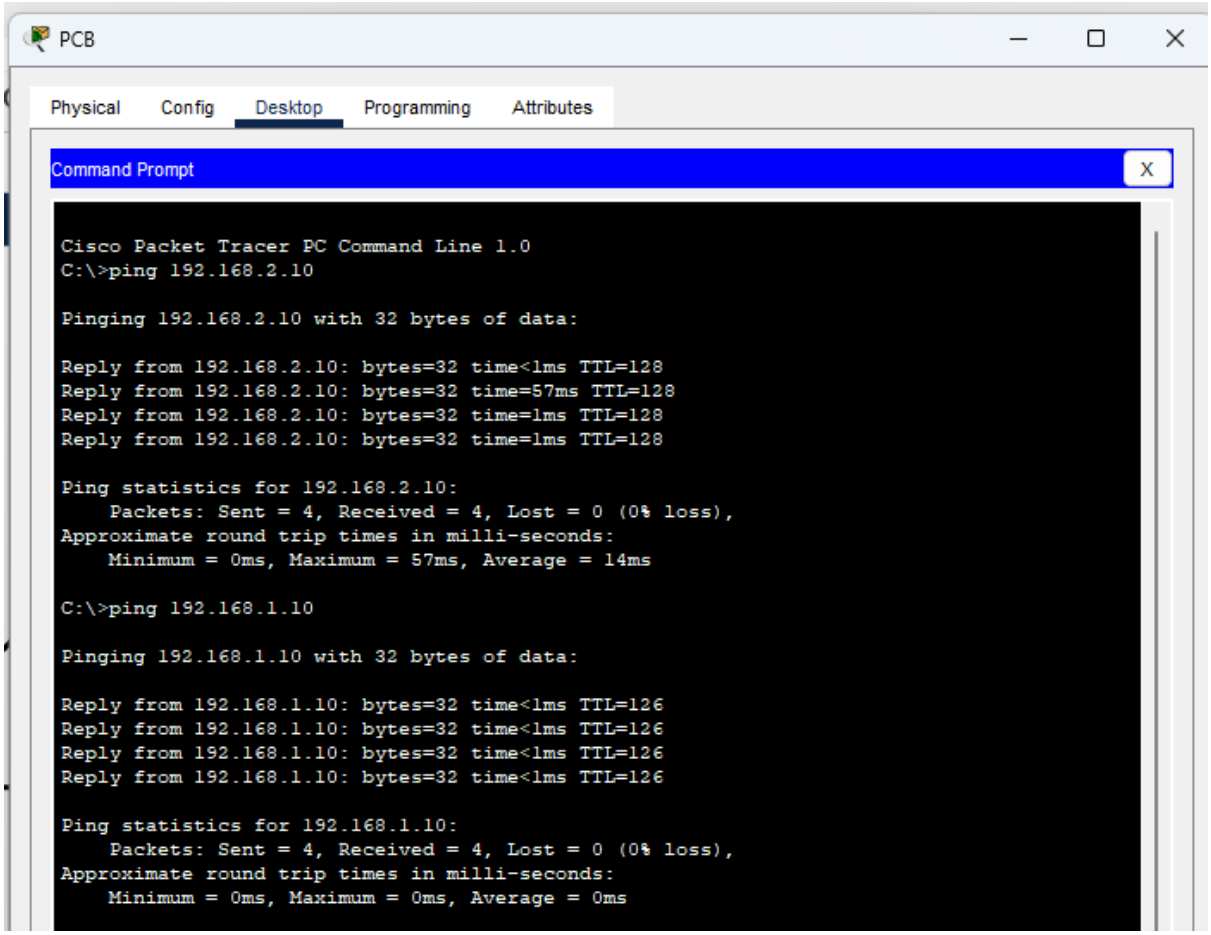
No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PCA	PCB	Ya	
		PCC	Ya	
2	PCB	PCA	Ya	
		PCC	Ya	
3	PCC	PCA	Ya	
		PCB	Ya	

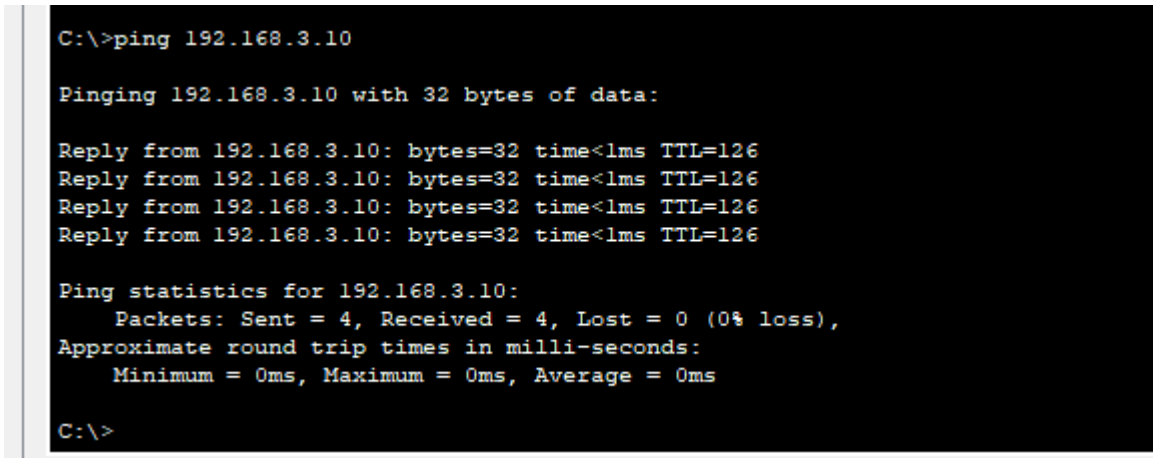
Hasil ping dari router A ke B dan C



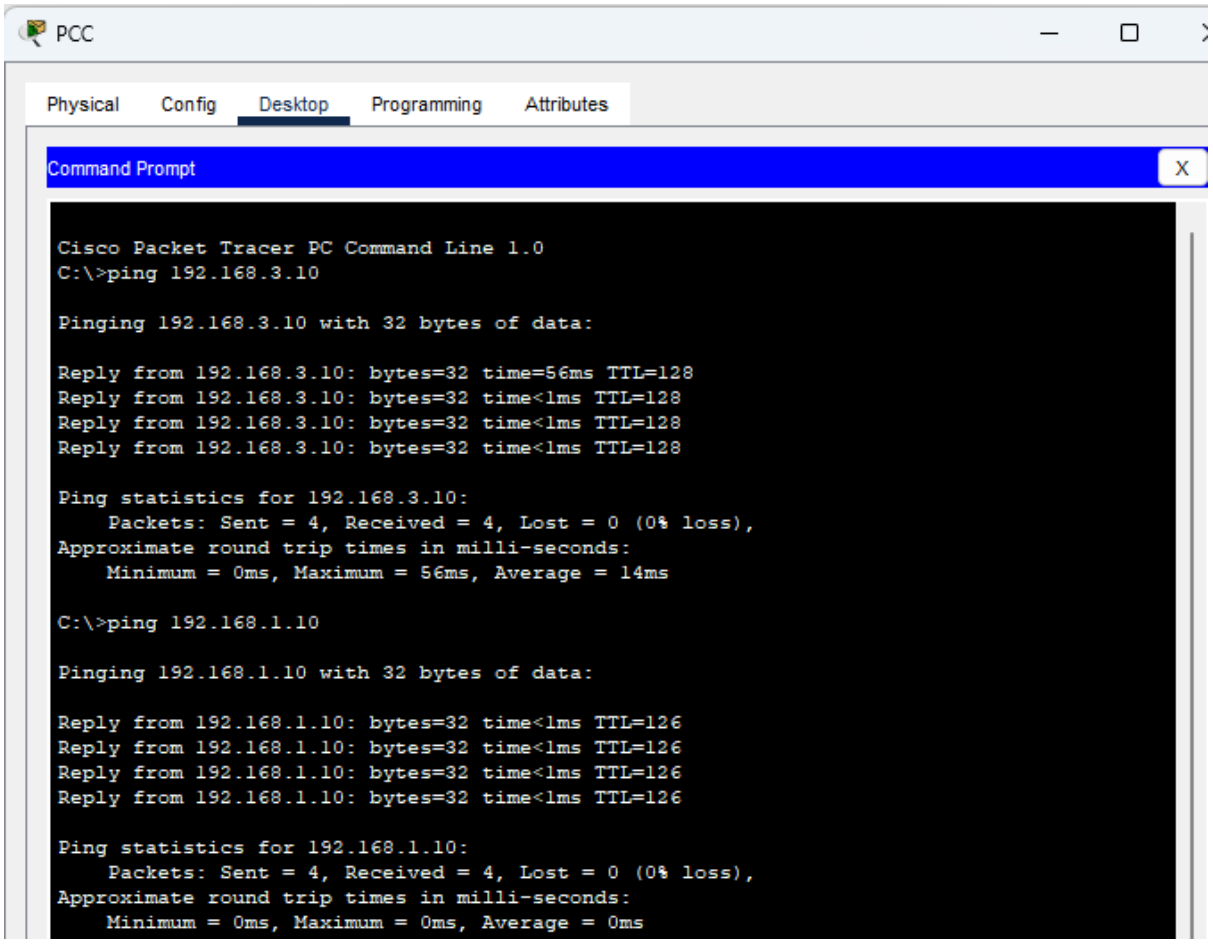


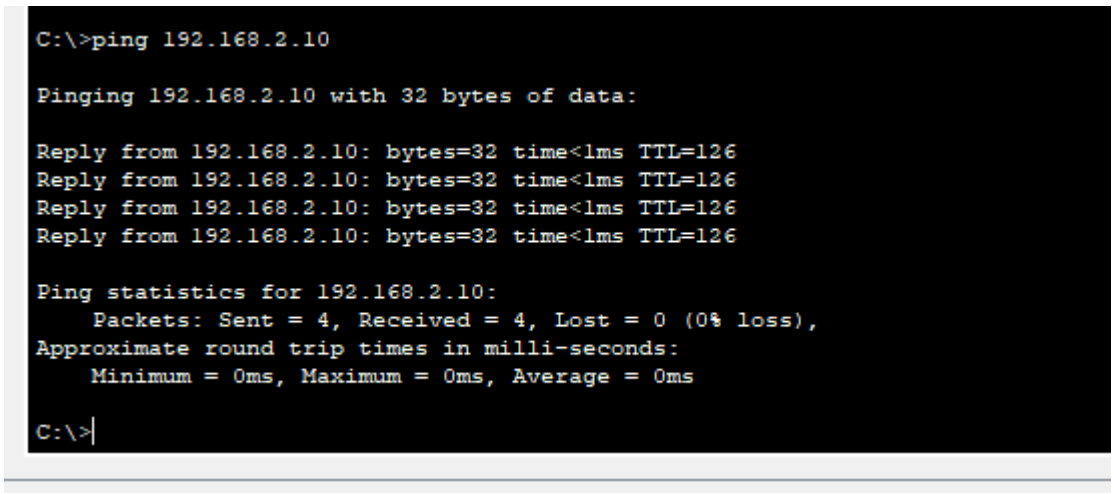
Hasil ping dari router B ke A dan C





Hasil ping dari PCC ke PCA dan PCB


PCC
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.3.10
Pinging 192.168.3.10 with 32 bytes of data:
Reply from 192.168.3.10: bytes=32 time=56ms TTL=128
Reply from 192.168.3.10: bytes=32 time<1ms TTL=128
Reply from 192.168.3.10: bytes=32 time<1ms TTL=128
Reply from 192.168.3.10: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.3.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 56ms, Average = 14ms
C:\>ping 192.168.1.10
Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: bytes=32 time<1ms TTL=126
Reply from 192.168.1.10: bytes=32 time<1ms TTL=126
Reply from 192.168.1.10: bytes=32 time<1ms TTL=126
Reply from 192.168.1.10: bytes=32 time<1ms TTL=126
Ping statistics for 192.168.1.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms


C:\>ping 192.168.2.10
Pinging 192.168.2.10 with 32 bytes of data:
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Ping statistics for 192.168.2.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>

Penjelasan Hasil Praktikum

Pada praktikum ini, dilakukan konfigurasi routing menggunakan dua protokol dinamis, yaitu Routing Information Protocol (RIP) dan Enhanced Interior Gateway Routing Protocol (EIGRP). Praktikum dimulai dengan membuat topologi jaringan sesuai diagram pada modul, di mana setiap router dikonfigurasi IP Address pada antarmuka yang berbeda. Pengujian koneksi dilakukan menggunakan perintah ping dan traceroute untuk memverifikasi konektivitas antar perangkat di jaringan.

1. **RIP Configuration:** Router R1, R2, dan R3 dikonfigurasi dengan protokol RIP versi 2 untuk memungkinkan pembagian informasi routing secara dinamis. Setelah konfigurasi, hasil perintah show ip route rip menunjukkan tabel routing yang dihasilkan oleh protokol RIP di setiap router.
2. **EIGRP Configuration:** Topologi diubah untuk konfigurasi EIGRP antara RouterA, RouterB, dan RouterC. Protokol EIGRP memungkinkan penggunaan nomor Autonomous System (AS) dan lebih efisien dibanding RIP dalam pembagian informasi routing.

Analisis

Praktikum ini menunjukkan perbandingan antara RIP dan EIGRP dalam hal konfigurasi, fleksibilitas, dan efisiensi dalam pembagian informasi routing:

- **RIP** terbatas pada jarak maksimum (hops), sehingga kurang cocok untuk jaringan skala besar. RIP melakukan update routing secara periodik, menyebabkan potensi penggunaan bandwidth lebih besar.
- **EIGRP** lebih efisien karena hanya mengirimkan perubahan topologi, bukan update penuh, yang membantu mengurangi penggunaan bandwidth. EIGRP juga menggunakan metrik yang lebih kompleks (bandwidth dan delay), memberikan kontrol routing yang lebih baik di jaringan besar.

Kesimpulan

Praktikum ini memberikan pemahaman tentang penggunaan dan konfigurasi RIP dan EIGRP. RIP sederhana namun memiliki keterbatasan untuk jaringan besar, sedangkan EIGRP lebih cocok untuk jaringan besar dengan efisiensi yang lebih tinggi. EIGRP mampu menjaga stabilitas jaringan dengan lebih baik karena hanya mengirimkan pembaruan jika ada perubahan topologi.