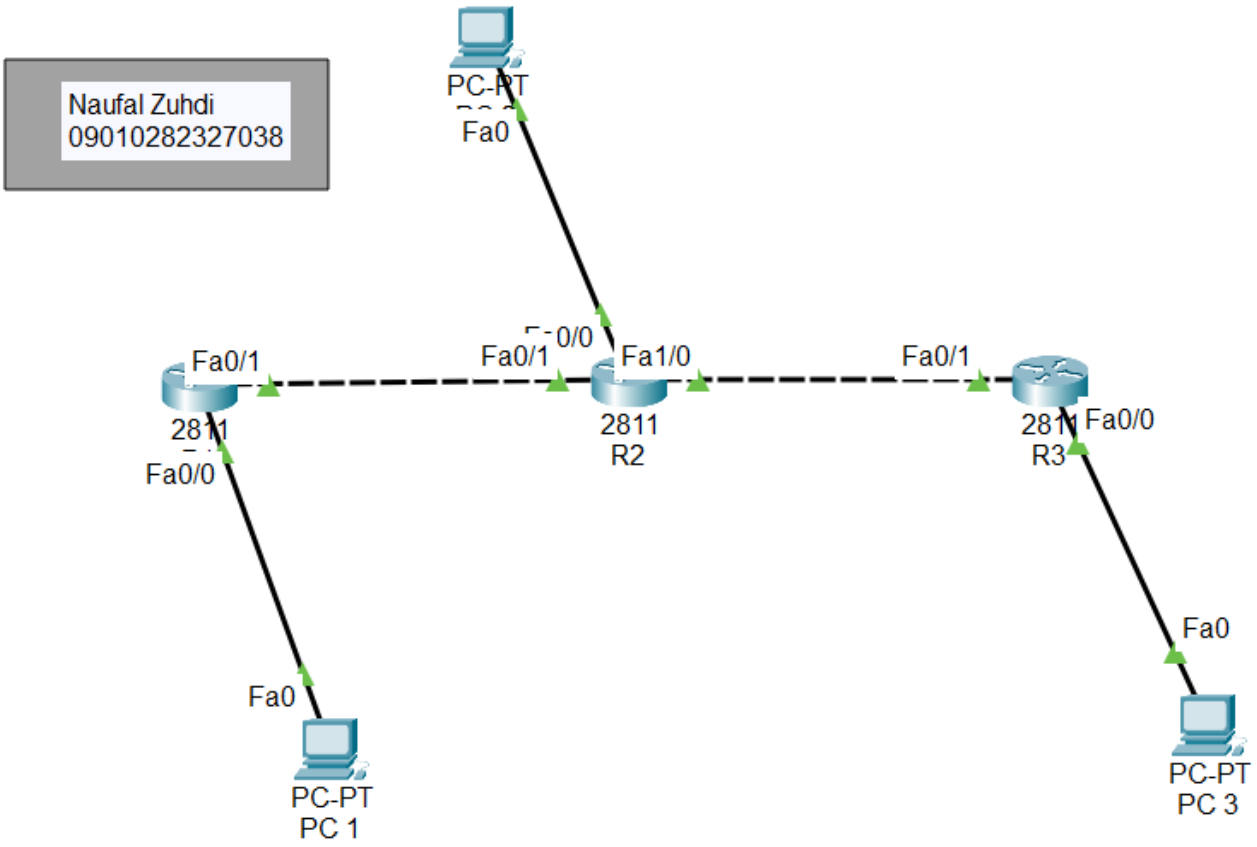
NAMA	**: NAUFAL ZUHDI**
NIM	**: 09010282327038**
KELAS	**: MI.3A**
MK	**: PRAKTIKUM JARKOM**

- **Routing RIP**



1. Buatlah IP Address di PC

No	Nama Device	Alamat	Netmask	Gateway
1	PC1	192.168.1.10	255.255.255.0	192.168.1.1
2	PC2	192.168.2.10	255.255.255.0	192.168.2.1
3	PC3	192.168.3.10	255.255.255.0	192.168.3.1

Router R1

```
R1_09010282327038>enable
R1_09010282327038#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, 00:00:16, FastEthernet0/1
R    192.168.3.0/24 [120/2] via 192.168.100.2, 00:00:16, FastEthernet0/1
     192.168.200.0/30 is subnetted, 1 subnets
R       192.168.200.0 [120/1] via 192.168.100.2, 00:00:16, FastEthernet0/1
```

Router R2

```
R2_09010282327038>enable
R2_09010282327038#show ip route rip
R    192.168.1.0/24 [120/1] via 192.168.100.1, 00:00:25, 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, 00:00:19, FastEthernet1/0
```

Router R3

```
R3_09010282327038>enable
R3_09010282327038#show ip route rip
R    192.168.1.0/24 [120/2] via 192.168.200.1, 00:00:18, FastEthernet0/1
R    192.168.2.0/24 [120/1] via 192.168.200.1, 00:00:18, FastEthernet0/1
     192.168.100.0/30 is subnetted, 1 subnets
R       192.168.100.0 [120/1] via 192.168.200.1, 00:00:18, FastEthernet0/1
```

2. Lakukan PING dan Traceroute dari PC1 ke PC2 dan PC3, PC2 ke PC1 dan PC3, serta PC3 ke PC1 dan PC2.

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

Tabel hasil Ping :

PC A :

```
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=4ms 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 = 4ms, Average = 1ms

C:\>ping 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.10: bytes=32 time=1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

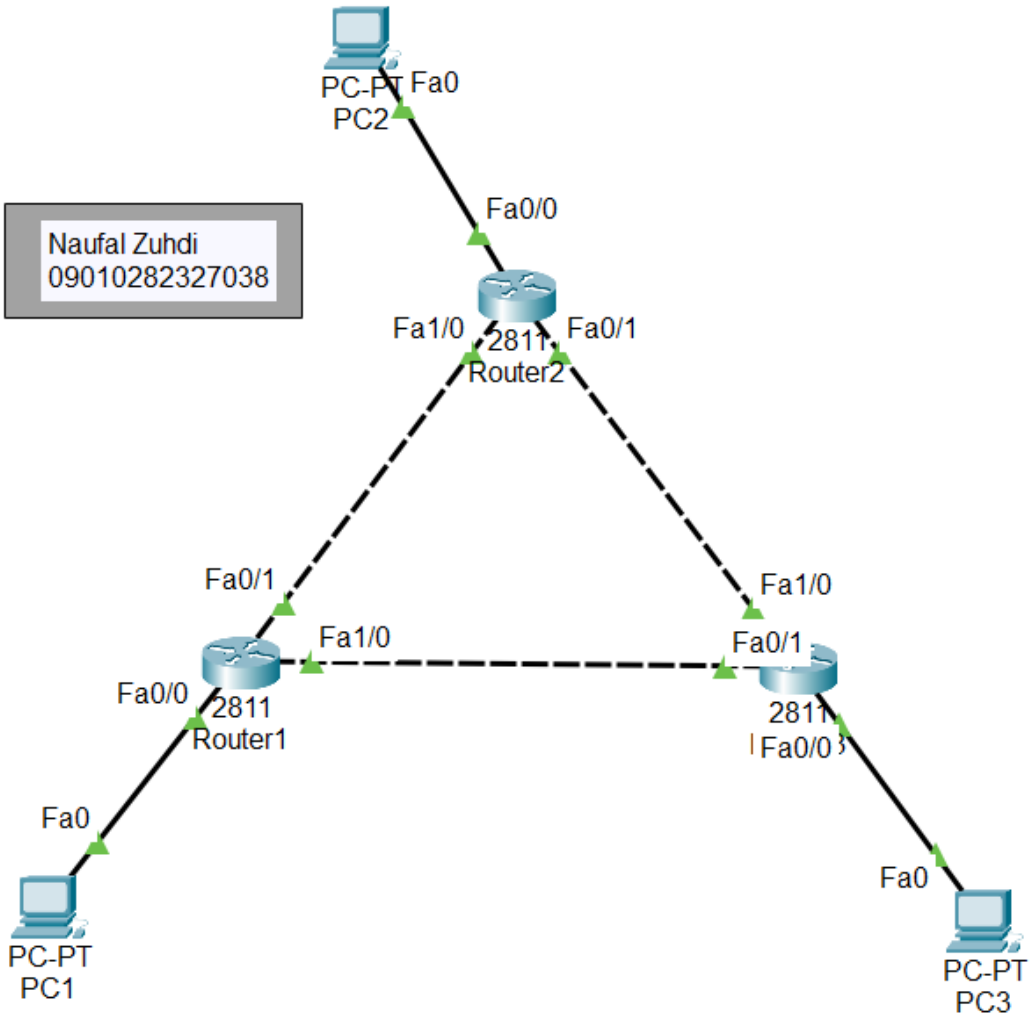
PC B :

```
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 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126

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 = 0ms, Average = 0ms
```

PC C :

```
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=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125

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
```

- **Routing EIGRP**



1. Buat Pengalamat di PC

No	Nama Device	Alamat	Netmask	Gateway
1	PCA	192.168.1.10	255.255.255.0	192.168.1.1
2	PCB	192.168.2.10	255.255.255.0	192.168.2.1
3	PCC	192.168.3.10	255.255.255.0	192.168.3.1

Router A

```
RouterA_09010282327038>enable
RouterA_09010282327038#show ip route eigrp
     100.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D       100.100.100.8/30 [90/30720] via 100.100.100.6, 00:00:23, FastEthernet0/1
D       100.100.100.12/30 [90/30720] via 100.100.100.2, 00:00:23, 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, 00:00:23, FastEthernet0/1
D    192.168.3.0/24 [90/33280] via 100.100.100.6, 00:00:23, FastEthernet0/1
                    [90/33280] via 100.100.100.2, 00:00:23, FastEthernet1/0
D    192.168.4.0/24 [90/30720] via 100.100.100.2, 00:00:23, FastEthernet1/0
```

Router B

```
RouterB_09010282327038>enable
RouterB_09010282327038#show ip route eigrp
     100.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D       100.100.100.0/30 [90/30720] via 100.100.100.5, 00:00:48, FastEthernet1/0
D       100.100.100.12/30 [90/30720] via 100.100.100.10, 00:00:48, FastEthernet0/1
D    192.168.1.0/24 [90/30720] via 100.100.100.5, 00:00:48, FastEthernet1/0
     192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
D    192.168.3.0/24 [90/30720] via 100.100.100.10, 00:00:48, FastEthernet0/1
D    192.168.4.0/24 [90/33280] via 100.100.100.5, 00:00:48, FastEthernet1/0
                    [90/33280] via 100.100.100.10, 00:00:48, FastEthernet0/1
```

Router C

```
RouterC_09010282327034>enable
RouterC_09010282327034#show ip route eigrp
     100.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D       100.100.100.0/30 [90/30720] via 100.100.100.14, 00:01:03, FastEthernet0/1
D       100.100.100.4/30 [90/30720] via 100.100.100.9, 00:01:03, FastEthernet1/0
D    192.168.1.0/24 [90/33280] via 100.100.100.14, 00:01:03, FastEthernet0/1
                    [90/33280] via 100.100.100.9, 00:01:03, FastEthernet1/0
D    192.168.2.0/24 [90/30720] via 100.100.100.9, 00:01:03, FastEthernet1/0
     192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
D    192.168.4.0/24 [90/30720] via 100.100.100.14, 00:01:03, FastEthernet0/1
```

2. Lakukan PING dan Traceroute dari PCA ke PCB dan PCC, PCB ke PCA dan PCC, serta PCC ke PCA dan PCB.

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

Tabel hasil Ping :

PC A

```
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 = 1ms, Average = 0ms

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<1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125
Reply from 192.168.3.10: bytes=32 time<1ms TTL=125

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 = 0ms, Average = 0ms
```

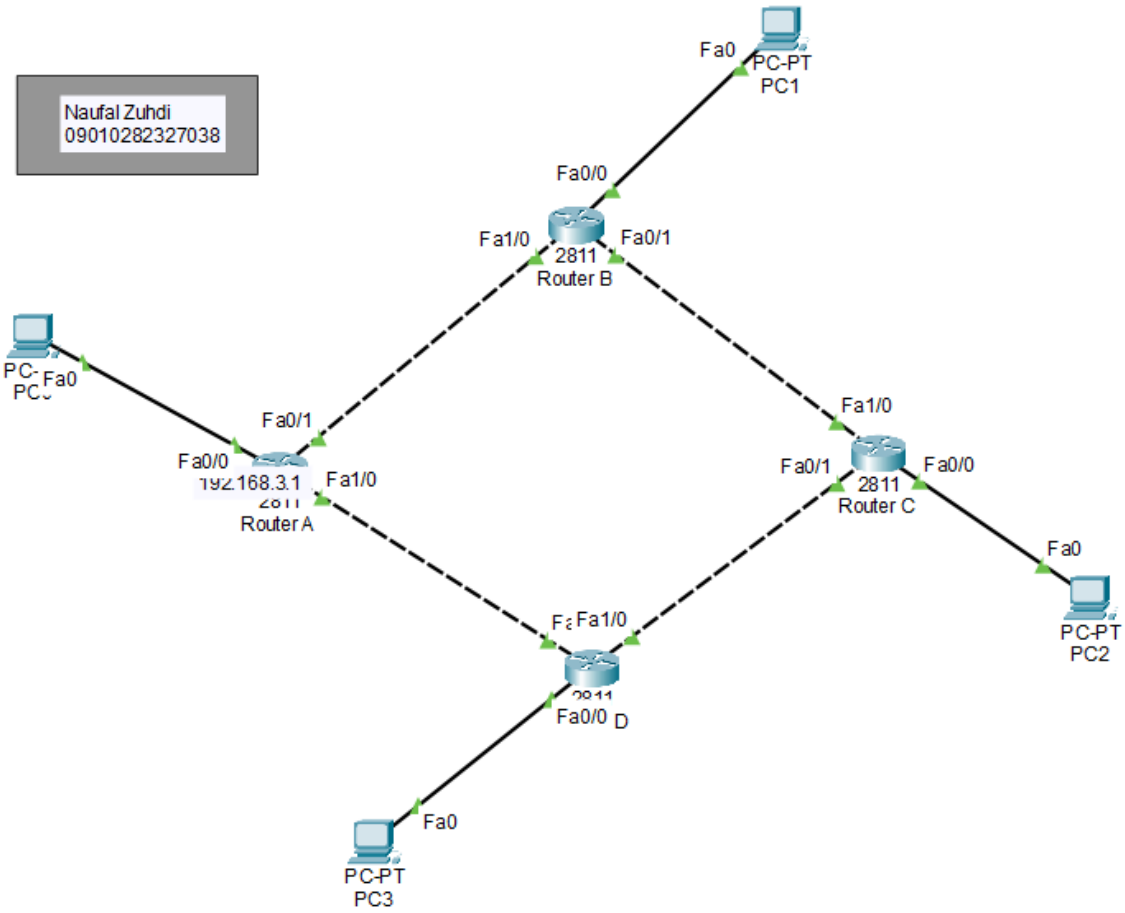
PC B

```
Cisco Packet Tracer PC Command Line 1.0
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 = 1ms, Average = 0ms

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<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126

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 = 1ms, Average = 0ms
```

PC C

```
Cisco Packet Tracer PC Command Line 1.0
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=37ms TTL=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125
Reply from 192.168.1.10: bytes=32 time<1ms TTL=125

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 = 37ms, Average = 9ms

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
```

3. Putuskan koneksi pada RouterA ke RouterC, lalu tambahkan satu RouterD dan PC D, dimana RouterD terhubung ke RouterA dan RouterC.



Router D

```
RouterD_09010282327038>enable
RouterD_09010282327038#show ip route eigrp
     100.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D       100.100.100.4/30 [90/30720] via 100.100.100.1, 00:00:20, FastEthernet0/1
D       100.100.100.8/30 [90/30720] via 100.100.100.13, 00:00:20, FastEthernet1/0
D    192.168.1.0/24 [90/30720] via 100.100.100.1, 00:00:20, FastEthernet0/1
D    192.168.2.0/24 [90/33280] via 100.100.100.13, 00:00:20, FastEthernet1/0
                    [90/33280] via 100.100.100.1, 00:00:20, FastEthernet0/1
D    192.168.3.0/24 [90/30720] via 100.100.100.13, 00:00:20, FastEthernet1/0
```

Hasil tes ping PC D :

```
Cisco Packet Tracer PC Command Line 1.0
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=25ms TTL=125
Reply from 192.168.2.10: bytes=32 time<1ms TTL=125
Reply from 192.168.2.10: bytes=32 time<1ms TTL=125
Reply from 192.168.2.10: bytes=32 time<1ms TTL=125

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 = 25ms, Average = 6ms

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<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126
Reply from 192.168.3.10: bytes=32 time<1ms TTL=126

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 = 1ms, Average = 0ms
```

- Berikan penjelasan terkait hasil dari praktikum kali ini.

Dalam praktikum ini, konfigurasi routing RIP dan EIGRP telah diimplementasikan pada jaringan yang terdiri dari beberapa PC yang saling berhubungan melalui router. Setelah konfigurasi, pengujian koneksi antar-PC dilakukan dengan menggunakan perintah PING dan Traceroute untuk memastikan bahwa masing-masing perangkat dapat mencapai perangkat lainnya melalui jaringan. Hasil pengujian menunjukkan bahwa koneksi antara semua perangkat berhasil dengan baik, ditandai dengan respons "YA" pada tabel hasil PING, yang menandakan bahwa paket data berhasil dikirimkan dan diterima.

- Buat Analisa terkait praktikum yang dikerjakan.

Konfigurasi RIP dan EIGRP digunakan untuk membandingkan kedua protokol routing dalam mengatur rute paket data pada jaringan. RIP, yang menggunakan distance vector routing dengan batas maksimum hop count 15, cocok untuk jaringan kecil hingga menengah. Sedangkan EIGRP, yang menggunakan algoritma hybrid, memberikan performa lebih baik dengan memungkinkan penggunaan lebih banyak metrik dan mendukung deteksi jaringan yang lebih luas dan dinamis. Berdasarkan hasil PING dan traceroute yang berhasil, terlihat bahwa keduanya efektif dalam mengatur rute di jaringan ini, meskipun EIGRP menawarkan kecepatan konvergensi yang lebih cepat dan lebih stabil pada jaringan yang lebih kompleks.

- Kesimpulan.

Praktikum ini menunjukkan bahwa baik RIP maupun EIGRP dapat digunakan untuk routing pada jaringan, tetapi masing-masing memiliki karakteristik dan keunggulan tersendiri. RIP lebih sederhana tetapi terbatas pada jaringan yang lebih kecil, sementara EIGRP lebih kompleks namun mendukung performa yang lebih tinggi pada jaringan yang lebih besar. Implementasi dan hasil pengujian membuktikan bahwa konfigurasi yang dilakukan pada kedua protokol berhasil memastikan komunikasi antar perangkat dalam jaringan.