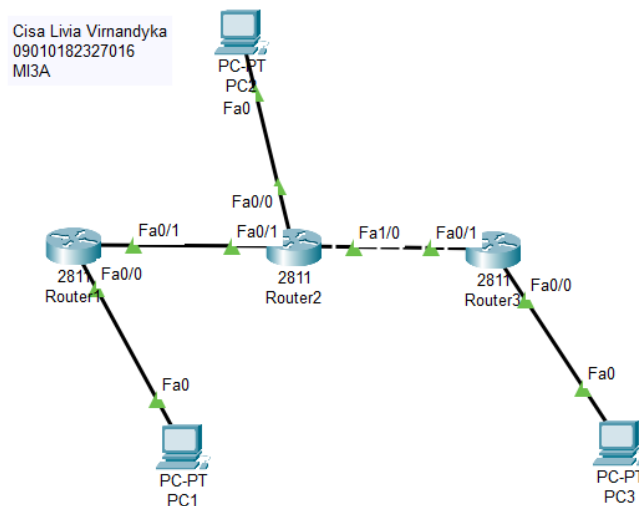


TUGAS RIP DYNAMIC ROUTING

Nama : Cisa Livia Virnandyka
NIM : 09010182327016
Kelas : MI3A
MK : Praktikum Jaringan Komputer

ASSIGNMENT:

SS Topologi Routing RIP, sekaligus berikan Nama, NIM, dan Kelas pada pojok kiri Topologi Kalian (Place Note).



Dengan IP Address di tiap 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

SS hasil konfigurasi dan perintah *#show ip route eigrp* dari setiap router.

1. Router1



```
Router1
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1_09010182327016
R1_09010182327016(config)#int fa0/0
R1_09010182327016(config-if)#ip add 192.168.1.1 255.255.255.0
R1_09010182327016(config-if)#no sh

R1_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R1_09010182327016(config-if)#ex
R1_09010182327016(config)#int fa0/1
R1_09010182327016(config-if)#ip add 192.168.100.1 255.255.255.252
R1_09010182327016(config-if)#no sh

R1_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

R1_09010182327016(config-if)#ex
R1_09010182327016(config)#router rip
R1_09010182327016(config-router)#vers 2
R1_09010182327016(config-router)#net 192.168.1.0
R1_09010182327016(config-router)#net 192.168.100.0
R1_09010182327016(config-router)#no auto-summary
R1_09010182327016(config-router)#ex
R1_09010182327016(config)#ex
R1_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

R1_09010182327016#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1_09010182327016#sh ip router rip
^
% Invalid input detected at '^' marker.

R1_09010182327016#sh ip route rip

R1_09010182327016#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

R1_09010182327016#sh 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, 00:00:15, FastEthernet0/1
R    192.168.3.0/24 [120/2] via 192.168.100.2, 00:00:15, FastEthernet0/1
192.168.200.0/30 is subnetted, 1 subnets
R    192.168.200.0 [120/1] via 192.168.100.2, 00:00:15, FastEthernet0/1
```

2. Router2

Router2

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2_09010182327016
R2_09010182327016(config)#int fa0/0
R2_09010182327016(config-if)#ip add 192.168.2.1 255.255.255.0
R2_09010182327016(config-if)#no sh

R2_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R2_09010182327016(config-if)#ex
R2_09010182327016(config)#int fa0/1
R2_09010182327016(config-if)#ip add 192.168.100.2 255.255.255.252
R2_09010182327016(config-if)#no sh

R2_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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

R2_09010182327016(config-if)#ex
R2_09010182327016(config)#int fa1/0
R2_09010182327016(config-if)#ip add 192.168.200.1 255.255.255.252
R2_09010182327016(config-if)#no sh

R2_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

R2_09010182327016(config-if)#router rip
R2_09010182327016(config-router)#version 2
R2_09010182327016(config-router)#net 192.168.2.0
R2_09010182327016(config-router)#net 192.168.100.0
R2_09010182327016(config-router)#net 192.168.200.0
R2_09010182327016(config-router)#no auto-summary
R2_09010182327016(config-router)#passive-int fa0/0
R2_09010182327016(config-router)#ex
R2_09010182327016(config)#ex
R2_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

R2_09010182327016#copy running-config startup-config
^
% Invalid input detected at '^' marker.

R2_09010182327016#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R2_09010182327016#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

R2_09010182327016#sh 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, 00:00:19, FastEthernet1/0

R2_09010182327016#
```

Copy Paste

☐ Top

3. Router3



The screenshot shows a web-based interface for Router3. At the top, there are tabs for 'Physical', 'Config', 'CLI' (which is selected), and 'Attributes'. Below the tabs, the title 'IOS Command Line Interface' is displayed. The main area contains a text box with the following text:

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R3_09010182327016
R3_09010182327016(config)#int fa0/0
R3_09010182327016(config-if)#ip add 192.168.3.1 255.255.255.0
R3_09010182327016(config-if)#no sh

R3_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R3_09010182327016(config-if)#ex
R3_09010182327016(config)#int fa0/1
R3_09010182327016(config-if)#ip add 192.168.200.2 255.255.255.252
R3_09010182327016(config-if)#no sh

R3_09010182327016(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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

R3_09010182327016(config-if)#ex
R3_09010182327016(config)#router rip
R3_09010182327016(config-router)#version 2
R3_09010182327016(config-router)#net 192.168.3.0
R3_09010182327016(config-router)#net 192.168.200.0
R3_09010182327016(config-router)#no auto_summary
R3_09010182327016(config-router)#
% Invalid input detected at '^' marker.

R3_09010182327016(config-router)#no auto-summary
R3_09010182327016(config-router)#passive-interface fa0/0
R3_09010182327016(config-router)#
% Invalid input detected at '^' marker.

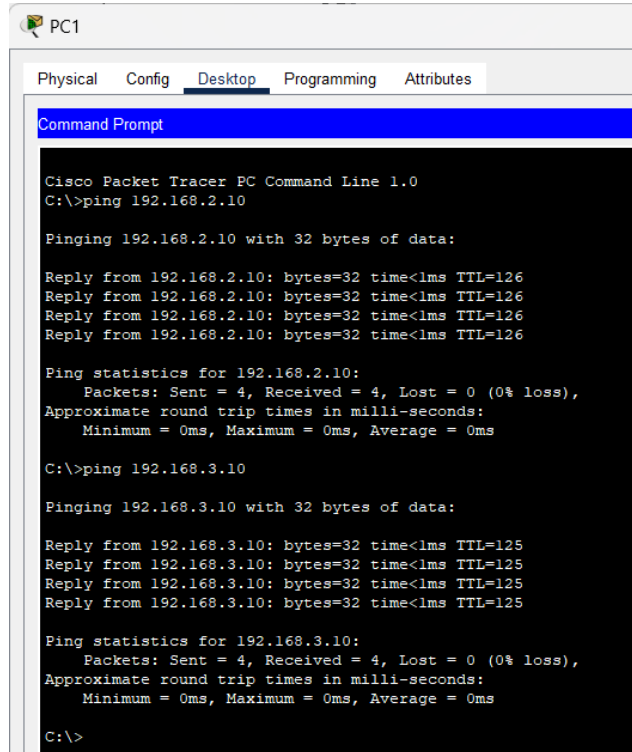
R3_09010182327016(config-router)#passive-interface fa0/0
R3_09010182327016(config-router)#ex
R3_09010182327016(config)#ex
R3_09010182327016#
%SYS-5-CONFIG_I: Configured from console by console

R3_09010182327016#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R3_09010182327016#
R3_09010182327016#sh ip route rip
R   192.168.1.0/24 [120/2] via 192.168.200.1, 00:00:07, FastEthernet0/1
R   192.168.2.0/24 [120/1] via 192.168.200.1, 00:00:07, FastEthernet0/1
R   192.168.100.0/30 is subnetted, 1 subnets
R       192.168.100.0 [120/1] via 192.168.200.1, 00:00:07, FastEthernet0/1
```

At the bottom right of the text box, there are 'Copy' and 'Paste' buttons. Below the text box, there is a checkbox labeled 'Top'.

Tes PING dan Traceroute dari PC1 ke PC2 dan PC3, PC2 ke PC1 dan PC3, serta PC3 ke PC1 dan PC2

- PC1 ke PC2 dan PC3



The screenshot shows the Command Prompt window for PC1 in Cisco Packet Tracer. The window has tabs for Physical, Config, Desktop (selected), Programming, and Attributes. The Command Prompt displays the following text:

```
Cisco Packet Tracer PC Command Line 1.0
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:\>ping 192.168.3.10

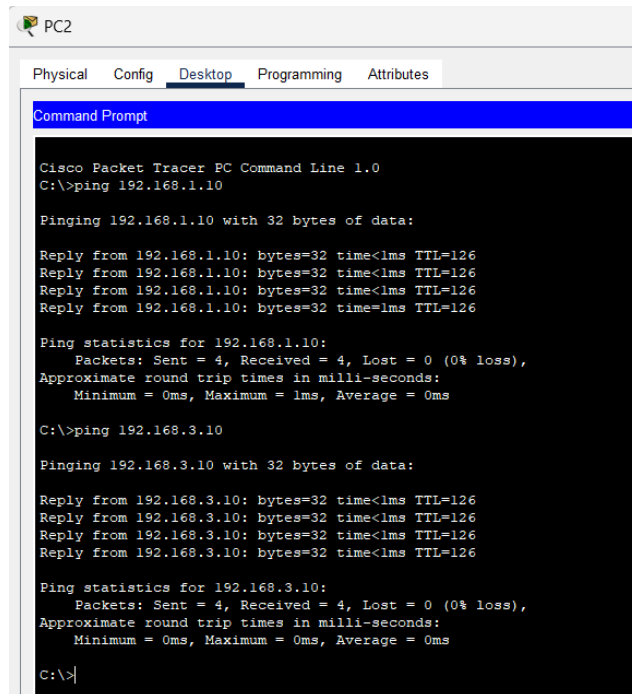
Pinging 192.168.3.10 with 32 bytes of data:

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

C:\>
```

- PC2 ke PC1 dan PC3



The screenshot shows the Command Prompt window for PC2 in Cisco Packet Tracer. The window has tabs for Physical, Config, Desktop (selected), Programming, and Attributes. The Command Prompt displays the following text:

```
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 = 0ms, Average = 0ms

C:\>
```

- PC3 ke PC1 dan PC2

```

PC3
Physical  Config  Desktop  Programming  Attributes
Command Prompt

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=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

C:\>

```

Tabel hasil PING.

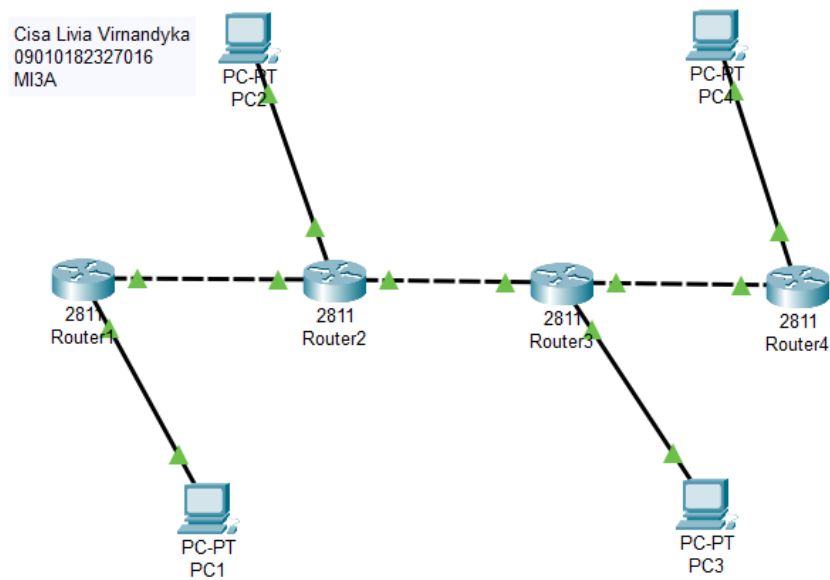
No	Sumber	Tujuan	Hasil	
			Ya	Tidak
1	PCA	PCB	Ya	-
		PCC	Ya	-

2	PCB	PCA	Ya	-
		PCC	Ya	-

3	PCC	PCA	Ya	-
		PCB	Ya	-

Tambahkan satu Router (R4) dan PC (PC4), dimana R4 terhubung ke R3 dan PC4 terhubung ke R4. Konfigurasi Router dengan protokol RIP pada R4, dan konfigurasi IP pada PC4. Lakukanlah konfigurasi seperti tahap 3, buktikan jika PC4 dapat melakukan PING dan traceroute ke PC lainnya

Topologi



Konfigurasi di Router 4



```
Router>en
Router#
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 0/0
Router(config-if)#ip add 192.168.4.1 255.255.255.0
Router(config-if)#no sh

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#ex
Router(config)#int fa0/1
Router(config-if)#ip add 192.168.210.2 255.255.255.252
Router(config-if)#no sh

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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

Router(config-if)#ex
Router(config)#router rip
Router(config-router)#vers 2
Router(config-router)#net 192.168.4.0
Router(config-router)#net 192.168.210.0
Router(config-router)#no auto-summary
Router(config-router)#passive-interface fa0/0
Router(config-router)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
^
% Invalid input detected at '^' marker.

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
?Bad filename
%Error parsing filename (Bad file number)
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R4_09010182327016

R4_09010182327016#sh ip route rip
R    192.168.1.0/24 [120/3] via 192.168.210.1, 00:00:01, FastEthernet0/1
R    192.168.2.0/24 [120/2] via 192.168.210.1, 00:00:01, FastEthernet0/1
R    192.168.3.0/24 [120/1] via 192.168.210.1, 00:00:01, FastEthernet0/1
R    192.168.100.0/30 is subnetted, 1 subnets
R      192.168.100.0 [120/2] via 192.168.210.1, 00:00:01, FastEthernet0/1
R    192.168.200.0/30 is subnetted, 1 subnets
R      192.168.200.0 [120/1] via 192.168.210.1, 00:00:01, FastEthernet0/1

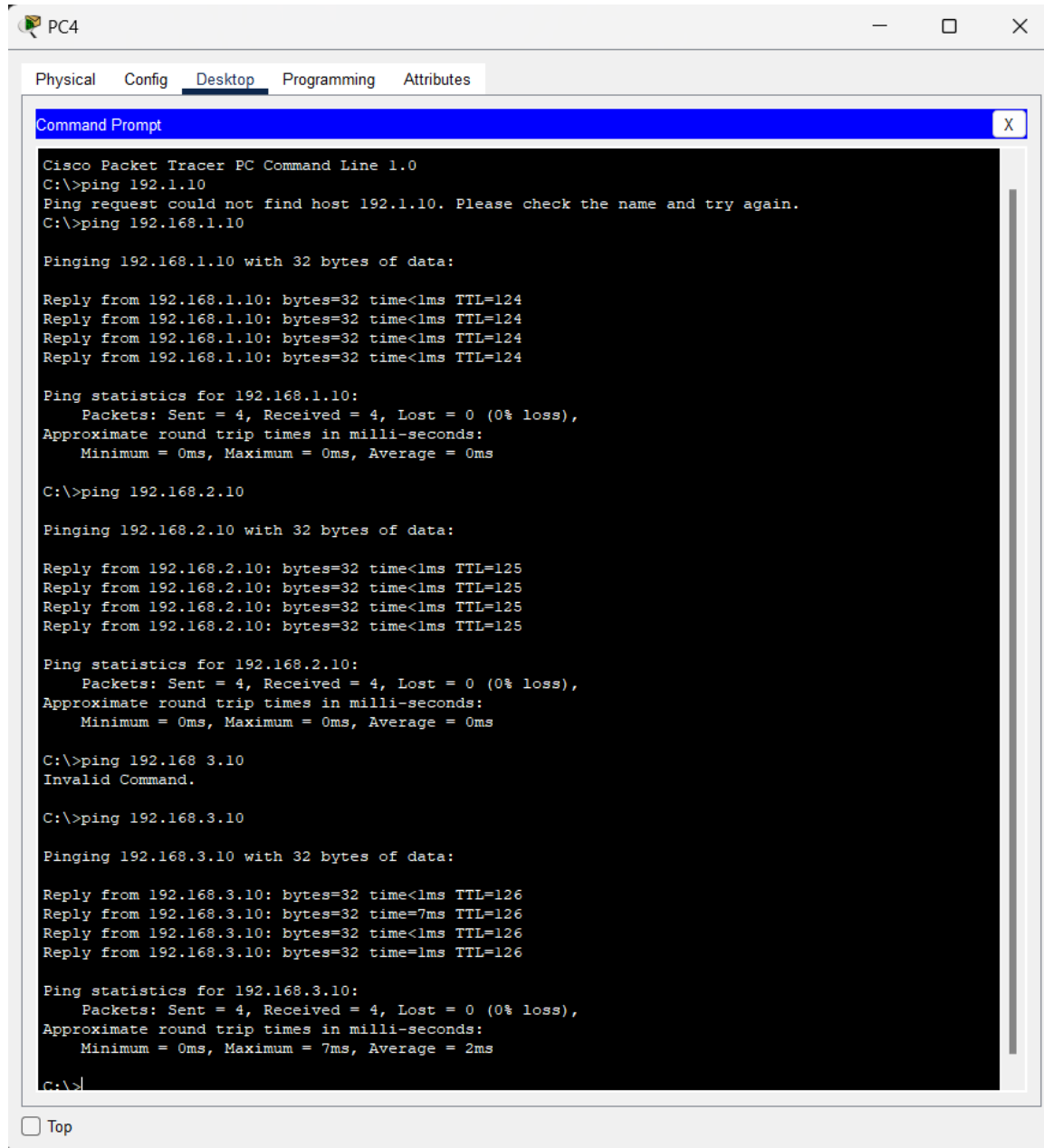
R4_09010182327016#
```

Copy Paste

☐ Top

(Lupa buat hostname dan udah dibuat diakhir yang nyatu sama ss konfigurasi)

Tes Ping PC4 ke seluruh PC



The screenshot shows a Cisco Packet Tracer PC Command Prompt window for PC4. The window has tabs for Physical, Config, Desktop (selected), Programming, and Attributes. The Command Prompt displays the following text:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.1.1.10
Ping request could not find host 192.1.1.10. Please check the name and try again.
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=124
Reply from 192.168.1.10: bytes=32 time<1ms TTL=124
Reply from 192.168.1.10: bytes=32 time<1ms TTL=124
Reply from 192.168.1.10: bytes=32 time<1ms TTL=124

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=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 = 0ms, Average = 0ms

C:\>ping 192.168.3.10
Invalid Command.

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=7ms 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 = 7ms, Average = 2ms

C:\>
```

At the bottom left of the window, there is a checkbox labeled "Top".

Hasil Praktikum

Pada Praktikum ini, konfigurasi protokol RIP berhasil menghubungkan beberapa router sehingga setiap PC dapat saling berkomunikasi. Setelah konfigurasi RIP pada router (R1, R2, R3, dan R4), seluruh perangkat dalam jaringan dapat terhubung, terbukti dari hasil tes **PING** dan **Traceroute** yang menunjukkan koneksi berhasil antara semua PC. Protokol RIP mengiklankan jalur ke subnet lain, memungkinkan tiap router mengetahui dan mengarahkan paket ke tujuan yang benar.

Analisis

Penggunaan RIP dalam jaringan ini menunjukkan keefektifan protokol ini untuk jaringan sederhana. RIP, yang bekerja dengan menghitung jumlah "hop" atau lompatan antar router, berhasil melakukan routing untuk jaringan kecil tanpa konfigurasi rumit. Namun, karena RIP terbatas pada maksimal 15 hop, protokol ini kurang efisien untuk jaringan yang lebih besar atau kompleks. Protokol RIP juga melakukan update secara periodik, yang dapat menambah sedikit beban jaringan, meskipun dalam skala kecil hal ini tidak terasa signifikan.

Kesimpulan

Praktikum ini berhasil menunjukkan bahwa RIP mampu menyediakan konektivitas dinamis antar perangkat dalam jaringan sederhana. Protokol ini mudah dikonfigurasi dan cukup efektif untuk jaringan kecil, namun memiliki keterbatasan untuk jaringan yang lebih besar. RIP adalah pilihan yang baik untuk jaringan dengan kebutuhan routing dasar dan topologi sederhana.