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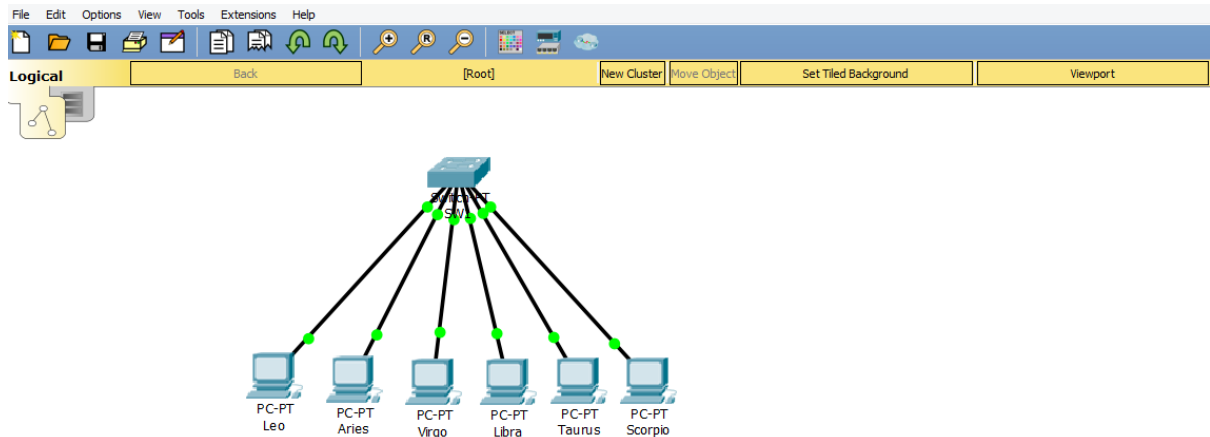
MODUL 4

Virtual LAN dan Trunking

Kegiatan Praktikum

1. Kegiatan 1. Topologi 1

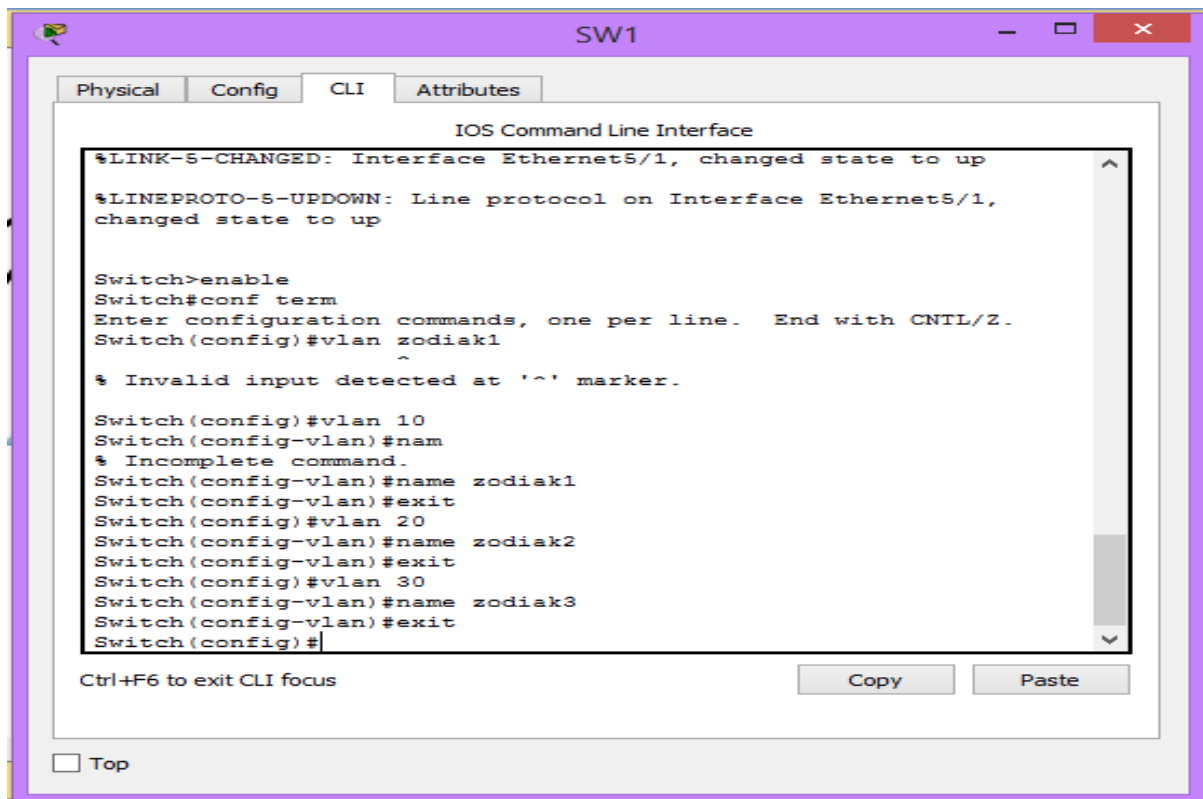
a. Desain topologi, penamaan topologi dan penyetingan IP Address



The screenshot shows the 'Leo' window with the 'Config' tab selected. The 'IP Configuration' section is active, displaying settings for both IPv4 and IPv6. The IPv4 configuration is set to 'Static' with an IP address of 172.21.1.1, subnet mask of 255.255.0.0, default gateway of 0.0.0.0, and DNS server of 0.0.0.0. The IPv6 configuration is also set to 'Static' with a link local address of FE80::2D0:58FF:FEE9:C675. The 'Top' checkbox is unchecked.

Configuration Type	Option	Value
IP Configuration (IPv4)	Static	
	IP Address	172.21.1.1
	Subnet Mask	255.255.0.0
	Default Gateway	0.0.0.0
	DNS Server	0.0.0.0
IPv6 Configuration	Static	
	IPv6 Address	
	Link Local Address	FE80::2D0:58FF:FEE9:C675
	IPv6 Gateway	
	IPv6 DNS Server	

- b. Konfigurasi switch untuk membuat 3 vlan dengan nama zodiak1, zodiak2, dan zodiak3



- c. Konfigurasi port-port switch ke dalam vlan zodiak1, zodiak2, dan zodiak3 dengan anggota sebagai berikut :

- Zodiak1 = leo dan libra
- Zodiak2 = aries dan taurus
- Zodiak3 = virgo dan scorpio

```
Switch(config)#int fa 0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa 0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit

Switch(config)#int fa 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#int fa 0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit

Switch(config)#int fa 0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#int fa 0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
```

- d. Pada mode user atau mode privileged, lihat konfigurasi VLAN yang telah dibuat.
Informasi VLAN keseluruhan

```
Switch#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/7, Fa0/8, Fa0/9, Fa0/10 Fa0/11, Fa0/12, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20, Fa0/21, Fa0/22 Fa0/23, Fa0/24
10	zodiak1	active	Fa0/1, Fa0/4
20	zodiak2	active	Fa0/2, Fa0/5
30	zodiak3	active	Fa0/3, Fa0/6
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

Tugas 6A

- Informasi VLAN 10

```
Switch#show vlan id 10
```

VLAN	Name	Status	Ports
10	zodiak1	active	Fa0/1, Fa0/4

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
10	enet	100010	1500	-	-	-	-	-	0	0

No	Variabel	Nilai
1	Nomor VLAN	10
2	Nama VLAN	Zodiak1
3	Port	Fa0/1, Fa0/4
4	Status	Active

- Informasi VLAN 20

```
Switch#show vlan id 20
```

VLAN	Name	Status	Ports
20	zodiak2	active	Fa0/2, Fa0/5

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
20	enet	100020	1500	-	-	-	-	-	0	0

No	Variabel	Nilai
1	Nomor VLAN	20
2	Nama VLAN	Zodiak2
3	Port	Fa0/2, Fa0/5
4	Status	Active

- Informasi VLAN 30

```
Switch#show vlan id 30
```

```

VLAN Name                Status    Ports
-----
30    zodiak3                active    Fa0/3, Fa0/6

VLAN Type  SAID      MTU    Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
-----
30    enet    100030    1500    -      -      -      -      -      0      0

```

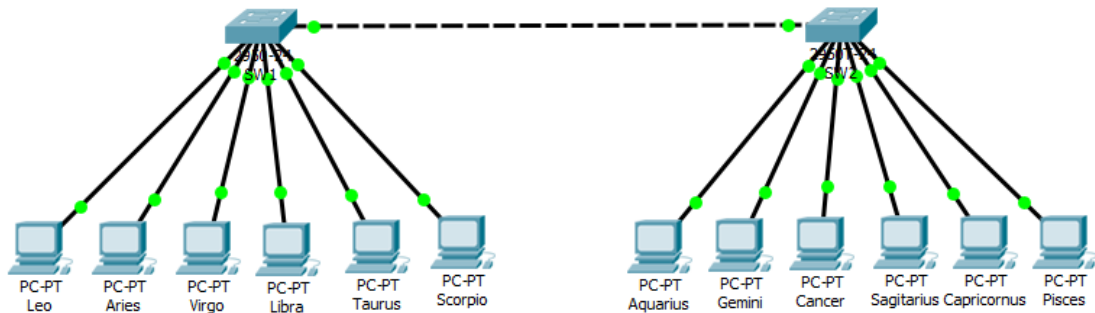
No	Variabel	Nilai
1	Nomor VLAN	30
2	Nama VLAN	Zodiak3
3	Port	Fa0/3, Fa0/6
4	Status	Active

Tugas 6B : Jelaskan secara singkat hasil yang anda peroleh dari tugas 6A

- Dalam VLAN ID, status VLAN menjadi aktif
- Identitas VLAN (1,2,3) sesuai dari pembuatan nama VLAN dengan nama zodiak1, zodiak2, dan zodiak3
- Port yang terdaftar dalam VLAN sesuai dengan konfigurasi yang telah dilakukan sebelumnya

2. Kegiatan 2. Topologi 2

- a. Desain topologi, penamaan topologi, dan penyetingan IP Address



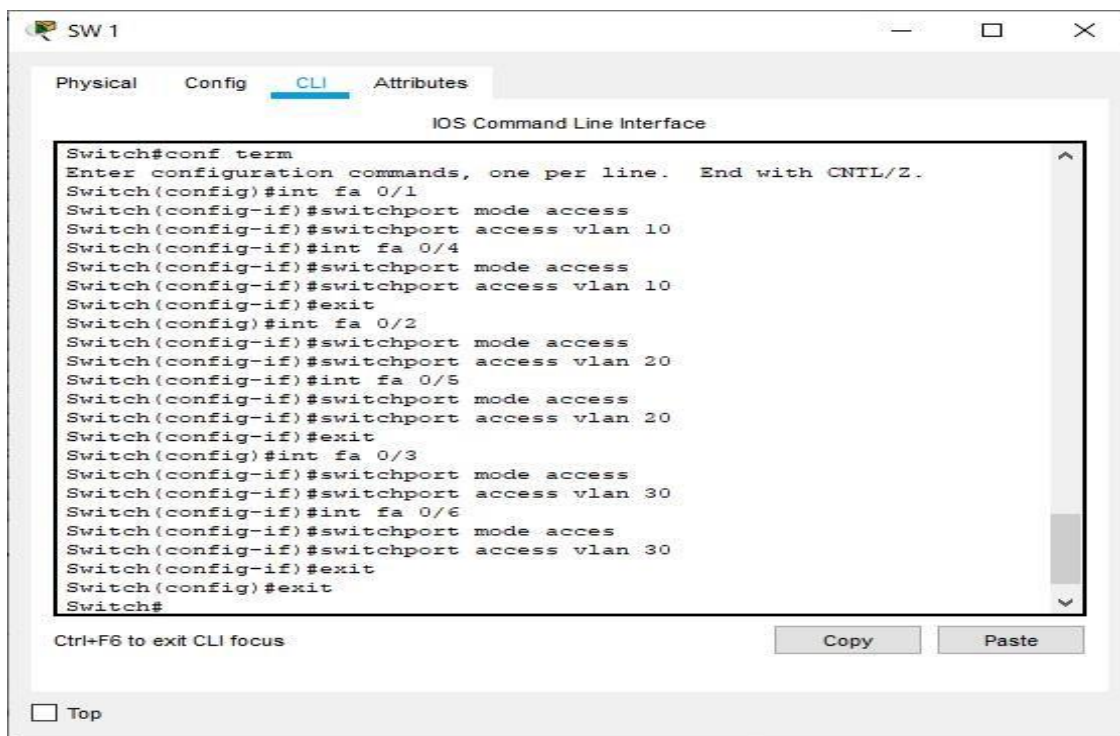
- b. Konfigurasi switch untuk membuat 3 vlan dengan nama zodiak1, zodiak2, dan zodiak3

```
SW 1
Physical Config CLI Attributes
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5,
changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6,
changed state to up
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
Ctrl+F6 to exit CLI focus
Copy Paste
Top
```

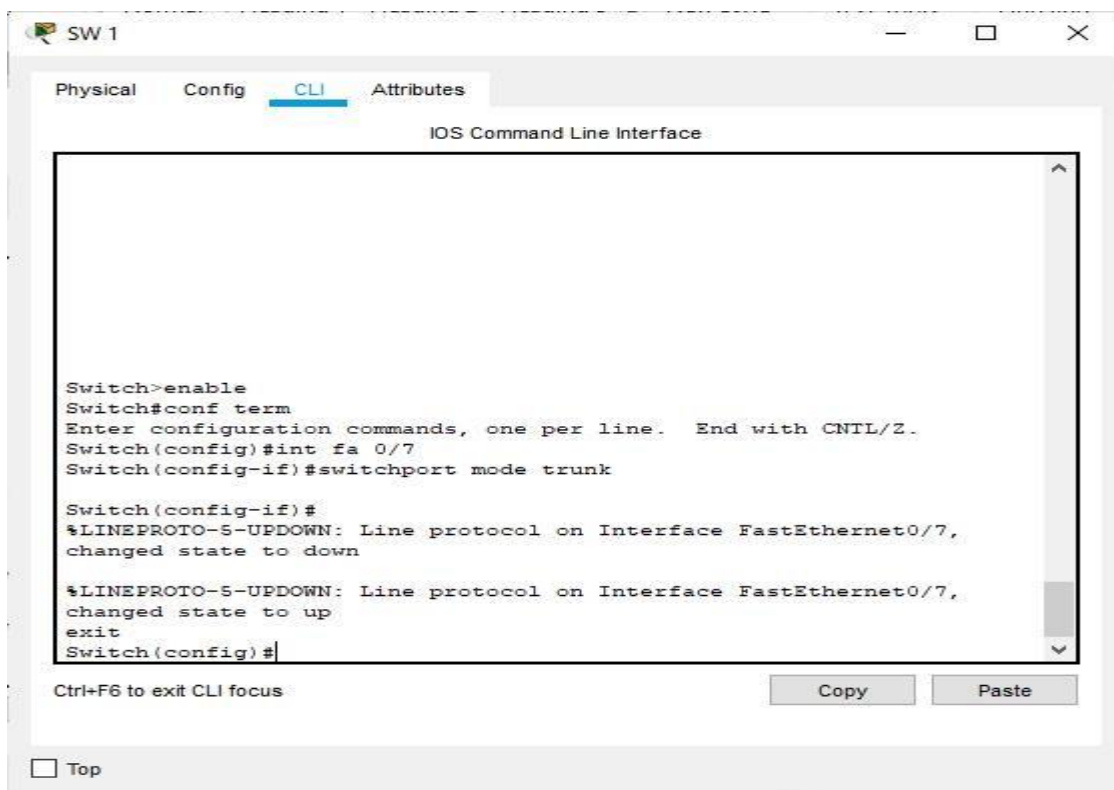
- c. Konfigurasi port – port switch ke dalam vlan zodiak1, zodiak2, dan zodiak3 dengan anggota sebagai berikut :

- Zodiak1 = Leo dan Libra
- Zodiak2 = Aries dan Taurus

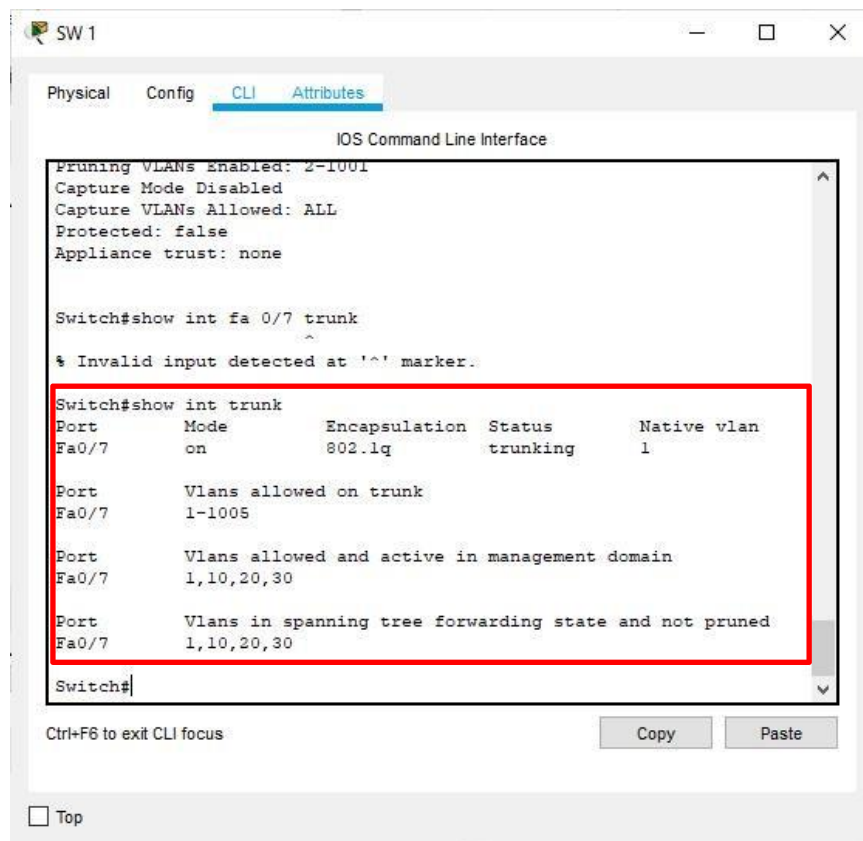
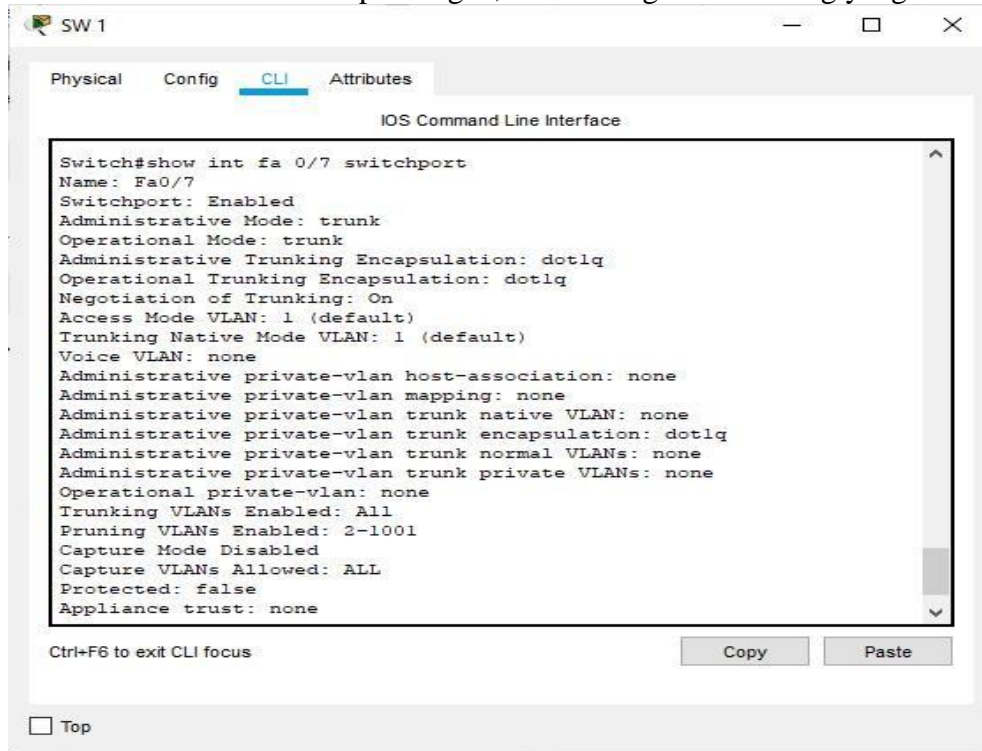
- Zodiak3 = Virgo dan Scorpio

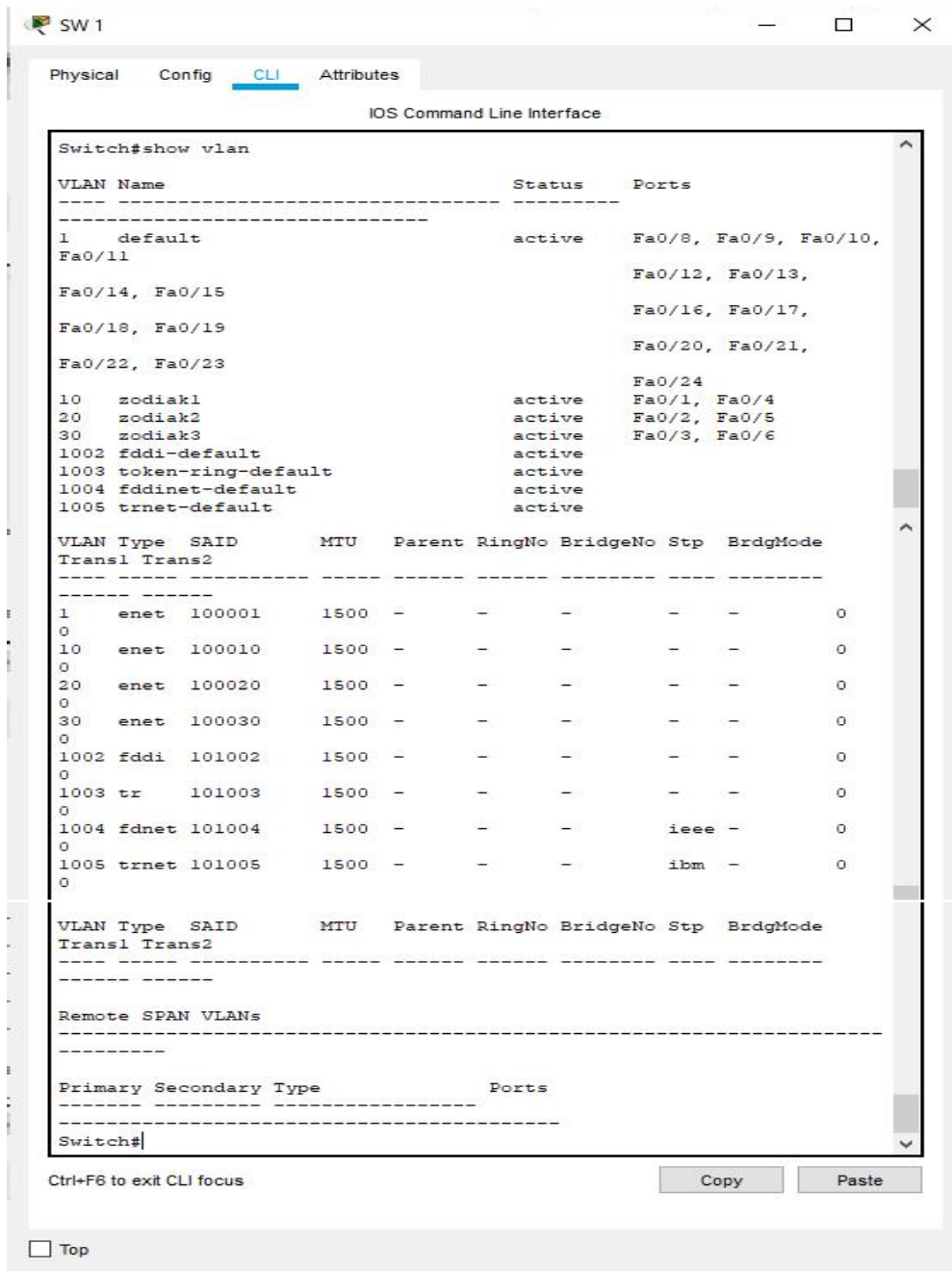


d. Konfigurasi VLAN trunking pada switch 1



- e. Pada mode user atau mode privileged, lihat konfigurasi trunking yang telah dibuat

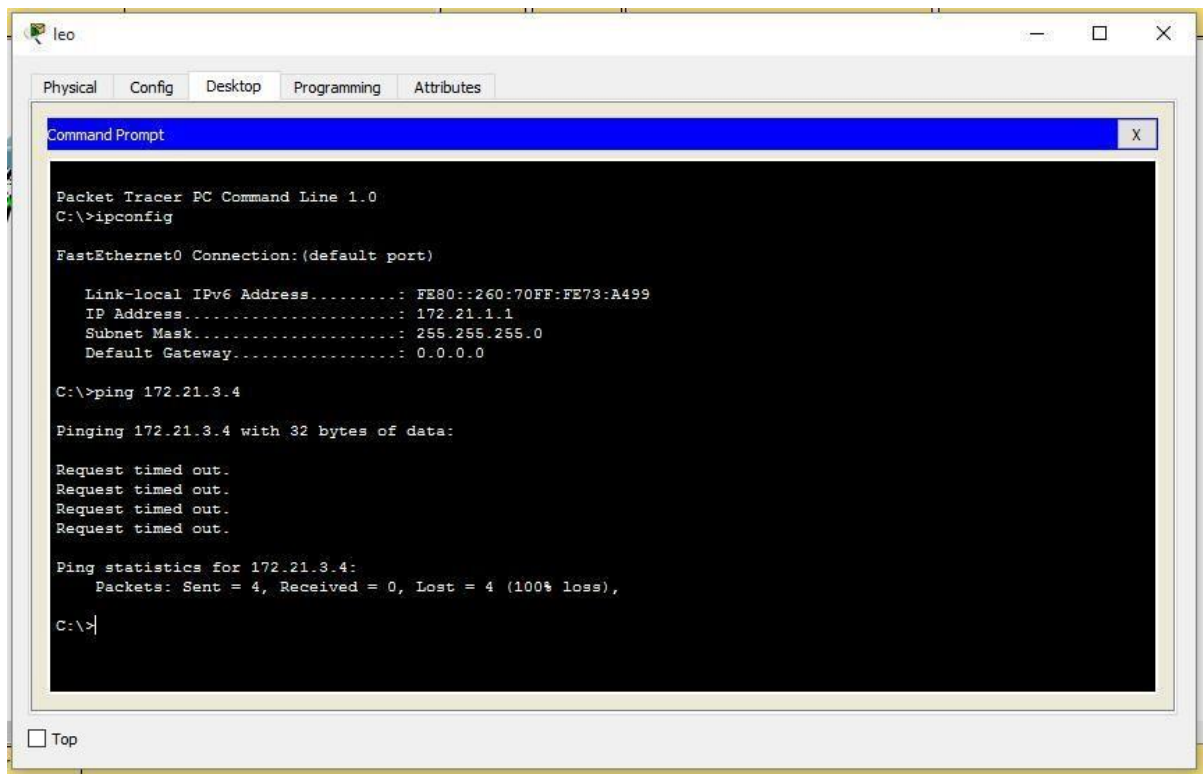




Tugas 7A : Jelaskan secara singkat hasil yang anda peroleh dari langkah 7

- Pada langkah ini port yang sudah terkonfigurasi ke dalam vlan yaitu port 0/1 sampai port 0/6, sedangkan port 0/7 untuk trunking antar switch

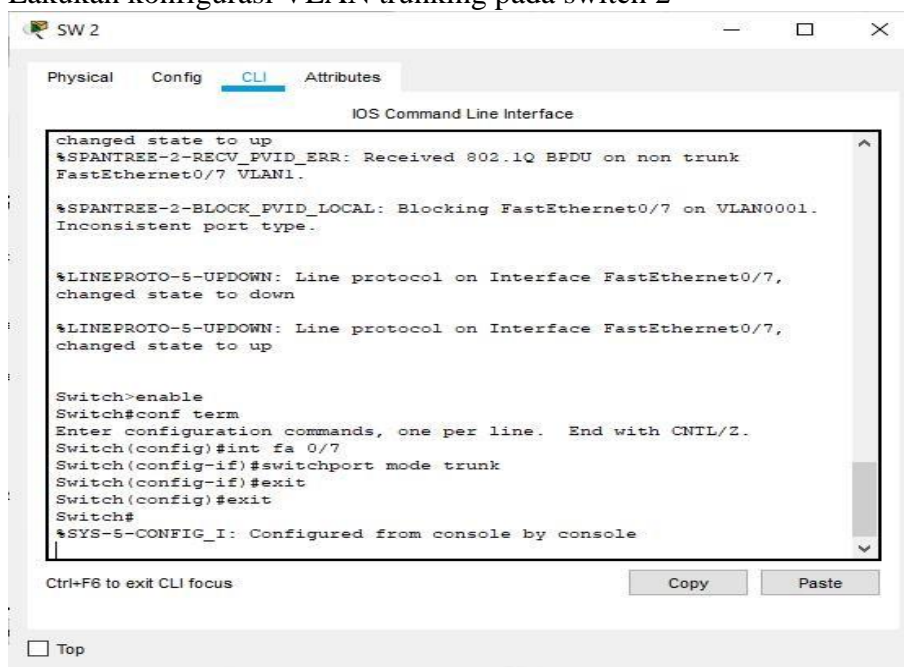
f. Lakukan ping dari PC Leo ke PC Pisces



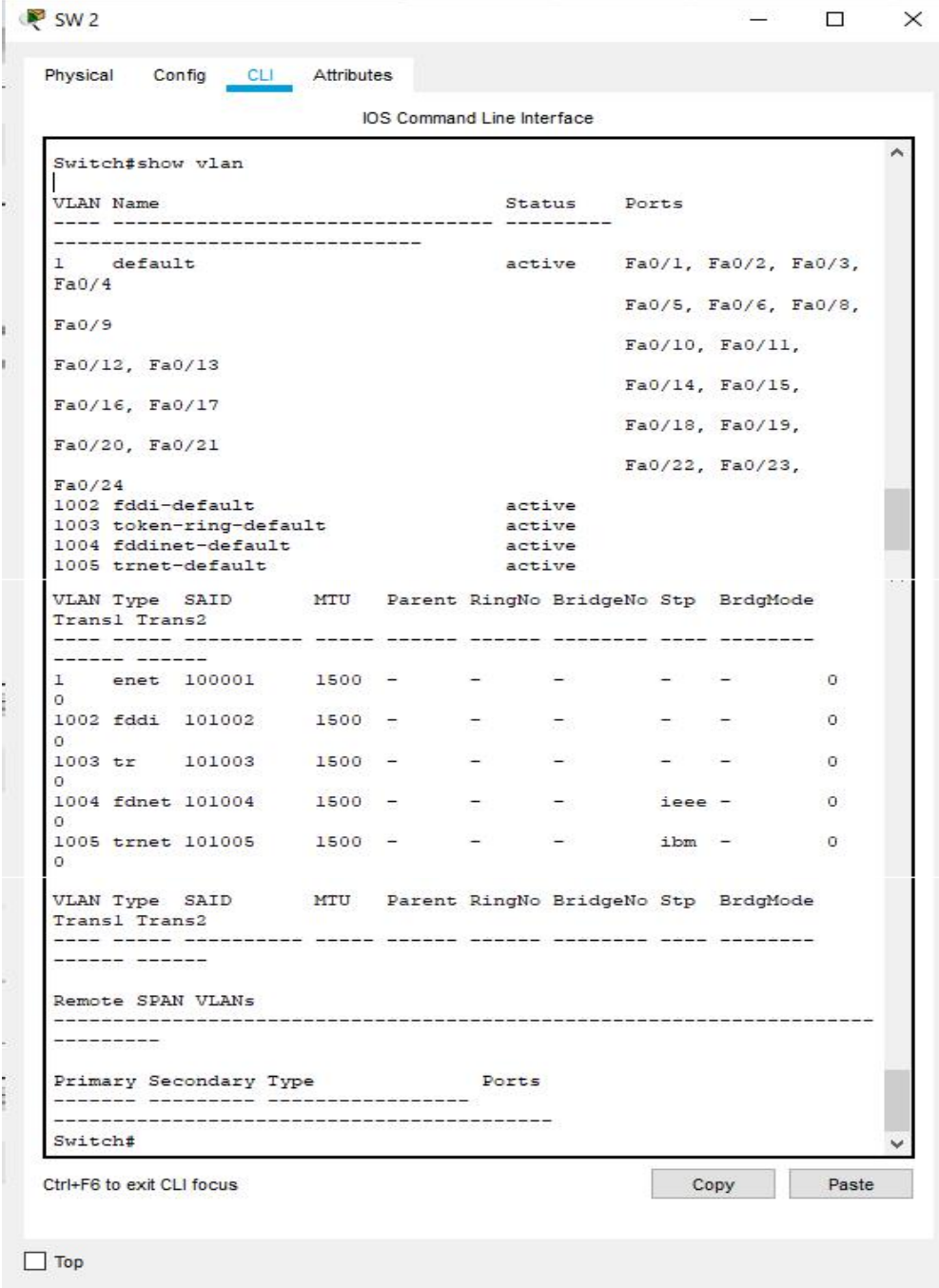
Tugas 8A : Jelaskan secara singkat mengapa hasil yang anda peroleh dari langkah 8 mendapatkan status “reply”?

- Hasilnya adalah RTO karena berada pada jaringan yang berbeda dan di switch belum di setting trunk

g. Lakukan konfigurasi VLAN trunking pada switch 2



h. Pada mode user atau mode privileged, lihat konfigurasi VLAN pada switch 2



```
SW 2
Physical Config CLI Attributes
IOS Command Line Interface

Switch#show vlan
|
VLAN Name                                Status   Ports
-----
1    default                                active   Fa0/1, Fa0/2, Fa0/3,
Fa0/4                                     Fa0/5, Fa0/6, Fa0/8,
Fa0/9                                     Fa0/10, Fa0/11,
Fa0/12, Fa0/13                            Fa0/14, Fa0/15,
Fa0/16, Fa0/17                            Fa0/18, Fa0/19,
Fa0/20, Fa0/21                            Fa0/22, Fa0/23,
Fa0/24
1002 fddi-default                        active
1003 token-ring-default                  active
1004 fddinet-default                    active
1005 trnet-default                      active

VLAN Type  SAID      MTU   Parent RingNo BridgeNo Stp   BrdgMode
Transl Trans2
-----
1    enet    100001   1500   -     -     -     -     -     0
0
1002 fddi   101002   1500   -     -     -     -     -     0
0
1003 tr     101003   1500   -     -     -     -     -     0
0
1004 fdnet  101004   1500   -     -     -     -     -     0
0
1005 trnet  101005   1500   -     -     -     -     -     0
0

VLAN Type  SAID      MTU   Parent RingNo BridgeNo Stp   BrdgMode
Transl Trans2
-----

Remote SPAN VLANs
-----

Primary Secondary Type           Ports
-----
Switch#
```

Ctrl+F6 to exit CLI focus

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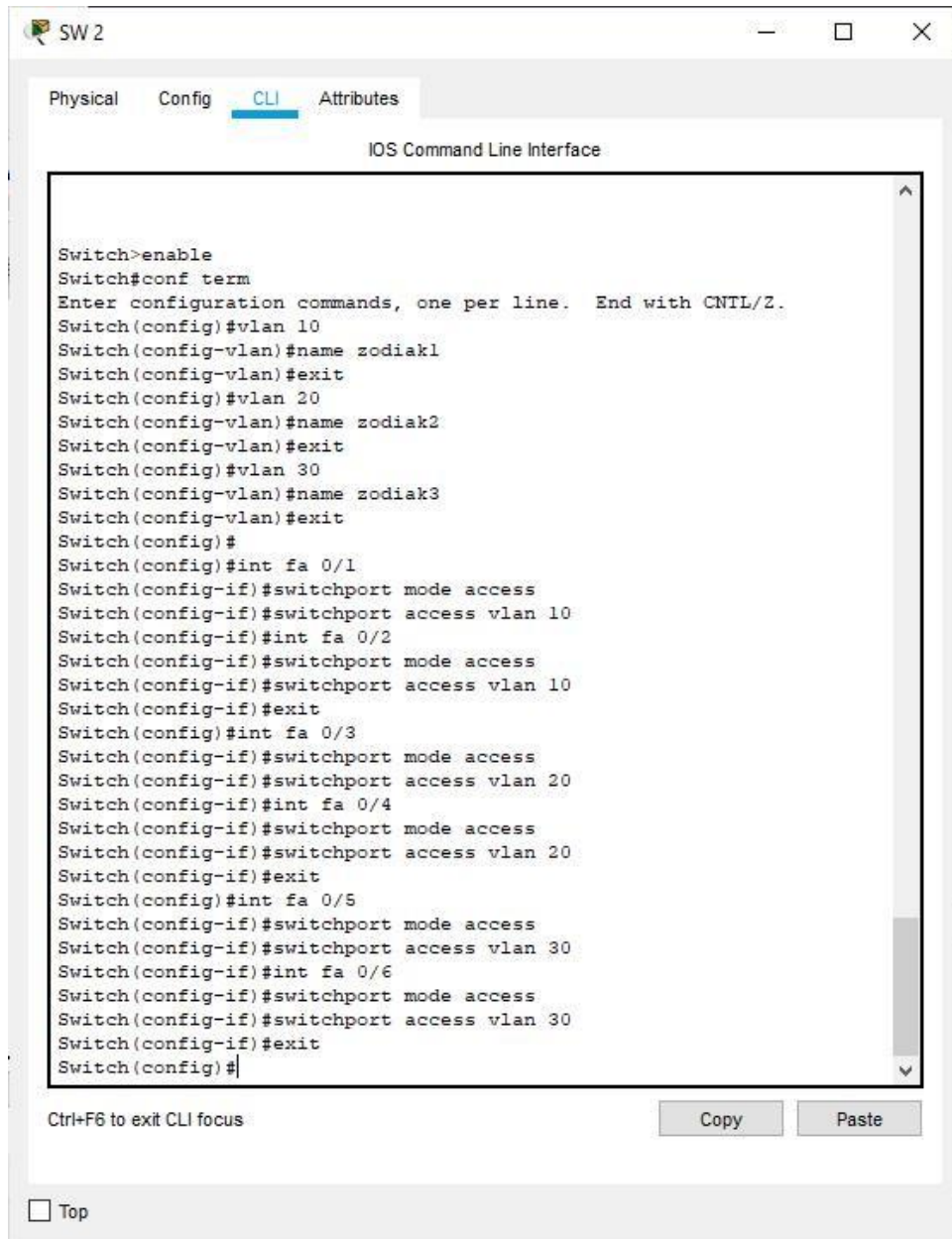
☐ Top

Tugas 10A : Jelaskan secara singkat hasil yang anda peroleh dari langkah 10

- Pada langkah ini port - port fastethernet belum terkonfigurasi kedalam VLAN, bahkan VLANnya belum dibuat.

i. Konfigurasi port - port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3 dengan anggota sebagai berikut:

- Zodiak1 = Aquarius dan Gemini
- Zodiak2 = Cancer dan Sagitarius
- Zodiak3 = Capricornus dan Pisces



```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#
Switch(config)#int fa 0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#int fa 0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#int fa 0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#int fa 0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#int fa 0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
Switch(config)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

i. Konfigurasi port-port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3

- Zodiak1 = Aquarius dan Gemini
- Zodiak2 = Cancer dan Sagitarius
- Zodiak3 = Capricornus dan Pisces



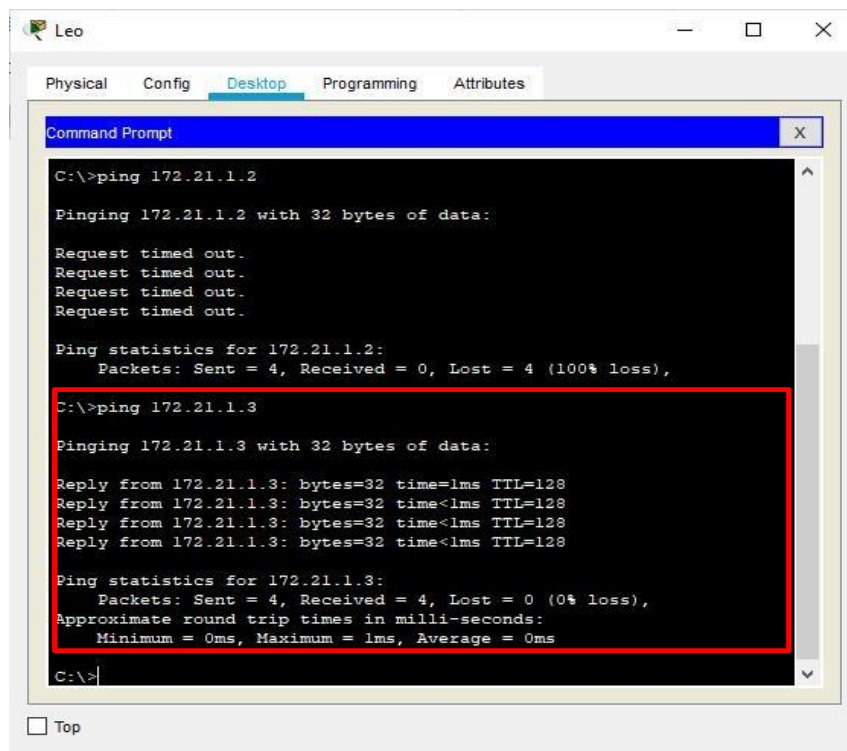
```
SW 2
Physical Config CLI Attributes
IOS Command Line Interface

Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#
Switch(config)#int fa 0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#int fa 0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#int fa 0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#int fa 0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#int fa 0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
Switch(config)#

Ctrl+F6 to exit CLI focus
Copy Paste
Top
```

j. Lakukan ping dari :

PC Leo ke PC Aries



```
C:\>ping 172.21.1.2

Pinging 172.21.1.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.1.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.1.3

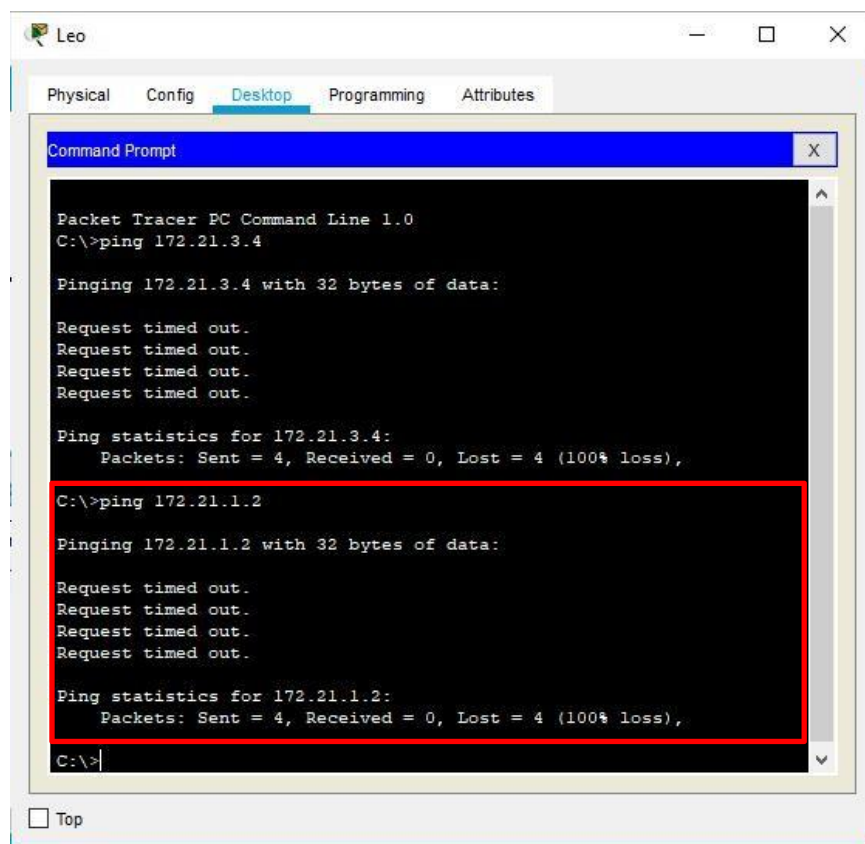
Pinging 172.21.1.3 with 32 bytes of data:

Reply from 172.21.1.3: bytes=32 time=1ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

PC Leo ke PC Aquarius



```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.1.2

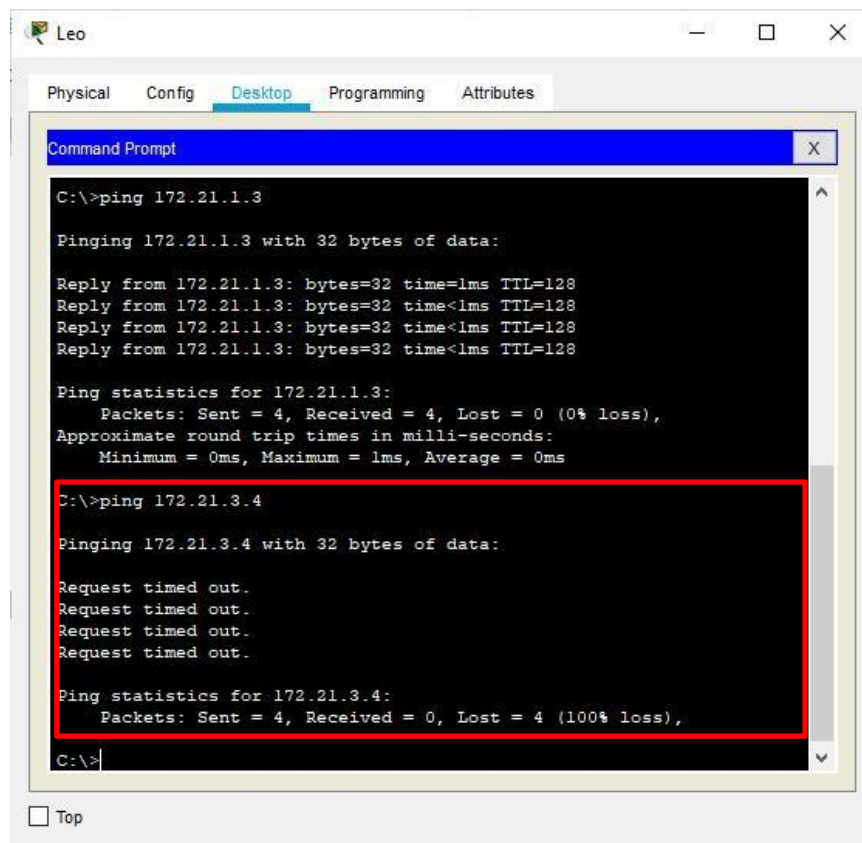
Pinging 172.21.1.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

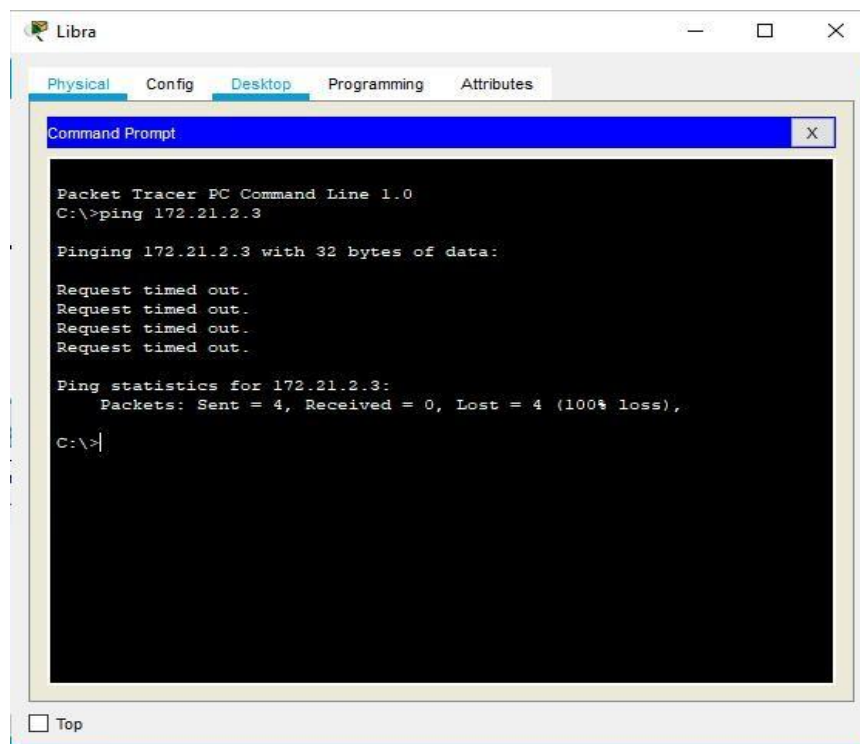
Ping statistics for 172.21.1.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```


PC Leo ke PC Pisces



PC Libra ke PC Cancer



PC Libra ke PC Leo

```

C:\>ping 172.21.2.3

Pinging 172.21.2.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.2.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.1.1

Pinging 172.21.1.1 with 32 bytes of data:

Reply from 172.21.1.1: bytes=32 time<lms TTL=128
Reply from 172.21.1.1: bytes=32 time<lms TTL=128
Reply from 172.21.1.1: bytes=32 time<lms TTL=128
Reply from 172.21.1.1: bytes=32 time<lms TTL=128

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
  
```

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
	Failed	Leo	Aries	ICMP		0.000	N	1
	Successful	Leo	Aquarius	ICMP		0.000	N	2
	Failed	Leo	Pisces	ICMP		0.000	N	3

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
	Failed	Libra	Cancer	ICMP		0.000	N	4
	Successful	Libra	Leo	ICMP		0.000	N	5

Tugas 12A : Jelaskan secara singkat hasil yang anda peroleh dari langkah 8

- Dari hasil percobaan diatas, dapat disimpulkan apabila PC berada pada VLAN yang sama, maka akan menghasilkan status Reply pada saat pengujian ping, seperti PC Leo ke PC Aquarius dan PC Libra ke PC Leo
- Akan tetapi, jika berada pada VLAN yang berbeda akan menghasilkan status RTO seperti contoh pada PC Leo ke PC Aries