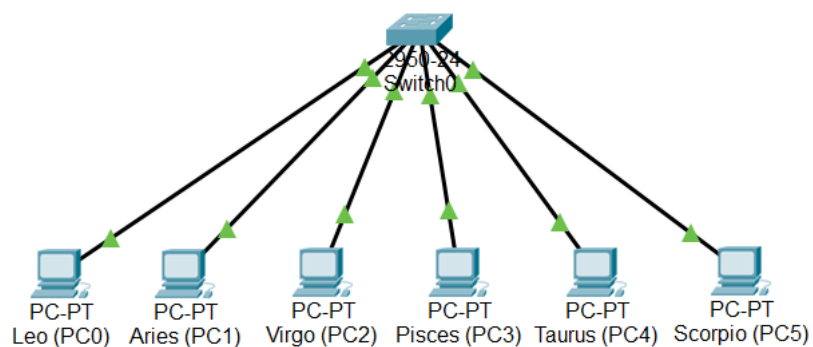


Nama : Rifqi Aditya Mahendra
NIM : L200180083
Kelas : C

Prak Jarkom Modul 4

Kegiatan 1 (topologi 1)

A. Desain topologi, penamaan topologi dan penyetingan IP Address



Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ 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

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::2D0:FFFF:FEE0:9735

IPv6 Gateway:

IPv6 DNS Server:

802.1X

B. Konfigurasi switch untuk membuat 3 Vlan dengan nama zodiak1, zodiak2, dan zodiak3

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)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#
```

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

- Zodiak1 = Leo dan Pisces
- Zodiak2 = Aries dan Taurus
- zodiak3 = Virgo dan Scorpio

Physical Config CLI Attributes

IOS Command Line Interface

```
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
Switch(config)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

D. Pada model user atau model 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

- Melihat konfigurasi vlas 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

- Melihat konfigurasi 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

- Melihat konfigurasi 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

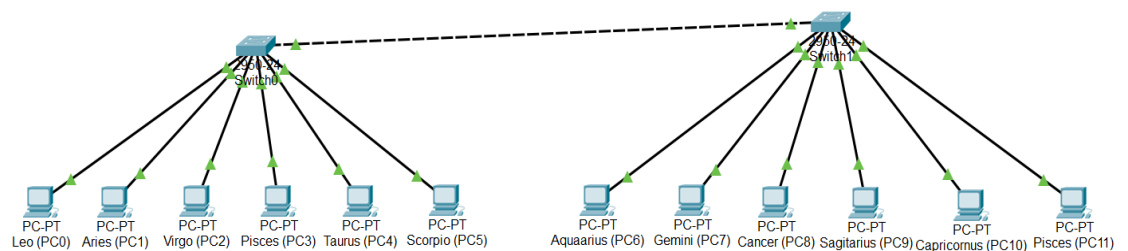
No	Variabel	Nilai
1	Nomor VLAN	30
2	Nama VLAN	Zodiak3
3	Port	Fa0/3, Fa0/6
4	Status	Active

Tugas 6B

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

Kegiatan 2 (topologi 2)

- Desain topologi, penamaan topologi, dan penyetingan IP Adress



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

```

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

```

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#conf term
Enter configuration commands, one per line. End with CNTL/Z.
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
Switch(config)#exit
Switch#
```

D. Konfigurasi VLAN trunking pada switch 1

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int fa 0/7
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
changed state to up
exit
Switch(config)#
```

E. Pada model user atau model privileged, lihat konfigurasi trunking yang telah dibuat

The screenshot shows a network switch window titled "SW 1" with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the output of the command "Switch#show int fa 0/7 switchport". The output shows that the interface is configured as a trunk port with dot1q encapsulation and negotiation of trunking enabled. The window also includes a "Ctrl+F6 to exit CLI focus" message and "Copy" and "Paste" buttons.

```
SW 1
Physical Config CLI Attributes
IOS Command Line Interface

Switch#show int fa 0/7 switchport
Name: Fa0/7
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: All
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL
Protected: false
Appliance trust: none

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



```

Pruning VLANs enabled: 1-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL
Protected: false
Appliance trust: none

Switch#show int fa 0/7 trunk
% Invalid input detected at '^' marker.

Switch#show int trunk

```

Port	Mode	Encapsulation	Status	Native vlan
Fa0/7	on	802.1q	trunking	1

```

Port      Vlans allowed on trunk
Fa0/7     1-1005

Port      Vlans allowed and active in management domain
Fa0/7     1,10,20,30

Port      Vlans in spanning tree forwarding state and not pruned
Fa0/7     1,10,20,30

```

```

Switch#show vlan

```

VLAN Name	Status	Ports
1 default	active	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	

```

VLAN Type  SAID      MTU   Parent RingNo BridgeNo Stp   BrdgMode
Trans1 Trans2
-----
1    enet    100001   1500  -     -     -     -     -     0
0
10   enet    100010   1500  -     -     -     -     -     0
0
20   enet    100020   1500  -     -     -     -     -     0
0
30   enet    100030   1500  -     -     -     -     -     0
0
1002 fddi    101002   1500  -     -     -     -     -     0
0
1003 tr     101003   1500  -     -     -     -     -     0
0
1004 fdnet  101004   1500  -     -     -     ieee  -     0
0
1005 trnet  101005   1500  -     -     -     ibm   -     0
0

VLAN Type  SAID      MTU   Parent RingNo BridgeNo Stp   BrdgMode
Trans1 Trans2
-----

Remote SPAN VLANs
-----

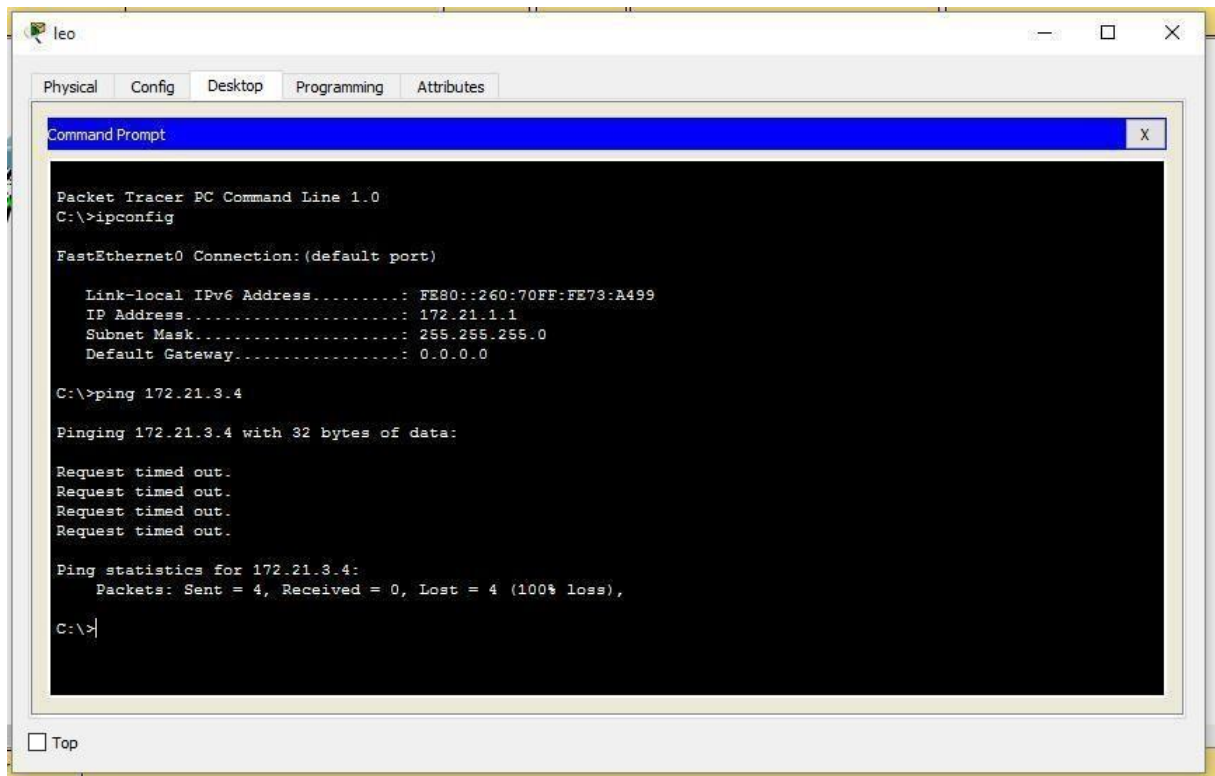
Primary Secondary Type      Ports
-----
Switch#

```

Tugas 7A

- 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

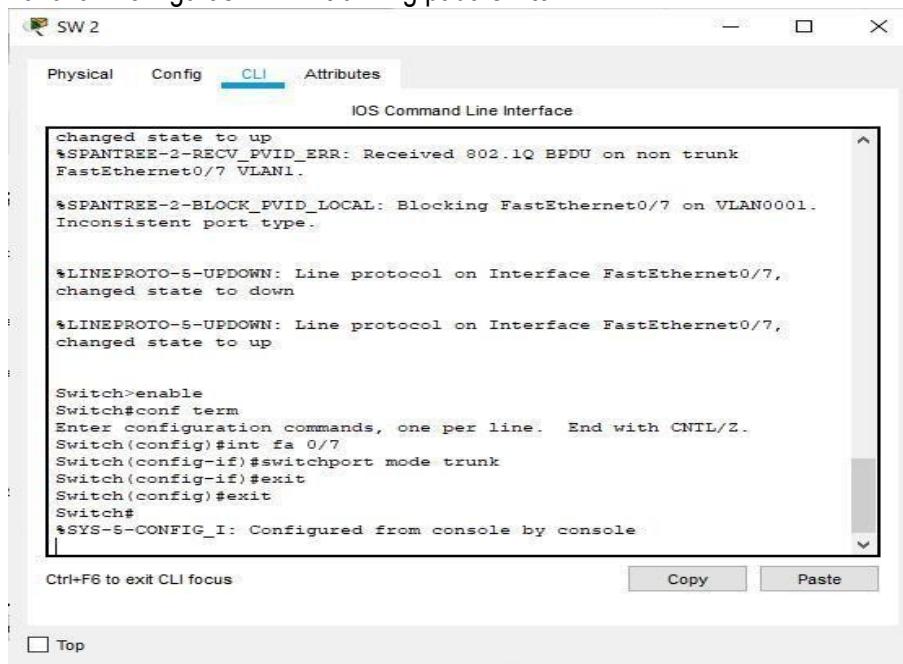
A. Lakukan ping dari PC Leo ke PC Pisces



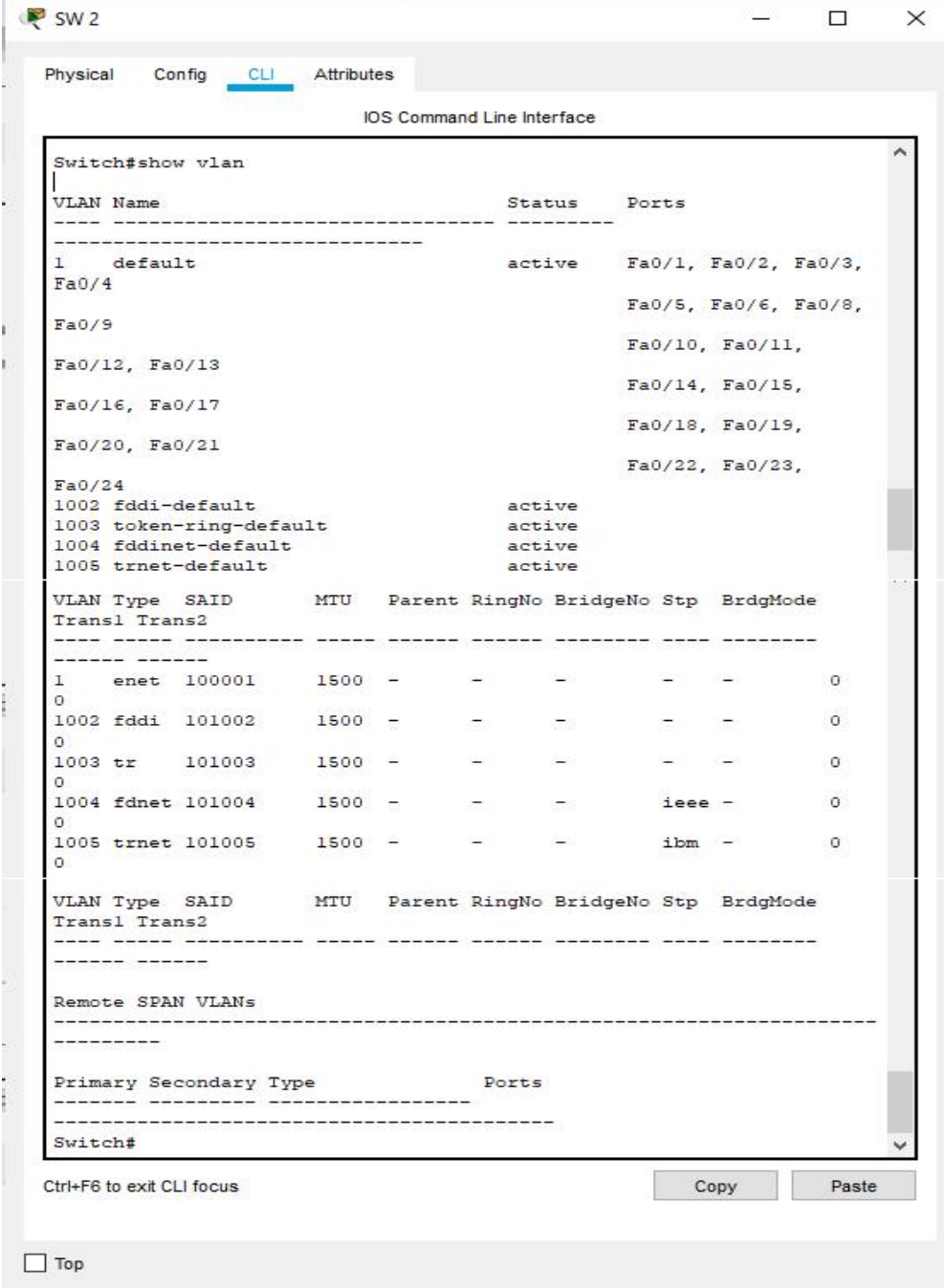
Tugas 8A

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

A. Lakukan konfigurasi VLAN trunking pada switch 2



B. 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
Trans1 Trans2
-----
1    enet    100001   1500   -     -     -     -     -     0
0
1002 fddi   101002   1500   -     -     -     -     -     0
0
1003 tr     101003   1500   -     -     -     -     -     0
0
1004 fdnet  101004   1500   -     -     -     ieee  -     0
0
1005 trnet  101005   1500   -     -     -     ibm   -     0
0

VLAN Type  SAID      MTU   Parent RingNo BridgeNo Stp  BrdgMode
Trans1 Trans2
-----

Remote SPAN VLANs
-----

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

Ctrl+F6 to exit CLI focus

Copy Paste

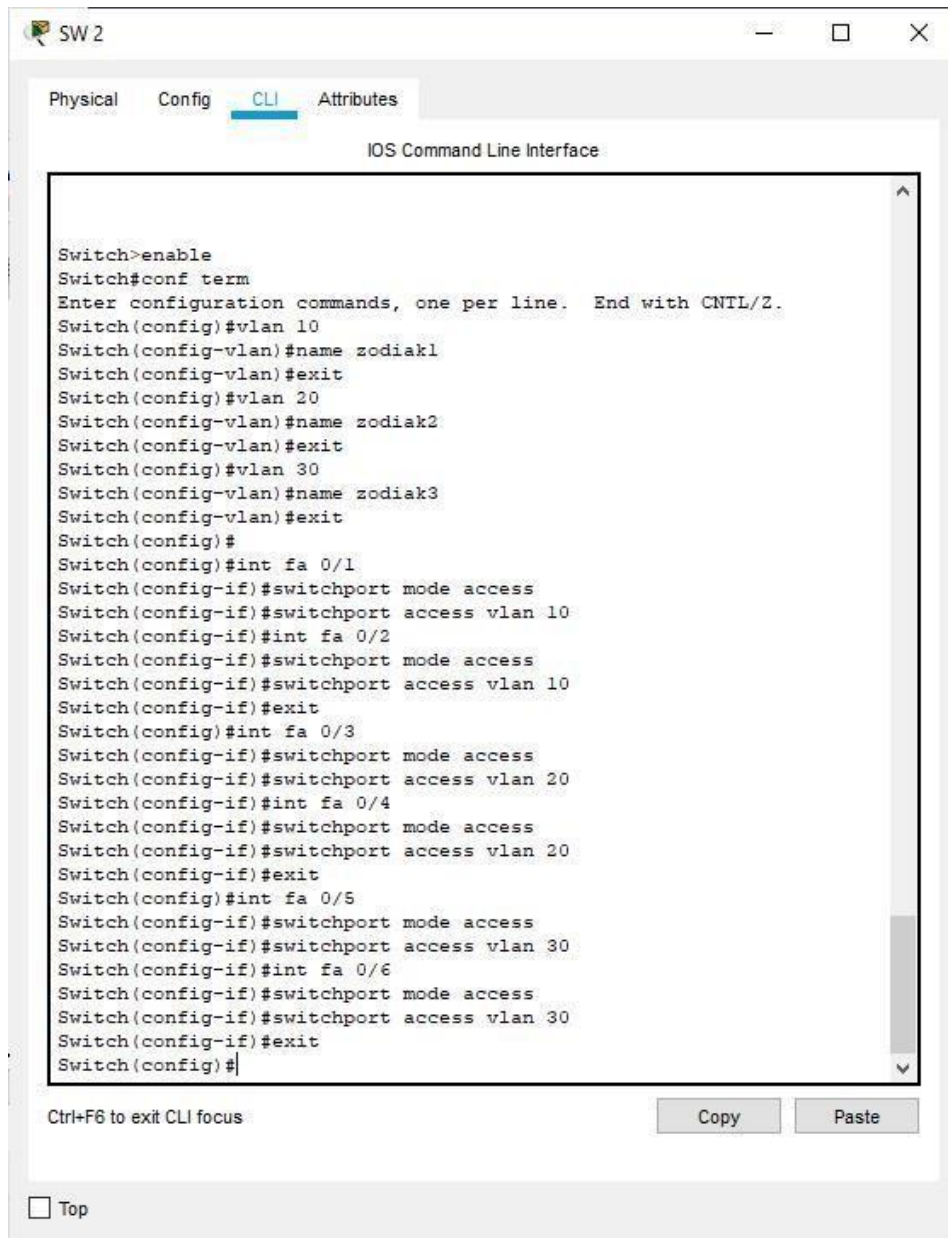
☐ Top

Tugas 10A

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

A. 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



```
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)#
```

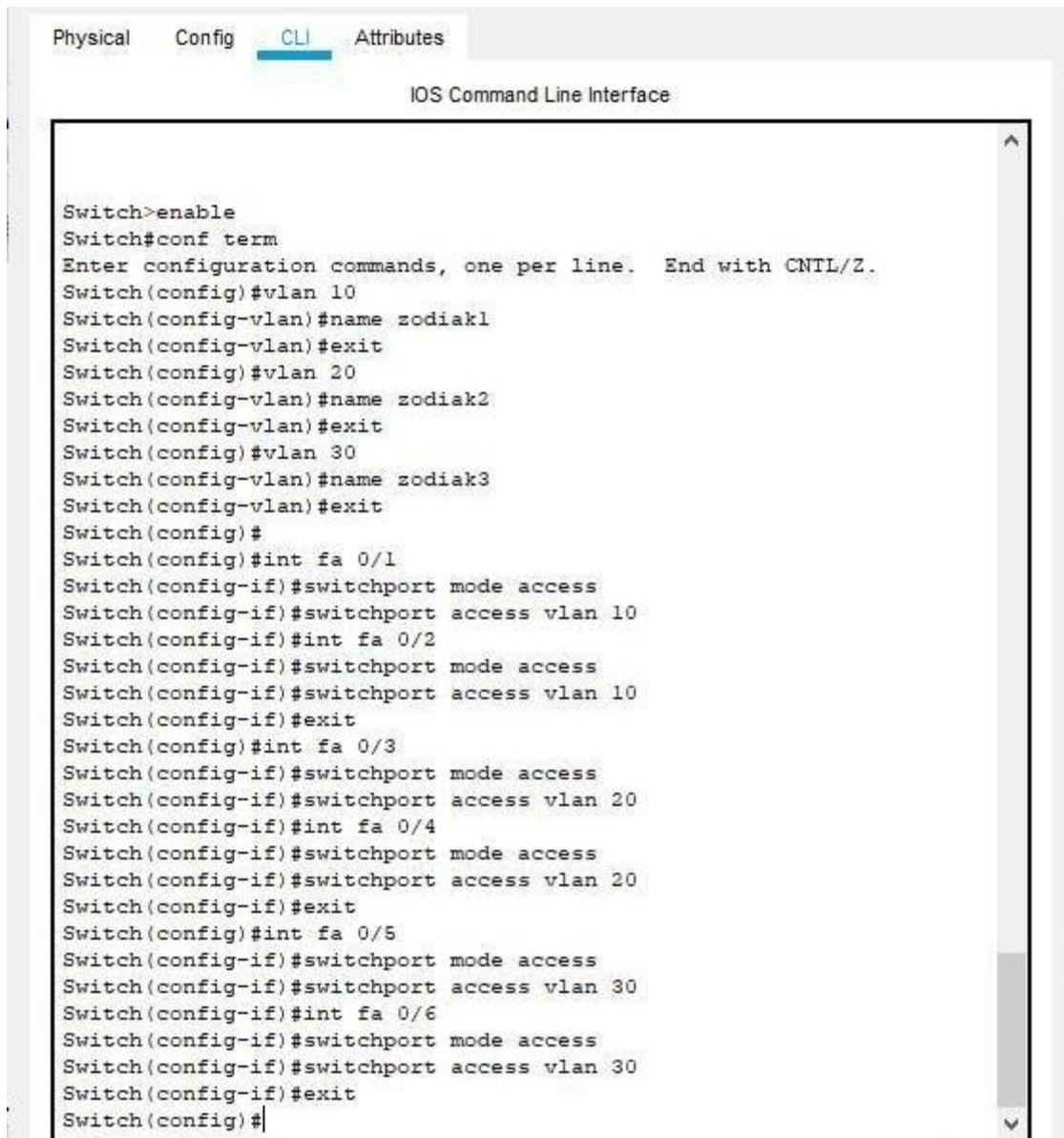
Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

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

- i. Zodiak1 = Aquarius dan Gemini
- ii. Zodiak2 = Cancer dan Sagitarius
- iii. Zodiak3 = Capricornus dan Pisces

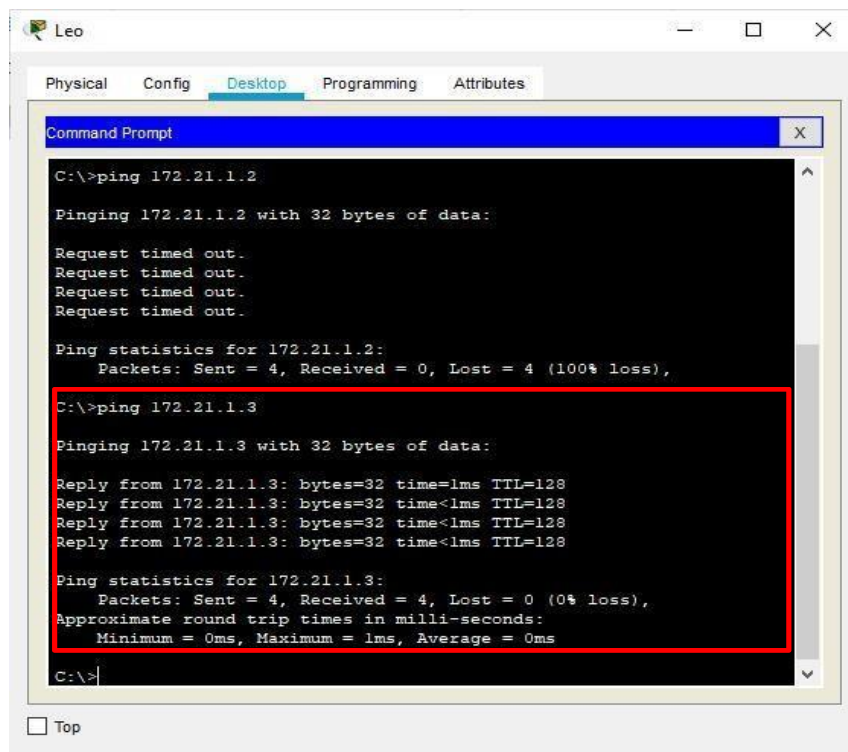


```
Physical  Config  CLI  Attributes

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)#
```

b. lakukan ping dari :
PC Leo ke PC Aries



```
Leo
Physical Config Desktop Programming Attributes
Command Prompt
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

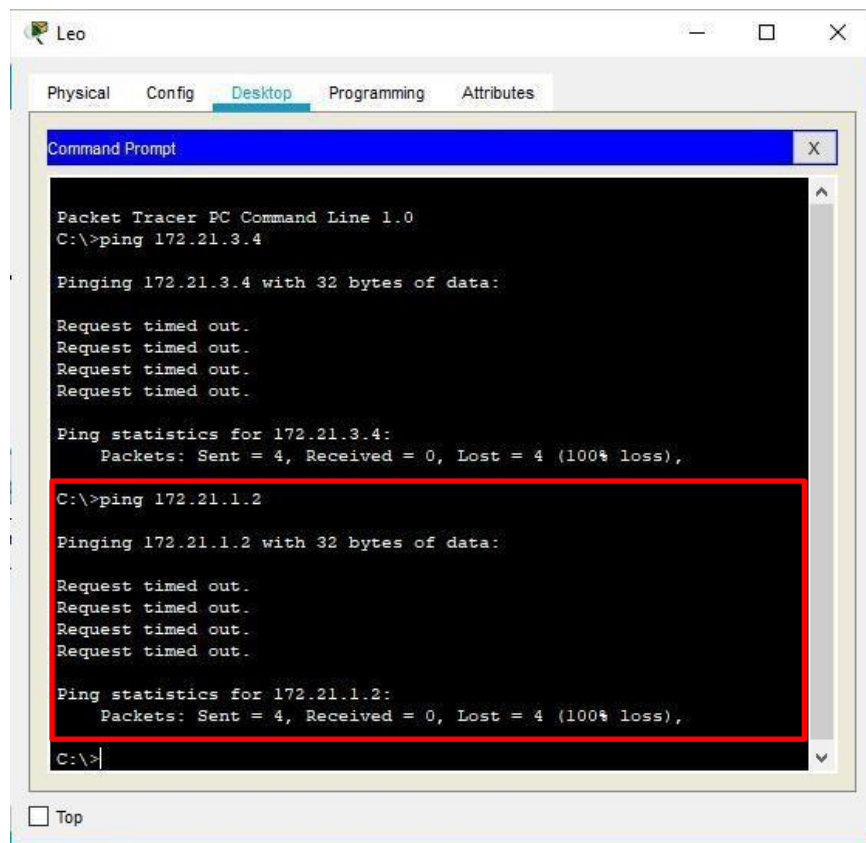
Pinging 172.21.1.3 with 32 bytes of data:

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



```
Leo
Physical Config Desktop Programming Attributes
Command Prompt
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

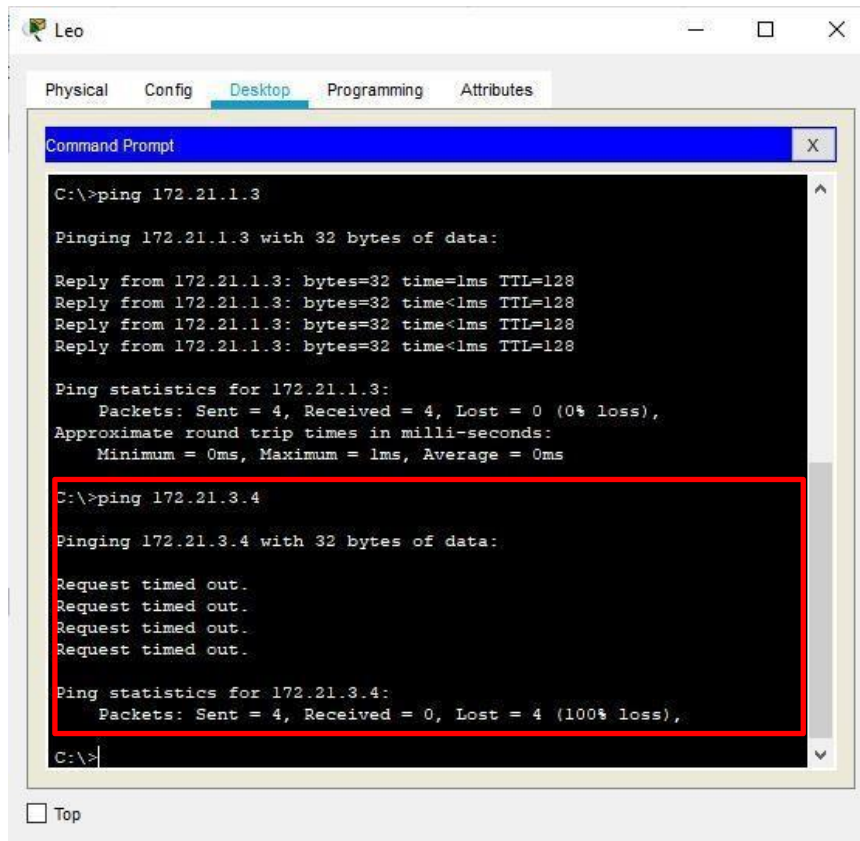
Pinging 172.21.1.2 with 32 bytes of data:

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



```
Leo
Physical Config Desktop Programming Attributes

Command Prompt

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:\>ping 172.21.3.4

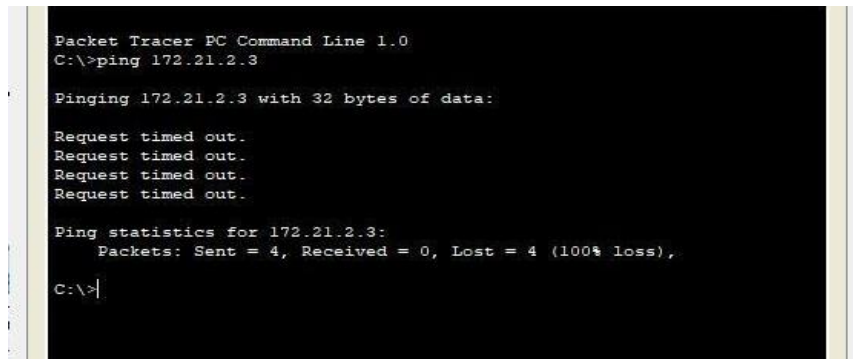
Pinging 172.21.3.4 with 32 bytes of data:

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:\>
```

PC Libra ke PC Cancer



```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.2.3

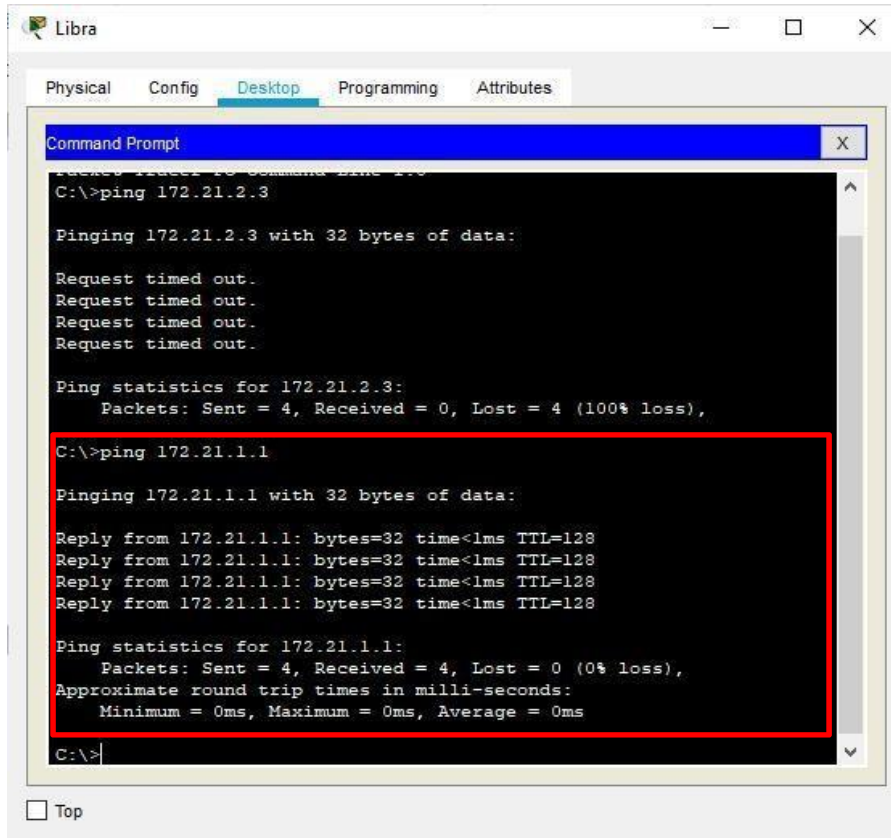
Pinging 172.21.2.3 with 32 bytes of data:

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:\>
```

PC Libra ke PC Leo



The screenshot shows a network configuration window titled 'Libra' with tabs for Physical, Config, Desktop, Programming, and Attributes. The 'Desktop' tab is active, displaying a Command Prompt window. The Command Prompt shows the execution of two ping commands. The first command, 'ping 172.21.2.3', results in four 'Request timed out.' messages and a 100% loss of packets. The second command, 'ping 172.21.1.1', results in four successful replies with a 0% loss of packets. The second command and its results are highlighted with a red rectangle.

```
Libra
Physical Config Desktop Programming Attributes
Command Prompt
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<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms 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:\>
```

Tugas 12A

- 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