

**Nama : Bayu Prayitno Aji**

**NIM : L200180054**

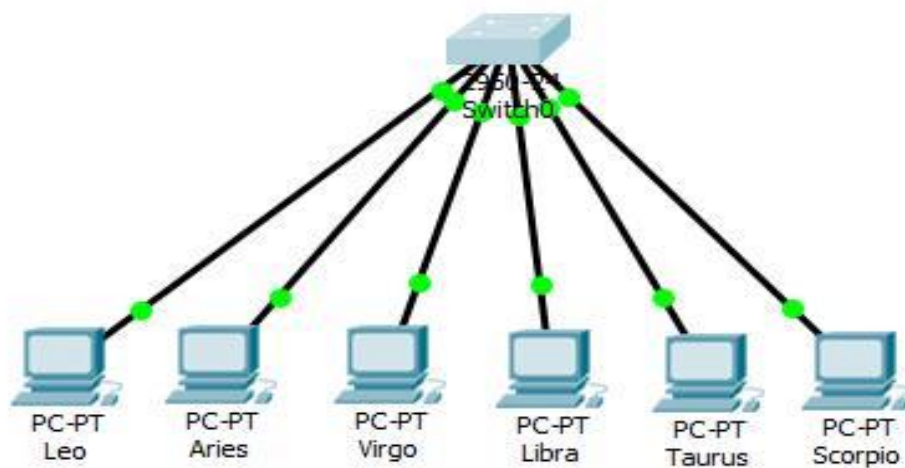
**Kelas : B**

## **MODUL 4**

### **C. Kegiatan Praktikum**

#### **Kegiatan 1.Topologi 1**

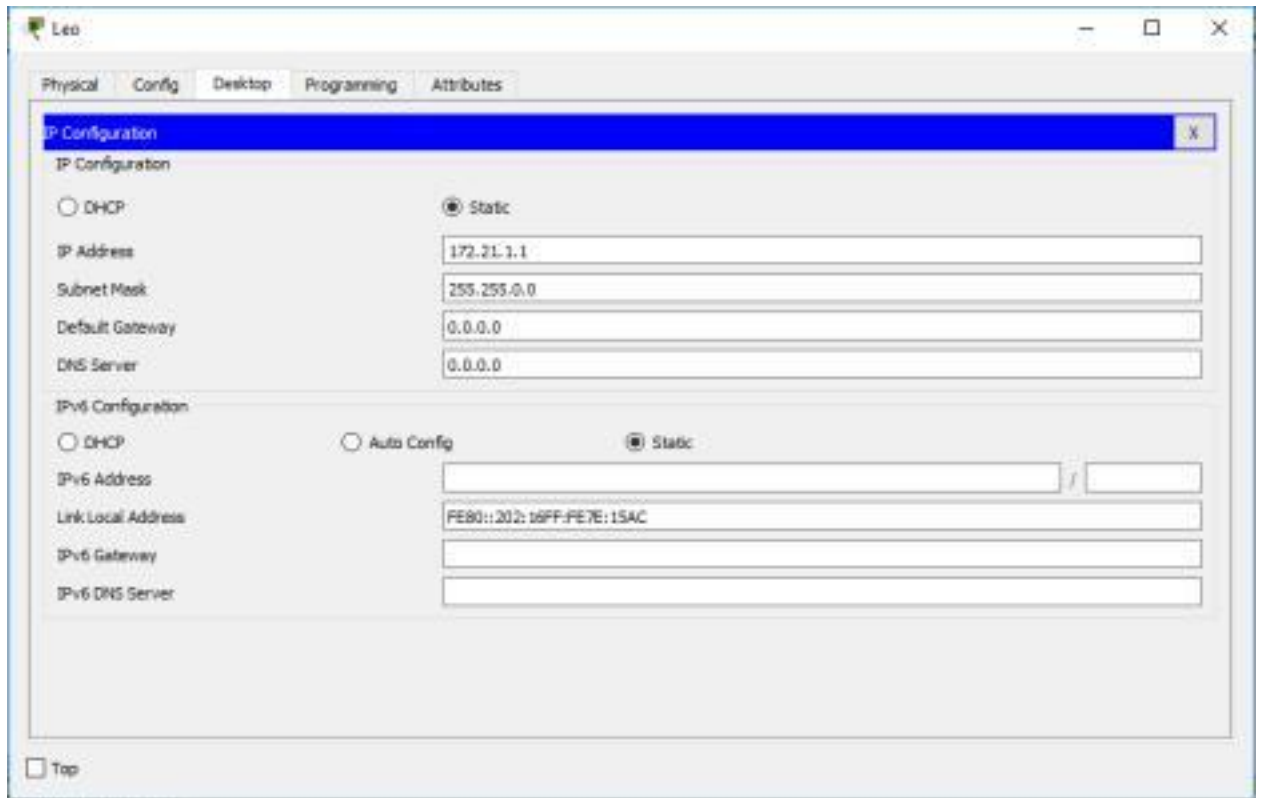
- A. Buat desain pada packet tracer dengan 1 SWITCH dan 6 PC.
- B. Dan beri masing masing nama Leo, Aries, Virgo, Libra, Taurus & Scorpio



- C. Konfigurasi IP pada masing masing PC dengan nama dan alamat IP berikut ini :

- **Leo** : 172.21.1.1/24
- **Aries** : 172.21.1.2/24
- **Virgo** : 172.21.1.3/24
- **Libra** : 172.21.1.4/24
- **Taurus** : 172.21.1.5/24
- **Scorpio** : 172.21.1.6/24

- Memberi nama dan IP pada masing-masing PC.



- D. Membuat tiga VLAN (Virtual LAN), dengan nama zodiak1, zodiak2, dan zodiak3.

```
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)#
```

Pada gambar di atas merupakan konfigurasi pada switch dengan mode user atau mode privileged & dan perintah pengoperasiannya

E. Lalu konfigurasi tiap port switch kedalam vlan zodiac 1,2 dan 3. Pada intinya di langkah ini merupakan pengelompokan pc kedalam tiap zodiac dengan ketentuan :

- a. Zodiac1 = leo dan libra
- b. Zodiac2 = aries dan Taurus
- c. Zodiac3 = 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)#
```

Pada gambar di atas adalah cara konfigurasi pengelompokan pc kedalam vlan. Cara mudahnya adalah cari tahu terlebih dahulu tiap pc terhubung ke port berapa baru kita kelompokkan kebetulan leo di port fa0/1, libra di port fa 0/4.

- Mengkonfigurasi port-port pada switch ke dalam VLAN.

```
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#interface FastEthernet0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
```

```
Switch(config)#interface fastethernet0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#interface FastEthernet0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
```

```
Switch(config)#interface FastEthernet0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#interface FastEthernet0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
```

F. Melihat konfigurasi VLAN.

```
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	

```
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						

```
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
```

```
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
```

- Tugas 6A : Capture masing-masing tampilan informasi VLAN dan isi tabel berikut.

- Zodiak1

No	Variable	Nilai
1	Nomor VLAN	10
2	Nama VLAN	Zodiak1
3	Port	Fa 0/1, Fa 0/4
4	Status	Active

- Zodiak2

No	Variable	Nilai
1	Nomor VLAN	20
2	Nama VLAN	Zodiak2
3	Port	Fa 0/2, Fa 0/5
4	Status	Active

- Zodiak3

No	Variable	Nilai
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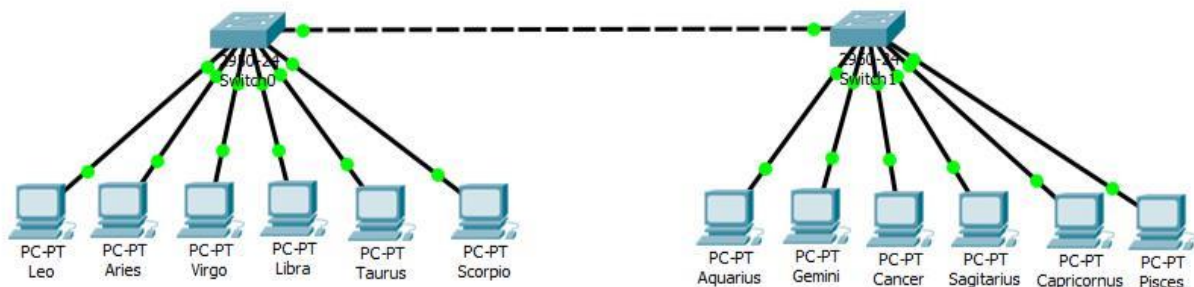
1	Nomor VLAN	30
2	Nama VLAN	Zodiak3
3	Port	Fa 0/3, Fa 0/6
4	Status	Active

• **Tugas 6B: Jelaskan Secara Singkat hasil yang anda peroleh dari tugas 6A**

“Hasil dari table diatas terdapat informasi di 6 computer tersebut dibagi menjadi 3 VLAN yang berbeda, zodiak1, zodiak2, dan zodiak3. Dimana nomor dari Vlan 10, 20, dan 30, dimana Vlan 10 terdapat port Fa 0/1 (Leo) dan Fa 0/4 (Libra), Vlan 20 terdapat port Fa 0/2 (Aries) dan Fa 0/5 (Taurus), dan Vlan 30 terdapat port Fa 0/3 (Virgo) dan Fa 0/6 (Scorpio), dan kesemua Vlan tersebut dalam kondisi aktif”

## **Kegiatan 2. Topologi 2**

A. Design Jaringan pada packet tracer, menggunakan dua switch 2950



B. Beri nama masing- masing nama sw1 : Leo, Aries, Virgo, Libra, Taurus & Scorpio

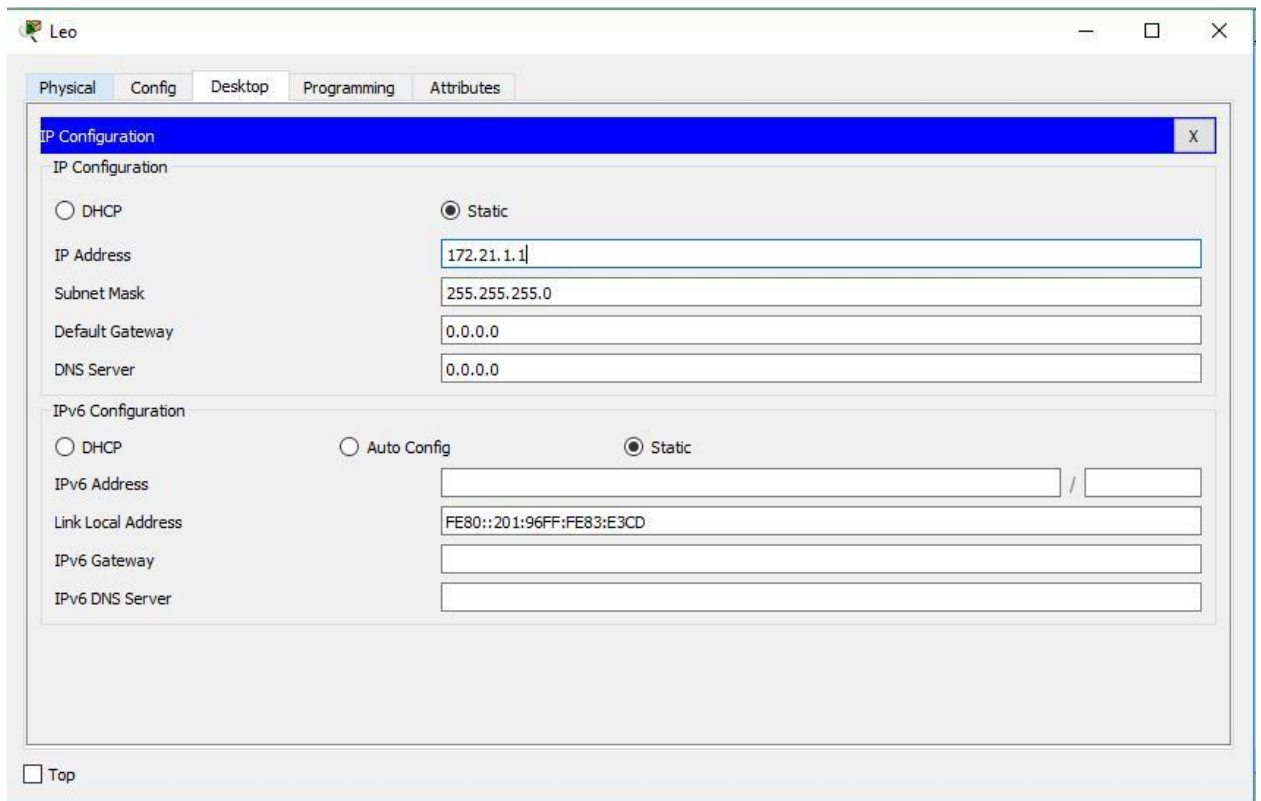
C. Beri nama masing- masing nama sw2 : Aquarius,Gemini,Cancer,Segitarius,Capricornus,Pisces

D. Konfigurasi IP pada tiap PC dengan dengan nama dan alamat IP berikut ini :

- Leo : 172.21.1.1/24
- Aries : 172.21.1.2/24
- Virgo : 172.21.2.1/24
- Libra : 172.21.2.2/24
- Taurus : 172.21.3.1/24
- Scorpio : 172.21.3.2/24

- **Aquarius** : 172.21.1.3/24
- **Gemini** : 172.21.1.4/24
- **Cancer** : 172.21.2.3/24
- **Sagittarius** : 172.21.2.4//24
- **Capricornus**: 172.21.3.3/24
- **Pisces** : 172.21.3.4/24

- Memberi nama dan IP pada masing-masing PC



- E. Membuat VLAN dan mengkonfigurasi port-port pada switch ke VLAN



```
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#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 10
Switch(config-if)#interface FastEthernet0/4
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 10
Switch(config-if)#
```

```
Switch(config)#interface FastEthernet0/2
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 20
Switch(config-if)#interface FastEthernet0/5
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 20
Switch(config-if)#exit
Switch(config)#
```

```
Switch(config)#interface FastEthernet0/3
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 30
Switch(config-if)#interface FastEthernet0/6
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 30
Switch(config-if)#exit
Switch(config)#
```

- Melakukan konfigurasi VLAN Trunking pada switch pertama (switch 0)

```
Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan all
Switch(config-if)#exit
Switch(config)#
```

#### F. Melihat konfigurasi Trunking VLAN

```
Switch#show interface fastethernet0/24 switchport
Name: Fa0/24
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
```

```
Switch#show interface fastethernet0/24
FastEthernet0/24 is up, line protocol is up (connected)
  Hardware is Lance, address is 00d0.bc7b.ea18 (bia 00d0.bc7b.ea18)
  BW 100000 Kbit, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s
  input flow-control is off, output flow-control is off
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    956 packets input, 193351 bytes, 0 no buffer
    Received 956 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 watchdog, 0 multicast, 0 pause input
    0 input packets with dribble condition detected
  2357 packets output, 263570 bytes, 0 underruns
    0 output errors, 0 collisions, 10 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
```

```
Switch#show vlan
```

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
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	

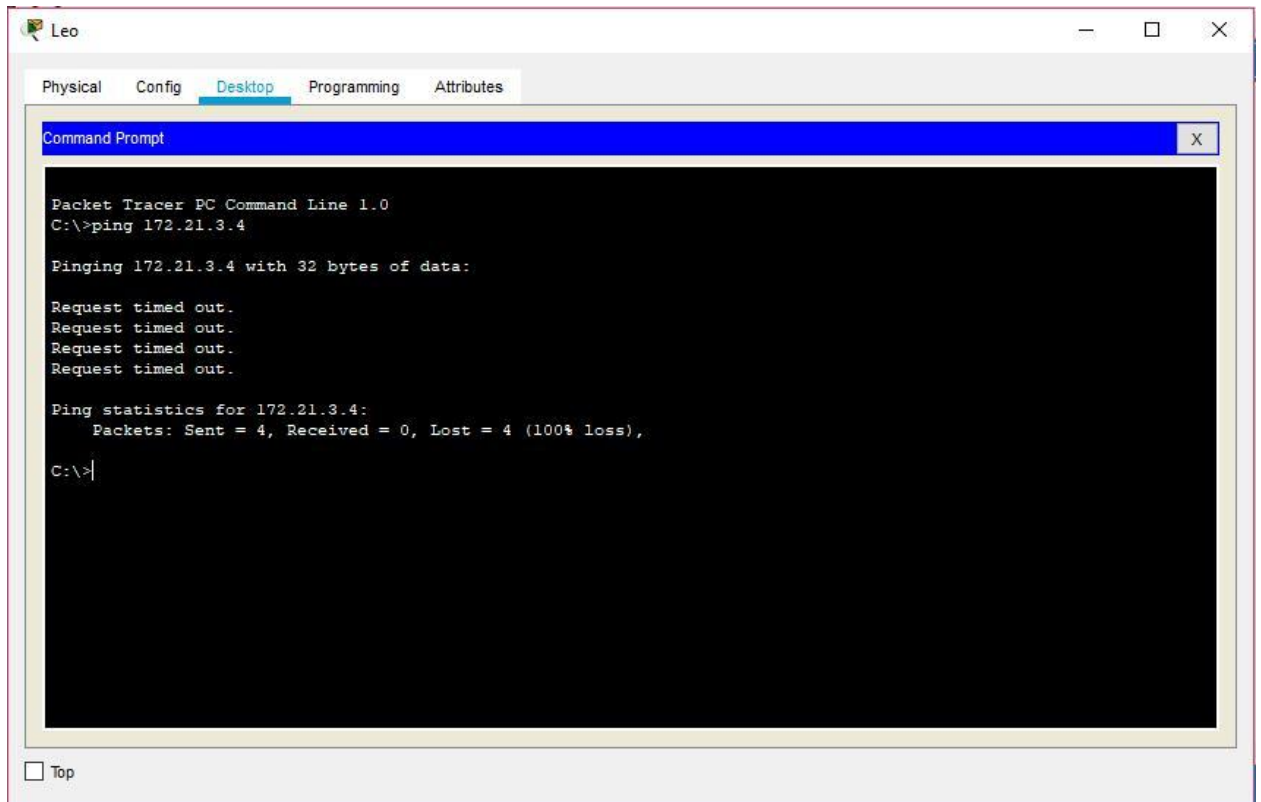
VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
1	enet	100001	1500	-	-	-	-	-	0	0
10	enet	100010	1500	-	-	-	-	-	0	0
20	enet	100020	1500	-	-	-	-	-	0	0
30	enet	100030	1500	-	-	-	-	-	0	0
1002	fddi	101002	1500	-	-	-	-	-	0	0
1003	tr	101003	1500	-	-	-	-	-	0	0
1004	fdnet	101004	1500	-	-	-	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
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- **Tugas 7A: Jelaskan secara singkat hasil yang anda peroleh dari langkah 7.**  
“Pada hasil yang tertera di atas menunjukkan bahwa, Vlan pada port 0/1 sampai 0/6 sudah terkonfigurasi dan telah di Trunking pada port 0/24”

- Melakukan Ping pada PC Leo ke PC Pisces



- **Tugas 8A: Jelaskan secara singkat mengapa hasil yang anda peroleh dari langkah 8 mendapatkan status “reply”?**
- Membuat VLAN Trunking pada switch kedua (switch 1)

```
Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan all
Switch(config-if)#exit
Switch(config)#
```

- Melihat konfigurasi Trunking VLAN (switch 1)

```
Switch#show vlan
```

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
10 zodiak1	active	Fa0/1, Fa0/2
20 zodiak2	active	Fa0/3, Fa0/4
30 zodiak3	active	Fa0/5, 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
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

```
Remote SPAN VLANs
```

Primary	Secondary	Type	Ports
1	20	en	0/1, 0/2, 0/3, 0/4, 0/5, 0/6, 0/7, 0/8, 0/9, 0/10, 0/11, 0/12, 0/13, 0/14, 0/15, 0/16, 0/17, 0/18, 0/19, 0/20, 0/21, 0/22, 0/23

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

“Pada hasil yang tertera di atas menunjukkan bahwa, Vlan pada port 0/1 sampai 0/6 sudah terkonfigurasi dan telah di Trunking pada port 0/24”

- Membuat VLAN dan mengkonfigurasi port-port pada switch ke VLAN (switch 1)

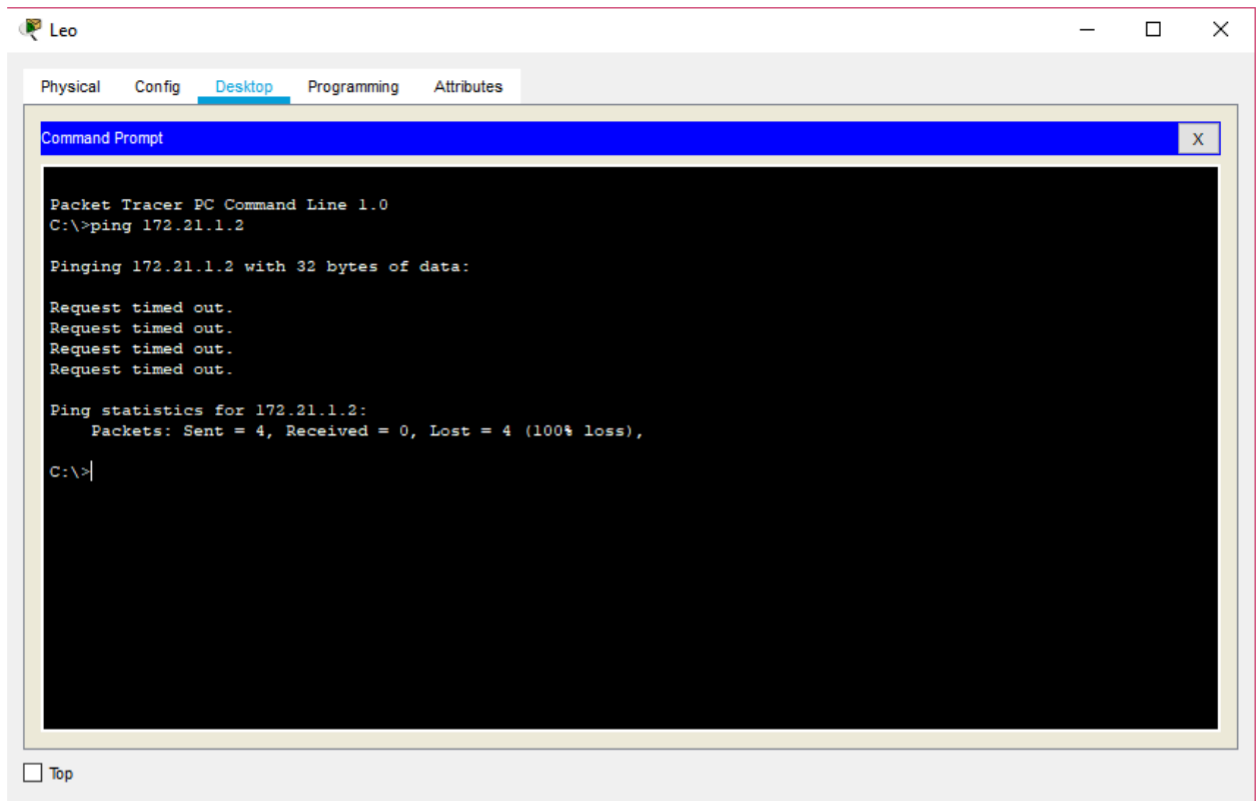
```
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#
```

```
Switch(config)#interface FastEthernet0/2
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 10
Switch(config-if)#interface FastEthernet0/1
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 10
Switch(config-if)#exit
Switch(config)#
```

```
Switch(config)#interface FastEthernet0/3
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 20
Switch(config-if)#interface FastEthernet0/4
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 20
Switch(config-if)#exit
Switch(config)#
```

```
Switch(config)#interface FastEthernet0/5
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 30
Switch(config-if)#interface FastEthernet0/6
Switch(config-if)#switch mode access
Switch(config-if)#switch access vlan 30
Switch(config-if)#exit
Switch(config)#
```

- Melakukan ping pada PC Leo ke PC Aries, PC leo ke PC Aquarius, PC Leo ke PC Pisces, PC Libra ke PC Cancer, PC Libra ke PC Leo



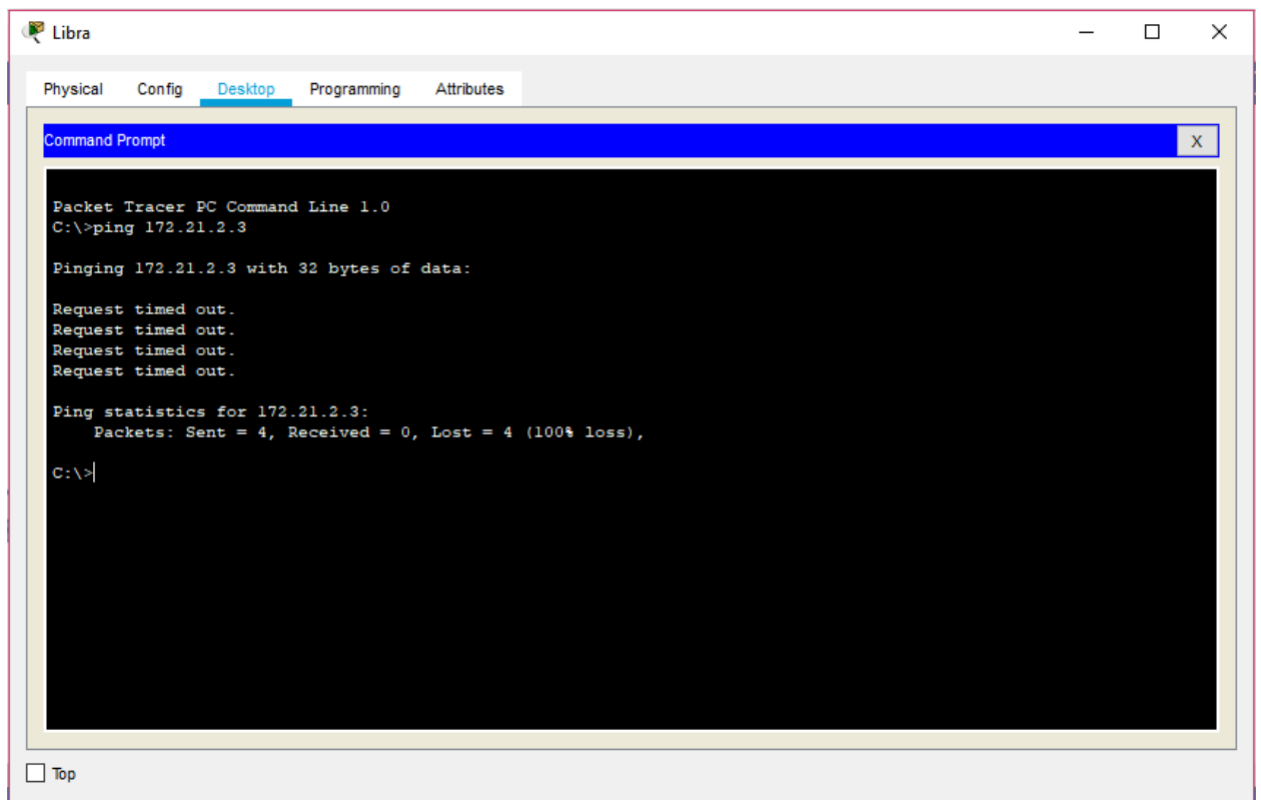
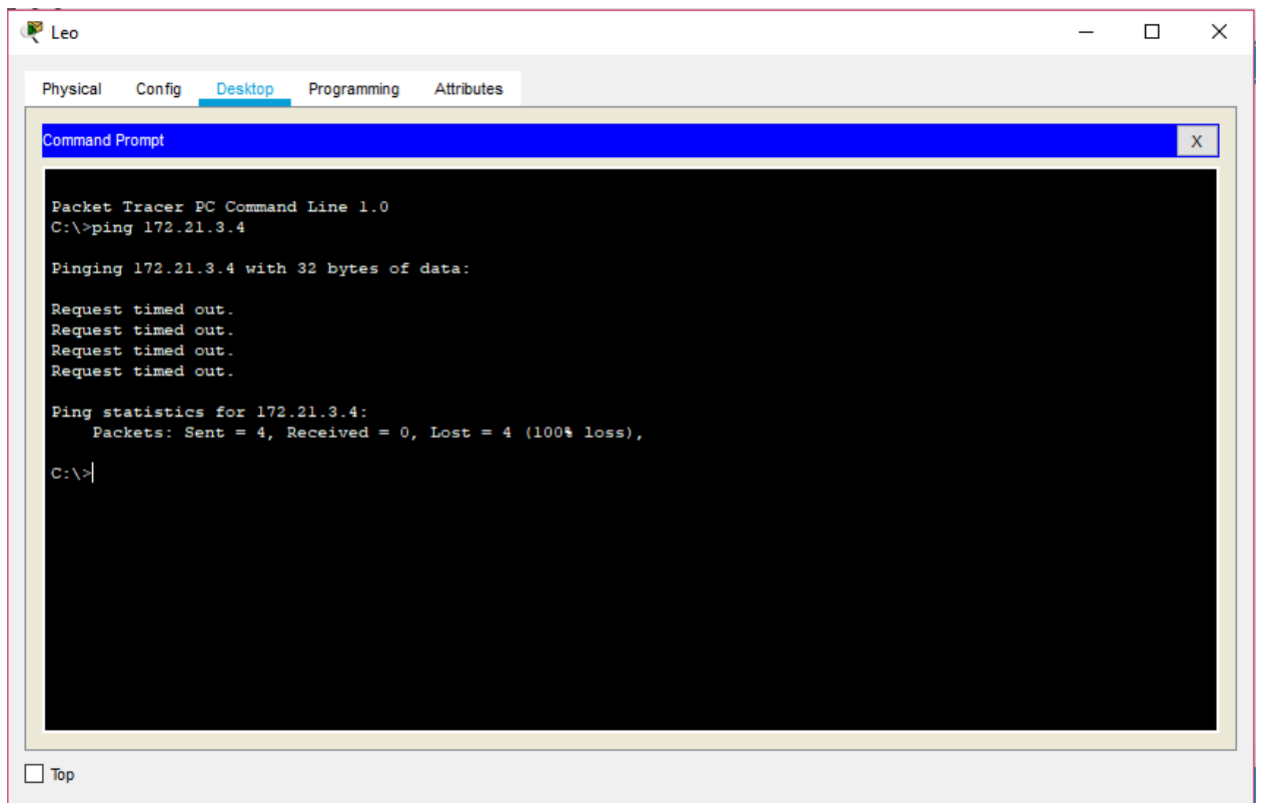
```
C:\>ping 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

Reply from 172.21.1.3: bytes=32 time=91ms 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 = 91ms, Average = 22ms

C:\>
```





```
C:\>ping 172.21.1.1

Pinging 172.21.1.1 with 32 bytes of data:

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

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

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

“Dari hasil yang didapat, dan percobaan yang telah dilakukan, didapat kesimpulan bahwa Ping dengan Vlan yang berbeda dan switch yang berbeda tidak memungkinkan, walaupun telah terbantu dengan Trunking, walaupun begitu memungkinkan untuk melakukan ping pada Vlan yang sama.”

