NAMA : **Khairul Noviyanti**

NIM : **L200170178**

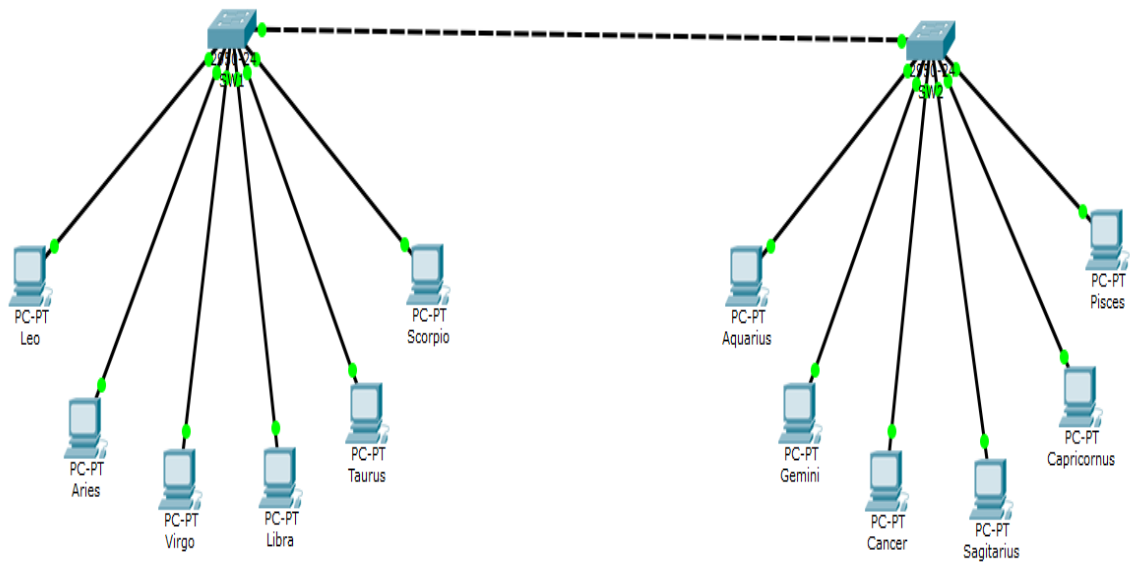**KELAS : D**

PRAKTIKUM JARINGAN KOMPUTER
VIRTUAL LAN DAN TRUNKING

Kegiatan 2. Topologi 2

1. Membuat topologi berikut ini menggunakan packet tracer
2. Memberi nama masing masing perangkat
   a. Switch1 : SW1   h. Switch2 : SW2
   b. Pc0   : Leo   i. Pc6   : Aquarius
   c. Pc1   : Aries   j. Pc7   : Gemini
   d. Pc2   : Virgo   k. Pc8   : Cancer
   e. Pc3   : Libra   l. Pc9   : Sagitarius
   f. Pc4   : Taurus   m. Pc10   : Capricornus   :
   g. Pc5   : Scorpio   n. Pc11   : Pisces

3. Merubah konfigurasi tiap PC
a. Leo : 172.21.1.1/24
b. Aries : 172.21.1.2/24
c. Virgo : 172.21.2.1/24
d. Libra : 172.21.2.2/24
e. Taurus : 172.21.3.1/24
f. Scorpio : 172.21.3.2/24
g. Aquarius : 172.21.1.3/24
h. Gemini : 172.21.1.4/24
i. Cancer : 172.21.2.3/24
j. Sagitarius : 172.21.2.4/24
k. Capricornus : 172.21.3.3/24
l. Pisces : 172.21.3.4/24

/24 maksudnya adalah masuk kelas c
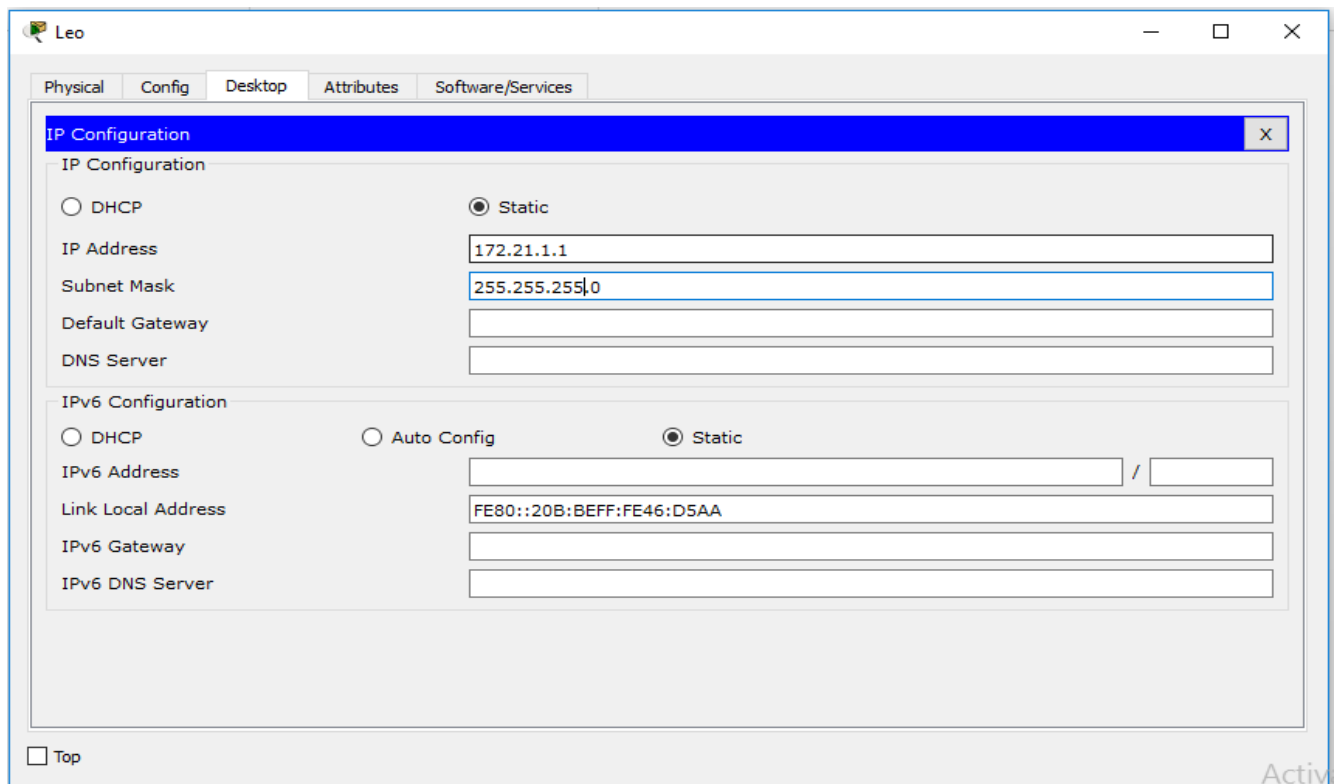
Aries

Physical | Config | Desktop | Attributes | Software/Services

IP Configuration

IP Configuration

- ◯ DHCP   ◉ Static

IP Address	172.21.1.2
Subnet Mask	255.255.255.0
Default Gateway	
DNS Server	

IPv6 Configuration

- ◯ DHCP   ◯ Auto Config   ◉ Static

IPv6 Address	/
Link Local Address	FE80::2D0:FFFF:FEA3:4D36
IPv6 Gateway	
IPv6 DNS Server	

☐ Top

Activ

Virgo

Physical | Config | Desktop | Attributes | Software/Services

IP Configuration

IP Configuration

- ◯ DHCP   ◉ Static

IP Address	172.21.2.1
Subnet Mask	255.255.255.0
Default Gateway	
DNS Server	0.0.0.0

IPv6 Configuration

- ◯ DHCP   ◯ Auto Config   ◉ Static

IPv6 Address	/
Link Local Address	FE80::201:63FF:FE52:668A
IPv6 Gateway	
IPv6 DNS Server	

☐ Top

Activ

Libra

Physical | Config | Desktop | Attributes | Software/Services

IP Configuration

IP Configuration

○ DHCP   ● Static

IP Address: 172.21.2.2

Subnet Mask: 255.255.255.0

Default Gateway:

DNS Server:

IPv6 Configuration

○ DHCP   ○ Auto Config   ● Static

IPv6 Address: /

Link Local Address: FE80::20A:41FF:FEB0:8070

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

Taurus

Physical | Config | Desktop | Attributes | Software/Services

IP Configuration

IP Configuration

○ DHCP   ● Static

IP Address: 172.21.3.1

Subnet Mask: 255.255.255.0

Default Gateway:

DNS Server:

IPv6 Configuration

○ DHCP   ○ Auto Config   ● Static

IPv6 Address: /

Link Local Address: FE80::2D0:58FF:FE0A:5735

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

Scorpio — □ ✕

Physical | Config | Desktop | Attributes | Software/Services

IP Configuration ✕

IP Configuration

○ DHCP   ◉ Static

IP Address   `172.21.3.2`

Subnet Mask   `255.255.255.0`

Default Gateway

DNS Server

IPv6 Configuration

○ DHCP   ○ Auto Config   ◉ Static

IPv6 Address   /

Link Local Address   `FE80::2E0:F9FF:FE68:83E9`

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

Aquarius — □ ✕

Physical | Config | Desktop | Attributes | Software/Services

IP Configuration ✕

IP Configuration

○ DHCP   ◉ Static

IP Address   `172.21.1.3`

Subnet Mask   `255.255.255.0`

Default Gateway

DNS Server

IPv6 Configuration

○ DHCP   ○ Auto Config   ◉ Static

IPv6 Address   /

Link Local Address   `FE80::2D0:BAFF:FE34:39EA`

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

Gemini

_ □ ✕

| Physical | Config | Desktop | Attributes | Software/Services |

IP Configuration ✕

IP Configuration

○ DHCP   ⦿ Static

IP Address   172.21.1.4

Subnet Mask   255.255.255.0

Default Gateway

DNS Server   0.0.0.0

IPv6 Configuration

○ DHCP   ○ Auto Config   ⦿ Static

IPv6 Address   /

Link Local Address   FE80::250:FFF:FEDE:7891

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

Cancer

_ □ ✕

| Physical | Config | Desktop | Attributes | Software/Services |

IP Configuration ✕

IP Configuration

○ DHCP   ⦿ Static

IP Address   172.21.2.3

Subnet Mask   255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

○ DHCP   ○ Auto Config   ⦿ Static

IPv6 Address   /

Link Local Address   FE80::201:63FF:FE39:B33E

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

Sagitarius

Physical | Config | **Desktop** | Attributes | Software/Services

IP Configuration [X]

IP Configuration

○ DHCP   ⦿ Static

IP Address   172.21.2.4

Subnet Mask   255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

○ DHCP   ○ Auto Config   ⦿ Static

IPv6 Address   /

Link Local Address   FE80::260:70FF:FE63:6222

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

Capricornus

Physical | Config | **Desktop** | Attributes | Software/Services

IP Configuration [X]

IP Configuration

○ DHCP   ⦿ Static

IP Address   172.21.3.3

Subnet Mask   255.255.255.0

Default Gateway

DNS Server

IPv6 Configuration

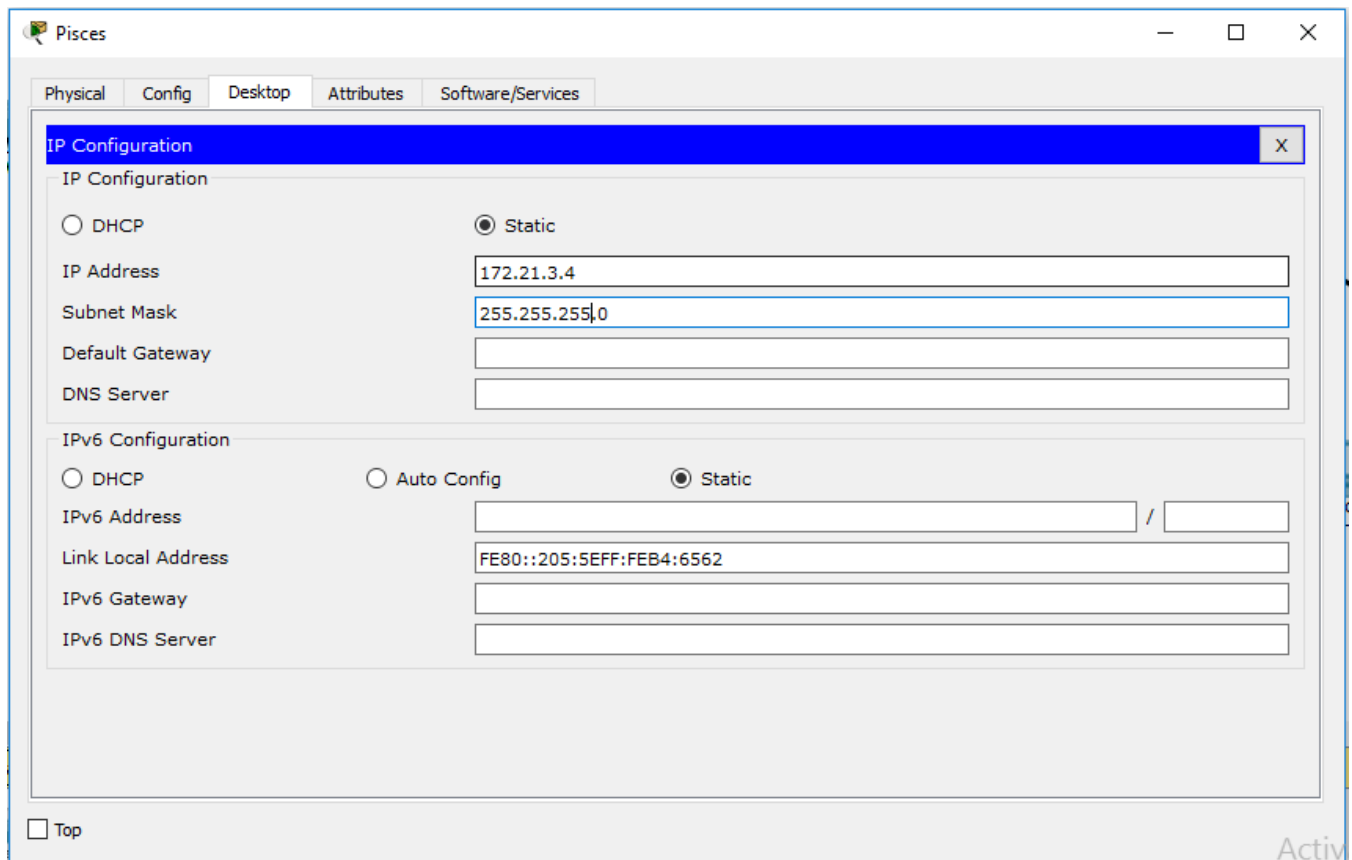○ DHCP   ○ Auto Config   ⦿ Static

IPv6 Address   /

Link Local Address   FE80::230:F2FF:FE61:1250

IPv6 Gateway

IPv6 DNS Server

☐ Top

Activ

4. Membuat 3 buah Vlan dengan nama zodiak1, zodiak2, dan zodiak3
5. Selanjutnya pada mode konfigurasi, kelompokkan port-port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3. Pengaturannya sebagai berikut :
   - Zodiak1   : leo dan libra
   - Zodiak2   : aries dan Taurus
   - Zodiak3   : virgo dan scorpio

```
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)#int fa 0/1
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/4
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 10
Switch(config-if)#int fa 0/2
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#int fa 0/3
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#int fa 0/5
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 20
Switch(config-if)#sw mode access
Switch(config-if)#sw access vlan 30
Switch(config-if)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

6. Konfigurasi VLAN trunking pada awitch 1.
   Langka pengoperasian seperti gambar dibawah ini :

```
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#
```

7. Konfigurasi trunking yang dibuat mode privileged. Langkah pengoperasian untuk melihat konfigurasi seperti gambar dibawah ini :

```
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#witchport mode trunk
                  ^
% Invalid input detected at '^' marker.

Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up

Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show interface fastethernet 0/24 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
```

```
Switch#show interface trunk
Port        Mode         Encapsulation  Status        Native vlan
Fa0/24      on           802.1q         trunking      1

Port         Vlans allowed on trunk
Fa0/24       1-1005

Port         Vlans allowed and active in management domain
Fa0/24       1,10,20,30

Port         Vlans in spanning tree forwarding state and not pruned
Fa0/24       1,10,20,30

Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/6,  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
30   zodiak3                          active    Fa0/3, Fa0/5
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
```

```
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/6, 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
30   zodiak3                          active    Fa0/3, Fa0/5
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

Remote SPAN VLANs
------------------------------------------------------------------------------


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

8.   Ping dari PC Leo ke Pisces :

```
Command Prompt

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=22ms TTL=128
Reply from 172.21.1.1: bytes=32 time=18ms TTL=128
Reply from 172.21.1.1: bytes=32 time=18ms TTL=128
Reply from 172.21.1.1: bytes=32 time=10ms 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 = 10ms, Maximum = 22ms, Average = 17ms

C:\>
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 172.21.2.1

Pinging 172.21.2.1 with 32 bytes of data:

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

Ping statistics for 172.21.2.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.2.2
```

Command Prompt

```
C:\>ping 172.21.2.2

Pinging 172.21.2.2 with 32 bytes of data:

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

Ping statistics for 172.21.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.3.1

Pinging 172.21.3.1 with 32 bytes of data:

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

Ping statistics for 172.21.3.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.3.2

Pinging 172.21.3.2 with 32 bytes of data:

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

Ping statistics for 172.21.3.2:
    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:

Request timed out
```

Command Prompt

```
Request timed out.

Ping statistics for 172.21.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

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 172.21.2.4

Pinging 172.21.2.4 with 32 bytes of data:

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

Ping statistics for 172.21.2.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.3.3

Pinging 172.21.3.3 with 32 bytes of data:

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

Ping statistics for 172.21.3.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

9. Konfigurasi VLAN trunking pada switch 2 :

IOS Command Line Interfac

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, 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
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

Remote SPAN VLANs
------------------------------------------------------------------------------

Primary Secondary Type              Ports
------- --------- ----------------- ---------------------------------------
```

10. Ubah mode privileged

IOS Command Line Interfac

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface fa 0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, 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
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

Remote SPAN VLANs
------------------------------------------------------------------------------

Primary Secondary Type              Ports
------- --------- ----------------- ---------------------------------------
```

11. Pada mode configures, konfigurasi port – port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3 dengan anggota sebagai berikut :
- Zodiak1 = aquarius dan Gemini
- Zosiak2 = cancer dan sagitarius
- Zodiak3 = capricornus dan pisces

12. Melakukan ping dari PC Leo ke PC Aries, PC Leo ke PC Aquarius, PC Leo ke PC Pisces, PC Libra ke PC Cancer, dan 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=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
```

```
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:

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:\>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:\>
```