PRACTICUM COMPUTER NETWORKS

MODUL 4

COMPUTER NETWORKS

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INFORMATION TECHNOLOGY

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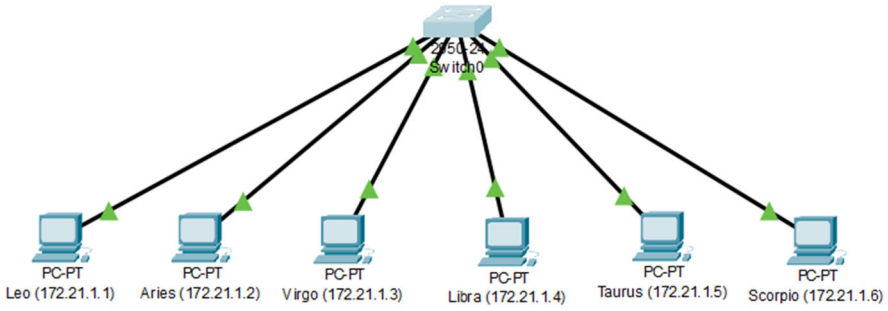
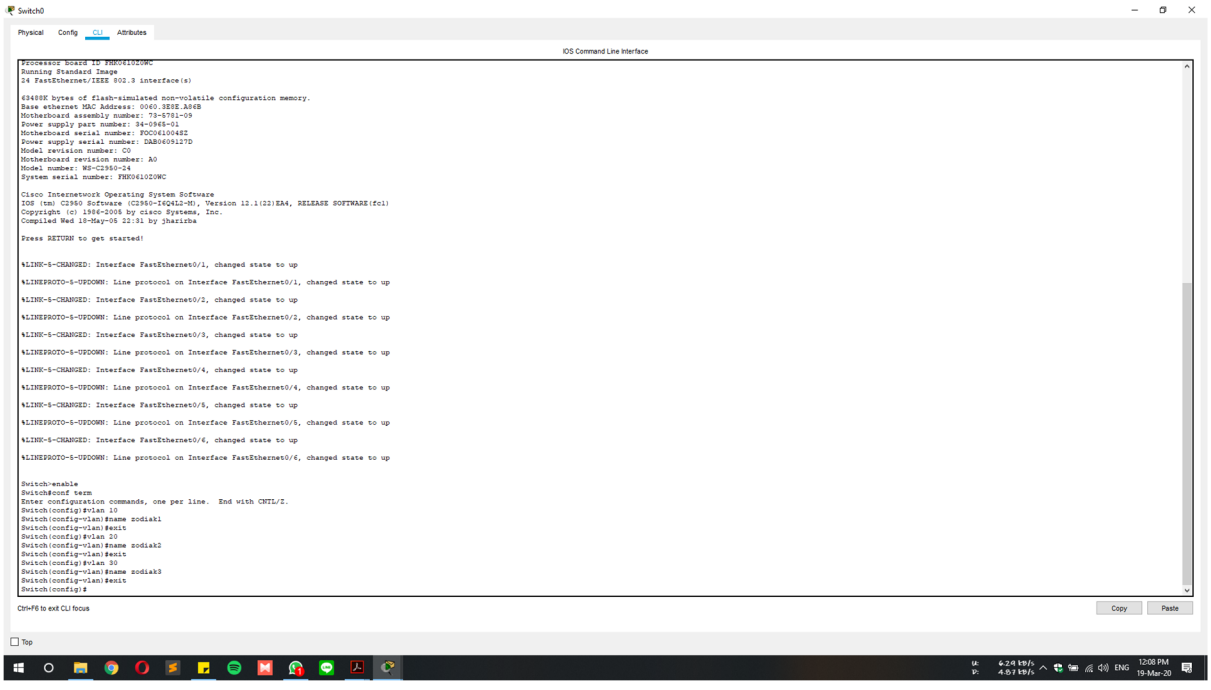
#Kegiatan 1



Pict 1. Network Design

Give the configuration just like below from PC1-PC6

Leo = 172.21.1.1/24
Arie = 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



Pict 2. VLAN zodiak1, zodiak2, zodiak3

Then, configure the ports in switch do VLAN zodiak1, zodiak2, zodiak3

zodiak1 = Leo (port 0/1) and Libra (port 0/4)

zodiak2 = Aries (port 0/2) and Taurus (port 0/5)

zodiak3 = Virgo (port 0/3) and Scorpion (port 0/6)

```
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)#
```

Ctrl+F6 to exit CLI focus

Pict 3. Configuration port into each PC to VLAN

```
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)#
```

Pict 4. Configuration port into each PC to VLAN

```
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)#
```

Pict 5. Configuration port into each PC to VLAN

Time to show the VLAN Information

```
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#
```

Pict 6. VLAN Information through “show vlan brief”

```
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#
```

Pict 7. VLAN Information trough “show vlan id 10”

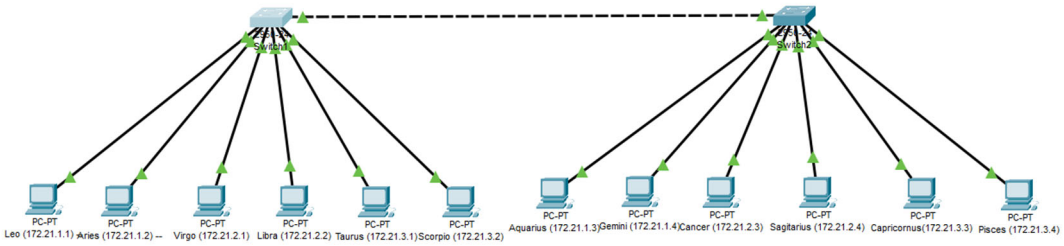
```
Switch#show vlan id 20

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 30
                 ^
% Invalid input detected at '^' marker.

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

Switch#
```

Pict 8. Show VLAN Information trough “show vlan id 20 && show vlan id 30”

NO.	Variable	Nilai		
1.	Nomor VLAN	10	20	30
2.	Nama VLAN	zodiak1	zodiak2	zodiak3
3.	Port	(0/1), (0/4)	(0/2), (0/5)	(0/3), (0/6)
4.	Status	active	active	active

Table 1. Show the information from VLAN switch 1

#Kegiatan 2



Pict 9. Network Design

Give the IP Configuration just like below :

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

```
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)#
```

Pict 10. VLAN zodiak1, zodiak2, zodiak3 in Switch2

Then, configure the ports in switch do VLAN zodiak1, zodiak2, zodiak3

zodiak1 = Leo (port 0/1) and Libra (port 0/4)

zodiak2 = Aries (port 0/2) and Taurus (port 0/5)

zodiak3 = Virgo (port 0/3) and Scorpion (port 0/6)

```
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)#
```

Ctrl+F6 to exit CLI focus

Pict 11. Configuration port into each PC to VLAN

```
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)#
```

Pict 12. Configuration port into each PC to VLAN

```
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)#
```

Pict 13. Configuration port into each PC to VLAN

```
------- --------- ----------------- ----------------------------------------
Switch>
Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface FastEthernet0/7
Switch(config-if)#
Switch(config-if)#switchport mode access
Switch(config-if)#
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

Switch(config-if)#
```

Pict 14. Configuration fa 0/7 become mode Trunk

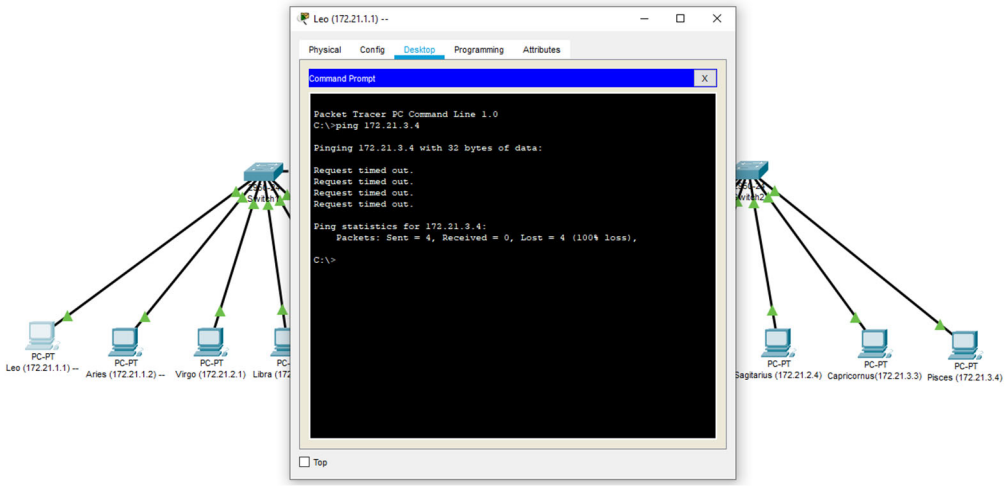
```
Switch#show int fa 0/7 switchport
Name: Fa0/7
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
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
```

Pict 15. Check the fa 0/7

```
Switch>enable
Switch#show vlan brief

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, Fa0/2
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
Switch#
```

Pict 16. Check the VLAN

How to check if the trunk were succeed? If the FastEthernet that've inputted didn't show up in the ports or even in VLAN.

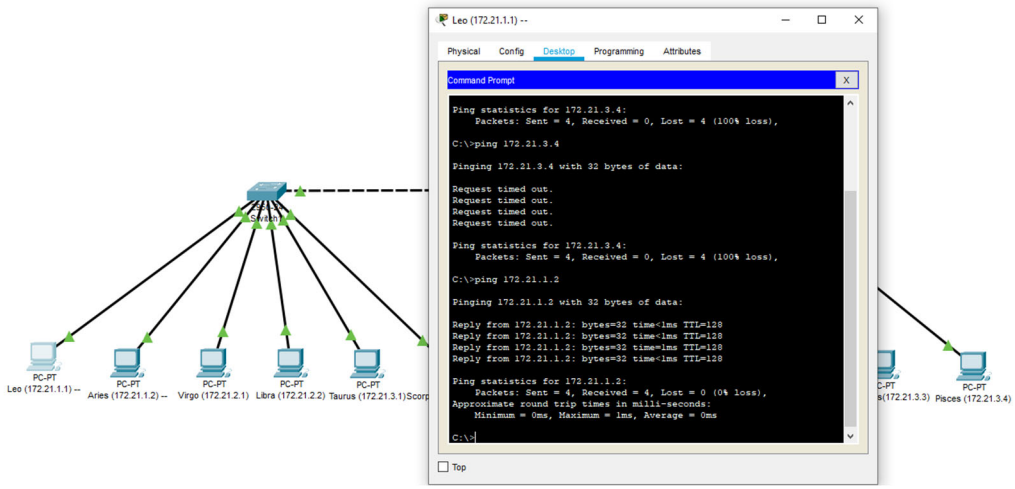


Pict 17. Ping PC Leo to PC Pisces

The result from PING PC Leo to PC Pisces is RTO, because you are in the different VLAN and different network host. So, it'll not be able to connect between em.

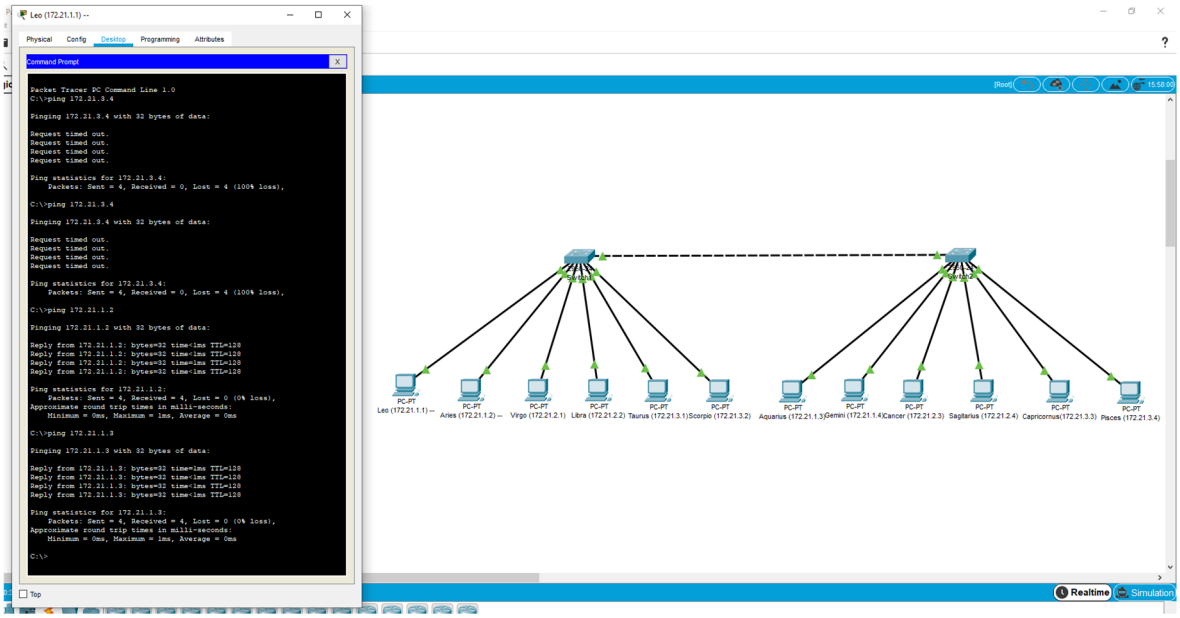
```
Switch#show int fa 0/7 switchport
Name: Fa0/7
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
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


Switch#show vlan brief

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   zodiak4                           active    Fa0/1, Fa0/2
20   zodiak5                           active    Fa0/3, Fa0/4
30   zodiak6                           active    Fa0/5, Fa0/6
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
Switch#
```

Pict 18. Do the same as Kegiatan 1 start from their trunk until the zodiac 4,5,6. Just follow the order from the book.



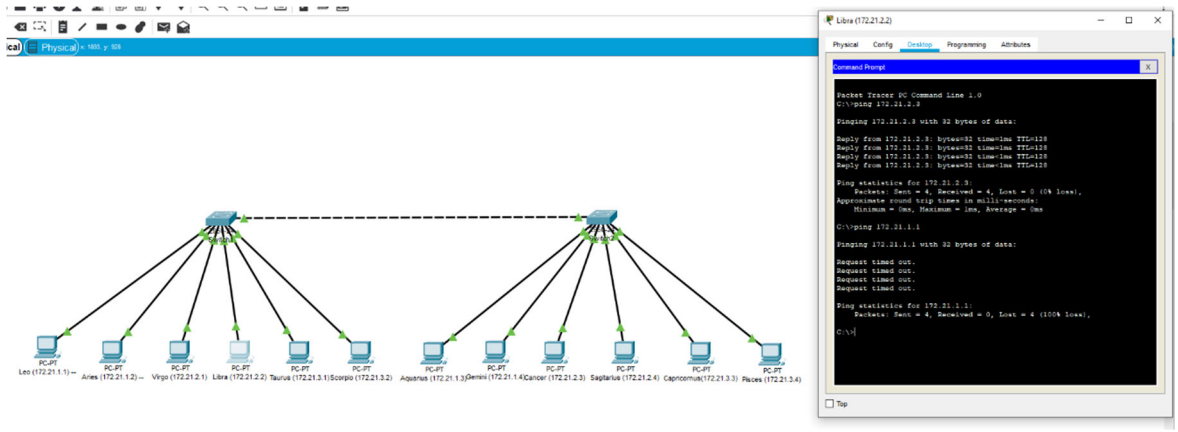
Pict 19. PING PC Leo (172.21.1.1) to PC Aries (172.21.1.2)

When you are PING PC Leo to PC Aries you'll notice that it works, cause it's the same VLAN and the same network host.



Pict 20. PING PC Leo(172.21.1.1) to Aquarius (172.21.1.3) and PC Leo (172.21.1.1) to Aries (172.21.1.2)

It'all work at charm, no matter what. because Aquarius and Aries has the same VLAN, network host.



Pict 21. PING Libra (172.21.2.2) to PC Leo (172.21.1.1) and PC Libra (172.21.2.2) to PC Cancer (172.21.2.3)

➔ PC Libra (172.21.2.2) to PC Cancer (172.21.2.3) will be okay, cause it's the same VLAN, and the same network host. But if it from Libra (172.21.2.2) to PC Leo (172.21.1.1) wont connect or reply cause in the different network host and VLAN. Even tho after being Trunked.