Nama : Titis Ulfa Mustikawati
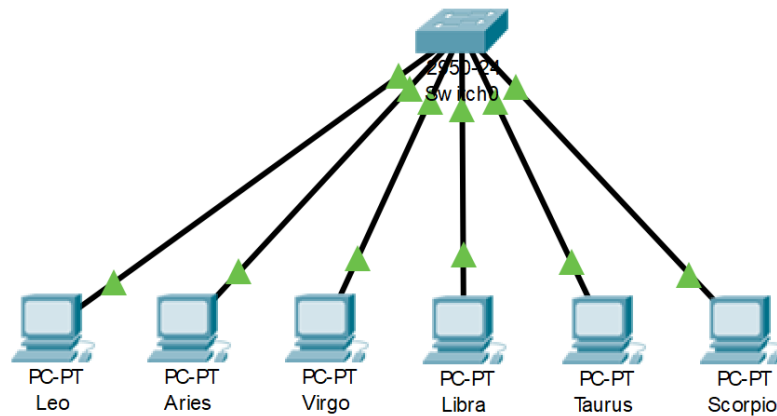NIM : L200170057
Kelas : B

# MODUL IV
# VIRTUAL DAN TRUNKING

## Kegiatan 1. Topologi 1

1. Menggunakan *packet tracer* buat topologi berikut ini dengan menggunakan switch.

   Memberi nama masing – masing perangkat dengan SW1 (switch), Leo (PC0), Aries (PC1), Virgo (PC2), Libra (PC3), Taurus (PC4), dan Scorpio (PC5).

   Konfigurasi 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



2. Konfigurasi Pada switch dengan *mode user* atau *mode privileged,* buat 3 VLAN dengan nama zodiak1, zodiak2, dan zodiak3. Dengan cara klik pada switch 2 kali kemudian pilih CLI.

```
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up

%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)#
```

3. Pada *mode configuration,* 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)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
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)#
```

4. 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
Switch>
```

- Informasi VLAN 10

```
                                              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
Transl Trans2
---- ----- ---------- ----- ------ ------ -------- ---- --------
------ ------
10   enet  100010     1500  -      -      -        -    -        0
0

Switch>
```

- Informasi VLAN id 20

```
--------------------------------
10   zodiak1                       active    Fa0/1, Fa0/4

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

Switch>
```

- Informasi VLAN id 30

```
-------------------------------
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

Switch>
```

a. Tugas 4A    : Capture masing – masing tampilan informasi VLAN da nisi table berikut.

| No | Variabel | Nilai | | |
|----|----------|-------|---|---|
| 1 | Nomor VLAN | 10 | 20 | 30 |
| 2 | Nama VLAN | Zodiak1 | Zodiak2 | Zodiak3 |
| 3 | Port | Fa 0/1, fa 0/4 | Fa 0/2, fa 0/5 | Fa 0/3, fa 0/6 |
| 4 | Status | Aktif | Aktif | Aktif |

b. Tugas 4B    : Jelaskan secara singkat hasil yang anda peroleh dari tugas 4A.
   - Zodiak1 dengan no vlan 10, port fa 0/1, fa 0/4 berstatus aktif
   - Zodiak2 dengan no vlan 20, port fa 0/2, fa 0/5 berstatus aktif
   - Zodiak3 dengan no vlan 30, port fa 0/3, fa 0/6 berstatus aktif
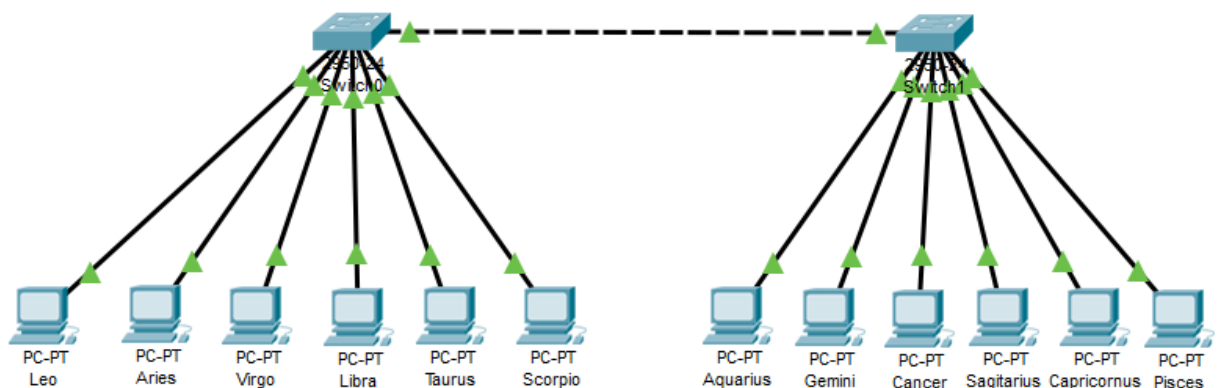
**Kegiatan 2. Topologi 2**

1. Menggunakan *cisco packet tracer* buat topologi berikut ini dengan menggunakan switch Catalyst 2950.

   Memberi nama masing – masing perangkat dengan SW1 (switch 1), Leo (PC0), Aries (PC1), Virgo (PC2), Libra (PC3), Taurus (PC4), dan Scorpio (PC5) untuk segmen switch1.

   Memberi nama masing – masing perangkat dengan SW2 (switch 21), Aquarius (PC6), Gemini (PC7), Cancer (PC8), Sagitarius (PC9), Capricornus (PC10), dan Pisces (PC11) untuk segmen switch 2.

   Konfigurasi masing – masing PC dengan nama dan alamat IP berikut ini :
   - Leo          = 172.21.1.1/24
   - Aries        = 172.21.1.2/24
   - Virgo        = 172.21.2.1/24
   - 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
   - Sagitarius   = 172.21.2.4/24
   - Capricornus  = 172.21.3.3/24
   - Pisces       = 172.21.3.4/24



2. Konfigurasi Pada switch dengan *mode user* atau *mode privileged,* buat 3 VLAN dengan nama zodiak1, zodiak2, dan zodiak3. Dengan cara klik pada switch 2 kali kemudian pilih CLI.

```
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up

%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)#
```

3. Pada *mode configuration,* 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)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
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)#
```

4. Lakukan konfigurasi VLAN trunking pada switch 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)#
Switch(config)#int fa 0/7
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#
```

5. Pada *mode user* atau *mode privileged,* lihat konfigurasi *trunking* yang telah dibuat.
   - Informasi *interface fashethernet 0/7 switchport*

```
Switch#show int fa 0/7 switchport
Name: Fa0/7
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dotlq
Operational Trunking Encapsulation: dotlq
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: dotlq
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
```

   - Informasi *interface fashethernet 0/7*

```
Operational Trunking Encapsulation: dotlq
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: dotlq
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 int fa 0/7 trunk
                 ^
% Invalid input detected at '^' marker.

Switch#
```

- Informasi VLAN

```
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
Transl Trans2
```

Jelaskan secara singkat hasil yang anda peroleh dari langkah 5

**Informasi** *interface fashethernet 0/7 switchport* **menampilkan :**
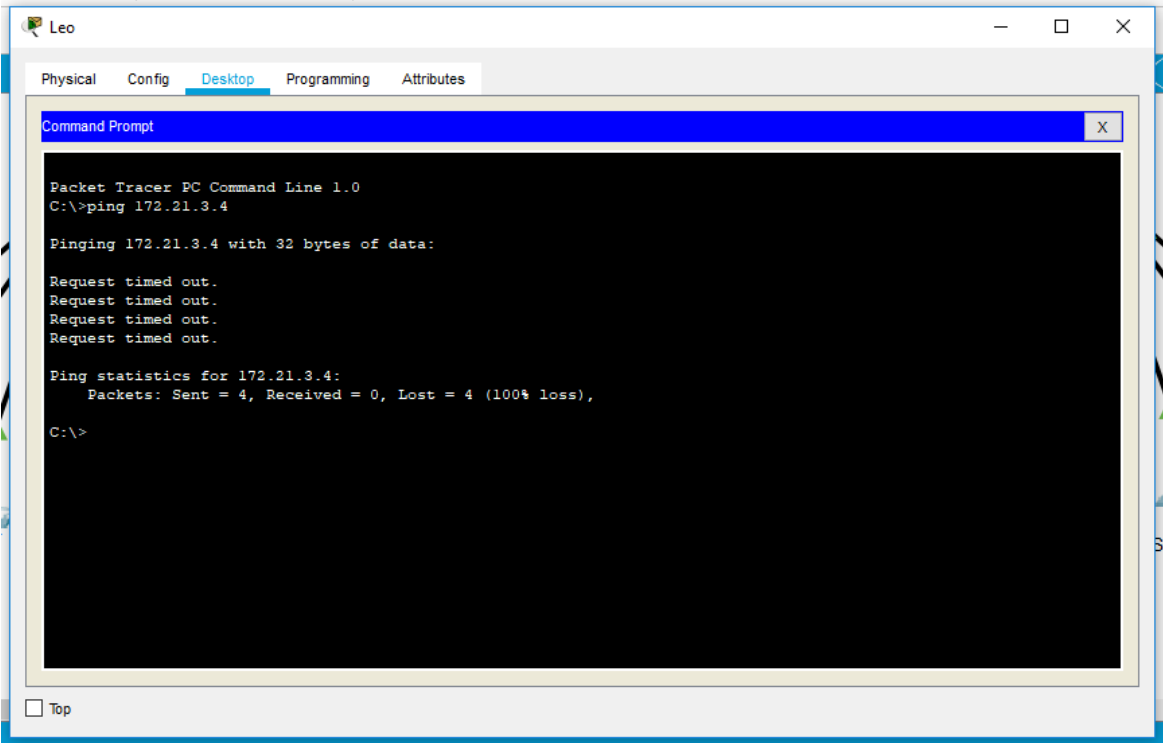
Switchport : enable

Administrative mode : trunk

Operational mode : trunk

**Informasi** *interface fashethernet 0/7* **menampilkan :**

*Invalid*

**Informasi VLAN menampilkan :**

| No | Variabel | Nilai | | |
|----|----------|-------|---|---|
| 1 | Nomor VLAN | 10 | 20 | 30 |
| 2 | Nama VLAN | Zodiak1 | Zodiak2 | Zodiak3 |
| 3 | Port | Fa 0/1, fa 0/4 | Fa 0/2, fa 0/5 | Fa 0/3, fa 0/6 |
| 4 | Status | Aktif | Aktif | Aktif |

6. Lakukan ping dari PC leo ke PC pisces

```
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:\>
```

Jelaskan secara singkat mengapa hasil yang anda peroleh dari langkah 6 mendapatkan status "reply"?.

*Hasil yang anda peroleh dari langkah 6 mendapatkan status timed out.*

7. Lakukan konfigurasi VLAN trunking pada switch 2 seperti langkah 4.

```
changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up

%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

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
changed state to up


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)#exit
Switch(config)#
```

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

```
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, Fa0/2
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
```

Jelaskan secara singkat hasil yang anda peroleh dari langkah 8.

| No | Variabel | Nilai | | |
|----|----------|-------|-----|-----|
| 1 | Nomor VLAN | 10 | 20 | 30 |
| 2 | Nama VLAN | Zodiak1 | Zodiak2 | Zodiak3 |
| 3 | Port | Fa 0/1, fa 0/2 | Fa 0/3, fa 0/4 | Fa 0/5, fa 0/6 |
| 4 | Status | Aktif | Aktif | Aktif |

9. Pada *mode configuration,* 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(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
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)#
```
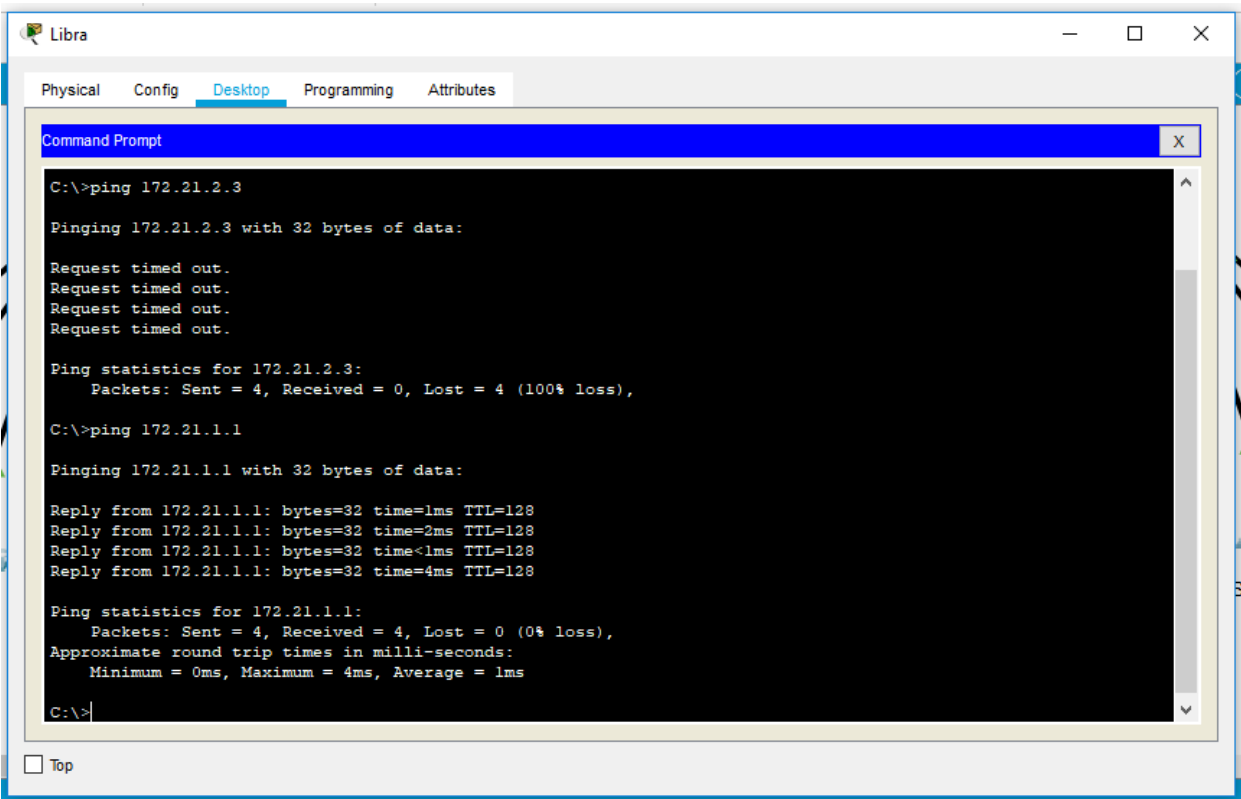
10. Ping PC leo ke PC aries, PC leo ke PC aquarius
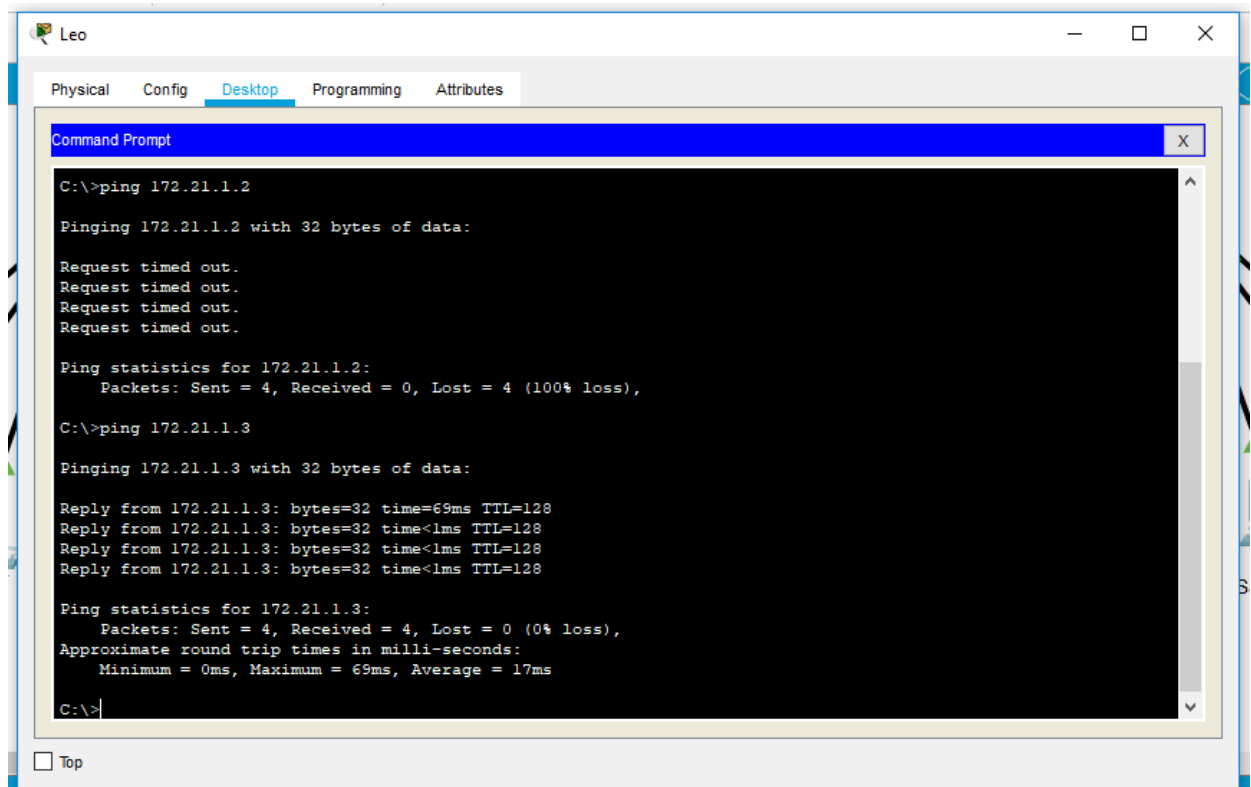
Ping PC leo ke PC pisces
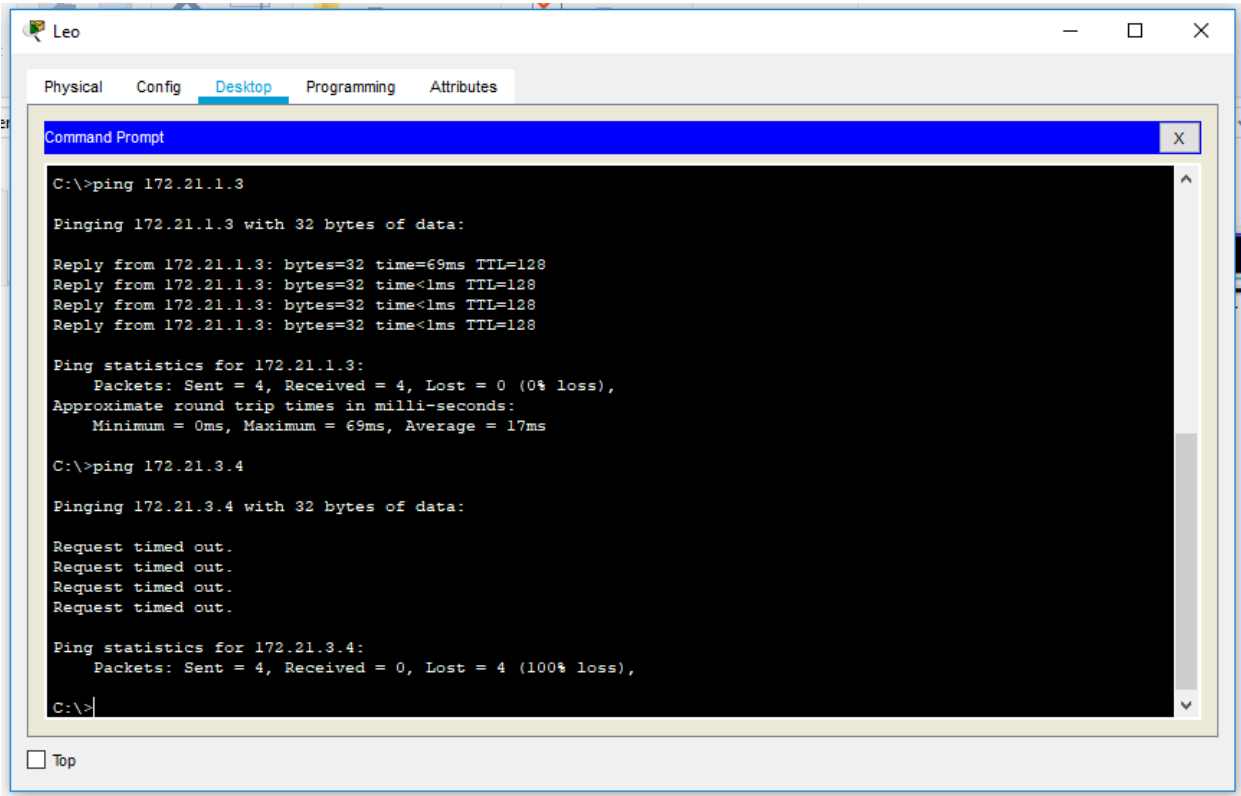


Ping PC libra ke PC cancer, PC libra ke PC leo.



Ping PC leo ke PC aries : timed out

Ping PC leo ke PC aquarius : sent = 4, received = 4

Ping PC leo ke PC pisces : timed out

Ping PC libra ke PC cancer : timed out

Ping PC libra ke PC leo : sent = 4, received = 4