COMPUTER NETWORK PRACTICUM
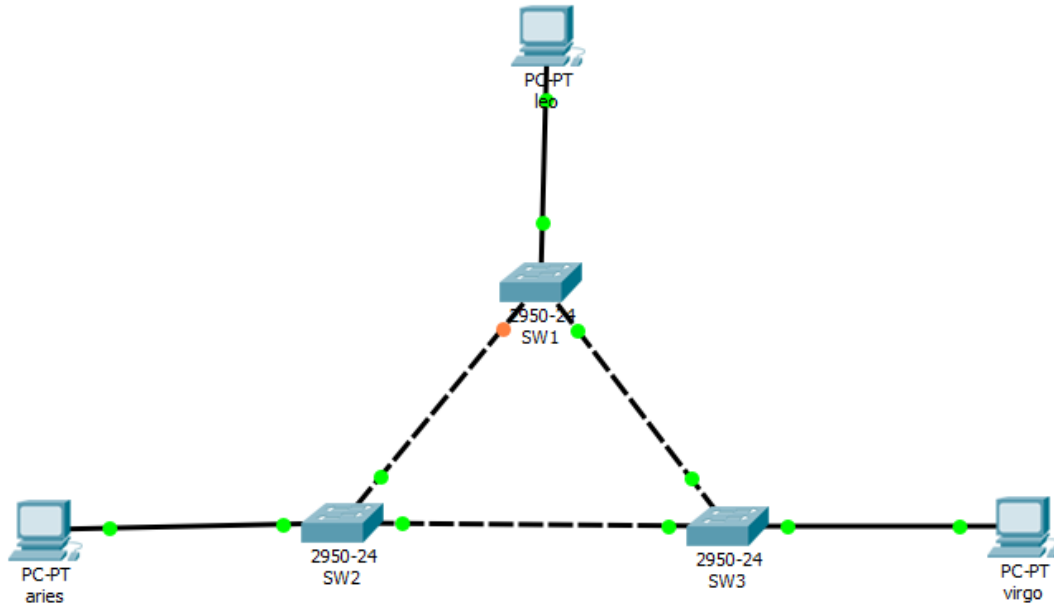# PRACTICUM 6

Writed by :

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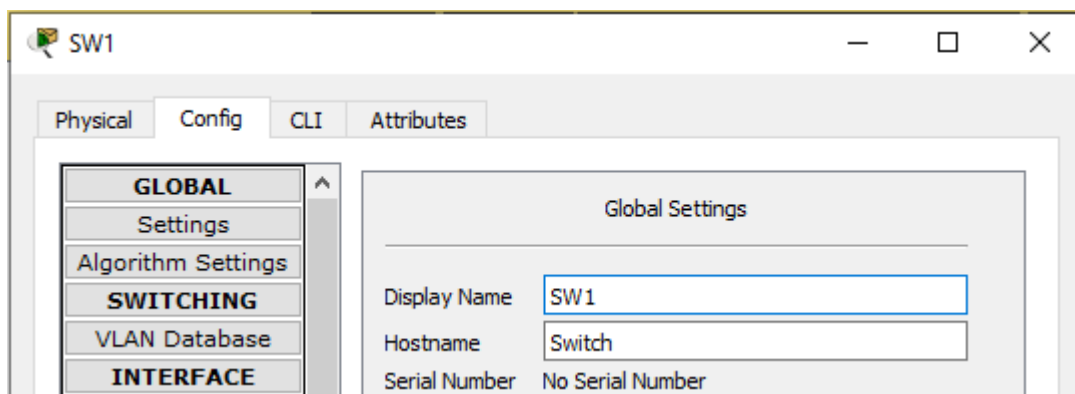
Class   : X

INFORMATION TECHNOLOGY

FACULTY OF COMMUNICATION AND INFORMATICS

MUHAMMADIYAH UNIVERSITY OF SURAKARTA
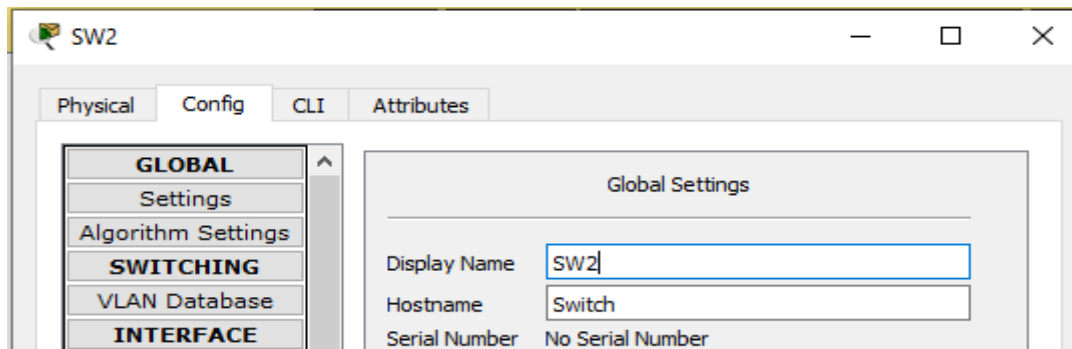
2020

Activity 1. Topology 1
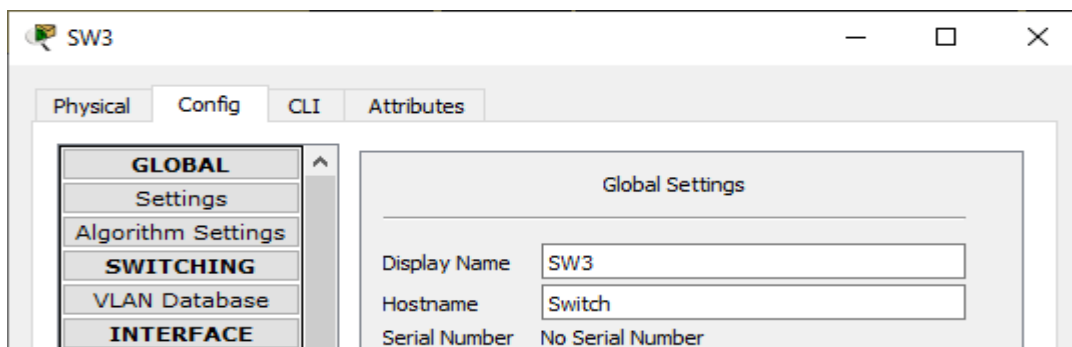
1. Make a topology design

2. Change the name of the Switch to SW1, SW2, and SW3, like the example below. Or you can also directly click on Switch0, Switch1, and Switch2 then just change the name to SW1, SW2, and SW3
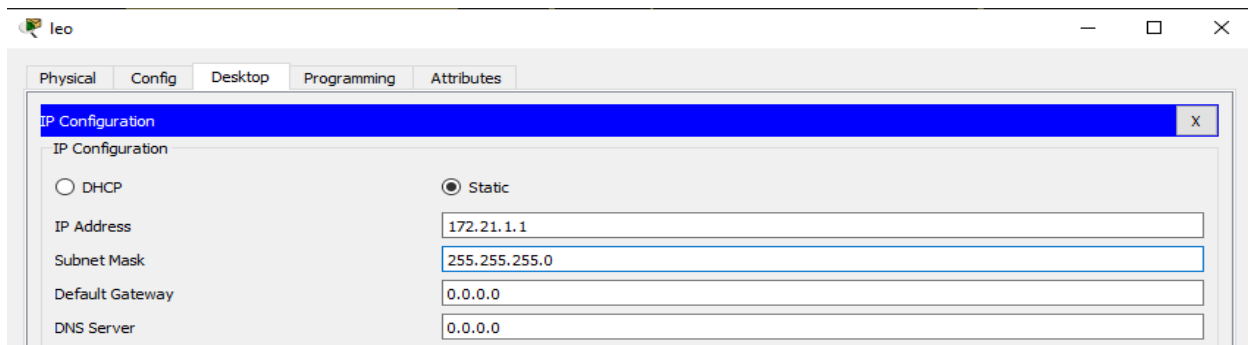
   a. Switch0 → SW1

b. Switch1 → SW2

c. Switch2 → SW3

3. Configure the IP address on each PC
   a. Leo

b. Aries

c. Virgo

4. - 4A. See STP status on each switch
   a. SW1

b. SW2

```
SW2                                          —    □    ×

Physical   Config   CLI   Attributes

                    IOS Command Line Interface

Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.4328.BA34
             Cost        19
             Port        2(FastEthernet0/2)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec

   Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0001.6319.3BD8
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec
             Aging Time  20

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- --------
--------------------------------
Fa0/3            Desg FWD 19        128.3    P2p
Fa0/1            Desg FWD 19        128.1    P2p
Fa0/2            Root FWD 19        128.2    P2p

Switch#

Ctrl+F6 to exit CLI focus                    Copy        Paste

□ Top
```

c. SW3

```
SW3                                          —    □    ×

Physical   Config   CLI   Attributes

                    IOS Command Line Interface

Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.4328.BA34
             This bridge is the root
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec

   Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0001.4328.BA34
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec
             Aging Time  20

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- --------
--------------------------------
Fa0/3            Desg FWD 19        128.3    P2p
Fa0/1            Desg FWD 19        128.1    P2p
Fa0/2            Desg FWD 19        128.2    P2p

Switch#

Ctrl+F6 to exit CLI focus                    Copy        Paste

□ Top
```

- 4B. Populate the table on each switch
  a. SW1

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0060.3EA9.C487
4	Bridge ID	32769 : 0060.3EA9.C487
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

  b. SW2

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.6319.3BD8
4	Bridge ID	32769 : 0001.6319.3BD8
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

  c. SW3

No	Variable	Value
1	Root ID	32769:0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.4328.BA34
4	Bridge ID	32769:0001.4328.BA34
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

- 4C.
  - Root bridge : SW3
  - Designated bride : SW1 and SW2
  - Root port : SW1(Fa0/3), SW2(Fa0/2)
  - Designated port : SW1(Fa0/1), SW2(Fa0/1, Fa0/2), SW3(Fa0/1, Fa0/2, Fa0/3)
- 4D.
  - The port is in the forwarding state : SW1(Fa0/1, Fa0/2), SW2(Fa0/1, Fa0/2, Fa0/3), SW3(Fa0/1, Fa0/2, Fa0/3),
  - Port yang berada pada keadan blocking : SW1(Fa0/2)

5. Ping leo to virgo

```
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=106ms 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 = 106ms, Average = 26ms
```

6. Save the network configuration with the name lab2.pkt
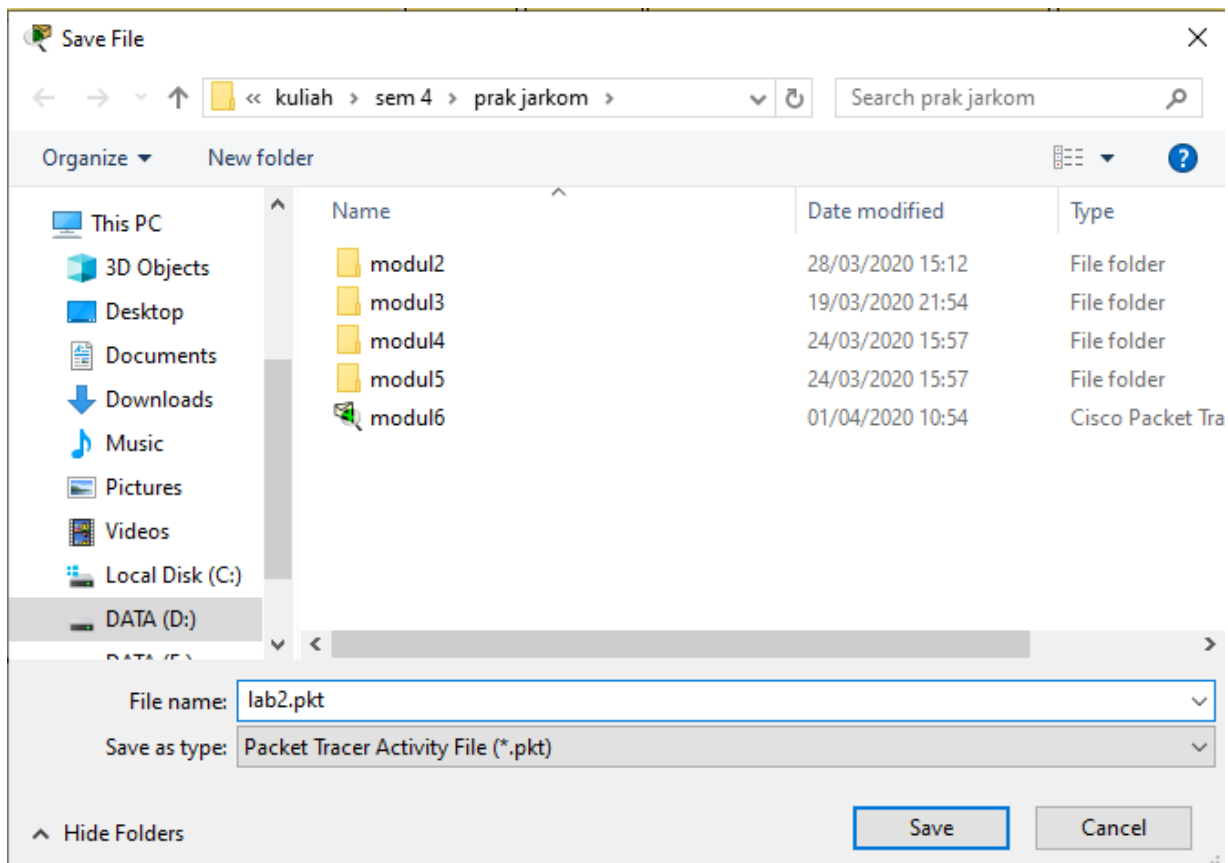
Activity 2. Topology 2

1. Make a topology design

2. See STP status on each switch
   a. SW1

b. SW2


```
Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.4328.BA34
             Cost        19
             Port        2(FastEthernet0/2)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0001.6319.3BD8
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec
             Aging Time  20

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- --------
--------------------------------
Fa0/2            Root FWD 19        128.2    P2p
Fa0/3            Desg FWD 19        128.3    P2p

Switch#
```
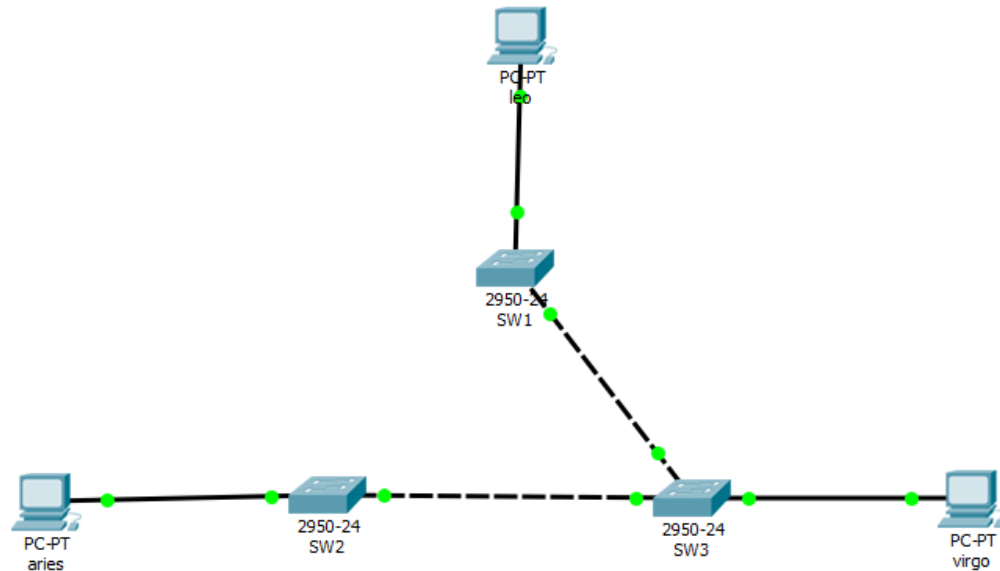
c. SW3


```
Switch>enable
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.4328.BA34
             This bridge is the root
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0001.4328.BA34
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15
sec
             Aging Time  20

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- --------
--------------------------------
Fa0/2            Desg FWD 19        128.2    P2p
Fa0/3            Desg FWD 19        128.3    P2p
Fa0/1            Desg FWD 19        128.1    P2p

Switch#
```

3. Populate the table on each switch
   a. SW1

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0060.3EA9.C487
4	Bridge ID	32769 : 0060.3EA9.C487
5	Cost (0/1;0/3)	0/1 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

   b. SW2

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.6319.3BD8
4	Bridge ID	32769 : 0001.6319.3BD8
5	Cost (0/2;0/3)	0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

   c. SW3

No	Variable	Value
1	Root ID	32769 : 0001.4328.BA34
2	Priority	32769
3	MAC Address	0001.4328.BA34
4	Bridge ID	32769 : 0001.4328.BA34
5	Cost (0/1;0/2;0/3)	0/1 → 19 0/2 → 19 0/3 → 19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Forward Delay	15 sec

- Root bridge : SW3
- Designated bride : SW1 and SW2

- Root port : SW1(0/3), SW2(0/2)
- Designated port : SW1(0/1), SW2(0/3), SW3(0/1, 0/2 0/3)
- The port is in the forwarding state : SW1(0/1, 0/3), SW2(0/2, 0/3), SW3(0/1, 0/2, 0/3). So, all switches are forwarded,
- Port yang berada pada keadan blocking : no ports are blocked

4. Ping from PC Leo to PC Virgo

leo — □ ✕

| Physical | Config | Desktop | Programming | Attributes |

Command Prompt   X

```
Packet Tracer PC Command Line 1.0
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=121ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128
Reply from 172.21.1.3: bytes=32 time=3ms TTL=128
Reply from 172.21.1.3: bytes=32 time=2ms 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 = 121ms, Average = 31ms

C:\>
```

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