Nama : **Robby Novianto**

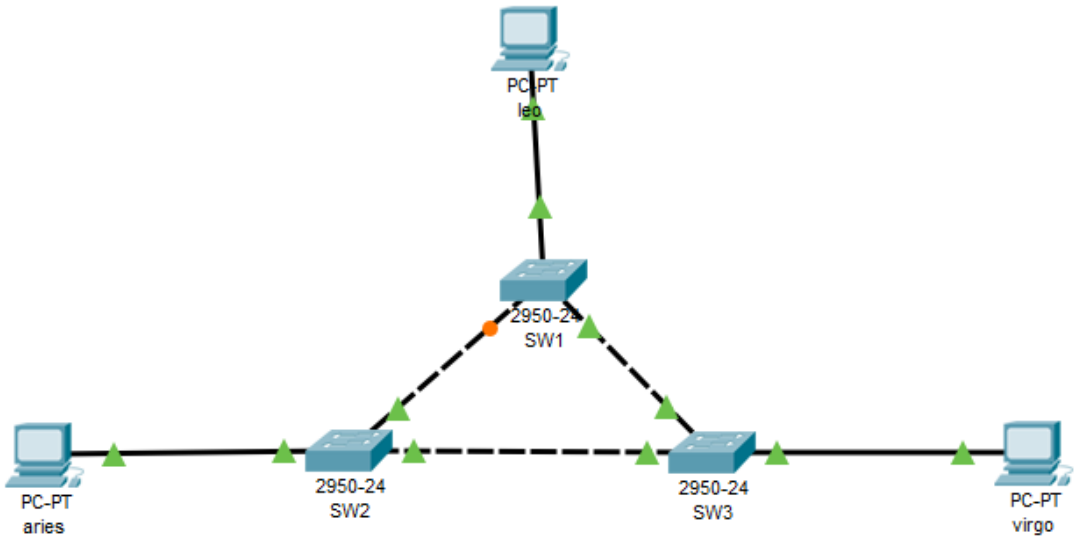
NIM : **L200180050**

Kelas : **B**

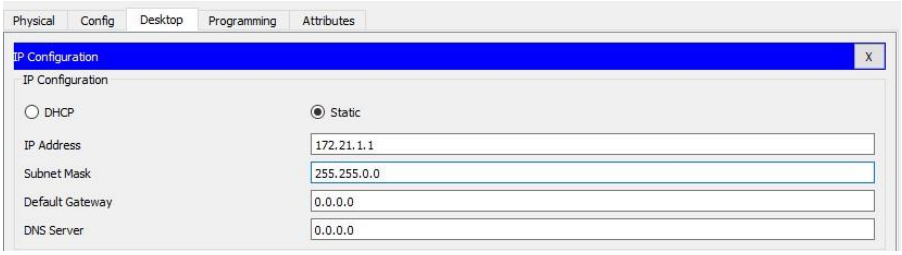
Modul 6

Kegiatan 1. Topologi 1

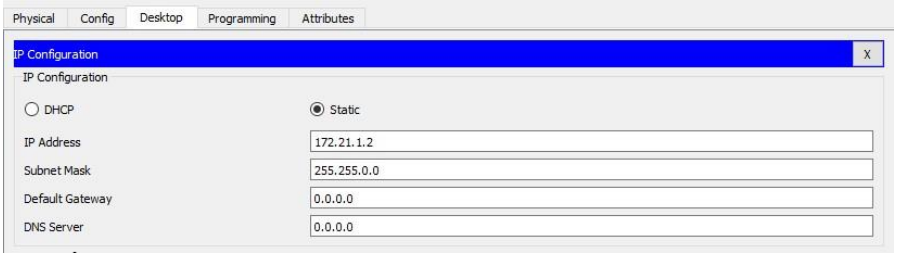
1. Menggunakan Packet Tracer buat topologi berikut ini dengan menggunakan switch Catalyst 2950



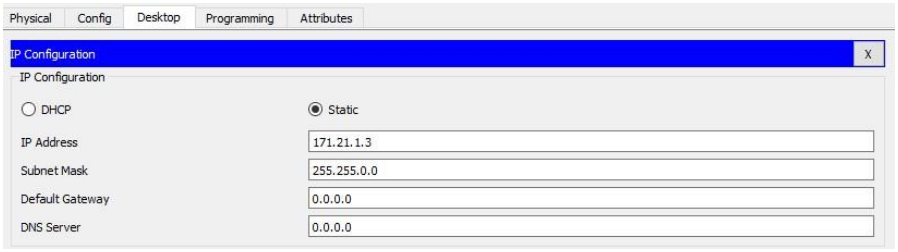
Leo = 172.21.1.1/24



- Aries = 172.21.1.2/24



- Virgo = 172.21.1.3/24



SW1

```
SW1>enable
SW1#
SW1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
SW1(config)#interface FastEthernet0/1
SW1(config-if)#
SW1(config-if)#exit
SW1(config)#interface FastEthernet0/1
SW1(config-if)#exit
SW1(config)#exit
SW1#
%SYS-5-CONFIG_I: Configured from console by console
show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     000C.857D.DC34
             Cost        19
             Port        3(FastEthernet0/3)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0040.0B4E.278C
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW1#
```

SW2

```
SW2>enable
SW2#
SW2#vlan database
% Warning: It is recommended to configure VLAN from config mode,
  as VLAN database mode is being deprecated. Please consult user
  documentation for configuring VTP/VLAN in config mode.

SW2(vlan)#exit
APPLY completed.
Exiting....
SW2#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     000C.857D.DC34
             Cost        19
             Port        3(FastEthernet0/3)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0010.11B8.5078
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW2#
```

SW3

```
SW3>enable
SW3#
SW3#vlan database
% Warning: It is recommended to configure VLAN from config mode,
  as VLAN database mode is being deprecated. Please consult user
  documentation for configuring VTP/VLAN in config mode.

SW3(vlan)#exit
APPLY completed.
Exiting....
SW3#write
Building configuration...
[OK]
SW3#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID     Priority    32769
              Address     000C.857D.DC34
              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     000C.857D.DC34
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  20

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

SW3#
```

5. Untuk tiap switch isikan tabel berikut :

Sw 1

No	Variable	Nilai
1	Root ID	32769 : 000C.857D.DC34
2	Priority	32769
3	MAC Address	0040.0B4E.278C
4	Bridge ID	32769 :0040.0B4E.278C
5	Cost (0 / 1 ; 0 / 2 ; 0 / 3)	Fa0/1 --> 19, Fa0/2 --> 19, Fa03--> 19
6	Hello Time	2 Sec
7	MaxAge	20 Sec
8	Forward Delay	15 Sec

Sw 2

No	Variable	Nilai
1	Root ID	32769 : 000C.857D.DC34
2	Priority	32769
3	MAC Address	0010.11B8.5078
4	Bridge ID	32769 : 0010.11B8.5078
5	Cost (0 / 1 ; 0 / 2 ; 0 / 3)	Fa0/1 --> 19, Fa0/2 --> 19, Fa03--> 19
6	Hello Time	2 Sec
7	MaxAge	20 Sec
8	Forward Delay	15 Sec

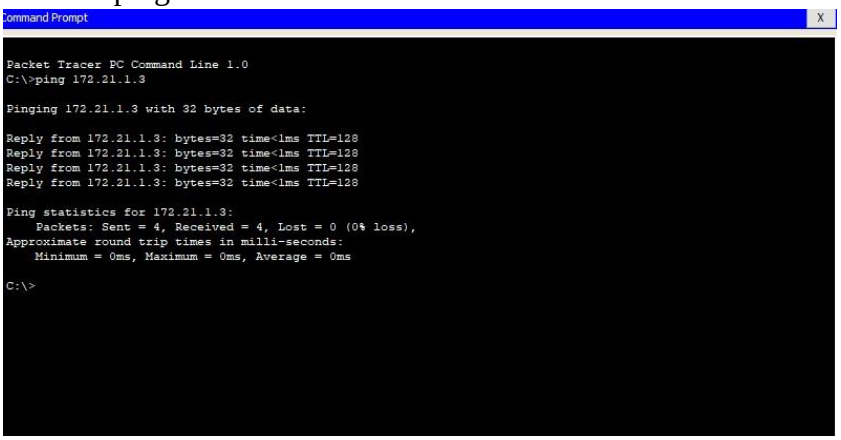
Sw 3

No	Variable	Nilai
1	Root ID	32769 : 000C.857D.DC34
2	Priority	32769

3	MAC Address	000C.857D.DC34
4	Bridge ID	32769 : 000C.857D.DC34
5	Cost (0 / 1 ; 0 / 2 ; 0 / 3)	Fa0/1 --> 19, Fa0/2 --> 19, Fa03--> 19
6	Hello Time	2 Sec
7	MaxAge	20 Sec
8	Forward Delay	15 Sec

6. Tentukan
   Root Bridge : SW3
   Designated bride : SW2
   Root Port : SW1 Fa 0/3, SW 2 Fa0/3
   Designated Port : SW1 Fa 0/1 , SW 2 Fa 0/1 Fa 0/2, SW 3 Fa0/1 Fa 0/2 Fa 0/3
   Port yang berada pada keadan forwarding : SW1(Fa 0/1;0/3) ,SW2(Fa 0/1;0/2;0/3), dan SW3(Fa 0/1;0/2;0/3)
   Port yang berada pada keadan blocking : SW1 (Fa 0/2)

7. Test ping pc leo ke virgo
   - Klik pada pc leo
   - Pilih tab desktop
   - Pilih command prompt
   - Tuliskan ping 172.21.1.3



8. Simpan konfigurasi jaringan dengan nama lab2.nwc Lakukan perintah dibawah untuk setiap switch

   Sw1

```
SW1#
SW1#write
Building configuration...
[OK]
```

   Sw2

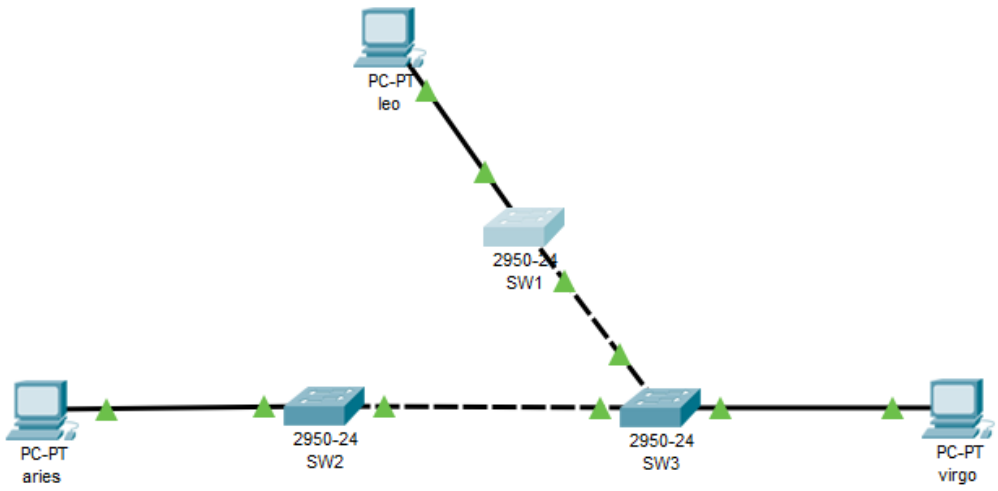
```
SW2#
SW2#write
Building configuration...
[OK]
SW2#
```

   Sw3

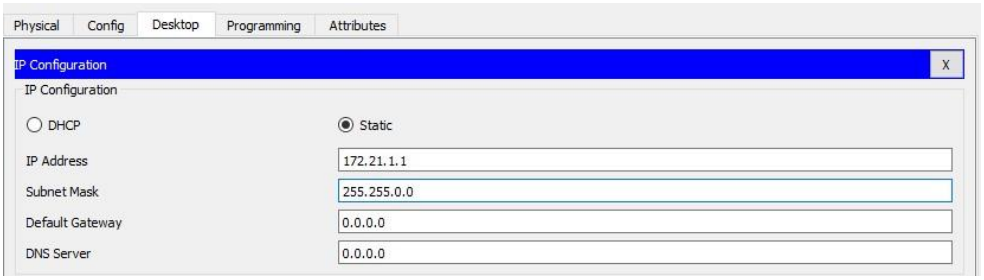
```
SW3(vlan)#exit
APPLY completed.
Exiting....
SW3#write
Building configuration...
[OK]
SW3#
```

Kegiatan 2. Topologi 2

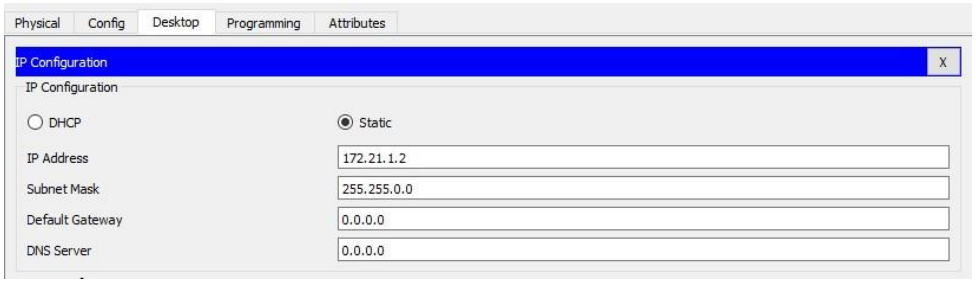
1) Menggunakan PACKET TRACER ubah topologi menjadi seperti topologi berikut ini:



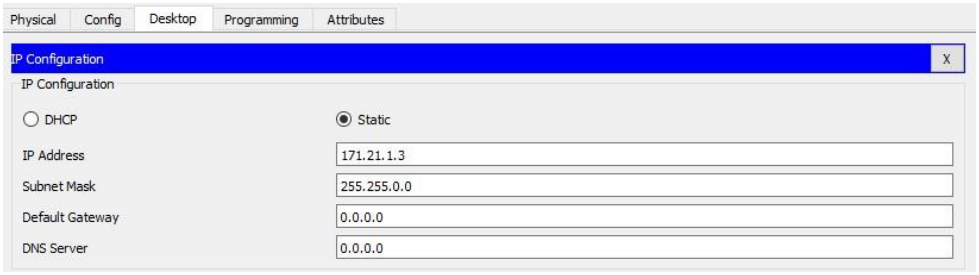
2) Konfigurasi masing-masing PC dengan IP :
Leo = 172.21.1.1/24



Aries = 172.21.1.2/24



Virgo = 172.21.1.3/24



3) Pada mode user atau mode privileged, lihat status STP pada masing - masing

SW1

```
SW1#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     000C.857D.DC34
             Cost        19
             Port        3(FastEthernet0/3)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0040.0B4E.278C
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW1#
```

SW2

```
SW2#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     000C.857D.DC34
             Cost        19
             Port        3(FastEthernet0/3)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0010.11B8.5078
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW2#
```

SW3

```
SW3#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     000C.857D.DC34
             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     000C.857D.DC34
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW3#
```

4) Untuk tiap switch isikan tabel berikut : Sw 1

No	Variable	Nilai
1	Root ID	32769 : 000C.857D.DC34
2	Priority	32769
3	MAC Address	0040.0B4E.278C
4	Bridge ID	32769 :0040.0B4E.278C
5	Cost (0 / 1 ; 0 / 2 ; 0 / 3)	Fa0/1 --> 19, Fa0/3--> 19
6	Hello Time	2 Sec
7	MaxAge	20 Sec
8	Forward Delay	15 Sec

Sw 2

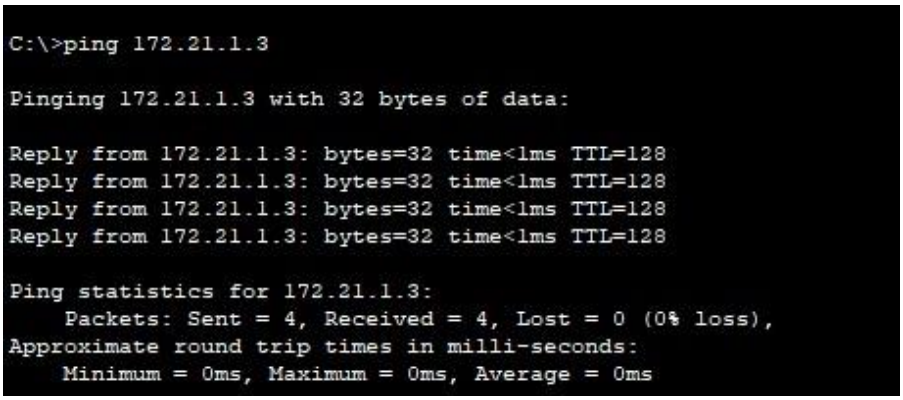
No	Variable	Nilai
1	Root ID	32769 : 000C.857D.DC34
2	Priority	32769
3	MAC Address	0010.11B8.5078
4	Bridge ID	32769 : 0010.11B8.5078
5	Cost (0 / 1 ; 0 / 2 ; 0 / 3)	Fa0/1 --> 19, Fa0/3--> 19
6	Hello Time	2 Sec
7	MaxAge	20 Sec
8	Forward Delay	15 Sec

Sw 3

No	Variable	Nilai
1	Root ID	32769 : 000C.857D.DC34
2	Priority	32769
3	MAC Address	000C.857D.DC34
4	Bridge ID	32769 : 000C.857D.DC34
5	Cost (0 / 1 ; 0 / 2 ; 0 / 3)	Fa0/1 --> 19, Fa0/2 --> 19, Fa0/3--> 19
6	Hello Time	2 Sec
7	MaxAge	20 Sec
8	Forward Delay	15 Sec

5) Kemudian Tentukan Root Bridge : SW3
   Designated bride : SW2
   Root Port : SW1 Fa 0/3, SW 2 Fa 0/3
   Designated Port : SW1 Fa 0/1 , SW 2 Fa0/1 , SW 3 (Fa0/1,Fa 0/2,Fa0/3) Port yang berada pada keadanforwarding : SW1(Fa 0/1;0/3) ,SW2(Fa 0/1;0/3), dan SW3(Fa 0/1;0/2;0/3)
   Port yang berada pada keadan blocking : tidak ada yang terblock

6) Test ping pc leo ke pc virgo
   - Klik pada pc leo
   - Pilih tab desktop
   - Pilih command prompt
   - Tuliskan ping 172.21.1.3


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 = 0ms, Average = 0ms