

**PRAKTIKUM  
JARINGAN KOMPUTER  
(Computer Networking)**

**LAPORAN TUGAS  
Ujian Tengah Semester IV**

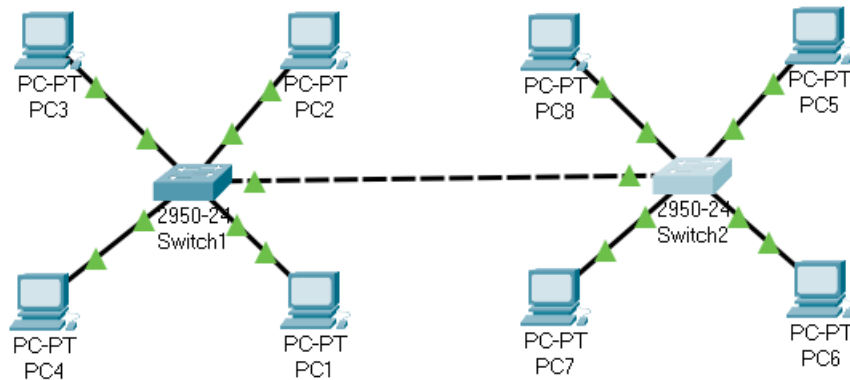


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NIM : L200190151  
Kelas : D**

**PROGRAM STUDI INFORMATIKA  
FAKULTAS KOMUNIKASI DAN INFORMATIKA  
UNIVERSITAS MUHAMMADIYAH  
SURAKARTA**

## Soal 1

### Topologi



### 1a

#### Switch1

```
Switch>
Switch>enable
Switch#show vlan brief
```

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, Fa0/24
10	Laboratorium	active	Fa0/2
20	Perpustakaan	active	Fa0/3
30	Kelas	active	Fa0/4, Fa0/5
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

#### Switch2

```
Switch>enable
Switch#show vlan brief
```

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, Fa0/24
10	Laboratorium	active	Fa0/5
20	Perpustakaan	active	Fa0/4
30	Kelas	active	Fa0/2, Fa0/3
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

**1b**

### **Ping PC1 ke PC8**

```
C:\>ping 220.168.3.8|

Pinging 220.168.3.8 with 32 bytes of data:

Reply from 220.168.3.8: bytes=32 time=107ms TTL=128
Reply from 220.168.3.8: bytes=32 time<1ms TTL=128
Reply from 220.168.3.8: bytes=32 time<1ms TTL=128
Reply from 220.168.3.8: bytes=32 time<1ms TTL=128

Ping statistics for 220.168.3.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 107ms, Average = 26ms
```

Hasil PING menunjukkan bahwa PC terhubung karena dalam satu VLAN yang sama.

**1c**

### **Ping PC1 ke PC6**

```
C:\>ping 220.168.3.6

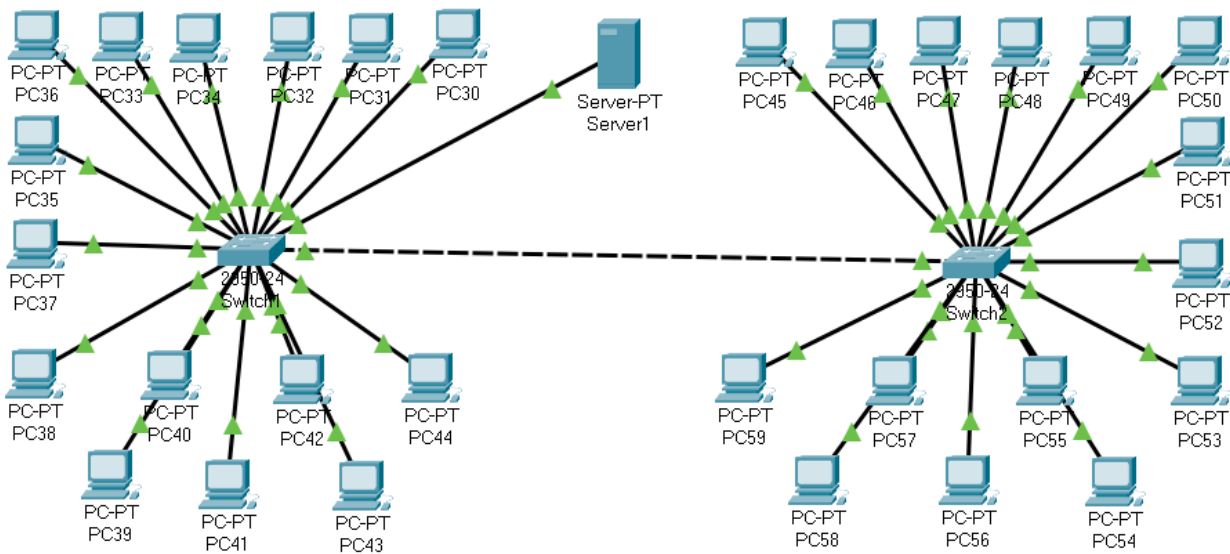
Pinging 220.168.3.6 with 32 bytes of data:

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

Ping statistics for 220.168.3.6:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Hasil dari PING menunjukkan bahwa PC tidak terhubung karena jalur VLAN yang berbeda.

2a



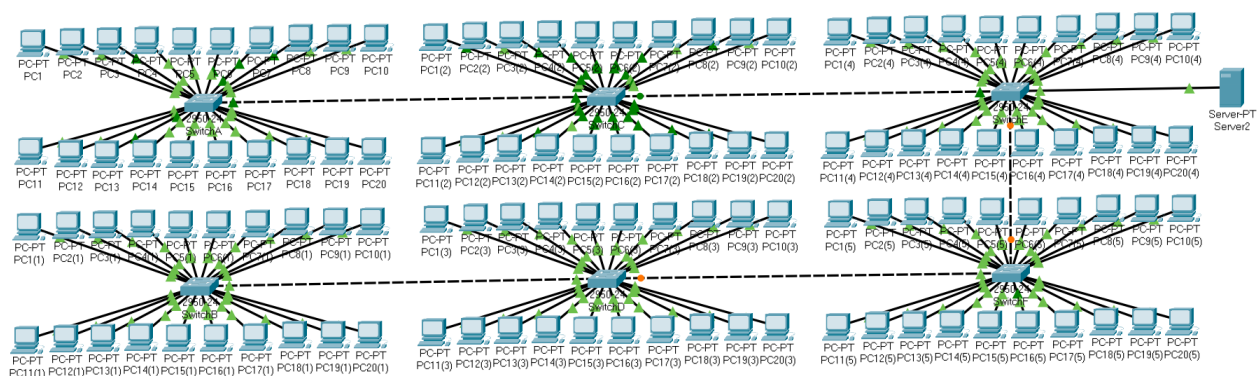
terdapat masing -masing 5 device pada jalur VLAN pada setiap switch nya, disini saya menggunakan 2 switch karena device yang dibutuhkan melebihi dari kapasitas dari switch yaitu 24 port saja.

```
Switch#
Switch# show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24
10	Sistem_informasi	active	Fa0/2, Fa0/3, Fa0/4, Fa0/5 Fa0/6
20	Jaringan_komputer	active	Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16
30	Rekayasa_perangkat_lunak	active	Fa0/7, Fa0/8, Fa0/9, Fa0/10 Fa0/11
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
Switch#
```

2b



Terdapat masing- masing 20 device pada setiap switch nya, disini saya menggunakan server untuk mengatur ip secara otomatis dengan DHCP dengan maximum device adalah 150.

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

**DHCP**

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

Start IP Address: 192 168 50 0

Subnet Mask: 255 255 255 0

Maximum Number of Users: 150

TFTP Server: 0.0.0.0

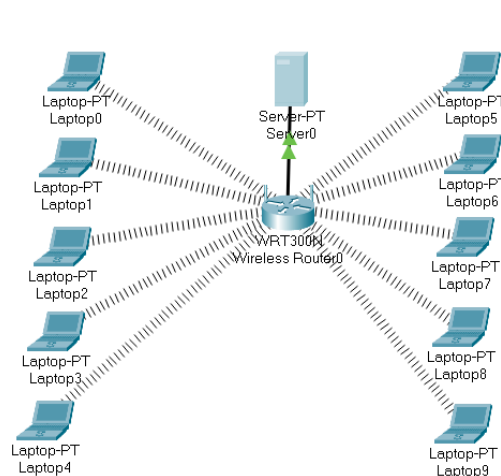
WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max Users	TFTP Server	WLC Address
serverPool	0.0.0.0	0.0.0.0	192.168.1	255.255.1	150	0.0.0.0	0.0.0.0

### Soal 3

#### 3a



Physical Config **Services** Desktop Programming Attributes

**SERVICES**

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

**DHCP**

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

Start IP Address: 220 168 1 0

Subnet Mask: 255 255 255 0

Maximum Number of Users: 10

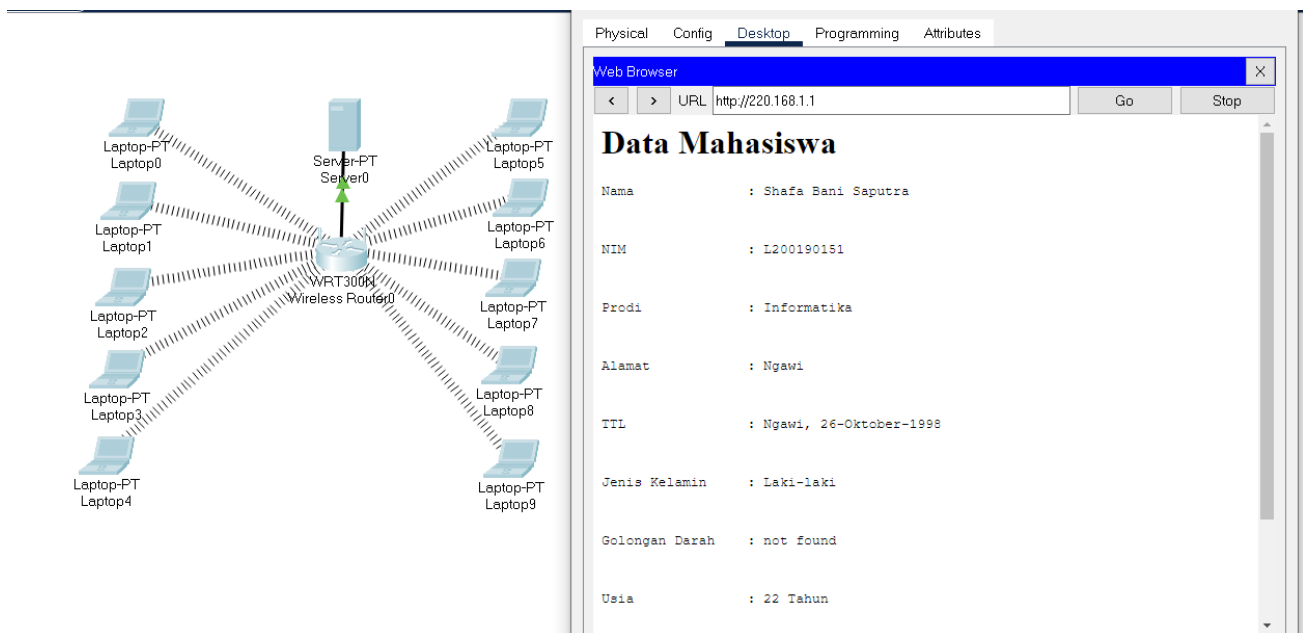
TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max Users	TFTP Server	WLC Address
serverPool	0.0.0.0	0.0.0.0	220.168.1	255.255.1	10	0.0.0.0	0.0.0.0

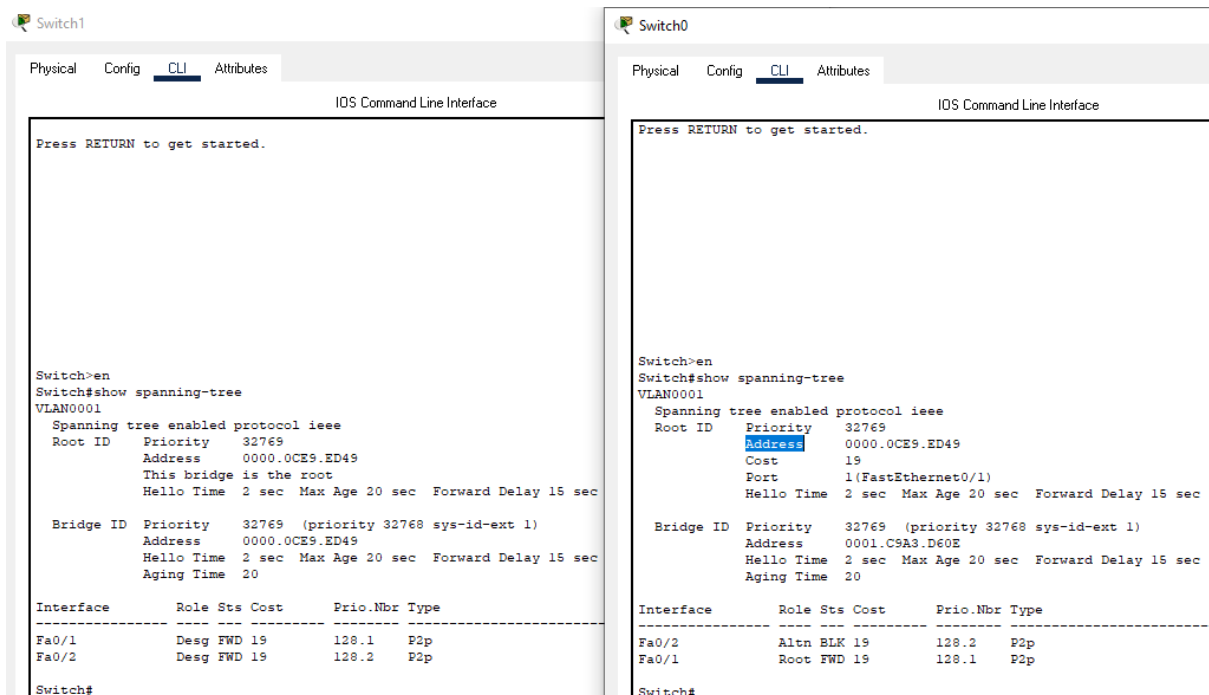
3b



The image shows a network diagram on the left and a web browser window on the right. The network diagram features a central 'Wireless Router' (WRT300M) connected to ten 'Laptop-PT' devices (Laptop0 through Laptop9) and a 'Server-PT' (Server0). The web browser window displays a 'Data Mahasiswa' page with the following information:

Nama	: Shafa Bani Saputra
NIM	: L200190151
Prodi	: Informatika
Alamat	: Ngawi
TTL	: Ngawi, 26-Oktober-1998
Jenis Kelamin	: Laki-laki
Golongan Darah	: not found
Usia	: 22 Tahun

Soal 4



The image shows two screenshots of network switch CLI interfaces. The left screenshot is for 'Switch1' and the right is for 'Switch0'. Both show the output of the 'show spanning-tree' command for VLAN0001.

**Switch1 Output:**

```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0000.0CE9.ED49
             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     0000.0CE9.ED49
             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
Fa0/2 Desg FWD 19 128.2 P2p
```

**Switch0 Output:**

```
Switch>en
Switch#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0000.0CE9.ED49
             Cost        19
             Port        1(FastEthernet0/1)
             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

  Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
             Address     0001.C9A3.D60E
             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
Fa0/1 Root FWD 19 128.1 P2p
```

Dari Status diatas keterangan sebagai berikut :

- a. Root Bridge                      Switch1 merupakan RootBridge
- b. Root Port                        Fa0/1 pada Switch0
- c. Designated Bridge            Switch1 karena pada Switch0 terdapat port Block
- d. Designated Port                Fa0/1 dan Fa0/2 pada Switch1