Judul

Mata Kuliah: Jaringan Komputer

Materi Praktikum ke: 10

Nama: Malik Sabarullah Akbar

NIM: 2411102441250

Tanggal Praktikum: 20-5-2025

BAB I

PENDAHULUAN

1.1 Latar Belakang

VLAN

VLAN atau Virtual Local Area Network adalah sub network yang dapat mengelompokkan kumpulan perangkat pada jaringan area lokal fisik (LAN) yang terpisah. Virtual Local Area Network juga bisa dikatakan pengelompokkan logis perangkat dalam domain siaran yang sama.

Fungsi *Virtual Local Area Network* pada jaringan komputer adalah menyediakan metode pada jaringan yang dapat membagi jaringan fisik menjadi beberapa broadcast domain.

1.2 Tujuan

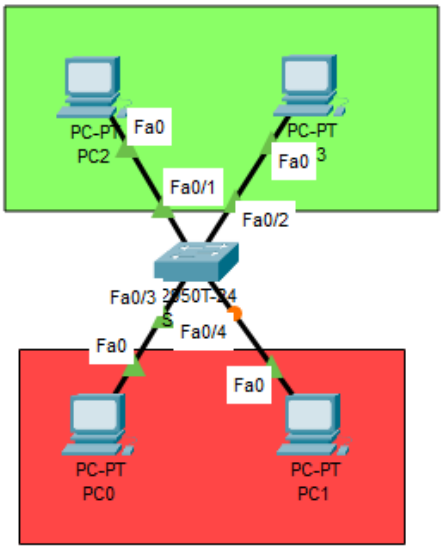
Mempelajari apa itu :
- VLAN Access
- VLAN Trunk
- Router on stick
- Final lab

BAB II

PROSEDUR KERJA

A.VLAN Access

1.Buat topologi seperti di bawah ini



Pada PC2 dan PC3 adalah bagian VLAN 10 dengan ip 192.168.10.0 dan PC0 dan PC1 adalah VLAN 20 dengan ip 192.168.20.0

2.Hubungkan access vlan ke masing-masing pc

```
VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/5, 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
                                                 Gig0/1, Gig0/2
10   ruang-guru                        active    Fa0/1, Fa0/2
20   ruang-meeting                     active    Fa0/3, Fa0/4
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
Switch(config)#
```

Copy Paste

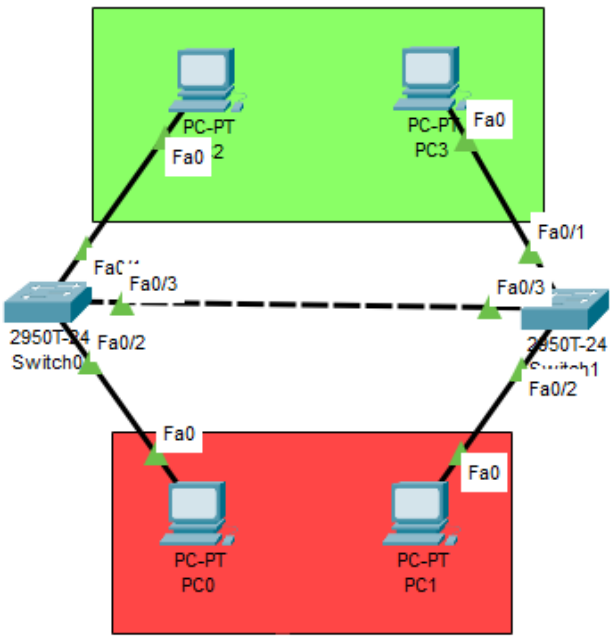
3.lakukan pengetesan terhadap masing-masing pc

```
C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time<1ms TTL=128
Reply from 192.168.20.2: bytes=32 time<1ms TTL=128
Reply from 192.168.20.2: bytes=32 time<1ms TTL=128
Reply from 192.168.20.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

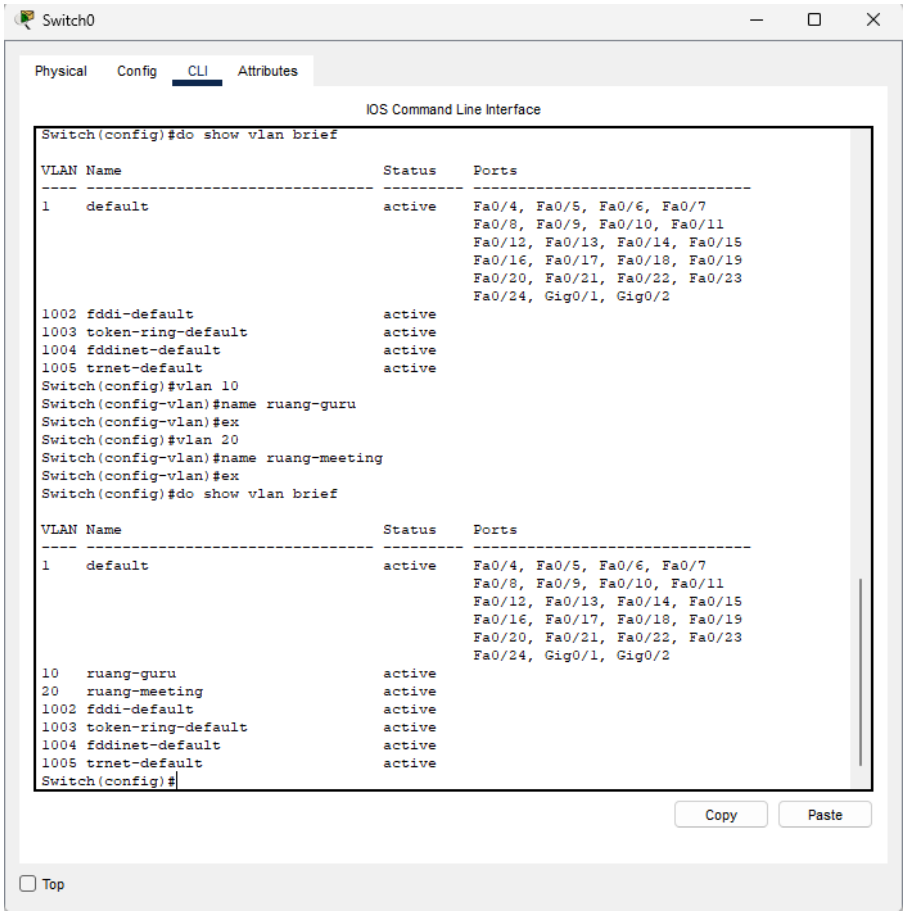
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

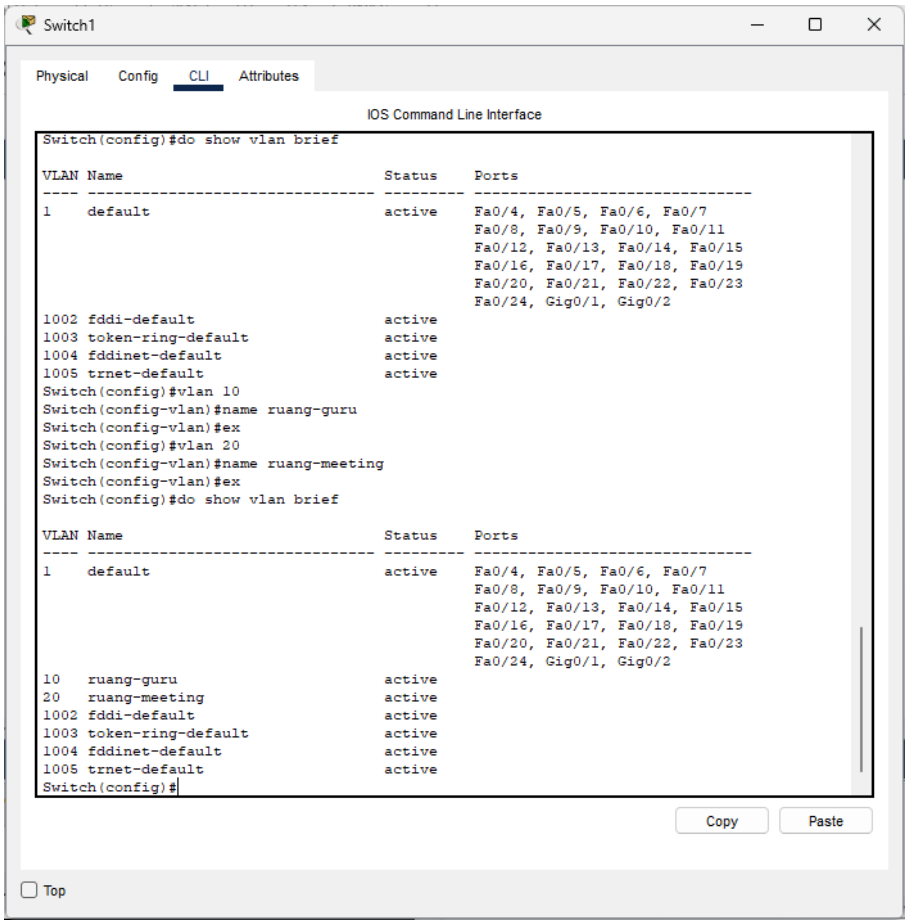
B.VLAN Trunk

1.buat topologi lalu tambah switch dan hubungkan antar switch tersebut menggunakan kabel cross

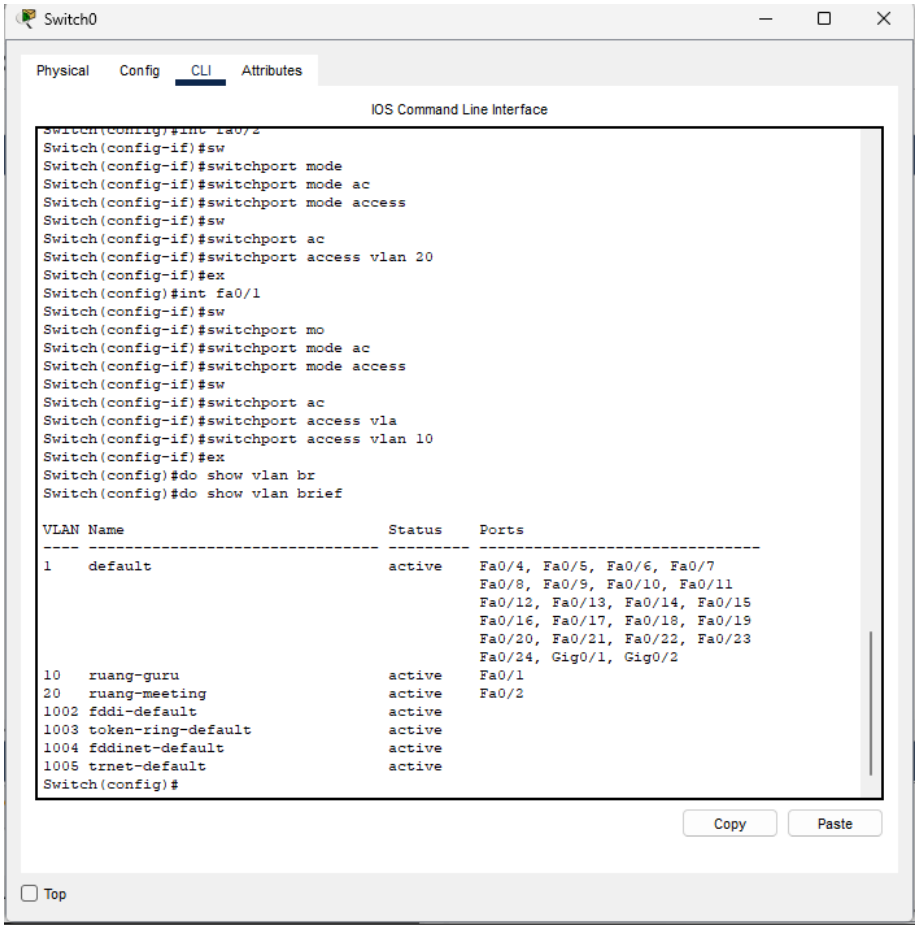


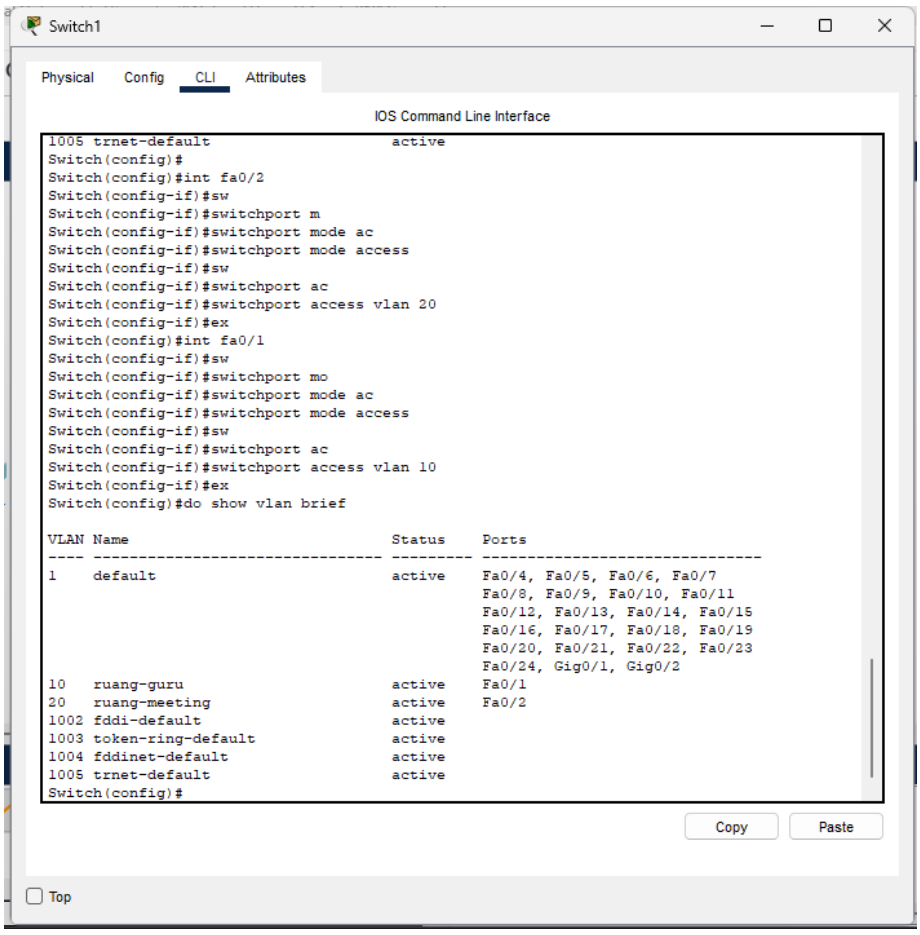
2.buat nama vlan di switch 0 dan switch 1 : vlan 10 ruang-guru dan vlan 20 ruang-meeting



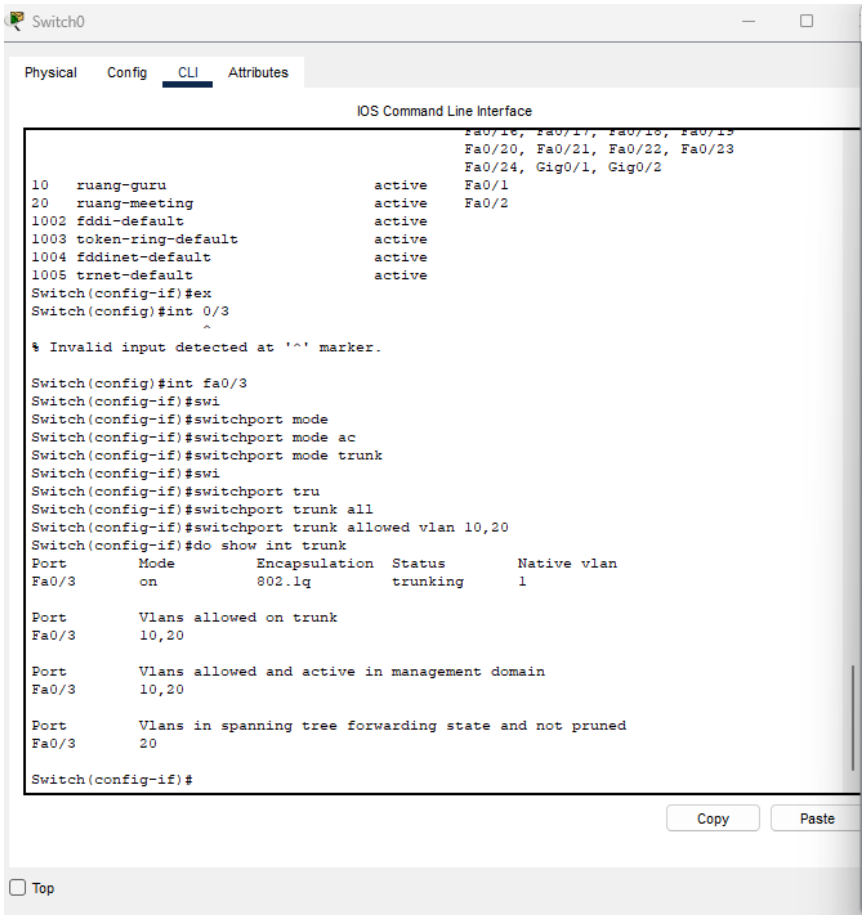


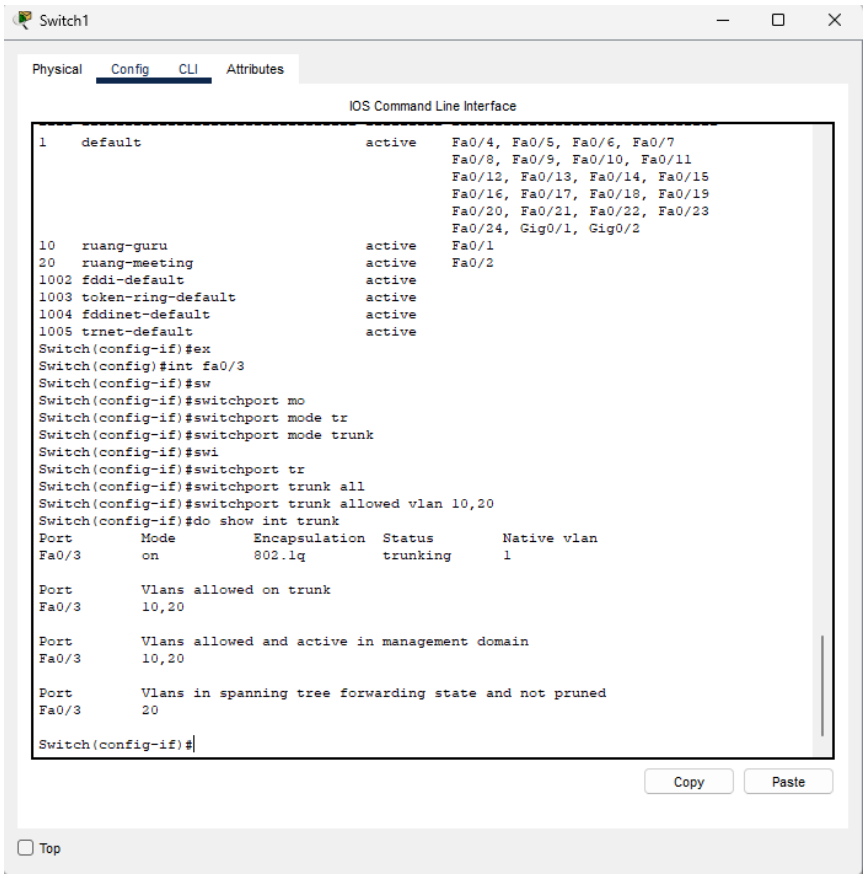
3.lalu hubungkan vlan di switch0 dengan pc yang terhubung dan begitu juga dengan switch1





4.hubungkan antar switchport dengan mode trunk pada switch0 dan switch1,lalu lakukan pengecekan

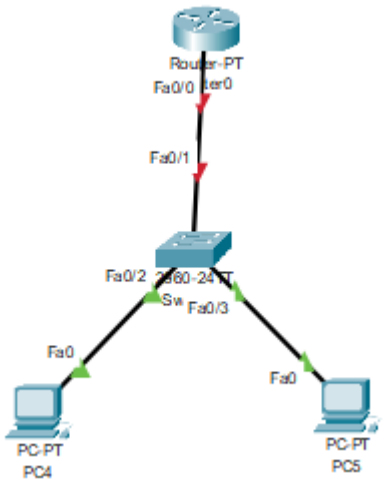




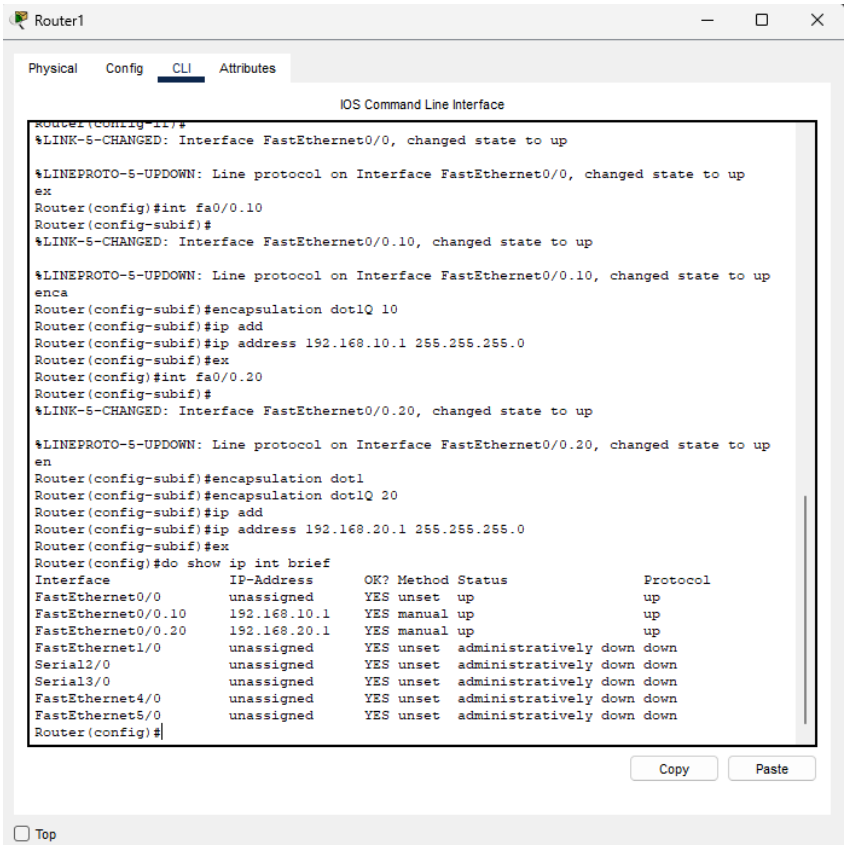
Successful	PC2	PC3	ICMP		0.000	N	5 (ec
Successful	PC0	PC1	ICMP		0.000	N	6 (ec

C.Router on Stick

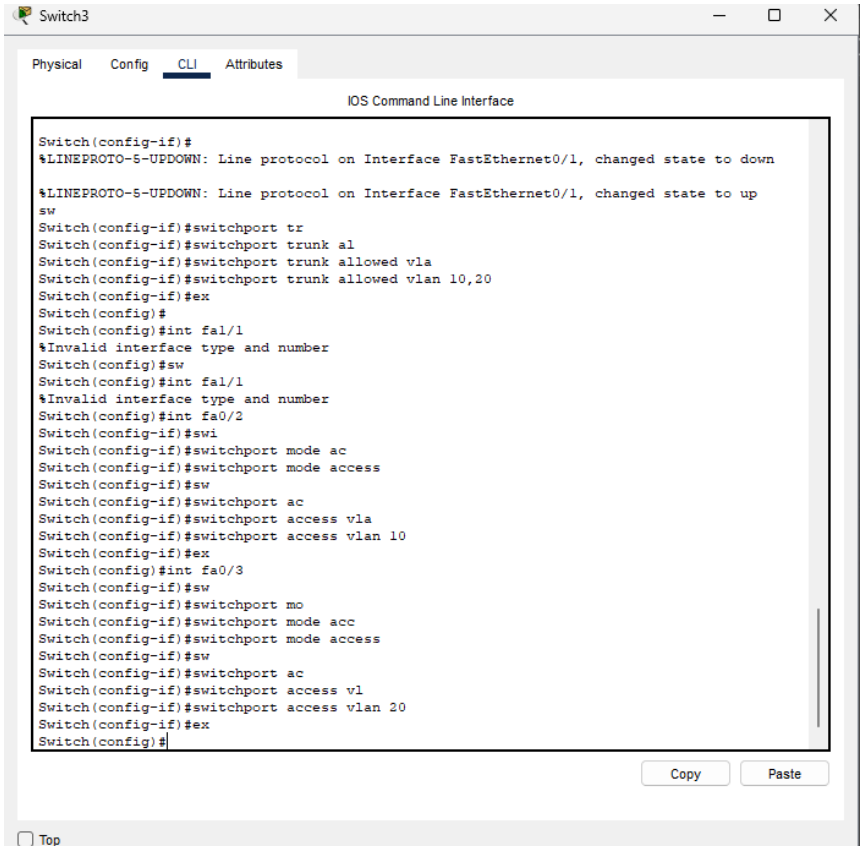
1.membuat topologi



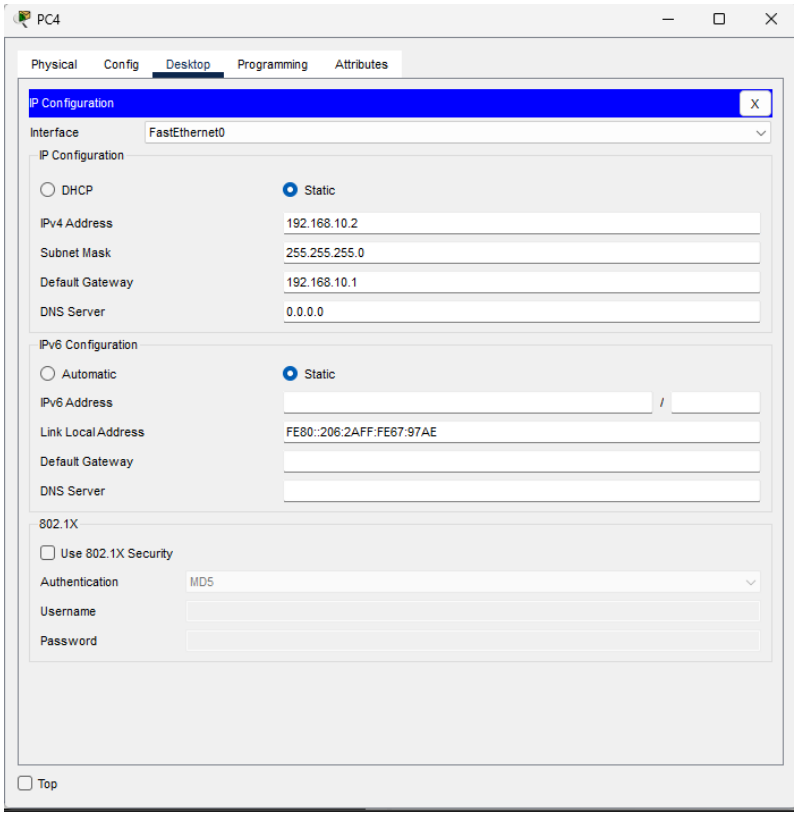
2.Melakukan encapsulation pada router

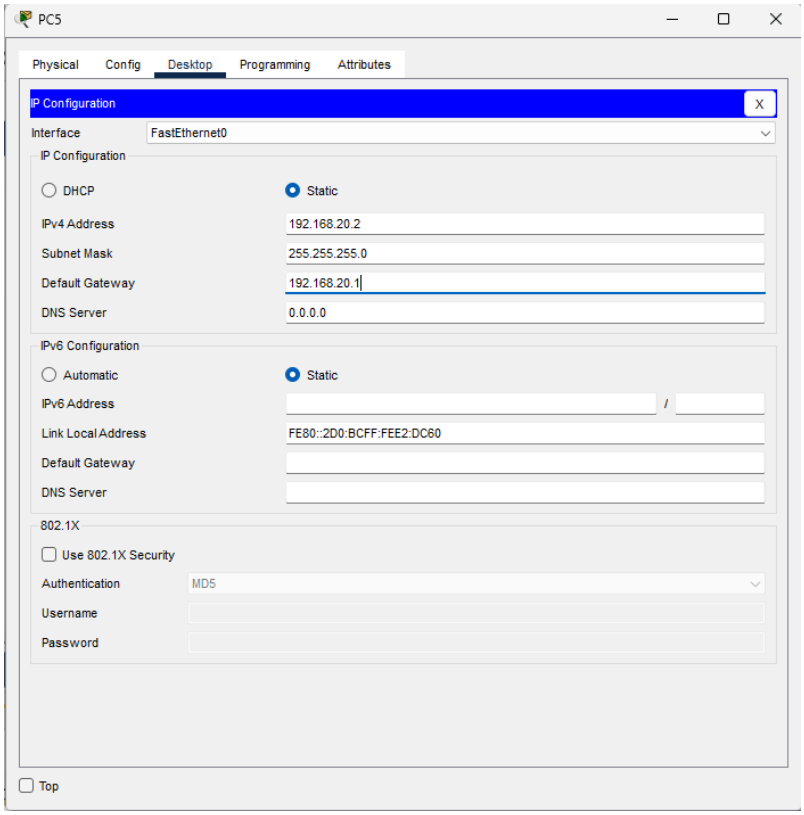


3.hubungkan pc ke vlan 10 dan 20



4.lalu tambahkan ip address ke pc dengan static dan berikan juga ip gateway





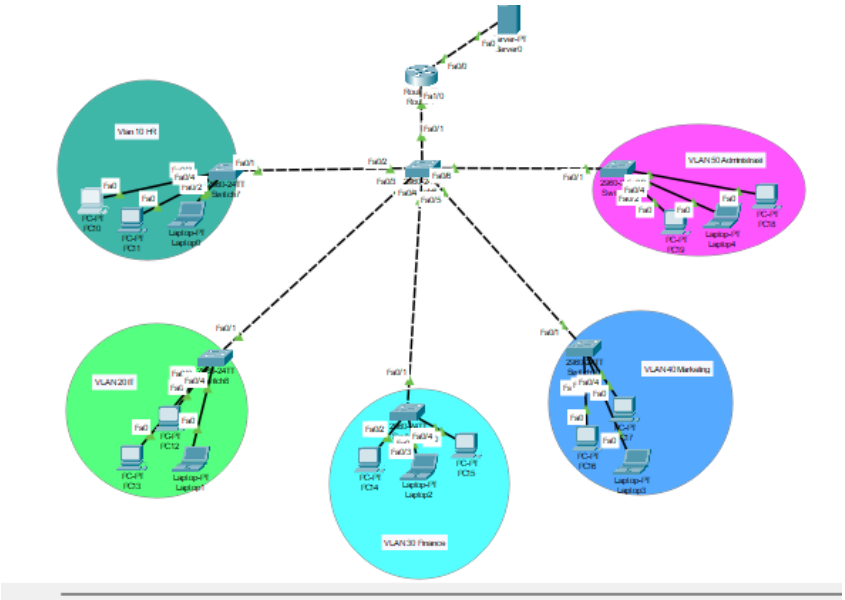
5.lakukan pengetesan ping pada antar pc untuk mengetahui apakah berhasil atau tidak

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

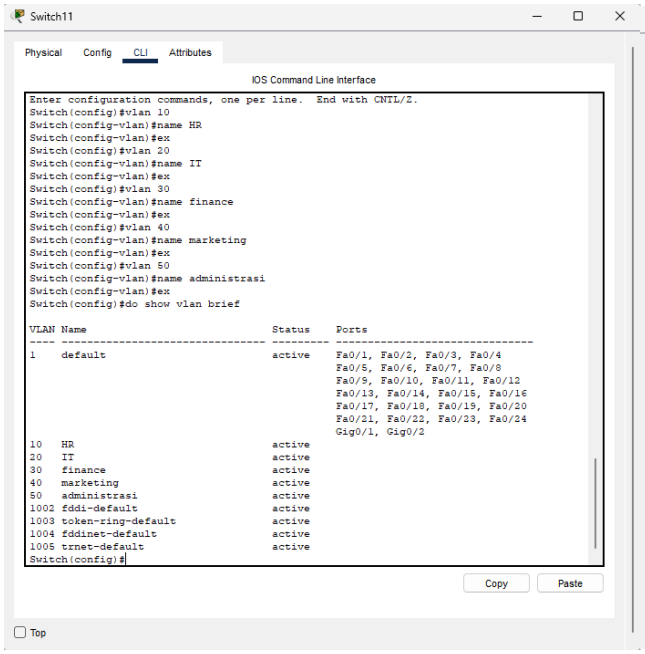
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time<1ms TTL=127
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

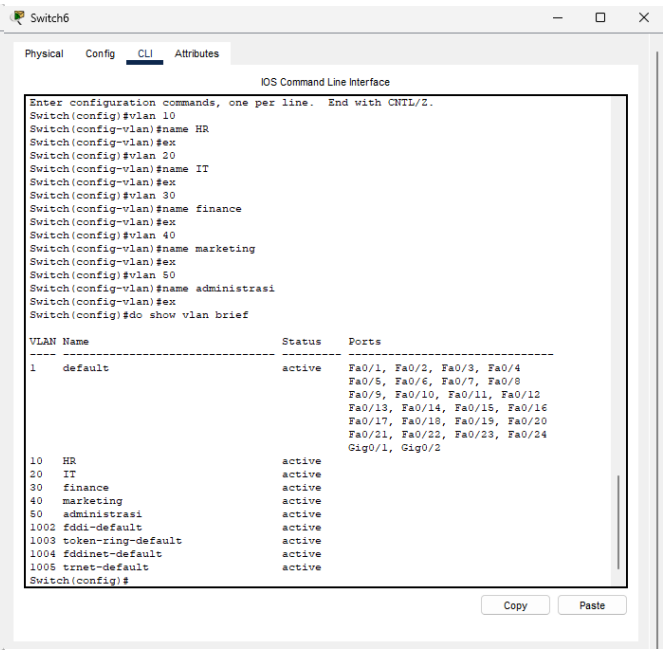
D.Final Lab

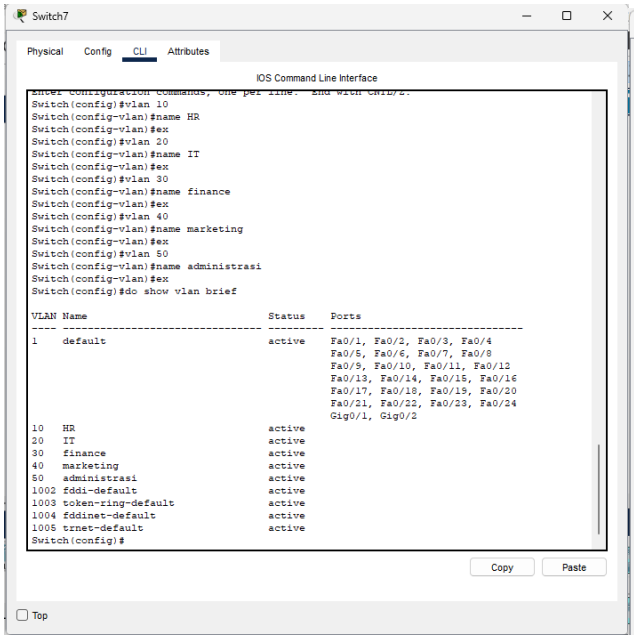
1.buat topologi

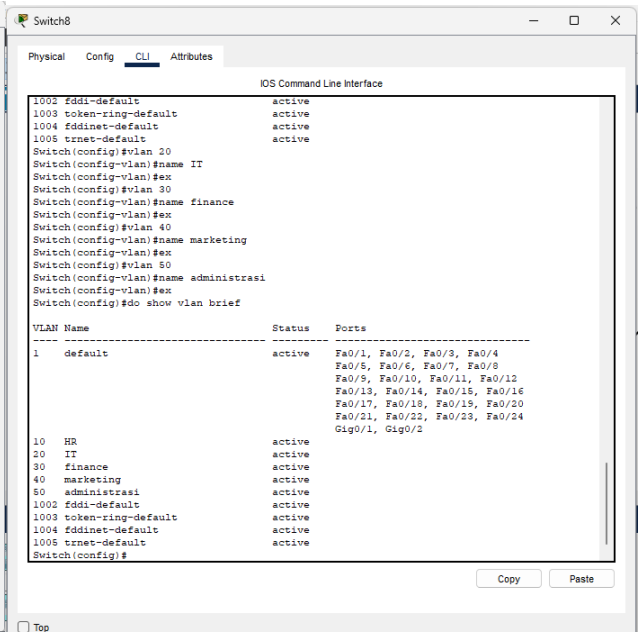


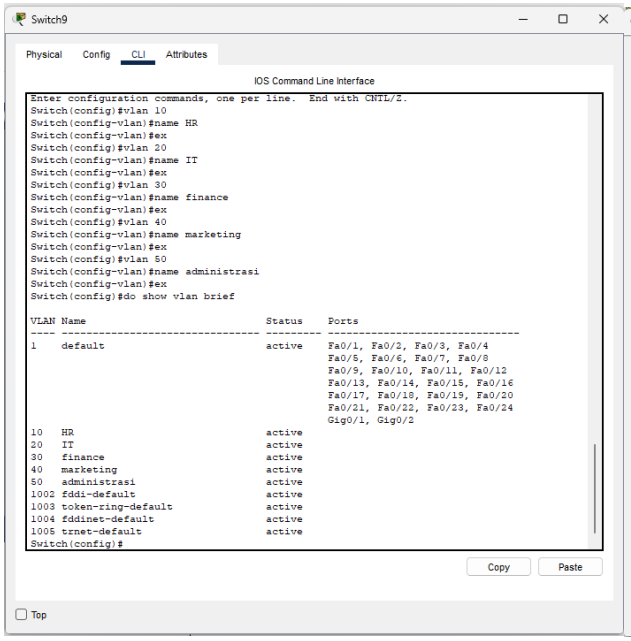
2.tambahkan vlan 10,20,30,40,dan 50 ke masing-masing switch

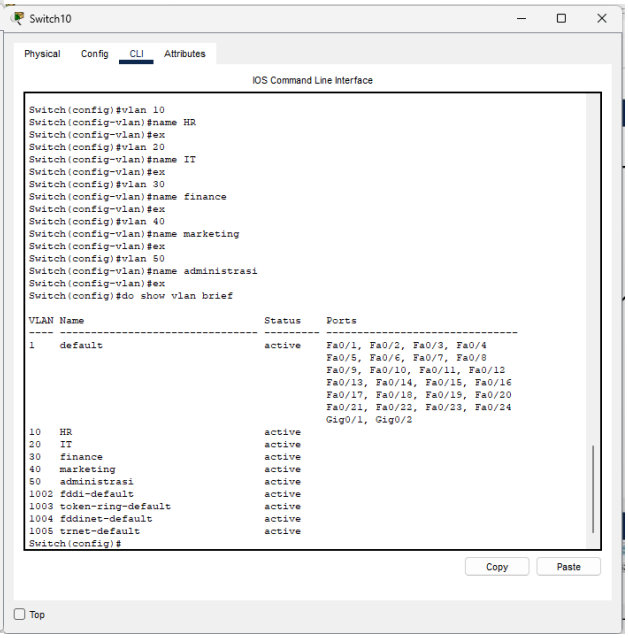




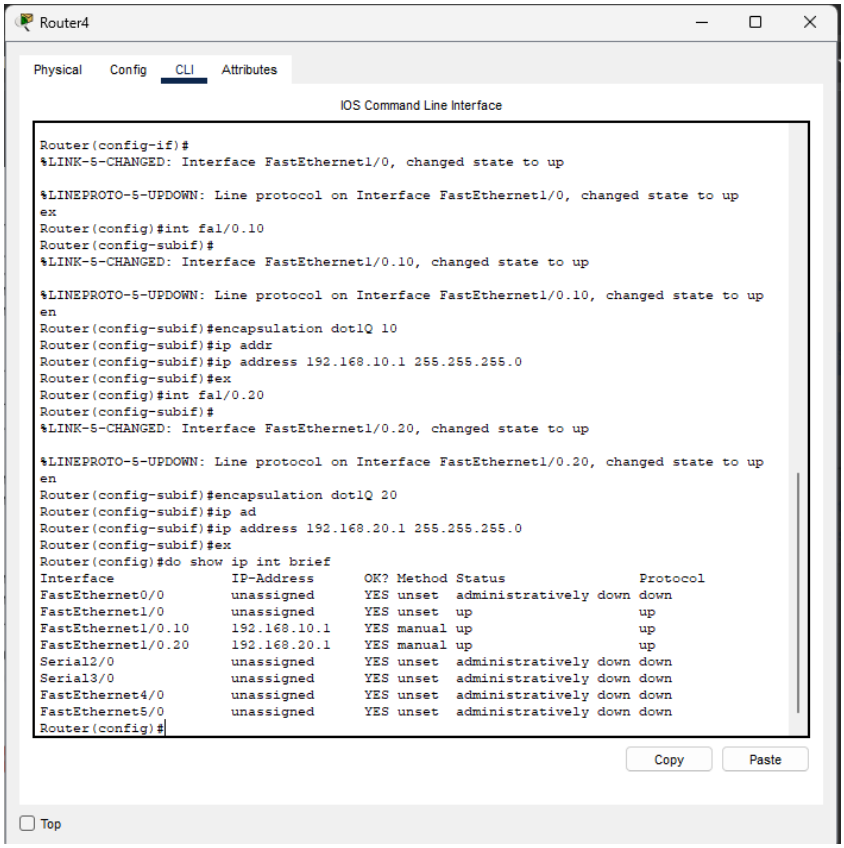




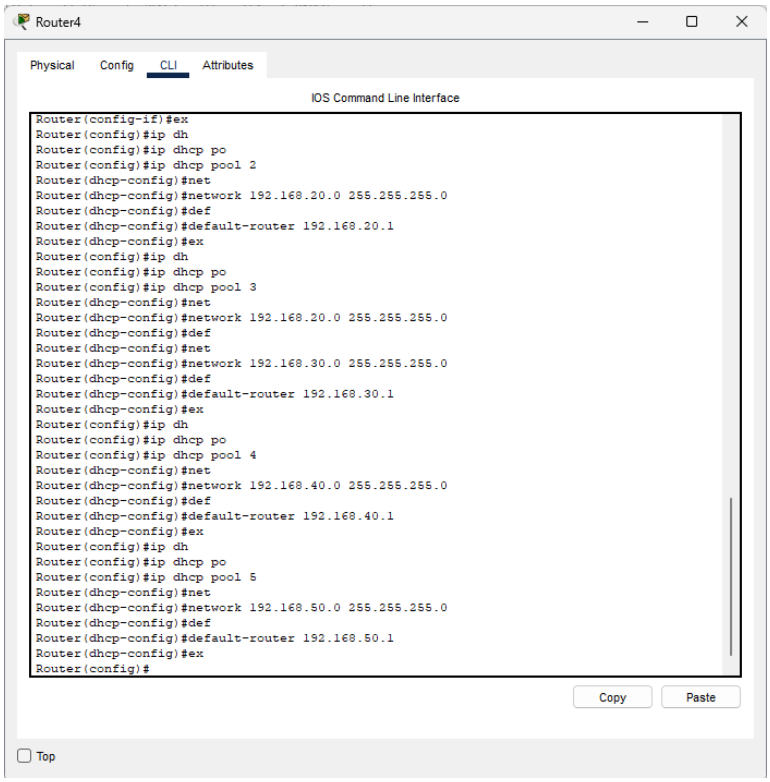




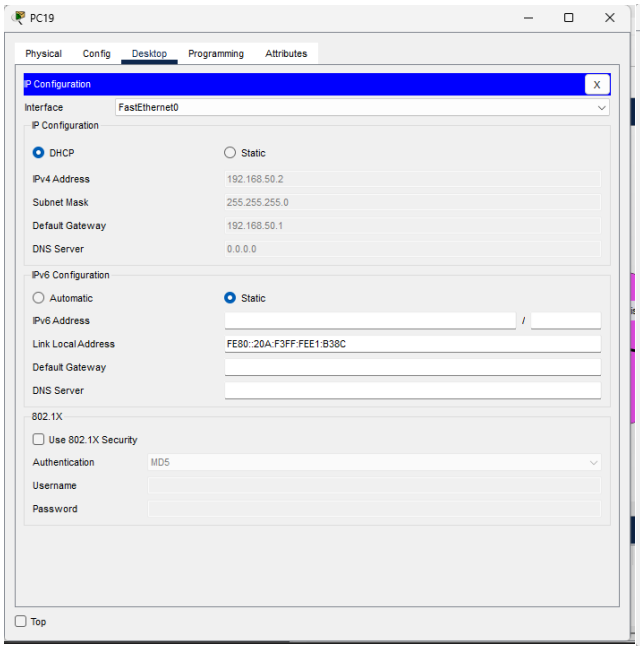
3.melakukan encapsulation ke setiap ip

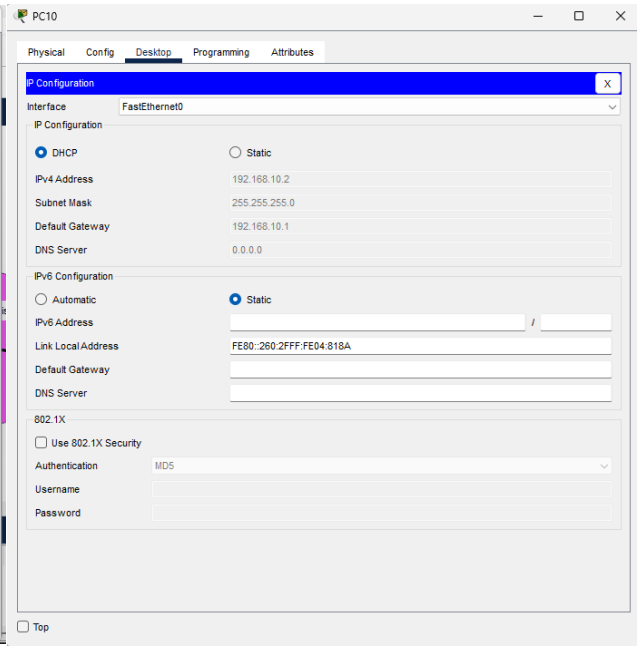


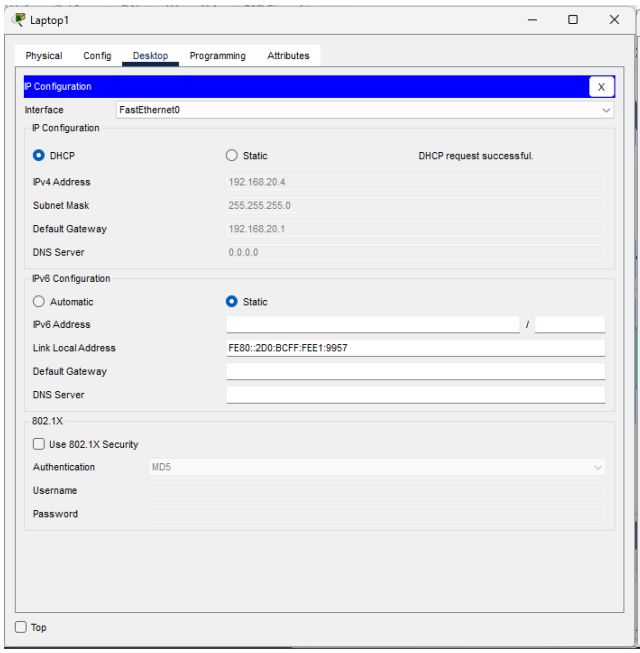
4.melakukan configurasi ip

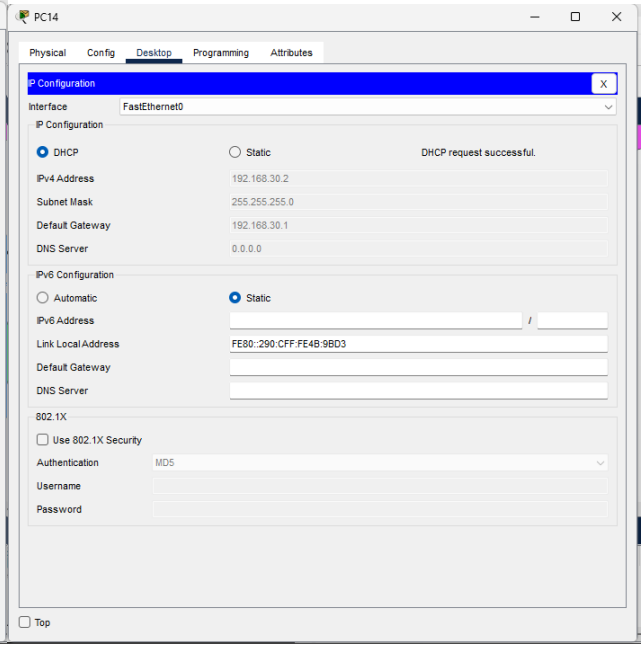


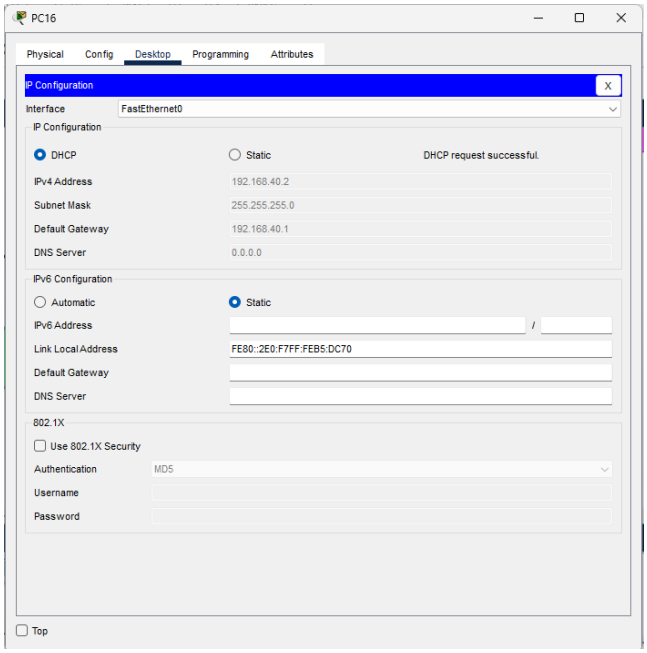
5.connectkan ip ke setiap pc menggunakan dhcp


PC19
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static
IPv4 Address 192.168.50.2
Subnet Mask 255.255.255.0
Default Gateway 192.168.50.1
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::20A:F3FF:FEE1:B38C
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top

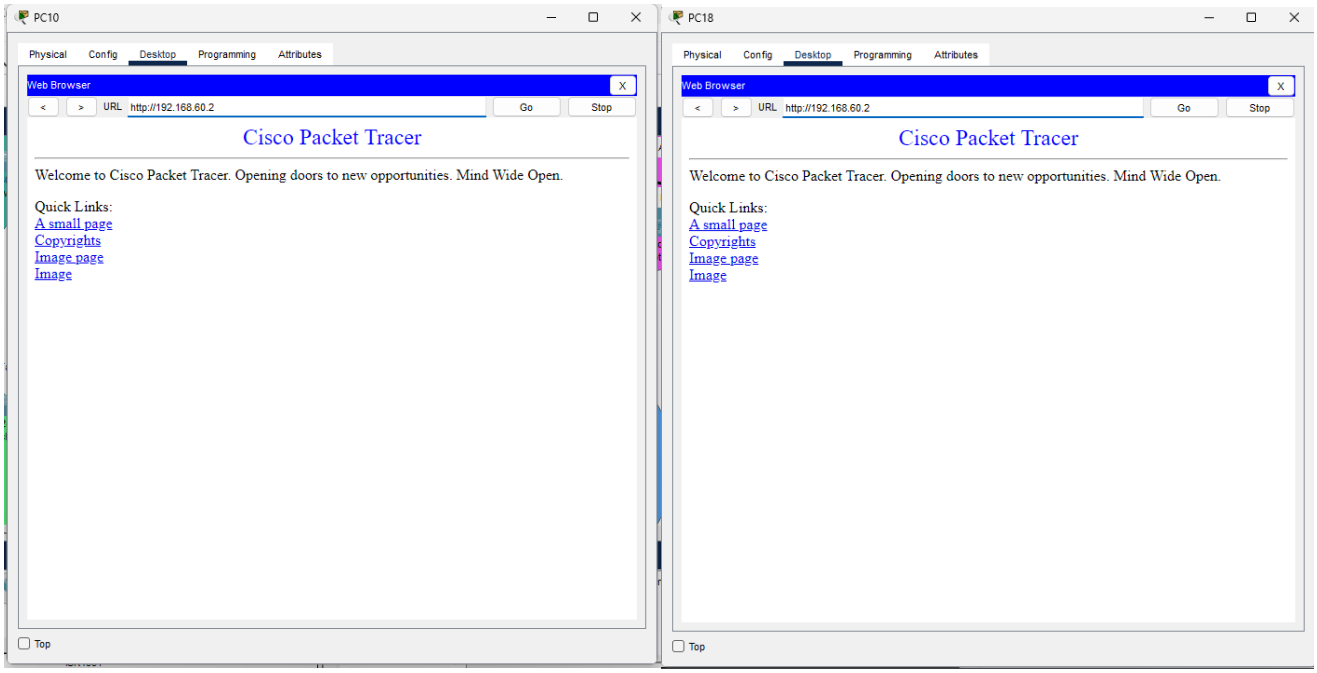

PC10
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static
IPv4 Address 192.168.10.2
Subnet Mask 255.255.255.0
Default Gateway 192.168.10.1
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::260:2FFF:FE04:818A
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top


Laptop1
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static DHCP request successful.
IPv4 Address 192.168.20.4
Subnet Mask 255.255.255.0
Default Gateway 192.168.20.1
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::2D0:BCFF:FEE1:9957
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top


PC14
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static DHCP request successful.
IPv4 Address 192.168.30.2
Subnet Mask 255.255.255.0
Default Gateway 192.168.30.1
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::290:CFF:FE4B:9BD3
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top


PC16
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static DHCP request successful.
IPv4 Address 192.168.40.2
Subnet Mask 255.255.255.0
Default Gateway 192.168.40.1
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::2E0:F7FF:FEB5:DC70
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top

6.mencoba website yang tersedia pada server ke pc di vlan 10 dan vlan 50



DAFTAR PUSTAKA

VLAN: Pengertian, Fungsi, Cara Kerja, dan Jenis-Jenisnya (Alvana Noor Fariza)-*https://www.sekawanmedia.co.id/blog/pengertian-vlan/*