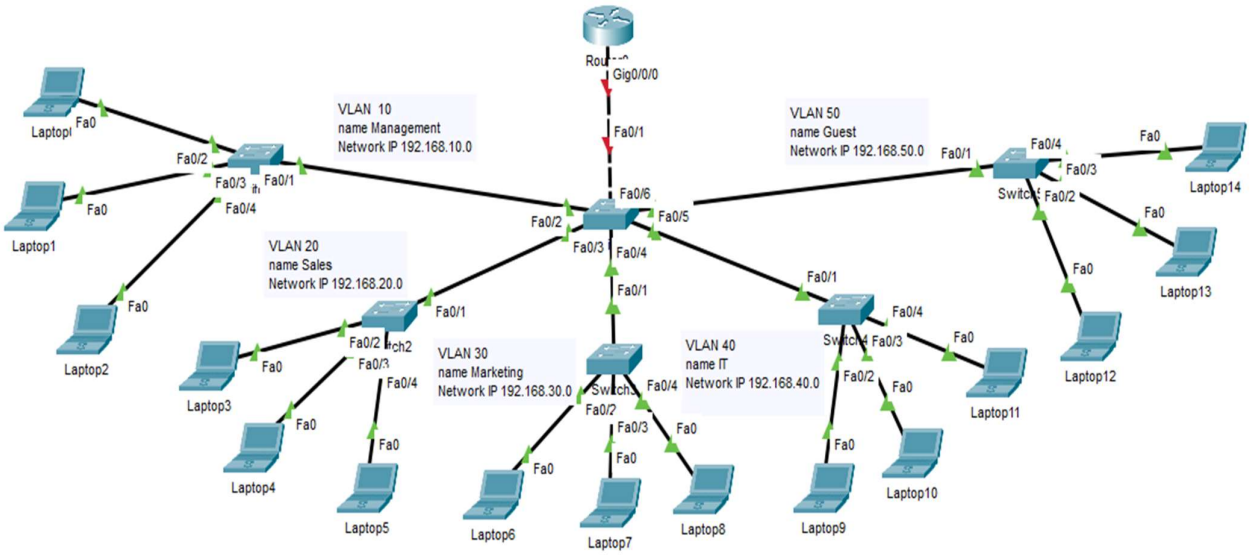
LAB4: VLANs Implementation

You have been tasked to implement five VLANs on a Local Area Network. Implement the following topology as it is.



First start by selecting the range of interfaces that you will assign to particular VLAN. Do this to all five switches that belong to each network.

Switch 1

```
Switch>
Switch>enable
Switch#configure terminal
Switch(config)#vlan 10
Switch(config-vlan)#name Management
Switch(config-vlan)#exit
Switch(config)#interface range fastEthernet 0/1-4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#do write
Building configuration...
[OK]
Switch(config-if-range)#end
```

#Repeat the above configurations on Switch 2,3,4,5 with necessary configurations.

On Switch 0

Do the following on Switch 0 that connects to the router, you have to declare the five vlans, that is VLAN 10, VLAN 20, VLAN 30, VLAN 40 and VLAN 50. Assign interface 2-6 to the VLANs respectively, then configure interface 1 as trunk port that can transmit multiple vlan traffic.

Create vlan and assign interfaces to vlans

```
Switch>enable
Switch#configure terminal
Switch(config)#vlan 10
Switch(config-vlan)#name Management
Switch(config-vlan)#exit
Switch(config)#interface fastEthernet 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
```

#Repeat the above configurations for other VLANs with necessary configurations.

Configure interface 1 as trunk port

```
Switch>
Switch>enable
Switch#configure terminal
Switch(config)#interface fastEthernet 0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#do write
Building configuration...
[OK]
Switch(config-if)#
```

On the Router

Start by putting the interface up, then configure virtual sub interfaces for each VLAN and assign them the first ip address of each network.

Put interface up

```
Router>
Router>enable
Router#configure terminal
Router(config)#interface gigabitEthernet 0/0/0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#
```

Configure virtual sub interfaces for each VLAN and assign IP addresses

```
Router(config)#
Router(config)#interface gigabitEthernet 0/0/0.1
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#exit
```

#Repeat the above configurations for other VLANs with necessary configurations.

Configure DHCP for each VLANs you have, use dns as 8.8.8.8, also exclude the first 15 address from your pool.

```
Router>
Router>enable
Router#configure terminal
Router(config)#ip dhcp pool vlan10
Router(dhcp-config)#network 192.168.10.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.10.1
Router(dhcp-config)#dns-server 8.8.8.8
Router(dhcp-config)#exit
Router(config)#ip dhcp excluded-address 192.168.10.1 192.168.10.15
Router(config)#
```

#Repeat the above configurations for other VLANs with necessary configurations.

Verify your VLAN configuration

On switch

```
Switch#show vlan brief
Switch#show vlan id 10
Switch#show vlan id 20
Switch#show vlan id 30
Switch#show vlan id 40
Switch#show vlan id 50
```

On Router

```
Router#show interfaces
```

Do this Lab diligently.