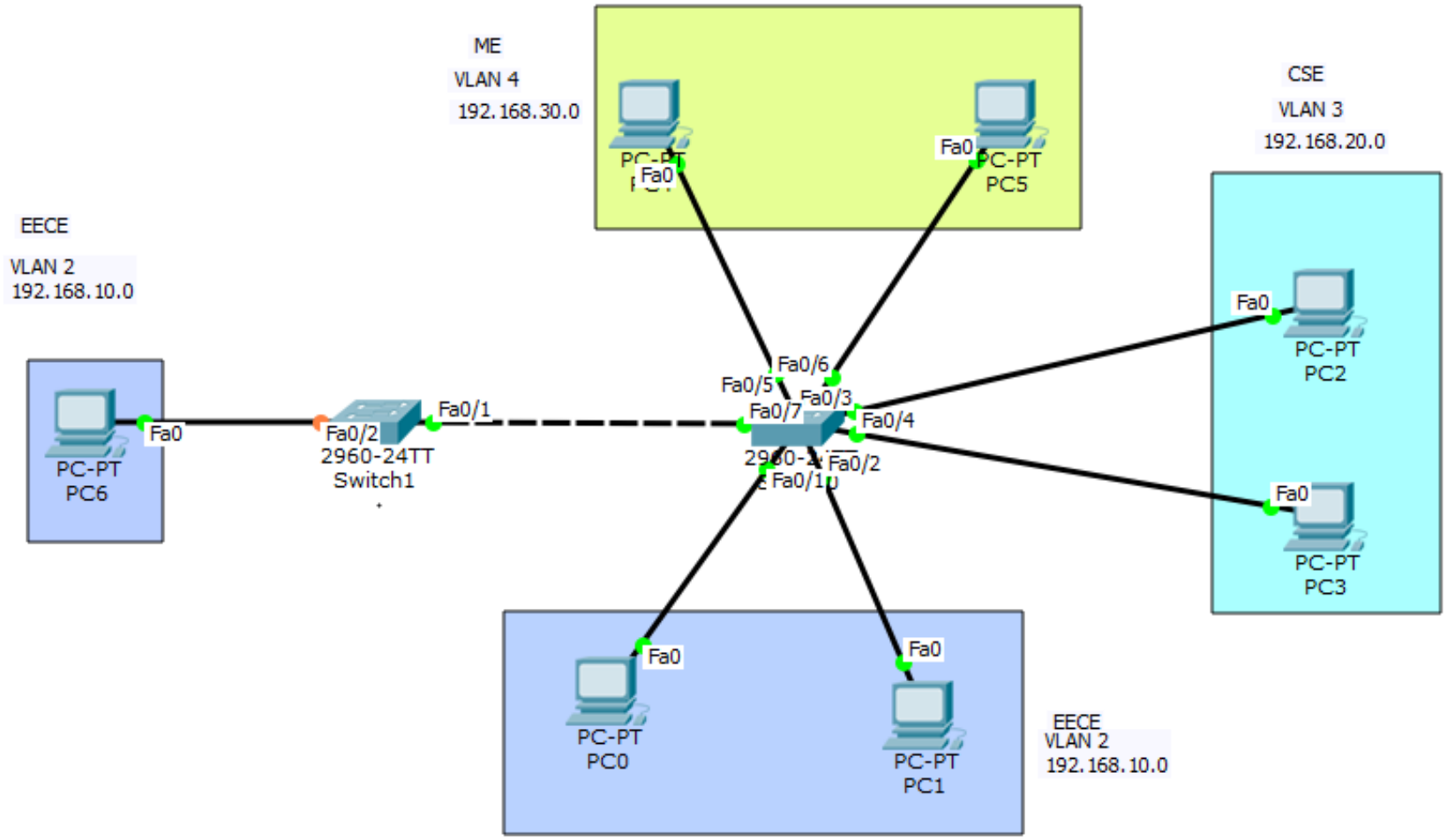
INTERVLAN


ME
VLAN 4
192.168.30.0
CSE
VLAN 3
192.168.20.0
EECE
VLAN 2
192.168.10.0
PC-PT
PC5
Fa0
PC-PT
PC6
Fa0
Fa0/2
2960-24TT
Switch1
Fa0/1
Fa0/6
Fa0/5
Fa0/3
Fa0/7
Fa0/4
Fa0/2
Fa0/10
PC-PT
PC2
PC-PT
PC3
PC-PT
PC0
PC-PT
PC1
EECE
VLAN 2
192.168.10.0

InterVLAN

- InterVLAN routing is a process in which different VLANs to communicate with each other irrespective of where the VLANs are present (on same or different switch).
- InterVLAN routing can be achieved through a layer 3 device (router or layer 3 switch).
- When the interVLAN routing is done through router, it is known as Router on a stick.

Router-on-a-Stick

- It is type of configuration in which you are able to use a single physical interface to route traffic between multiple VLANs.
- The switchport connecting to the router is configured as a trunk link.
- The router accepts traffic that is tagged from the VLANs on the switch through the trunk link.
- On the router, the physical interface is divided into smaller interfaces called sub-interfaces.
- When the router receives the tagged traffic, it forwards the traffic out to the sub-interfaces that has the destination IP address.
- Each sub interface is configured with an IP address and assigned a VLAN based on the design.

Encapsulation dot1q

To enable IEEE 802.1q encapsulation of traffic on a specified sub interface.

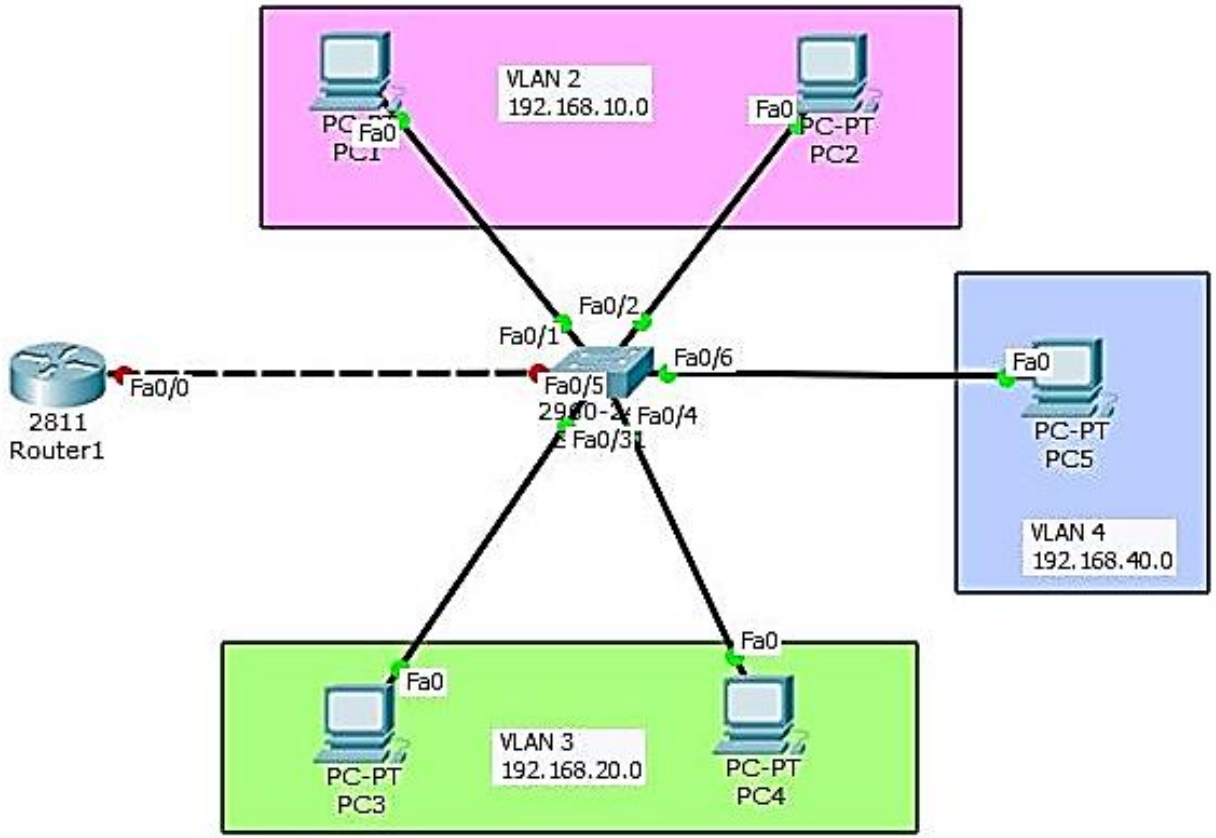
IEEE 802.1q: Standard protocol for interconnecting multiple switches and routers.

Some instructions:

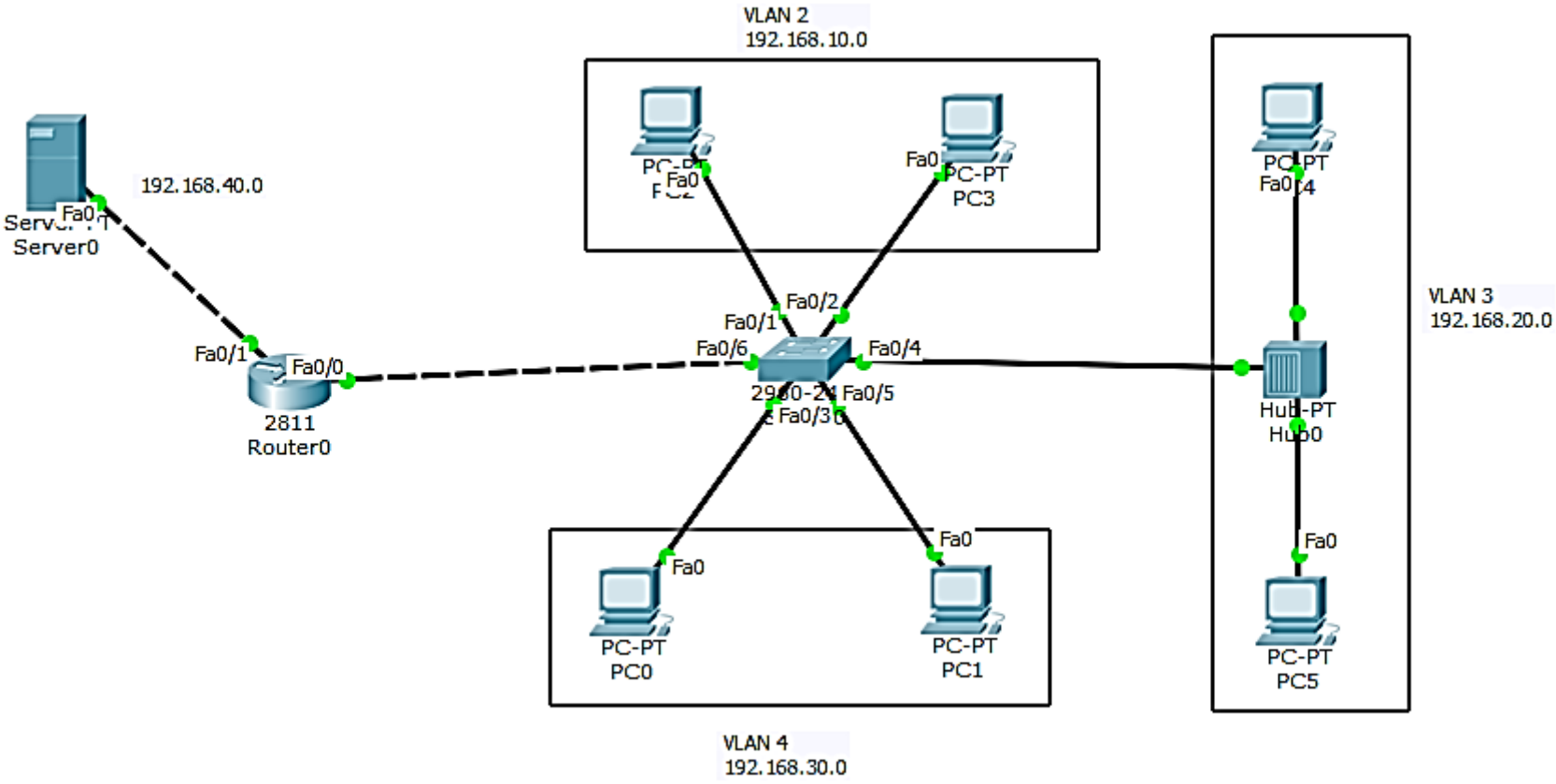
encapsulation dot1q ***vlan-id***

no encapsulation dot1q ***vlan-id***

Practice Problem-1



Practice Problem-2



Instructions of InterVLAN

Router(config)#int f0/0

Router(config-if)#no shutdown

Router(config-if)#int **.10**

Router(config-subif)#encapsulation dot1q **2**

Router(config-subif)#ip address 192.168.10.1 255.255.255.0

Router(config-subif)#ip dhcp pool r1

Router(dhcp-config)#network 192.168.10.0 255.255.255.0

Router(dhcp-config)#default-router 192.168.10.1

Router(dhcp-config)#exit