# Lab#13

Virtual Local Area Network

To study about IVR(Inter vlan Routing) and their implementation.

VLAN:

VLANs allow network administrators to partition their networks to match the functional and security requirements of their systems without having to run new cables or make major changes in their current network infrastructure.

IVR (INTER VLAN ROUTING):

Virtual LANs (VLANs) divide one physical network into multiple broadcast domains. But, VLAN-enabled switches cannot, by themselves, forward traffic across VLAN boundaries. So you need to have routing between these VLANs which is called interVLAN routing. You can achieve this by using either a Layer 3 switch or a router
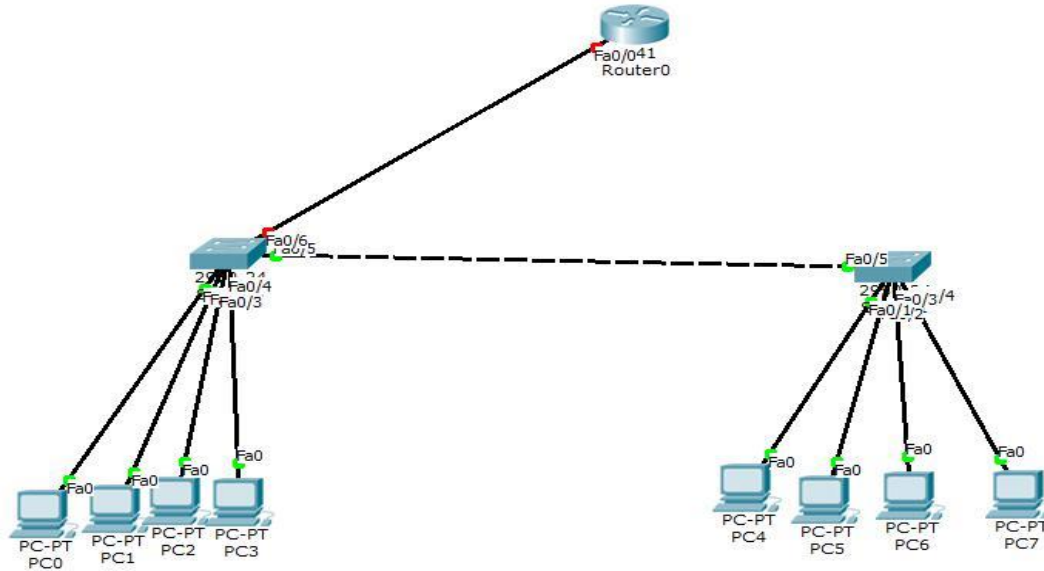
Steps:

☐ Assign IP and gateway to all PC.

☐ Assign vlan name to all PC.

☐ Assign port numbers to all pc.

☐ Enable both Trunk on switch

☐ Write the following command on CLI mode.

☐ Enable trunk mode on the link where router and switch is connected.

ROUTER COMMAND ON CLI MODE:

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Router>en
Router#conf t
Router#conf terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#no ip add
Router(config-if)#no ip address
Router(config-if)#no shutd
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#int fa 0/0.10
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.10, changed state to up

Router(config-subif)#ip add
Router(config-subif)#enc
Router(config-subif)#encapsulation d
Router(config-subif)#encapsulation dot1Q 2
Router(config-subif)#ip add
Router(config-subif)#ip address 10.0.0.10 255.0.0.0
Router(config-subif)#exit
 Router(config)#int fa 0/0.11
 Router(config-subif)#
 %LINK-5-CHANGED: Interface FastEthernet0/0.11, changed state to up

 Router(config-subif)#enc
 Router(config-subif)#encapsulation d
 Router(config-subif)#encapsulation dot1Q 3
 Router(config-subif)#ip add
 Router(config-subif)#ip address 11.0.0.10 255.0.0.0
 Router(config-subif)#exit
```
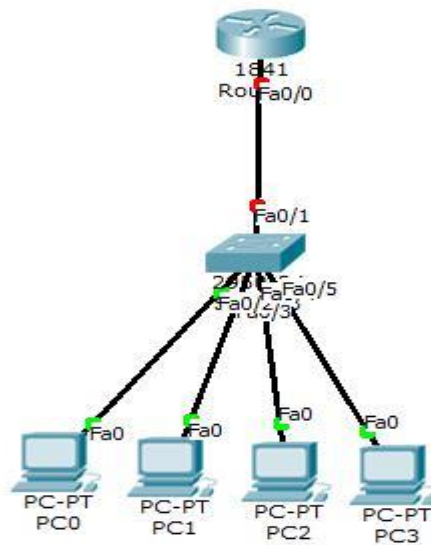
EXERCISES:

Q1. Write advantages of IVR?

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Q,2 write all steps for configuration this network(Router On A stick).

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Q.3) What is mean by Router on a stick?

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Q.4) What is the function of command encapsulation DOT1q?

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