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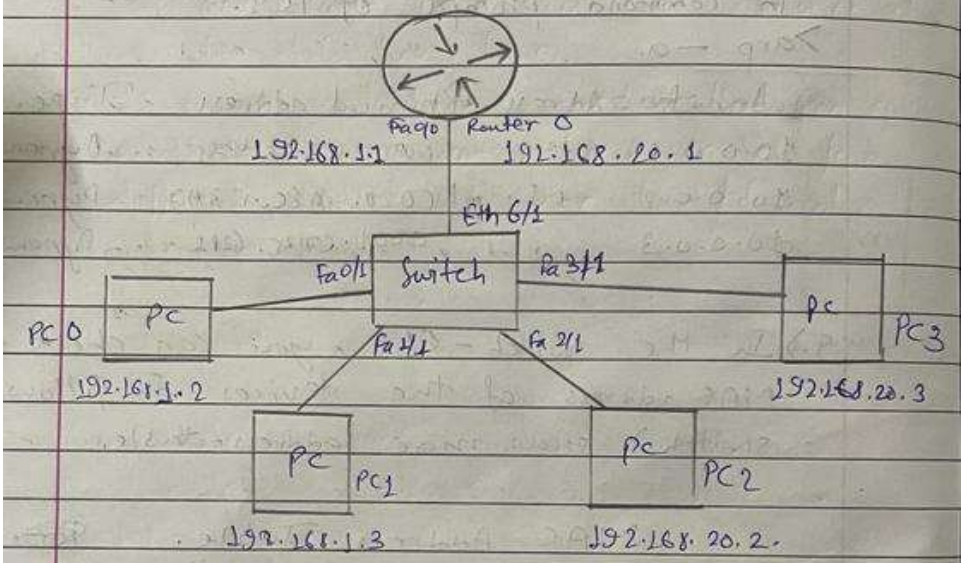
Experiment -9

Aim:- To construct a VLAN and ~~route~~ make the PC's communicate among a VLAN.

Topology:



Procedure.

1.) Set up the topology as shown above use 1891 router.
2.) Add an extra router - port to the switch as its needed.
3.) Use copper straight through wire. Set the IP address & gateway.
4.) In switch → config → VLAN Database, give any VLAN numbers, here 20 and VLAN name → VLAN.
5.) Select add select the interface (here fastethernet 4/1) (nearest ~~from~~ to the switch from router) and make it trunk.

6.) Look into fastethernet 2/1 & 3/1 and change VLAN to 20: VLAN.

7.) In router, select VLAN Database, enter the number and name of the VLAN created.

In CLI of router

Router (VLAN)# exit
APPLY completed.
Exiting.
Router # config t
Router (config)# interface fastethernet 0/0
Router (config-if)# ip address 192.168.1.1 255.255.255.0
Router (config-if)# no shut

Router (config)# interface fastethernet 0/0.1
Router (config-subif)# encapsulation dot1q 20
Router (config-subif)# ip address 192.168.20.1 255.255.255.0
Router (config-subif)# no shut
Router (config-subif)# exit.

Result (in PC0).

PC>ping 192.168.20.3

pinging 192.168.20.3 with 32 bytes of data.

Reply from 192.168.20.3: bytes = 32 time=1ms TTL=128
Reply from 192.168.20.3: bytes = 32 time=1ms TTL=128
Reply from 192.168.20.3: bytes = 32 time=0ms TTL=128
Reply from 192.168.20.3: bytes = 32 time=0ms TTL=128

Ping statistics for 192.168.20.3
Packets: Sent = 4, Received = 4, Lost = 0.
Approximate round trip time in milliseconds.

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Minimum = 0 ms, Maximum = 1 ms, Average = 0ms.

Observation

1.) VLAN - Virtual local area network is any broadcast domain that is partitioned and isolated in a completed network at the data link layer.

2.) It is a virtualised connection that converts multiple devices and network nodes from different LANs into one local/logical network.