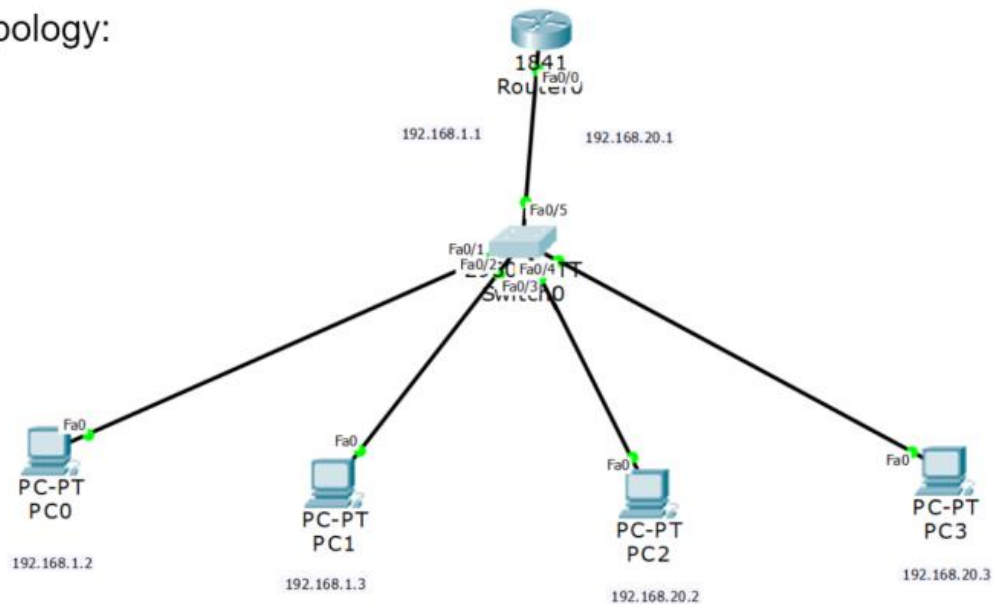# Experiment - 9

Aim: To construct a VLAN and make the PC's communicate among a VLAN

Topology:

```
          --- System Configuration Dialog ---

Continue with configuration dialog? [yes/no]: n


Press RETURN to get started!



Router>enable
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
  as VLAN database mode is being deprecated. Please consult user
  documentation for configuring VTP/VLAN in config mode.

Router(vlan)#vlan 20 name NEWVLAN
VLAN 20 modified:
    Name: NEWVLAN
Router(vlan)#exit
APPLY completed.
Exiting....
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/5
%Invalid interface type and number
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shut

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
exit
Router(config)#int fa 0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1, changed state to up

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
Router(config)#
```
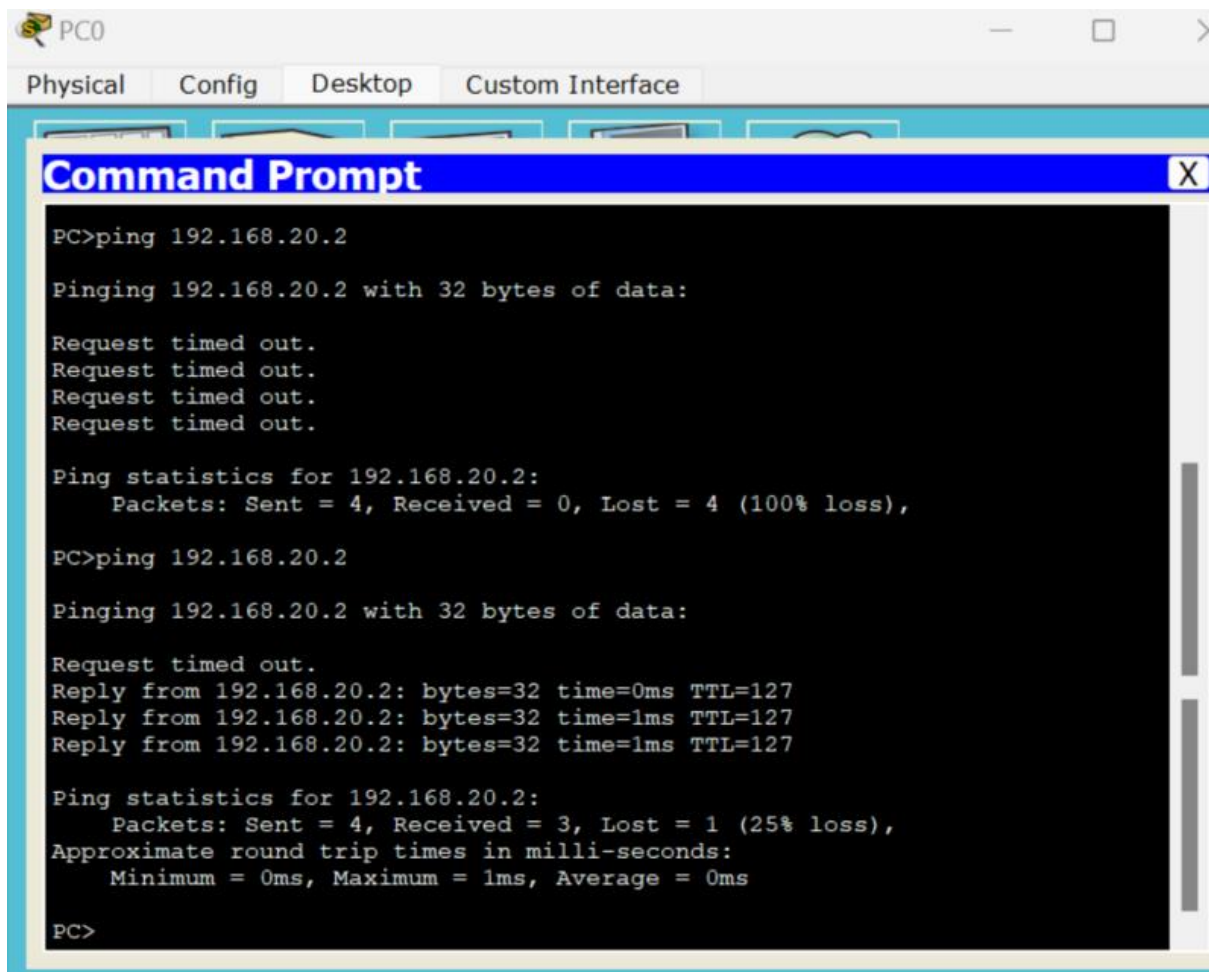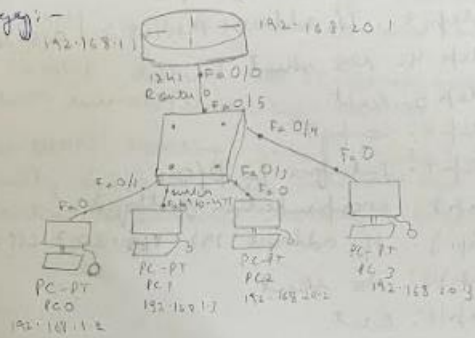
Lab - 9

Aim :- To construct a VLAN and make a PC communicate among VLAN

Topology :-

Procedure :-

→ create a topology as shown above, choose 1841 router and 2960-24TT switch.

→ Set the IP address of the router ad 4 PC's respectively, we use class C type addresses also gateways.

→ In switch, go to config tab and select VLAN Database. Give any VLAN no like 2 and name as vlan

→ select the interface fastethernet 4/1 and make it trunk.

→ Next select the switches under 2nd interface which has interface 0/3 and 0/4. Click on each of them and set VLAN number 2

→ Go to router → config tab and select VLAN Database and enter the name vlan ad no 2 created.

Go to router → CLI and type in following commands.

Step #1: - config T
step 2: interface fa 0/0
step 3: IP address 192.168.1.1 255.255.255.0
step 4: No shut
step 5: Exit
step 6: config T
step 7: Interface fa 0/0.1
step 8: encapsulation dot1q 2
step 9: ip address 192.168.20.7 255.255.255.0
step 10: No shut
step 11: Exit

→ Ping message from PC to another VLAN PC

PING OUTPUT

Packet tracer PC command line 1:0

PC> ping 192.168.20.3

Pinging 192.168.20.3 : ~~bytes =32 time=0ms~~
with 32 bytes of data: ~~TTL = 127~~

~~Pinging~~

Request timed out.

Reply from 192.168.20.3 : bytes= 32 time=0ms TTL=127
Reply from 192.168.20.3 : bytes=32 time=5ms TTL=127
Reply from 192.168.20.3 : bytes=32 time=0ms TTL=127

Ping statistics for 192.168.20.3

Packets: sent=4 received=3 loss=1 (25% loss)
Approximate round trip time in milliseconds:
min = 0ms   max = 5...

observation:-

1) we can have one device on one VLAN & another on another VLAN connected to the same switch. They will only hear other broadcast traffic from within their VLANS, or if they were connected 2 switches

2) Here VLANS doesn't use IP address instead deal with subnets/class C type address

3) Inter-VLAN routing gives a flexible tool to logically subdivide their networks that has potential to enhance security & performance

N.P
31/8/2023