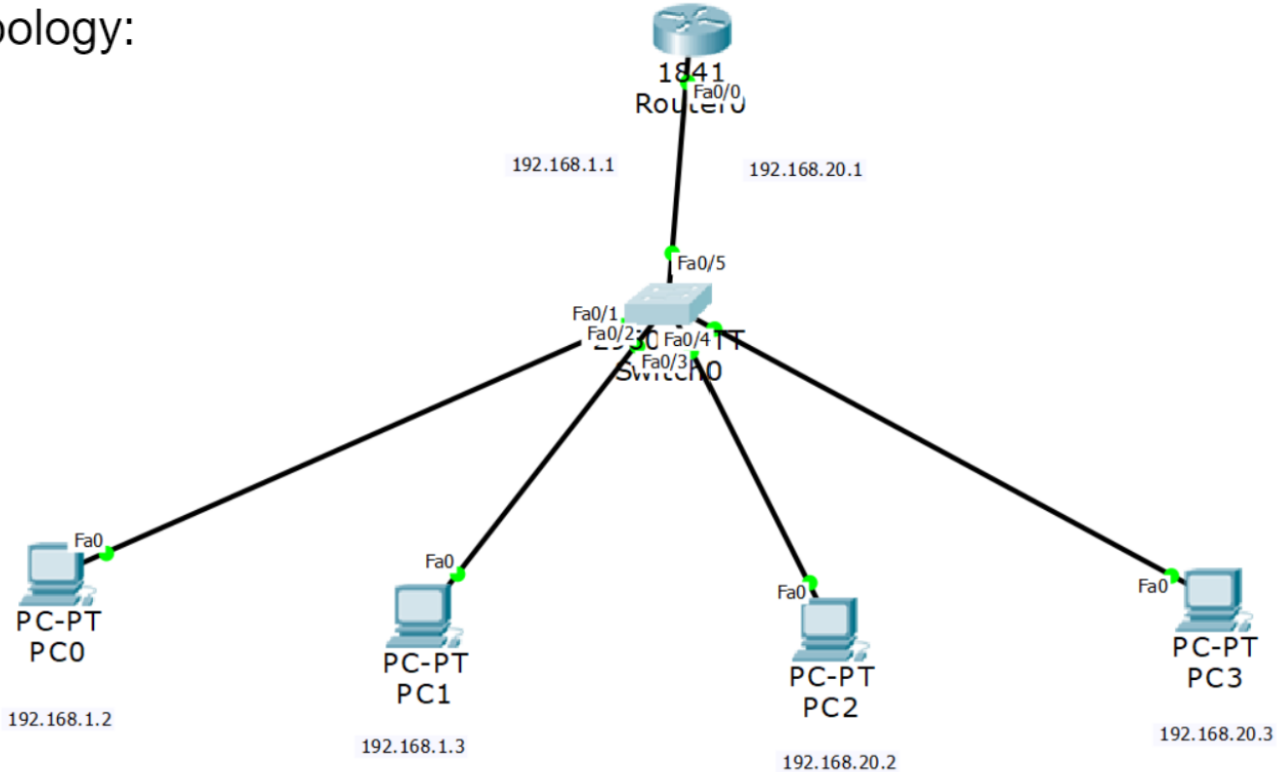
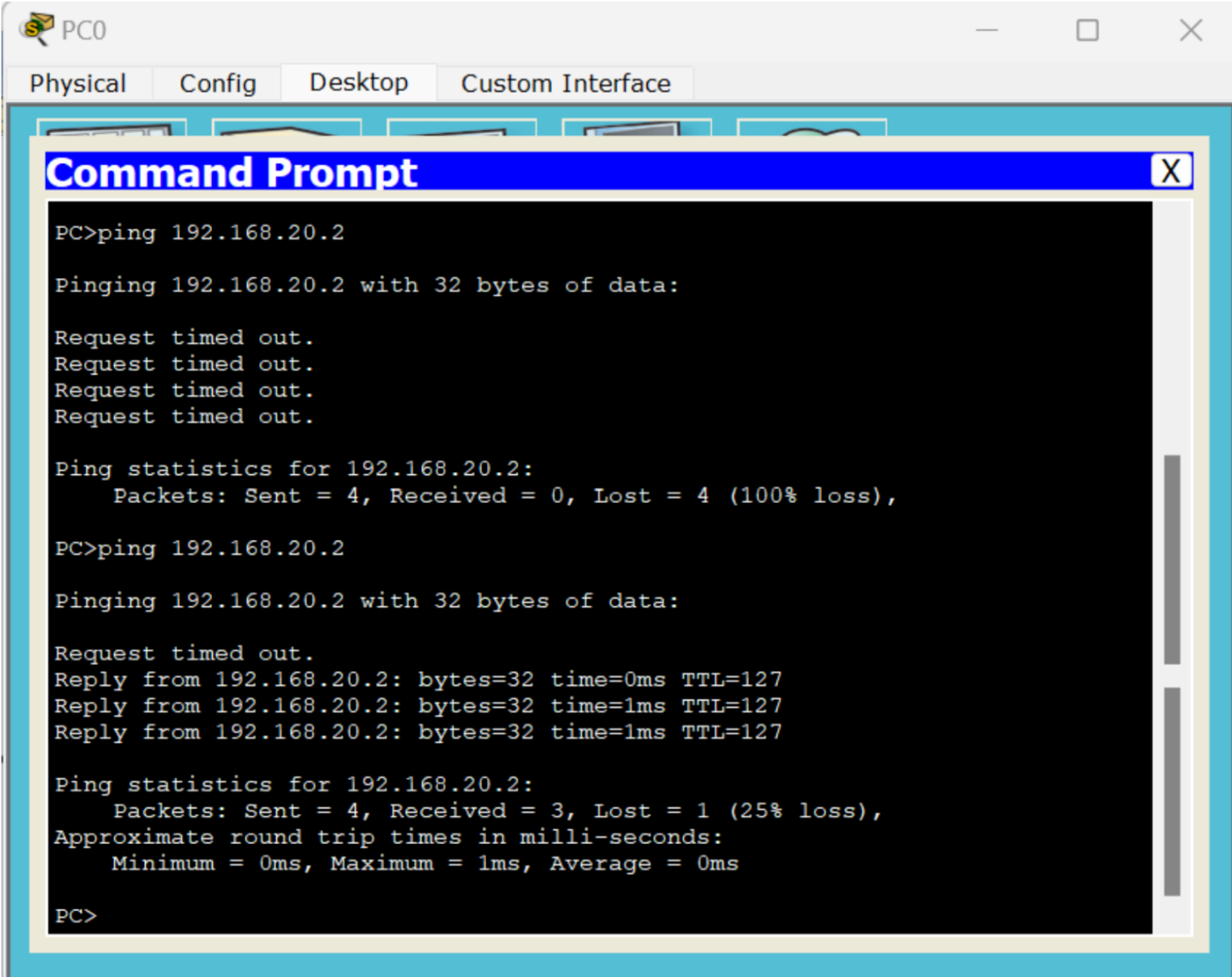
Experiment - 9

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

Topology:


1841
Router0
Fa0/0
192.168.1.1
192.168.20.1
Fa0/5
Fa0/1
Fa0/2
Fa0/3
Fa0/4
Switch0
Fa0
PC-PT
PC0
192.168.1.2
Fa0
PC-PT
PC1
192.168.1.3
Fa0
PC-PT
PC2
192.168.20.2
Fa0
PC-PT
PC3
192.168.20.3

```
         --- 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)#
```


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
PC>ping 192.168.20.2
Pinging 192.168.20.2 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.20.2:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 192.168.20.2
Pinging 192.168.20.2 with 32 bytes of data:
Request timed out.
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127
Ping statistics for 192.168.20.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>

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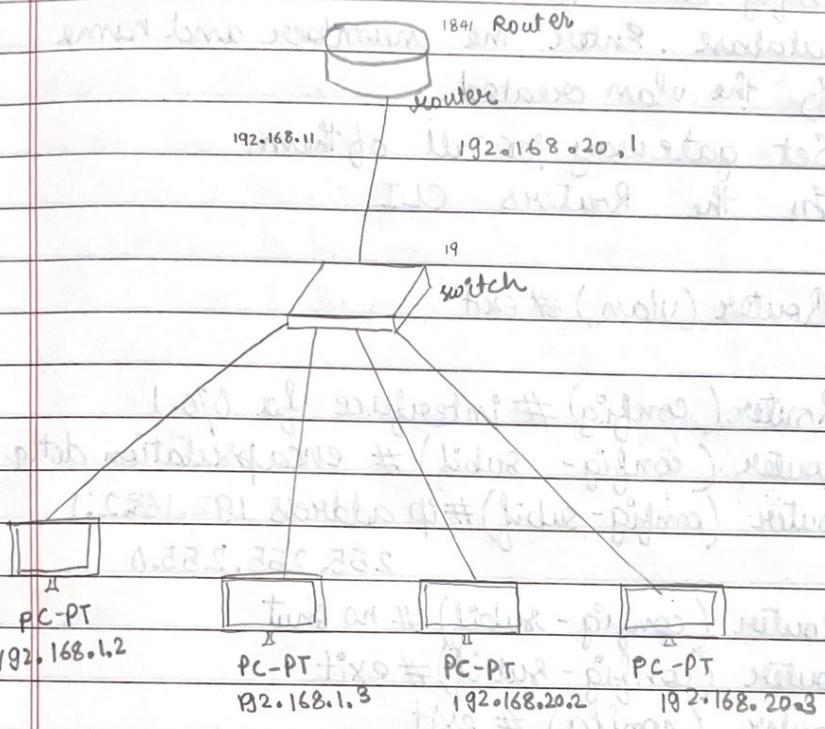
Date: 10-8-23

VIRTUAL LAN

Aim: To create a VLAN using class C type addresses.

Topology:



Procedure:

- Create a topology of a 1841 router, a switch, and 4 PT-PC's.
- IP address is assigned to all the devices.
- In switch, go to config tab and select VLAN Database.
- Give any VLAN number say 2 here & include any name.
- Then add.
- Select the interface near the switch from router and make it Trunk.

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- VLAN trunking allows switchs to forward frames from different VLAN's over a single link called trunk.
- This makes the switch understand NEWVLAN
- Next the router is to understand NEWVLAN
- Config tab of router select VLAN database. Enter the number and name of the vlan created
- Set gateway for all of them.
- In the Routers CLI

```
Router (vlan) # exit

Router (config) # interface fa 0/0.1
Router (config-subif) # encapsulation dot1q 2
Router (config-subif) # ip address 192.168.2.1
                                255.255.255.0
Router (config-subif) # no shut
Router (config-subif) # exit
Router (config) # 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 with 32 bytes of data
Request timed out.
Reply from 192.168.20.3: bytes=32 time=0ms TTL=
Reply from 192.168.20.3: bytes=32 time=5ms TTL=127
```

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Reply from 192.168.20.3: bytes=32 time: 0ms TTL=127
Ping statistics for 192.168.20.3.
Packets: sent=4, Recieved=3, lost=1 (25% loss)
Approximate round trip times in milliseconds:
minimum=0ms, Maximum=5ms, Average=1ms

Observation:

VLAN is a custom network which is created from one or more local area networks. It enables a group of devices availible in multiple networks to be combined into one logical network. The result becomes a virtual LAN this is administered exactly like a physical VLAN It is a virtual extension of LAN

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