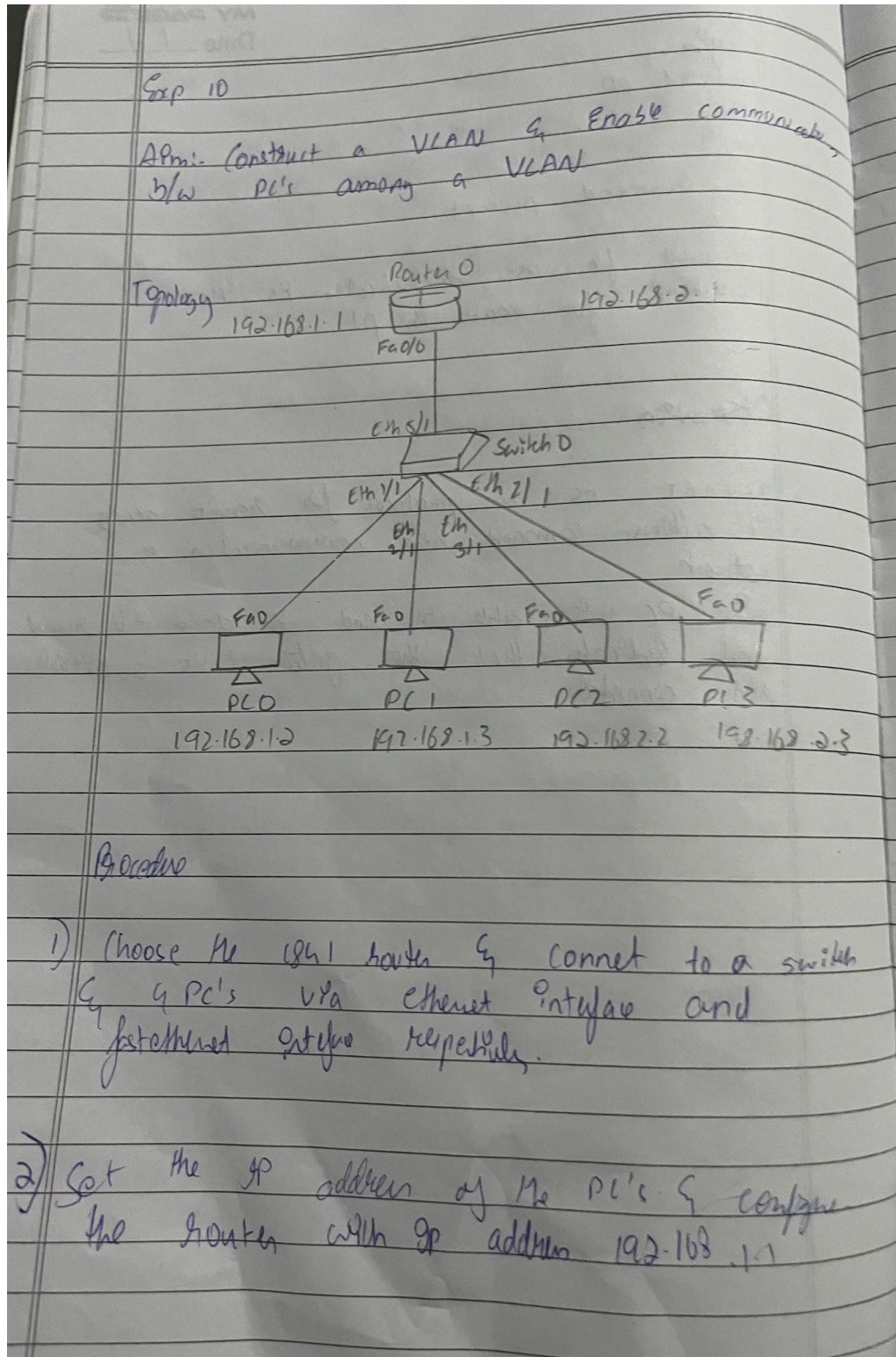## Program 12

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

Topology , Procedure and Observation:

Exp 10

Aim:- Construct a VLAN & Enable communicate
b/w PC's among a VLAN

Topology

Router O

192.168.1.1   192.168.2.1

Fa0/0

Eth s/1

Switch O

Eth y/1   Eth 2/1

Eth   Eth
2/1   3/1

Fa0   Fa0   Fa0   Fa0

PC0   PC1   PC2   PC3

192.168.1.2   192.168.1.3   192.168.2.2   192.168.2.3

Procedure

1) Choose the 1841 router & connet to a switch
& 4 PC's via ethernet intrface and
fastethernet intrfce respectively.

2) Set the IP address of the PC's & configure
the router with IP address 192-168.1.1

enable.
terminal
interface Fa 0/0
ip address 192.168.1.1 255.255.255.0
no shut

3) In the switch go to config table & select VAN Database

4) set the VLAN number & VLAN name
Select the Interface & make it to trunk.
VLAN trunking allows switching to forward frame from different VLAN on a single link called trunk

5) This is done by adding an additional header information called tag to the ethernet frame

6) Look into the Interfaces of the switches with a NEW VLAN Systems.

Router

interface fastethernet 0/0.1
encapsulation dot1q 2
ip address 192.168.2.1 255.255.255.0
no Shut
exit
exit
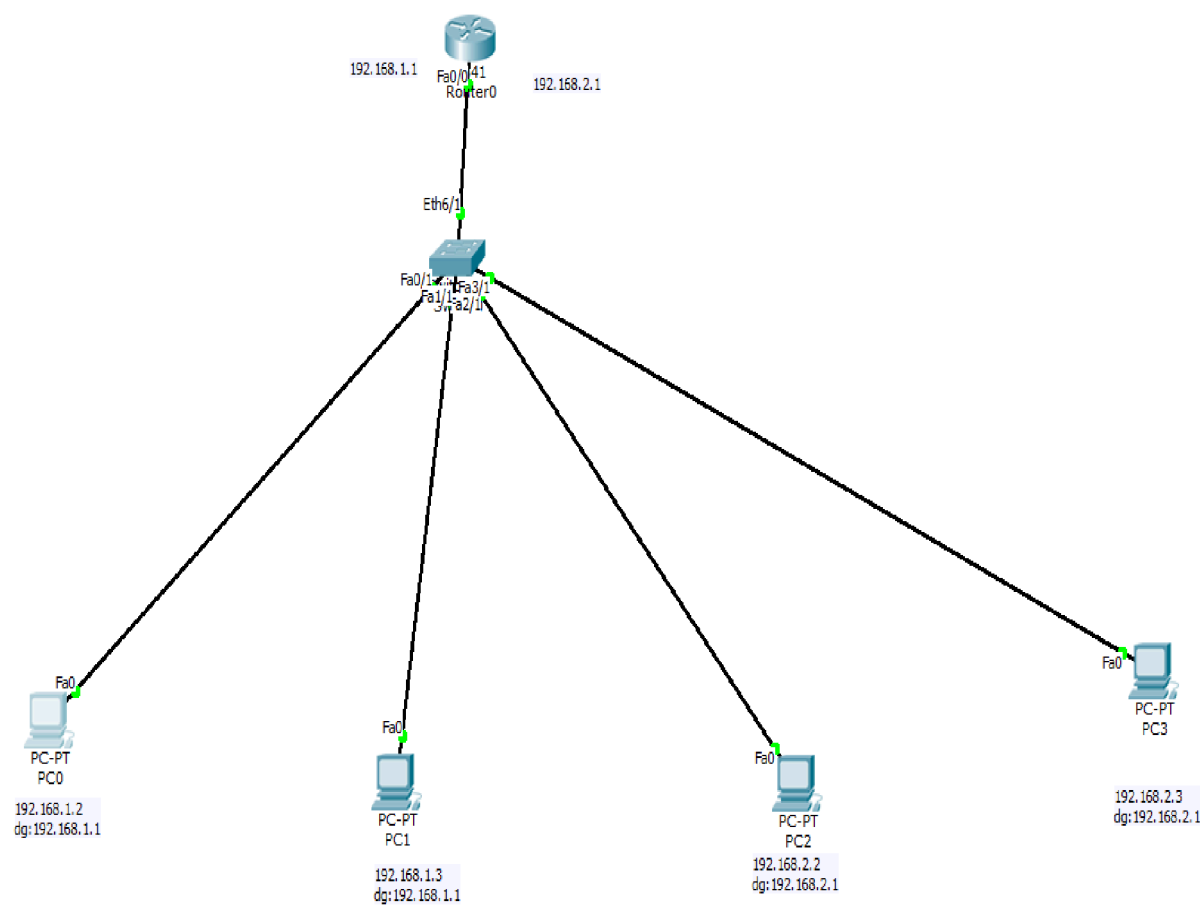
Observation

A VLAN segments a network into virtual groups to enhance security & reduces broadcast traffic.
On pinging the VLAN, the PC's are able to communicate

Screen Shots:

192.168.1.1 Fa0/0 41 192.168.2.1
Router0

Eth6/1

Fa0/15 Fa3/1
Fa1/1 Fa2/1

Fa0
PC-PT
PC0
192.168.1.2
dg:192.168.1.1

Fa0
PC-PT
PC1
192.168.1.3
dg:192.168.1.1

Fa0
PC-PT
PC2
192.168.2.2
dg:192.168.2.1

Fa0
PC-PT
PC3
192.168.2.3
dg:192.168.2.1

Command Prompt

```
Packet Tracer PC Command Line 1.0
PC>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.2: bytes=32 time=0ms TTL=127
Reply from 192.168.2.2: bytes=32 time=0ms TTL=127
Reply from 192.168.2.2: bytes=32 time=4ms TTL=127

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 1ms

PC>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.2.2: bytes=32 time=0ms TTL=127
Reply from 192.168.2.2: bytes=32 time=0ms TTL=127
Reply from 192.168.2.2: bytes=32 time=2ms TTL=127
Reply from 192.168.2.2: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

PC>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.3: bytes=32 time=3ms TTL=127
Reply from 192.168.2.3: bytes=32 time=2ms TTL=127
Reply from 192.168.2.3: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 3ms, Average = 2ms

PC>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time=0ms TTL=127
Reply from 192.168.2.3: bytes=32 time=0ms TTL=127
Reply from 192.168.2.3: bytes=32 time=2ms TTL=127
Reply from 192.168.2.3: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

PC>
```