LAB 9

To construct a VLAN and make a pc communicate among VLAN.

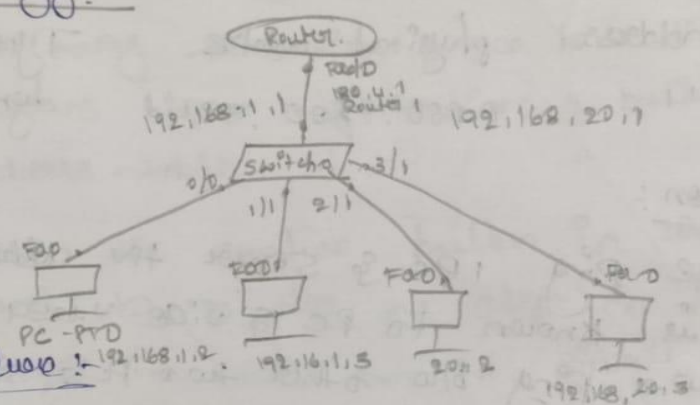
OBSERVATION:

VLAN 3/8/23 36

Virtual LAN

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

Topology:-



Procedure:-

-> To construct a new VLAN, we use class 'C' type addresses

-> create a topology as seen above choose the 1841 router

-> First PC0 & PC1 will be in physical LAN & PC2 & PC3 will be in VLAN

-> Configure Router i.e, set ip address for the Fa 0/0 interface as 192.168.1.1

- And set ip address of PC0 & PC1 as 192.168.1.2 & 192.168.1.3 & gateway as 192.168.1.1

-> now we can check that PC0 & PC1 can communicate with each other.

-> Now PC2 & PC3 set IP as 192.168.20.2 & 192.168.20.3 & gateway as 192.168.20.1

=> Switch configuration

-> In switch go to config & select VLAN data base. Set VLAN no & name:-

ex: VLAN Number 20
VLAN Name Newvlan.

-> click on add.

-> select the interface. i.e fa 0/1 (near the switch from router) & make it trunk.

-> VLAN trunking allows switches to forward frames from different VLANs over a single link called trunk.

-> this is done by adding an additional header information called tag to the ethernet frame. the process of adding this small header is called VLAN tagging.

→ And make (select) the interface that are connecting VLAN PC's to the switch..

→ Here it is fa 2/1 & fa 3/1 & select & make VLAN as 20 : new vlan.

VLAN [20]

☐ 1 : default
☑ 20 : newvlan

Router configuration:

→ open config selet VLAN database enter the no & name of vlan created.

go to CLI
Router (vlan) #exit.
Apply completed.
exiting....
Router # config t.
Router (config)# interface fa 0/0.1
Router (config-subif)# encapsulation dot1q 2.
Router (config-subif)# ip address 192.168.20.1 255.255.255.0
Router (config-subif)# no shut.

→ Now Ping

from PC0 to PC3

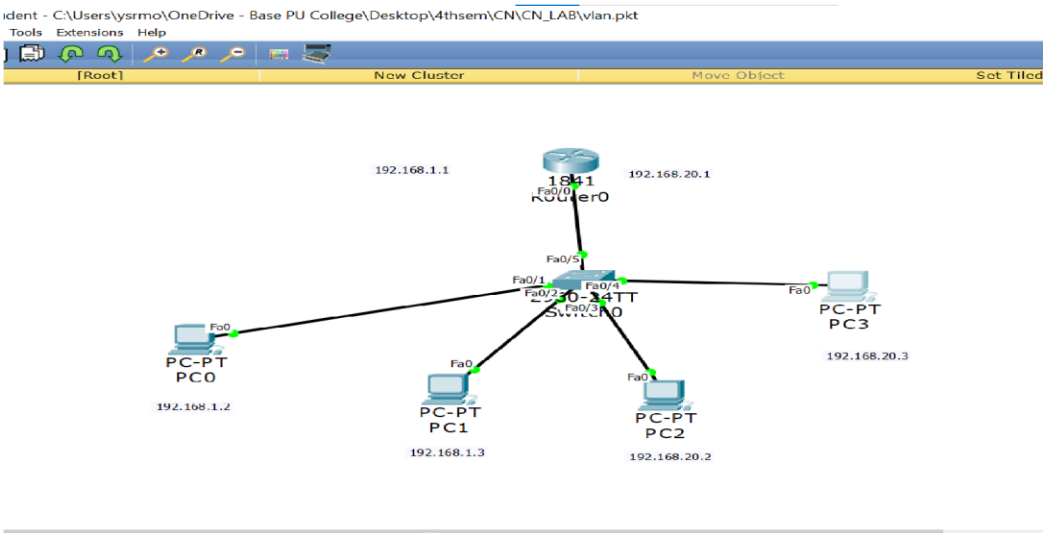
→ Ping 192.168.20.3

you will get a successful transmission from PC0 to PC3.

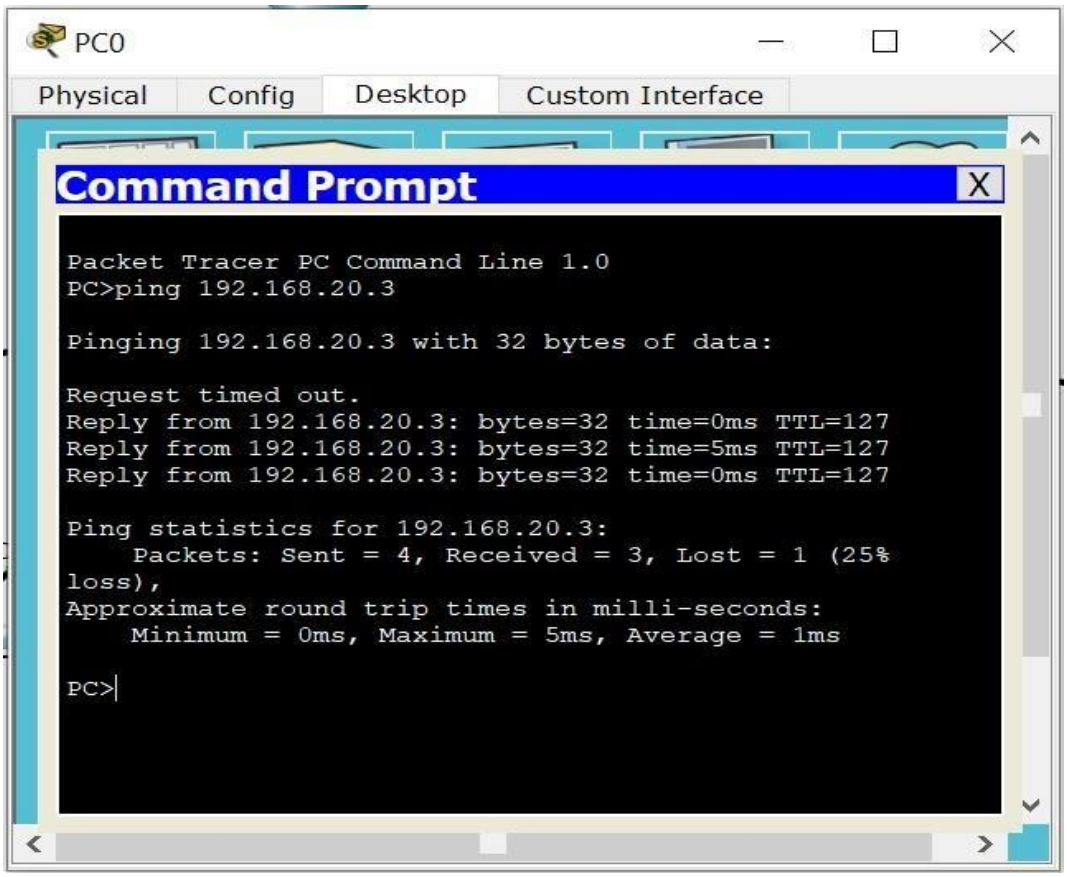
observation :-

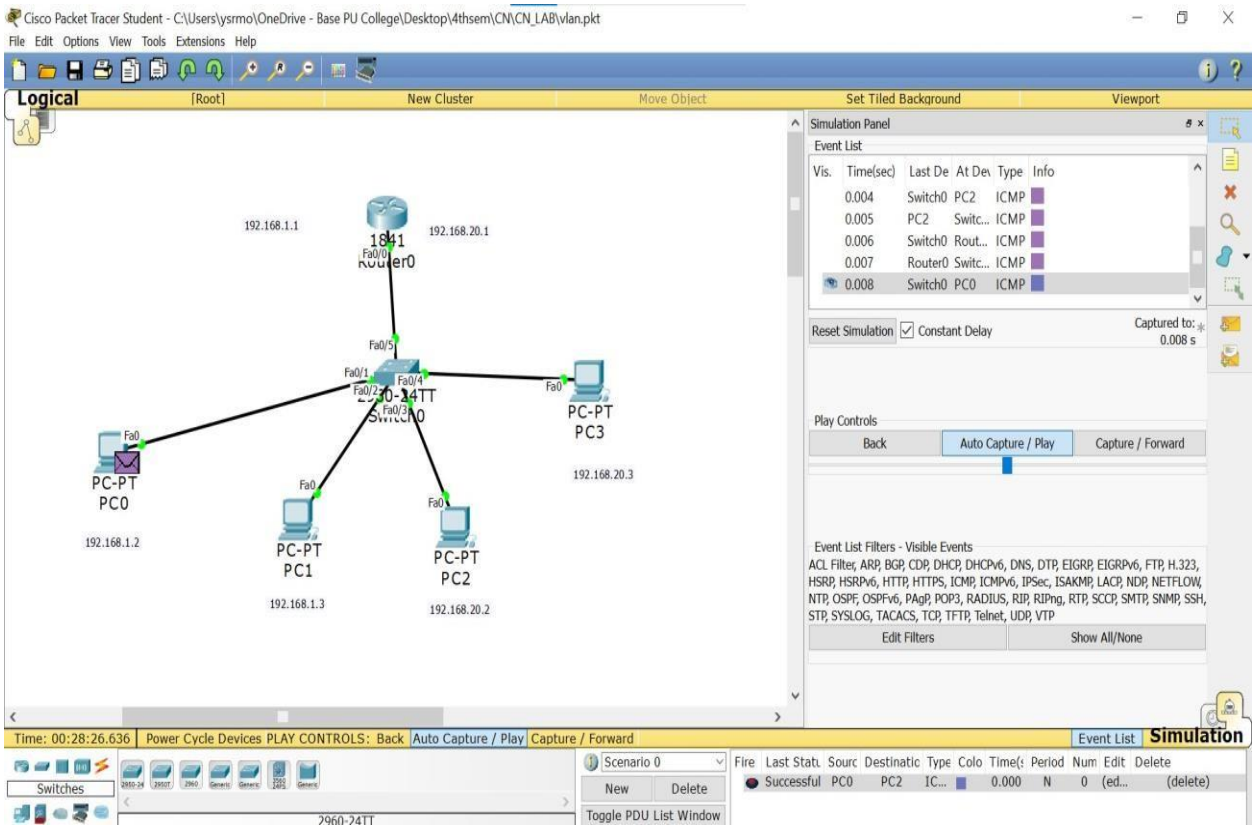
Even though we are using a single router we can use multiple different networks. And those networks will works as virtual networks. And we can communicate from physical LAN to VLAN & vice versa.

TOPOLOGY:



OUTPUT:




Cisco Packet Tracer Student - C:\Users\ysrmo\OneDrive - Base PU College\Desktop\4thsem\CN\CN_LAB\vlan.pkt
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
192.168.1.1
1841
Router0
192.168.20.1
Fa0/0
Fa0/5
Fa0/1
Fa0/2
Fa0/4
Fa0/3
2960-24TT
Switch0
Fa0
PC-PT
PC0
192.168.1.2
PC-PT
PC1
192.168.1.3
PC-PT
PC2
192.168.20.2
PC-PT
PC3
192.168.20.3
Simulation Panel
Event List
Vis. Time(sec) Last De At De Type Info
0.004 Switch0 PC2 ICMP
0.005 PC2 Switc... ICMP
0.006 Switch0 Rout... ICMP
0.007 Router0 Switc... ICMP
0.008 Switch0 PC0 ICMP
Reset Simulation
Constant Delay
Captured to:
0.008 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Time: 00:28:26.636
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Switches
2960-24TT
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Statu Sourc Destinatic Type Colo Time(s Period Num Edit Delete
Successful PC0 PC2 IC... 0.000 N 0 (ed... (delete)