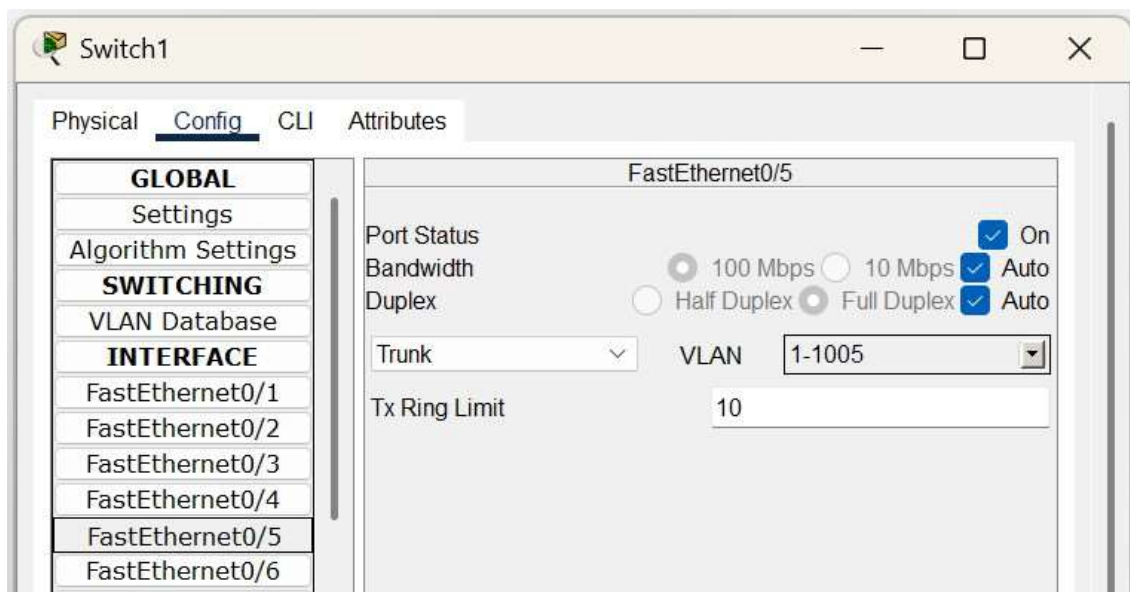
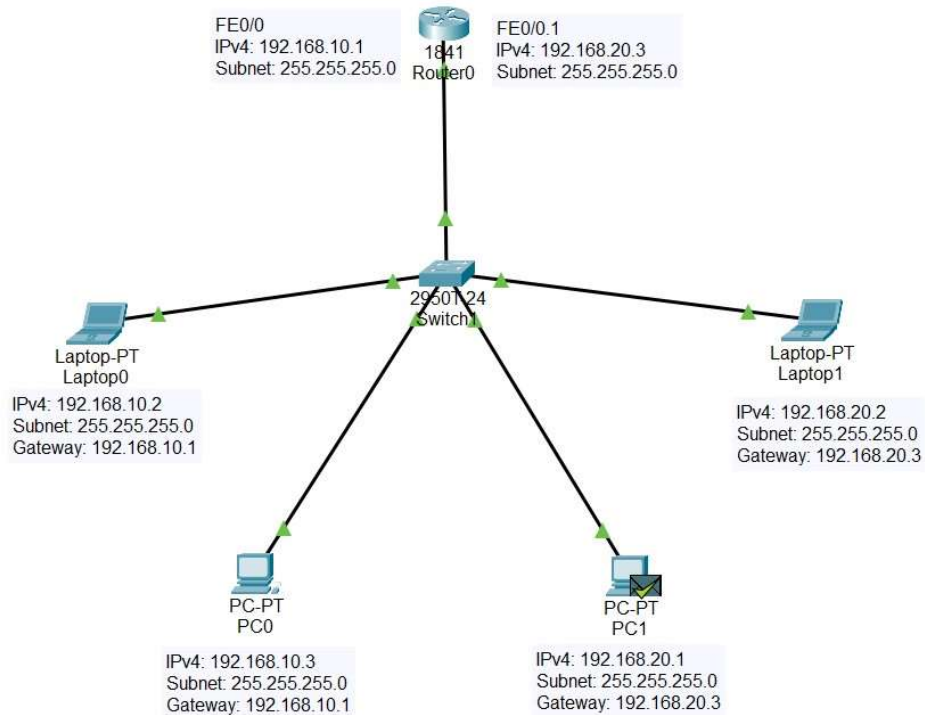
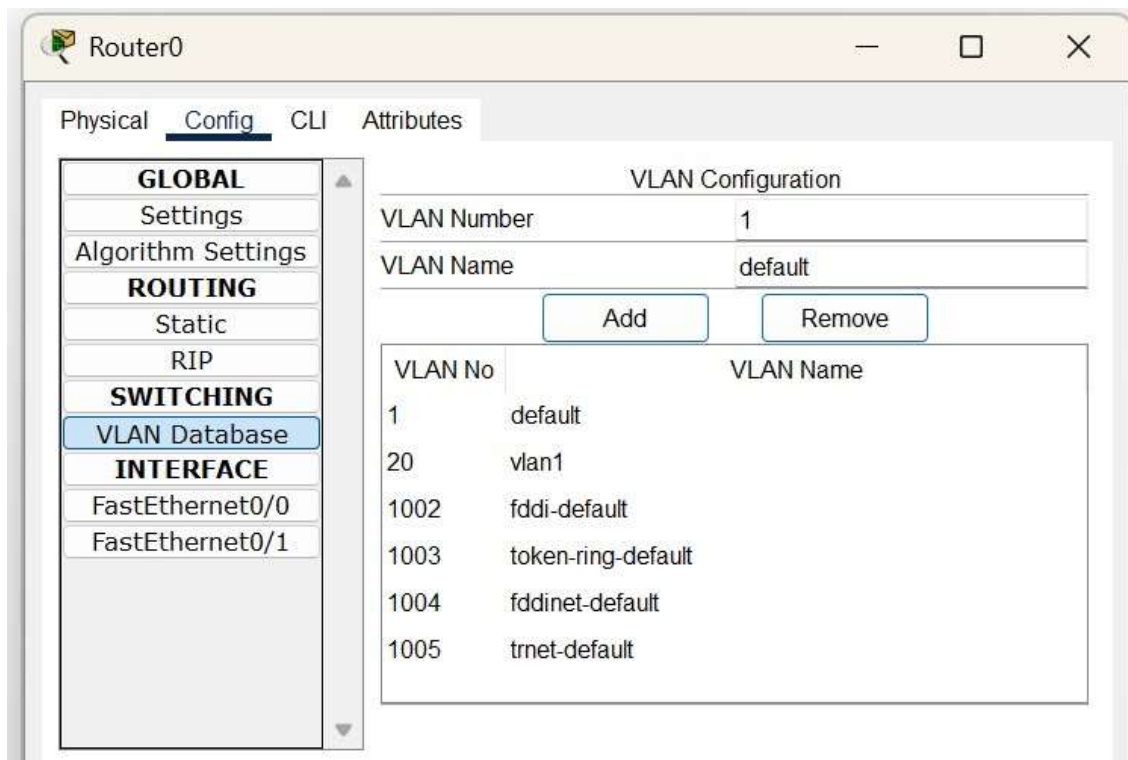


## LABORATORY PROGRAM – 12

To create a VLAN on top of the physical LAN and enable communication between physical LAN and virtual LAN.





```
C:\>ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

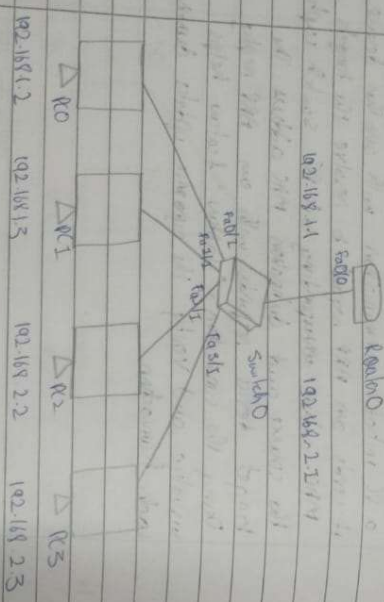
Reply from 192.168.20.3: bytes=32 time=2ms TTL=255
Reply from 192.168.20.3: bytes=32 time<1ms TTL=255
Reply from 192.168.20.3: bytes=32 time<1ms TTL=255
Reply from 192.168.20.3: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

To implement a VLAN and make the PCs communicate among the VLAN

- Aim: To create and configure VLANs using Cisco Packet Tracer, ensuring network segmentation and inter-VLAN communication via a router.

→ Topology



- Procedure:
  1. Use 4 end device, a switch and 4 PCs
  2. Connect them using copper straight through
  3. Assign IP address to all end device
  4. Switch → config → Select VLAN database
  5. Select interface fastEthernet 0/1 and make it trunk
  6. Config of router → select VLAN database → enter the number and name of the VLAN created

→

CLI → enable → config terminal →  
Router → interface fastEthernet 0/0/1  
encapsulation dot1q  
ip address 192.168.2.1 255.255.255.0  
exit

→

Observation

VLANs were successfully created by assigning VLAN numbers and names, such as VLAN 2 (Network). The switch interface connected to the router was configured as a trunk port allowing multiple VLANs to communicate through the router. VLAN tagging using the IEEE 802.1Q (encapsulation dot1q) was configured on router sub-interfaces for inter-VLAN communication. VLAN database and switch config changes were verified and setup allowed effective communication between VLANs via the router.

Not  
saved