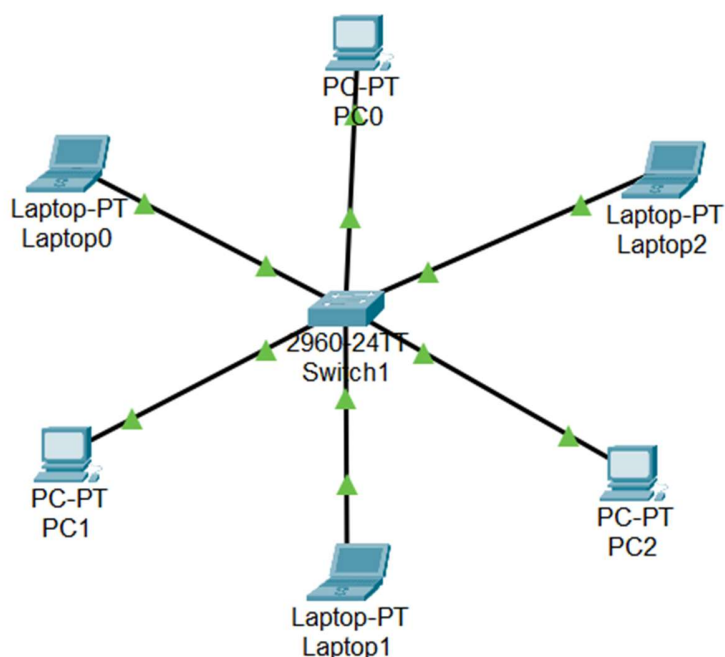
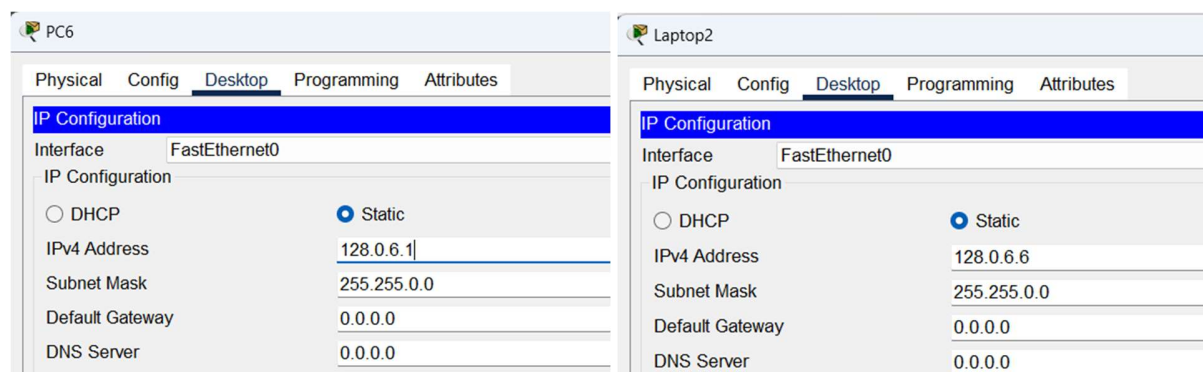
 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Simulate VLAN and verify the VLAN concepts the results.	
Experiment No: 10	Date: 28-08-2023	Enrolment No: 92210133006


Aim: Simulate VLAN and verify the VLAN concepts the results.

Step 1: Open Cisco Packet Tracer and create a small network with 1 router and 6 devices.



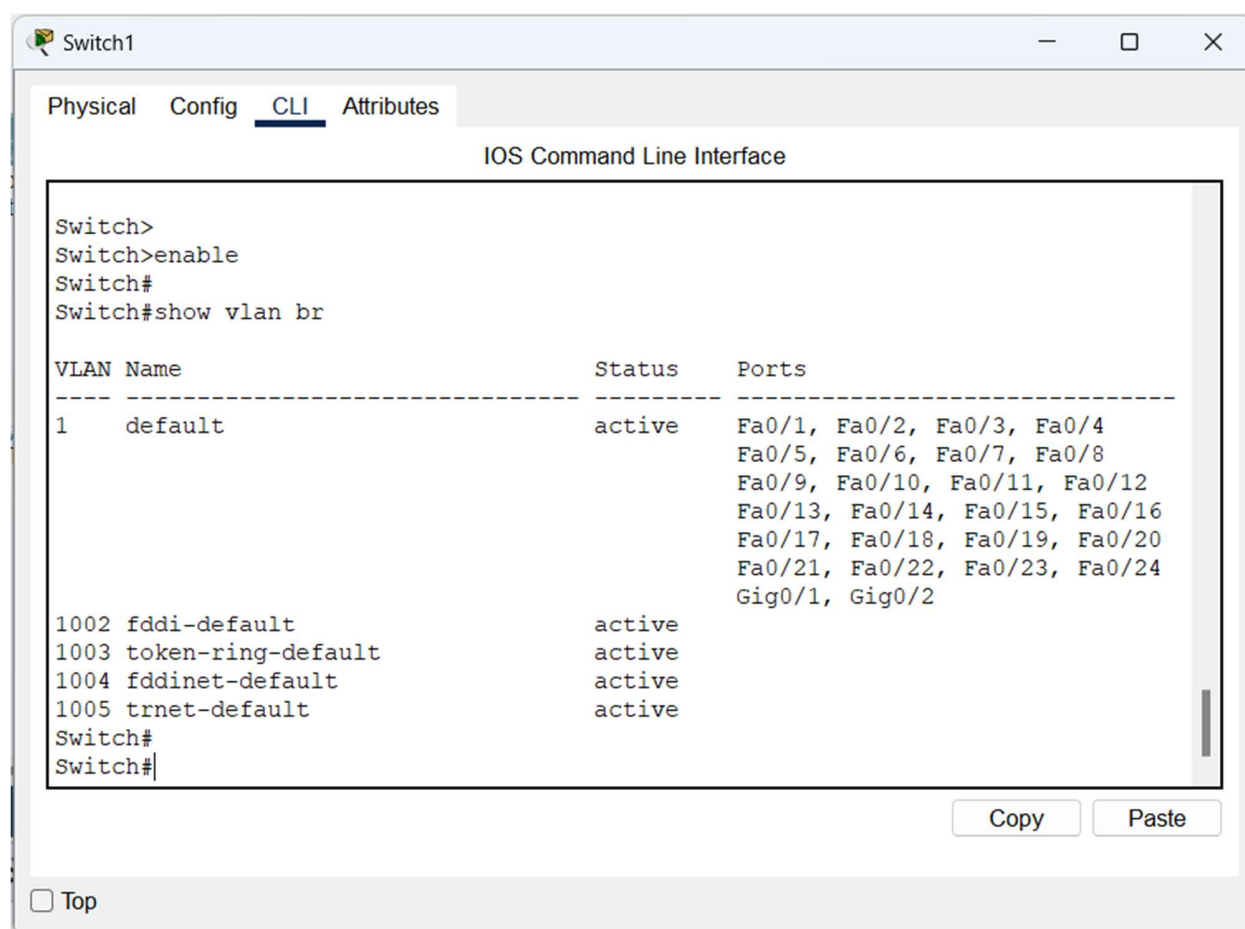
Step 2: First, we need to configure the IP address for all devices (PC) and assured that all devices has same network address. For example, if you choose the class B and network address 128.0 then for all the PC first two byte of address must be the same for connectivity.



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Step 3: Open on router and click on the CLI tab to access the (command line interface) for configuring the router.

Enter the "enable" command to switch from user mode to privilege mode, then use the "show vlan br" command to see the list of virtual LAN.




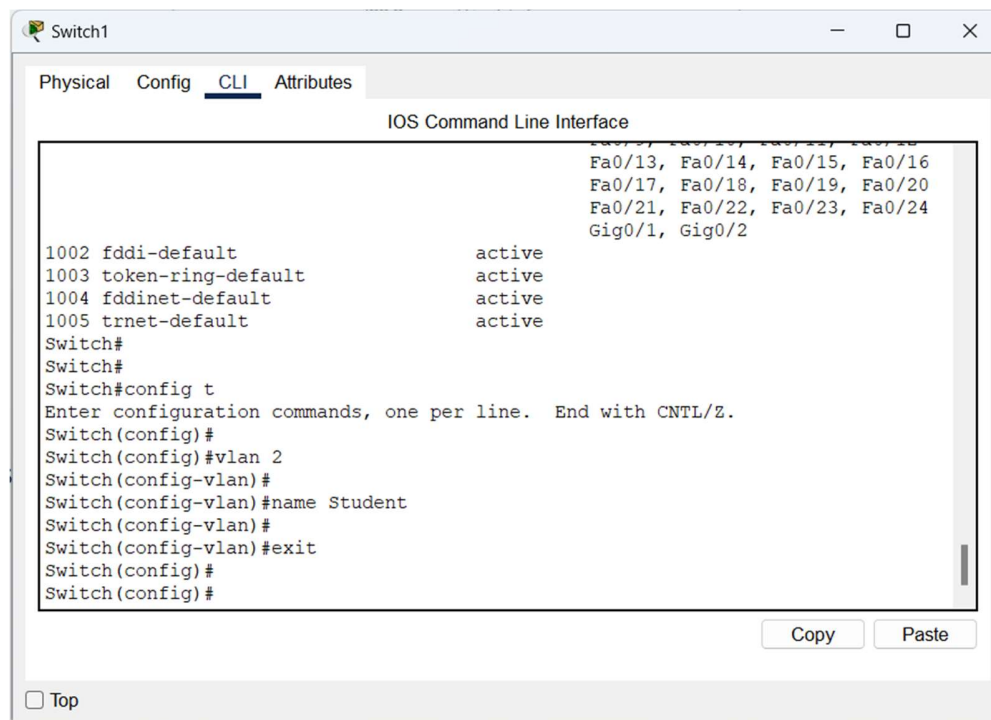
In Picture we can see that the by default one VLAN is there with name default, id 1 and access of all ports.

Step 4: Enter "configure terminal" or "config t" command to switch from privilege mode to configuration mode.

In configuration mode, enter "vlan 2" command to create VLAN with given vlan id.

Enter "name vlan_name" command to give name to created VLAN.

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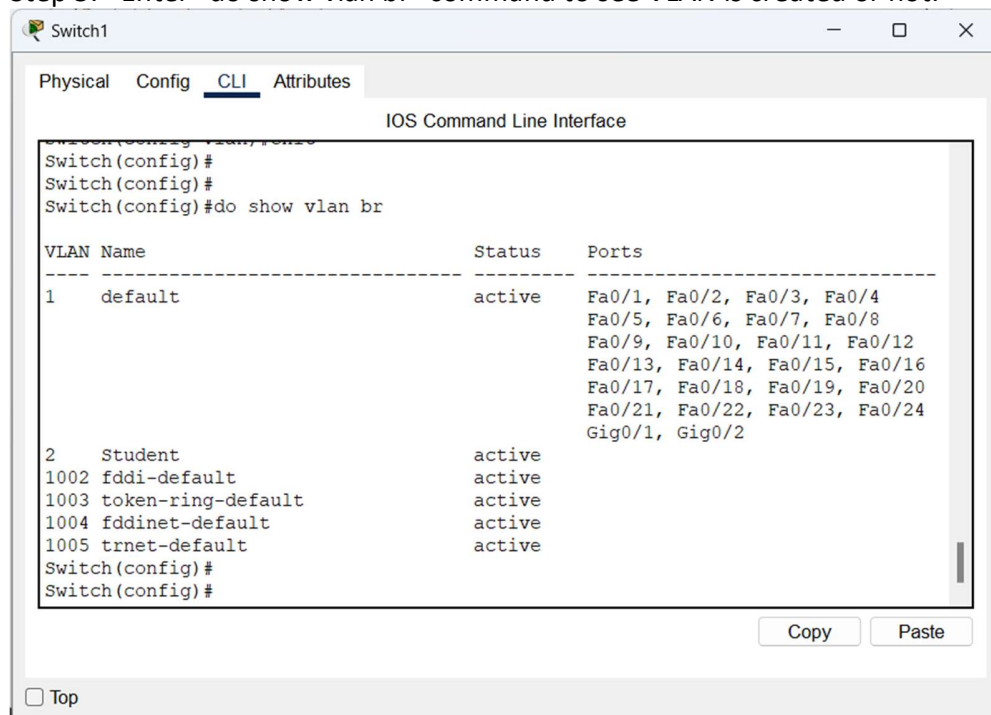


```

Switch1
Physical Config CLI Attributes
IOS Command Line Interface
Fa0/13, Fa0/14, Fa0/15, Fa0/16
Fa0/17, Fa0/18, Fa0/19, Fa0/20
Fa0/21, Fa0/22, Fa0/23, Fa0/24
Gig0/1, Gig0/2
1002 fddi-default          active
1003 token-ring-default    active
1004 fddinet-default       active
1005 trnet-default         active
Switch#
Switch#
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#
Switch(config)#vlan 2
Switch(config-vlan)#
Switch(config-vlan)#name Student
Switch(config-vlan)#
Switch(config-vlan)#exit
Switch(config)#
Switch(config)#
Copy Paste
Top

```


Step 5: Enter "do show vlan br" command to see VLAN is created or not.



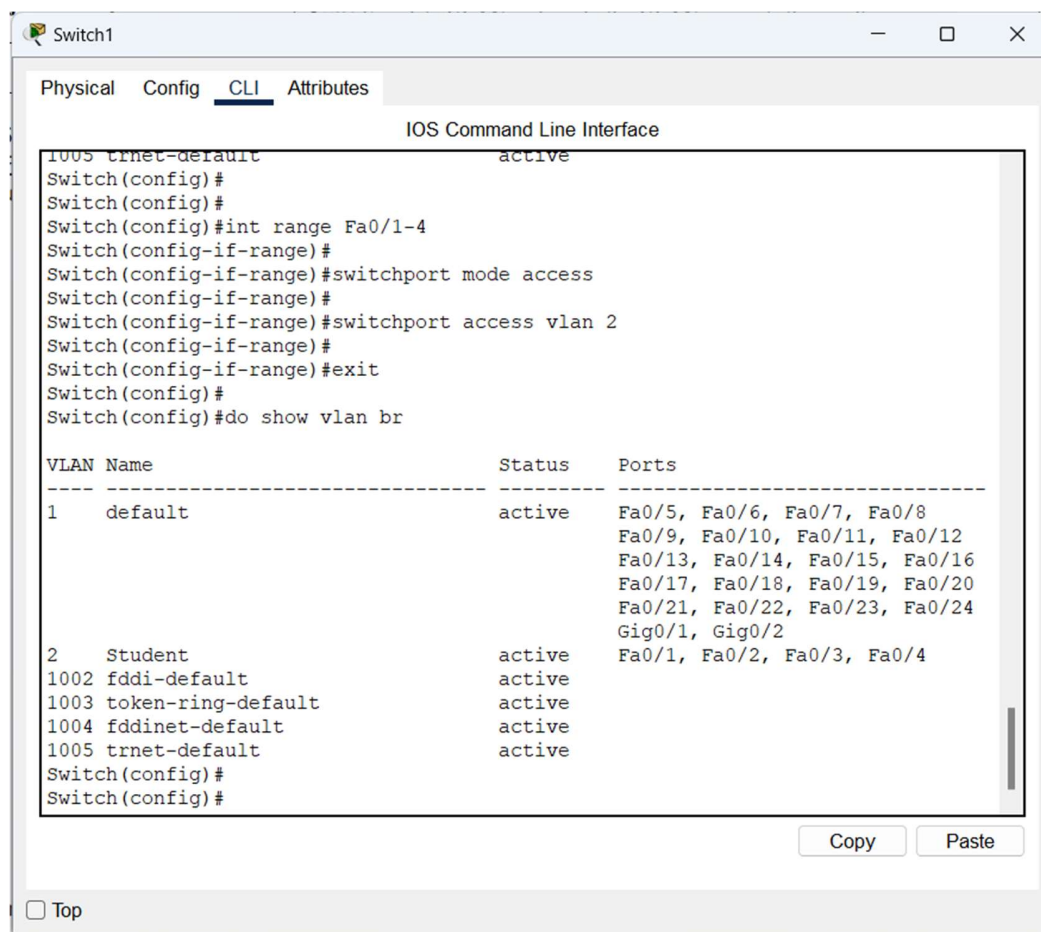
```

Switch1
Physical Config CLI Attributes
IOS Command Line Interface
Switch(config)#
Switch(config)#
Switch(config)#do show vlan br
VLAN Name                Status    Ports
-----
1    default                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                           Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                           Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                           Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                           Gig0/1, Gig0/2
2    Student                active
1002 fddi-default          active
1003 token-ring-default    active
1004 fddinet-default       active
1005 trnet-default         active
Switch(config)#
Switch(config)#
Copy Paste
Top

```

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Step 6: Enter "int range Fa0/1-4" command to define port for VLAN with given port.
Enter "switchport mode access" command to configure ports as accessline mode.
Enter "switchport access vlan 2" command to assign accessline ports to given VLAN.
Enter "exit" command to go one mode back.
Enter "do show vlan br" command to see ports assigned to VLAN or not.




```

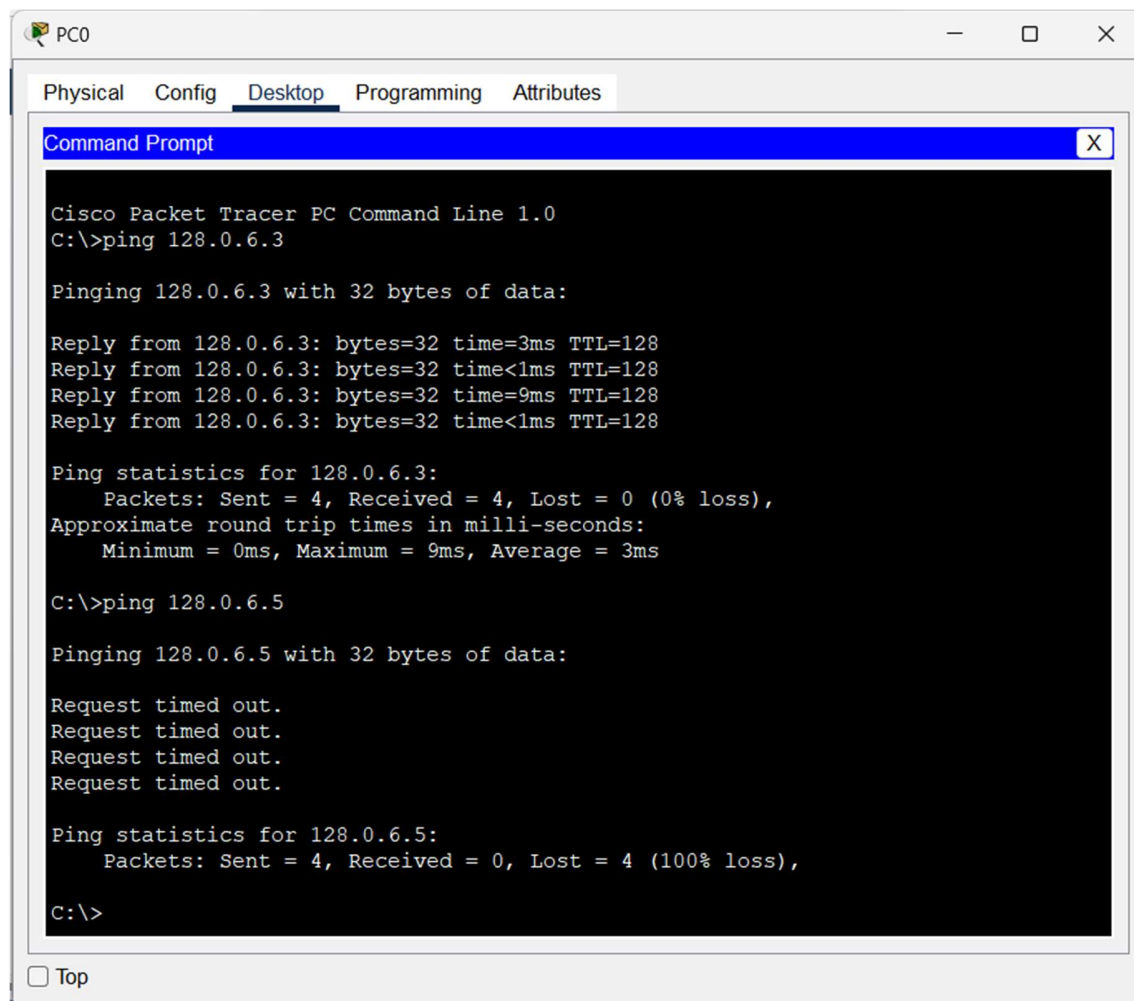
Switch1
Physical Config CLI Attributes
IOS Command Line Interface
1005 trnet-default active
Switch(config)#
Switch(config)#
Switch(config)#int range Fa0/1-4
Switch(config-if-range)#
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#
Switch(config-if-range)#switchport access vlan 2
Switch(config-if-range)#
Switch(config-if-range)#exit
Switch(config)#
Switch(config)#do show vlan br
VLAN Name                Status    Ports
-----
1    default                active    Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                           Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                           Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                           Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                           Gig0/1, Gig0/2
2    Student                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
1002 fddi-default         active
1003 token-ring-default   active
1004 fddinet-default       active
1005 trnet-default         active
Switch(config)#
Switch(config)#
Copy Paste
Top

```

In above we can see that ports Fa0/1 to Fa0/4 are configured to VLAN 2 (Student).

Step 7: Now for checking the connectivity of PC1 we go to the command prompt of PC1 and use the command ping and that destination ip which is in VLAN of PC1's ip. "ping 128.0.0.5" for my task.
For Testing network of VLAN we test ping.

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```

PC0
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 128.0.6.3

Pinging 128.0.6.3 with 32 bytes of data:

Reply from 128.0.6.3: bytes=32 time=3ms TTL=128
Reply from 128.0.6.3: bytes=32 time<1ms TTL=128
Reply from 128.0.6.3: bytes=32 time=9ms TTL=128
Reply from 128.0.6.3: bytes=32 time<1ms TTL=128

Ping statistics for 128.0.6.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 9ms, Average = 3ms

C:\>ping 128.0.6.5

Pinging 128.0.6.5 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 128.0.6.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
  
```

Here, PC0 and PC1 is connected because they are in same VLAN called Student and PC1 and PC2 show Request timed out because there are not in same VLAN.

Conclusion:

Through this experiment, I learned how to create VLAN and how to assign range of ports to that VLAN and make those ports to accessline. Using VLAN we can create subnetwork in network using ports.