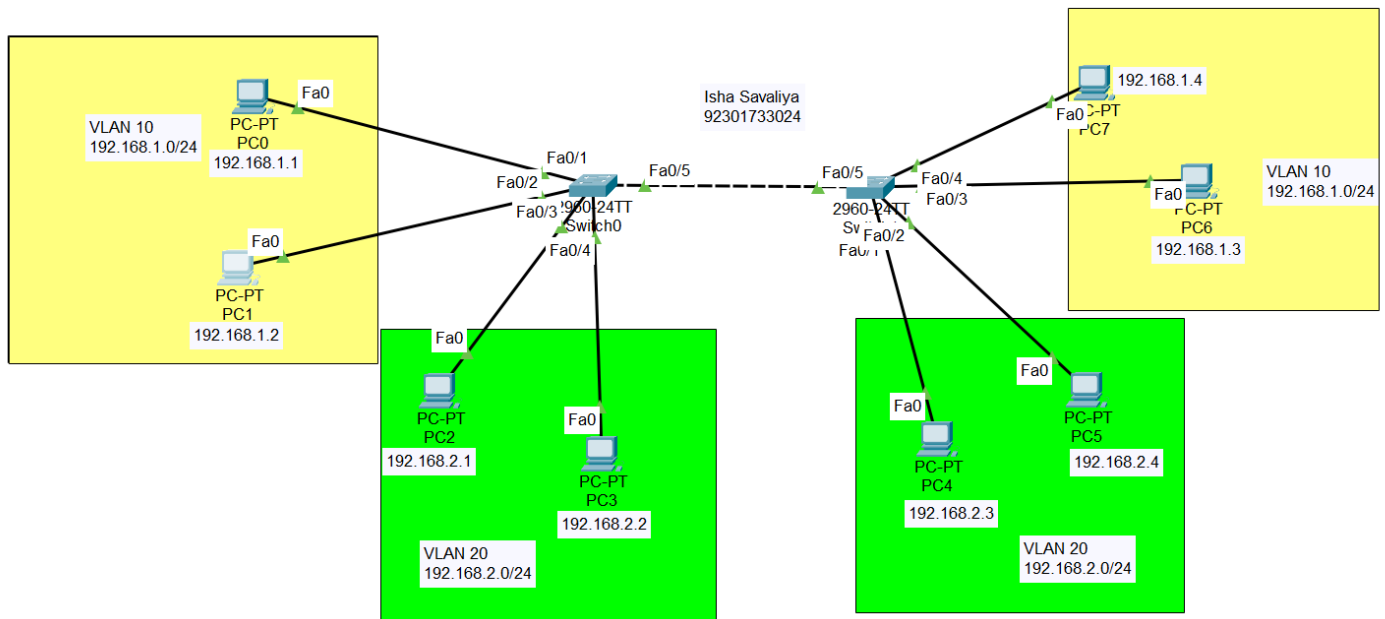
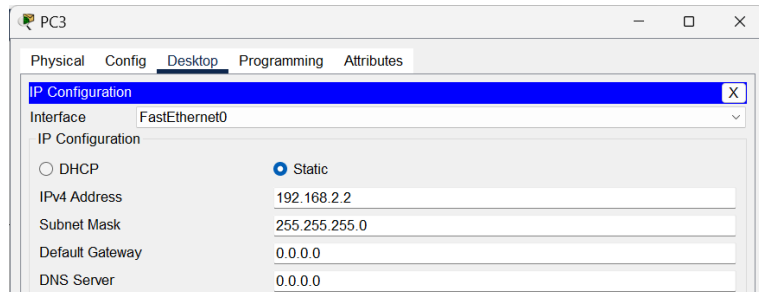
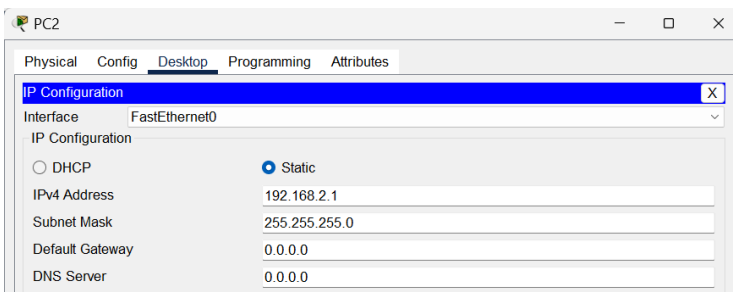
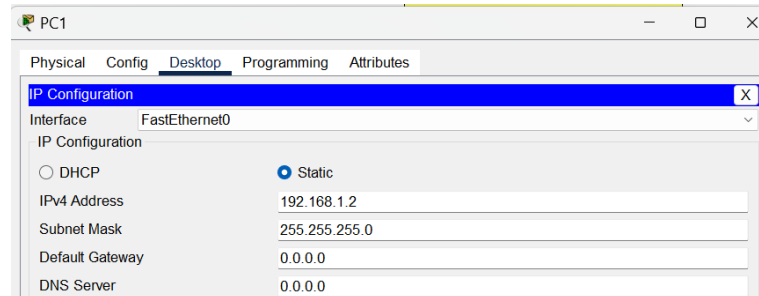
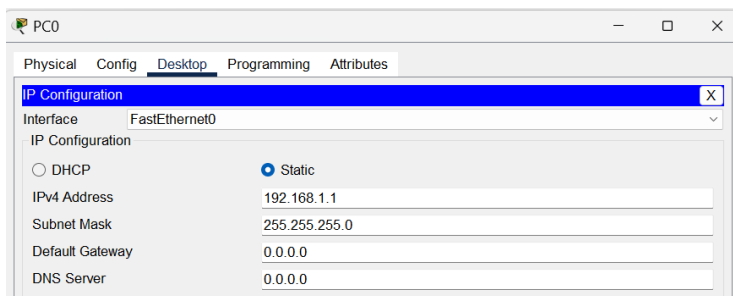

 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Simulate VLAN and verify the VLAN concepts the results.	
Experiment No: 10	Date: 08-11-2025	Enrolment No: 92301733024

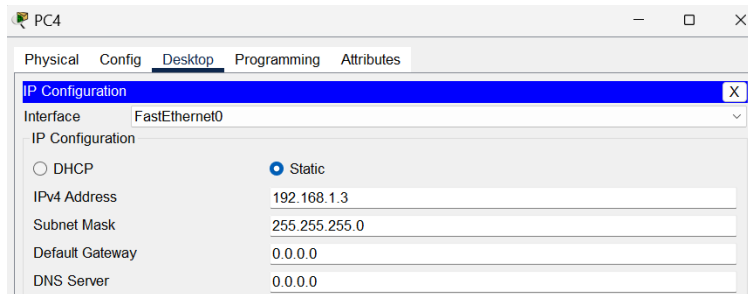
Step – 1:- Open Cisco Packet Tracer and take 2 switches and 8 PCs. Connect all the PCs to the switches using copper straight-through cables, and connect the two switches using a copper cross-over cable.



Step – 2 :- Assign IP addresses to all the PCs.

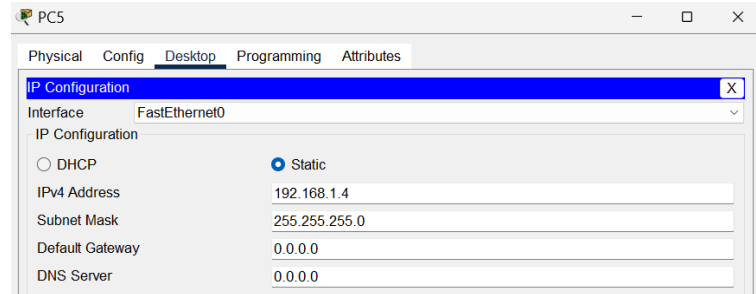


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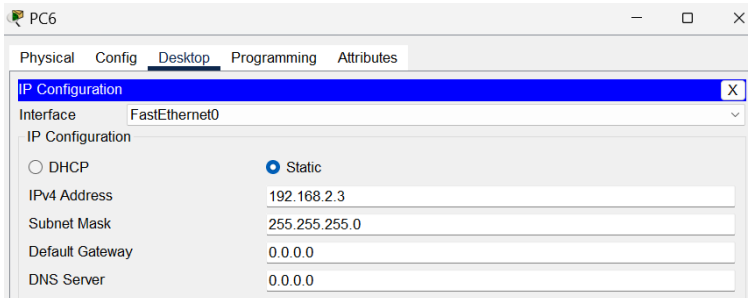
PC4 IP Configuration window showing Static IP configuration for FastEthernet0:

- Interface: FastEthernet0
- IP Configuration: Static (selected)
- IPv4 Address: 192.168.1.3
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0



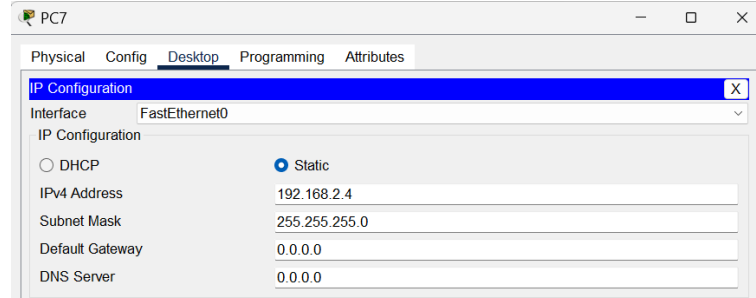
PC5 IP Configuration window showing Static IP configuration for FastEthernet0:

- Interface: FastEthernet0
- IP Configuration: Static (selected)
- IPv4 Address: 192.168.1.4
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0



PC6 IP Configuration window showing Static IP configuration for FastEthernet0:

- Interface: FastEthernet0
- IP Configuration: Static (selected)
- IPv4 Address: 192.168.2.3
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0



PC7 IP Configuration window showing Static IP configuration for FastEthernet0:


- Interface: FastEthernet0
- IP Configuration: Static (selected)
- IPv4 Address: 192.168.2.4
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

Step – 3 :- Click on switch0 and open the CLI to access the Command Line Interface of the switch.

```
Switch>en
Switch#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
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

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

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Step – 4:- Now we will assign the Ports to VLAN for switch0.

```
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name VLAN 10
^
% Invalid input detected at '^' marker.

Switch(config-vlan)#name VLAN10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name VLAN20
Switch(config-vlan)#exit
Switch(config)#int range Fa0/1-2
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#int range Fa0/3-4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#exit
Switch(config)#interface Fa0/5
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up


Switch(config-if)#exit
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#
```

```
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#do show vlan br
```

VLAN Name	Status	Ports
1 default	active	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
10 VLAN10	active	Fa0/1, Fa0/2
20 VLAN20	active	Fa0/3, Fa0/4
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

Switch(config)#

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Step – 5:- Now we will assign the Ports to VLAN for switch1.


```
Switch>en
Switch#show vlan br
```

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 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
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

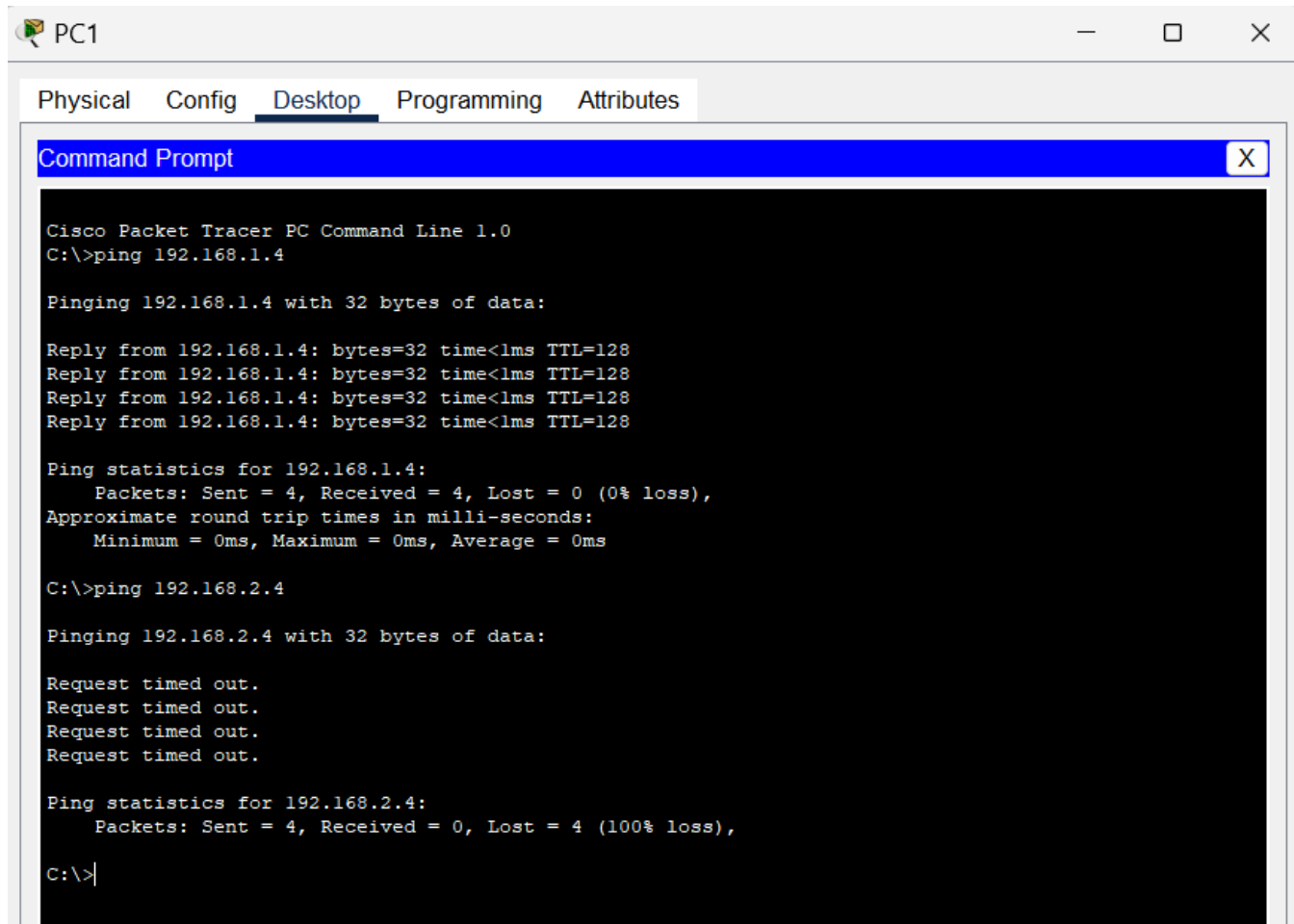
```
Switch#
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name VLAN10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name VLAN20
Switch(config-vlan)#exit
Switch(config)#int range Fa0/3-4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#int range Fa0/1-2
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#exit
Switch(config)#interface Fa0/5
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#do show vlan br
```

VLAN	Name	Status	Ports
1	default	active	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
10	VLAN10	active	Fa0/3, Fa0/4
20	VLAN20	active	Fa0/1, Fa0/2
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
Switch(config)#
```

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Step – 6 :- Now we will check the connectivity between the two PC's in the same and different VLAN.



```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.2.4

Pinging 192.168.2.4 with 32 bytes of data:

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

Ping statistics for 192.168.2.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>

```

The packet is lost because the PC's are not in the same VLAN.

Conclusion:-

In this experiment, We saw that computers in the same VLAN can easily communicate with each other, but those in different VLANs cannot. This shows how VLANs help in dividing a network into smaller parts to make it more organized, secure, and efficient.