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Ex. No:	5
Date of Submission	03/01/25
Name of the Experiment	Configuration of Intra VLAN network
Google Drive link of the packet tracer file (give view permission):	<a href="https://drive.google.com/drive/folders/18IaojBmTzttkbO8jTWXaJcnv-cEISo8z?usp=drive_link">https://drive.google.com/drive/folders/18IaojBmTzttkbO8jTWXaJcnv-cEISo8z?usp=drive_link</a>

### Objective(s):

To design and implement Intra VLAN using switch configuration

### Introduction:

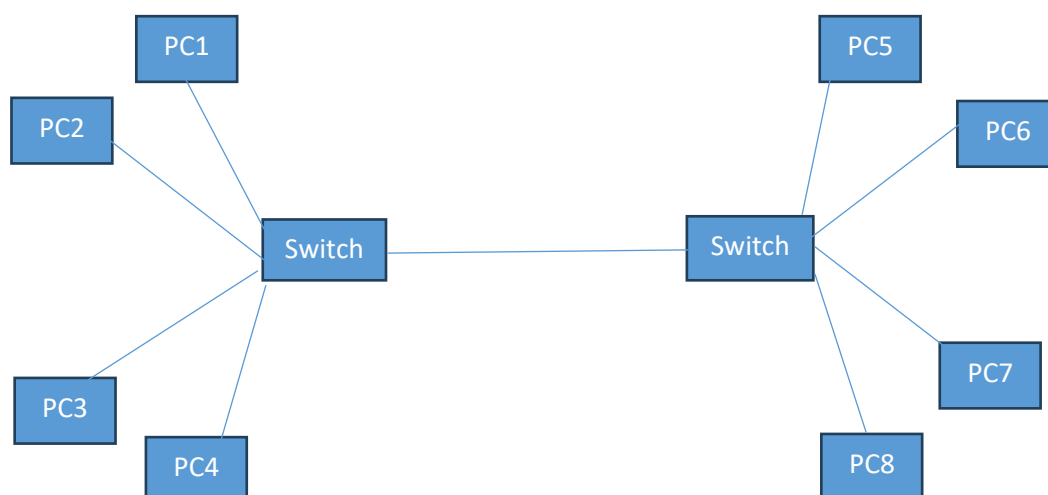
A VLAN is a group of devices on one or more LANs that are configured to communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments. Because VLANs are based on logical instead of physical connections, they are extremely flexible.

VLANs define broadcast domains in a Layer 2 network. A broadcast domain is the set of all devices that will receive broadcast frames originating from any device within the set. Broadcast domains are typically bounded by routers because routers do not forward broadcast frames. Layer 2 switches create broadcast domains based on the configuration of the switch. Switches are multiport bridges that allow you to create multiple broadcast domains. Each broadcast domain is like a distinct virtual bridge within a switch. Design the above-mentioned topologies and verify the connectivity.

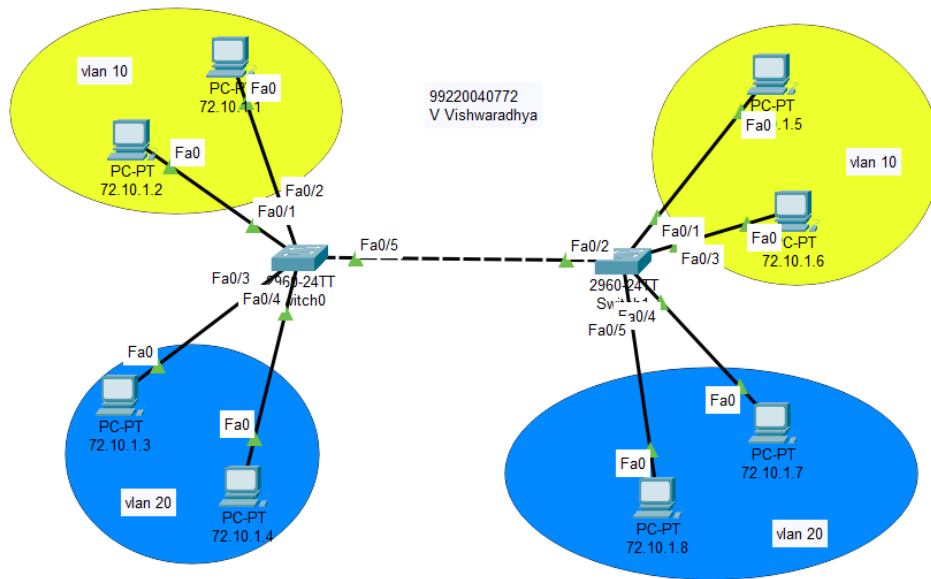
### 1. Device Requirements:

1. PC
2. Switch (2960-24TT)
3. Cables (copper straight, copper cross-over)

### 2. Network Diagram for your experiment (draw the diagram either hand drawing/ms paint or any other drawing tools)



### 3. Network Diagram (Packet tracer diagram before configuration):



### 4. Configuration details:

Device Name	Interface Name	IP Address	Subnet mask
PC1	FastEthernet0/2	72.10.1.1	255.0.0.0
PC2	FastEthernet0/1	72.10.1.2	255.0.0.0
PC3	FastEthernet0/3	72.10.1.3	255.0.0.0
PC4	FastEthernet0/4	72.10.1.4	255.0.0.0
PC5	FastEthernet0/1	72.10.1.5	255.0.0.0
PC6	FastEthernet0/3	72.10.1.6	255.0.0.0
PC7	FastEthernet0/4	72.10.1.7	255.0.0.0
PC8	FastEthernet0/5	72.10.1.8	255.0.0.0

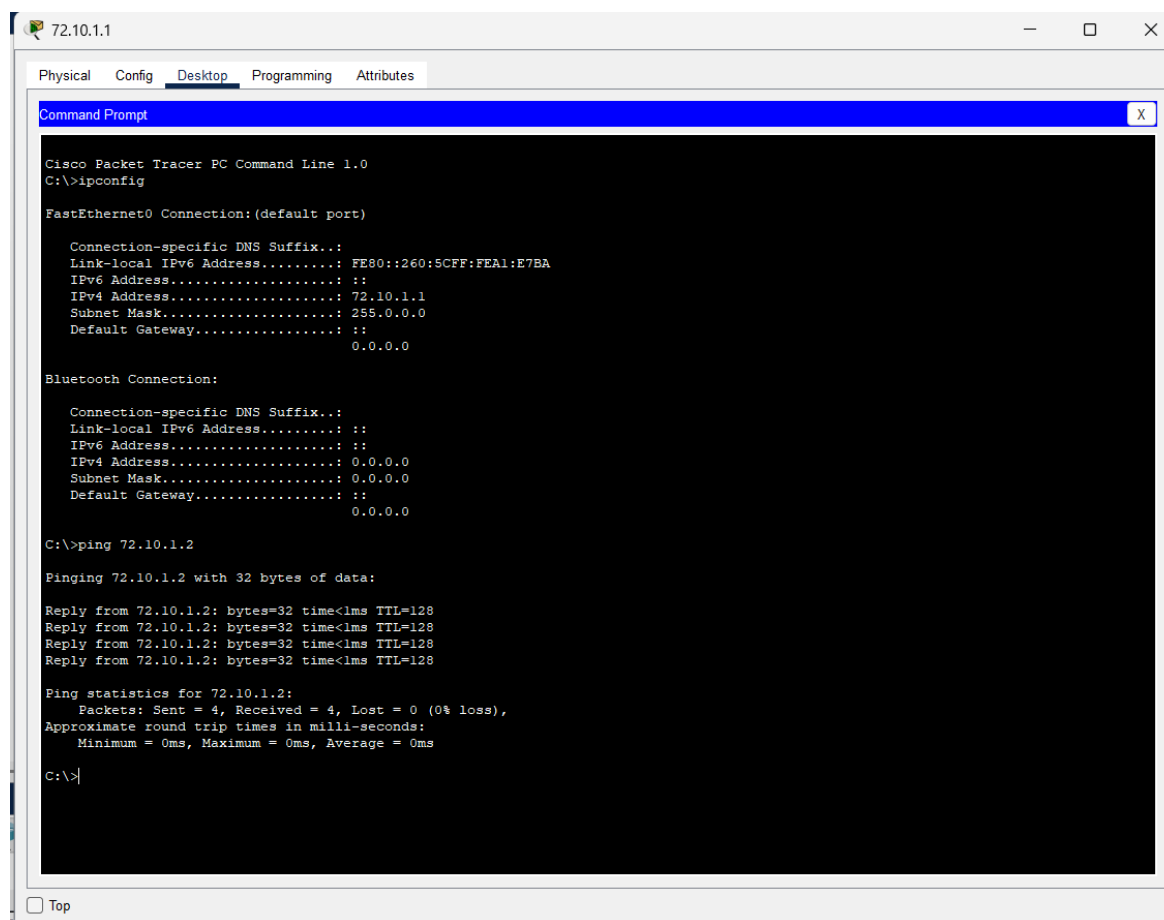
### 5. Describe step by step configuration steps properly (you may copy the commands used in the configuration tab and paste it.)

1. Create VLANs
2. Configure interfaces
3. Configure trunking

## Configuration Commands for Intra VLAN network on Switch:

1. enable
2. show vlan
3. configure terminal
4. vlan 10
5. Ctrl Z
6. vlan 20
7. Ctrl Z
8. show vlan
9. interface fastEthernet 0/ [interface Number]
10. switchport mode access
11. switchport access vlan [vlan name]
12. enable (On switch 1 and 2)
13. configure terminal
14. interface fastEthernet 0/ [interface Number]
15. switchport mode trunk

## 6. Output Diagram (Minimum 3 screenshot):



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device named 72.10.1.1. The window has tabs for Physical, Config, Desktop, Programming, and Attributes, with Desktop selected. The Command Prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::260:5CFF:FEA1:E7BA
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 72.10.1.1
    Subnet Mask . . . . .: 255.0.0.0
    Default Gateway . . . . .: ::
                                0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
                                0.0.0.0

C:\>ping 72.10.1.2

Pinging 72.10.1.2 with 32 bytes of data:

Reply from 72.10.1.2: bytes=32 time<1ms TTL=128
Reply from 72.10.1.2: bytes=32 time<1ms TTL=128
Reply from 72.10.1.2: bytes=32 time<1ms TTL=128
Reply from 72.10.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 72.10.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

At the bottom left of the window, there is a checkbox labeled "Top" which is currently unchecked.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::2E0:B0FF:FE1D:6AE6
    IPv6 Address.....: ::
    IPv4 Address.....: 72.10.1.2
    Subnet Mask.....: 255.0.0.0
    Default Gateway.....: ::
                        0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
                        0.0.0.0

C:\>ping 72.10.1.3

Pinging 72.10.1.3 with 32 bytes of data:

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

Ping statistics for 72.10.1.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

**Different VLAN – Request timed out.**

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::210:11FF:FE95:3797
    IPv6 Address.....: ::
    IPv4 Address.....: 72.10.1.5
    Subnet Mask.....: 255.0.0.0
    Default Gateway.....: ::
                        0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
                        0.0.0.0

C:\>ping 72.10.1.1

Pinging 72.10.1.1 with 32 bytes of data:

Reply from 72.10.1.1: bytes=32 time<1ms TTL=128
Reply from 72.10.1.1: bytes=32 time<1ms TTL=128
Reply from 72.10.1.1: bytes=32 time<1ms TTL=128
Reply from 72.10.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 72.10.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

**Same VLAN – Ping Successful**

**Rubrics for Experiment Assessment:**

<b>Rubrics</b>	<b>Good</b>	<b>Normal</b>	<b>Poor</b>	<b>Marks</b>
<b>Creation of Topology (4)</b>	Created the topology, identified the proper devices, and made the connections <b>(4)</b> .	Created the topology, identified the proper devices, and made the connections. But missing some features <b>(3)</b>	Created the wrong topology, failed to identify the proper devices, and made connections <b>(1)</b>	
<b>Verify the connectivity (4)</b>	Verified the connectivity in all the levels <b>(4)</b>	Verified the connectivity at some levels (only some nodes) <b>(2)</b>	Verified the connectivity is not done. <b>(1)</b>	
<b>Timely Completion (2)</b>	Completed the lab before the allotted time <b>(2)</b>	Completed the lab after the deadline <b>(1)</b>	Did not submit before grading <b>(0)</b>	
<b>Total</b>				

**CONCLUSION (provide a conclusion about this experiment):**

Thus, the process for creating intra VLAN network using Cisco Packet Tracer has done successfully.