ASSIGNMENT 5

AIM:

Study and implementation of VLAN using Cisco packet tracer.

THEORY:

VLAN is the abbreviation for Virtual LAN, i.e. Virtual Local Area Network. This is a custom network we create from one or more existing LANs. It enables a group of devices from multiple networks (both wired and wireless) to be combined into a single Logical network. The result is a VLAN that can be administered like a physical area network. The network equipment like routers or switches must support the VLAN configurations to create a VLAN.

Advantages of VLANs:

- **Security:** VLANs come with extra security because users of the same group can send broadcast messages with an assurance that users from another group will not receive that broadcast message.

- **Time and Cost Reduction:** It can reduce the migration cost of stations because it is a lot easier and quicker to migrate using the software.

OUTPUT:
Implementation:

PC1
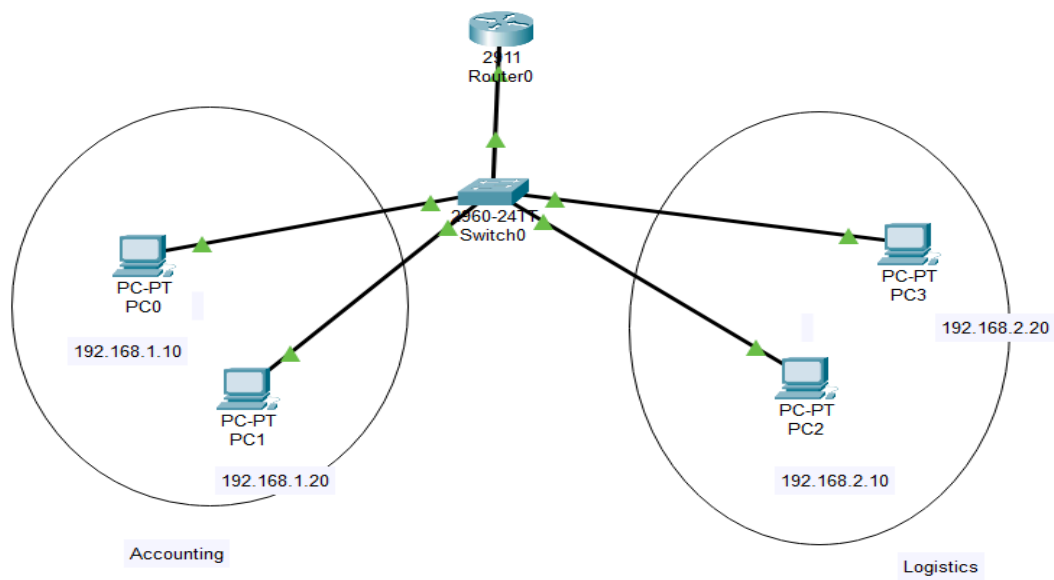
Physical   Config   Desktop   Programming   Attributes

IP Configuration   X

Interface   FastEthernet0   ⌄

IP Configuration

○ DHCP   ● Static

IPv4 Address   192.168.1.20

Subnet Mask   255.255.255.0

Default Gateway   192.168.1.1

DNS Server   0.0.0.0

IPv6 Configuration

○ Automatic   ● Static

IPv6 Address   /

Link Local Address   FE80::201:C7FF:FE15:503E

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication   MD5   ⌄

Username

Password

Switch0

Physical   Config   CLI   Attributes

GLOBAL	VLAN Configuration		

Settings

Algorithm Settings

SWITCHING

VLAN Number

VLAN Name

VLAN Database

INTERFACE

FastEthernet0/1

FastEthernet0/2

FastEthernet0/3

FastEthernet0/4

FastEthernet0/5

FastEthernet0/6

FastEthernet0/7

FastEthernet0/8

FastEthernet0/9
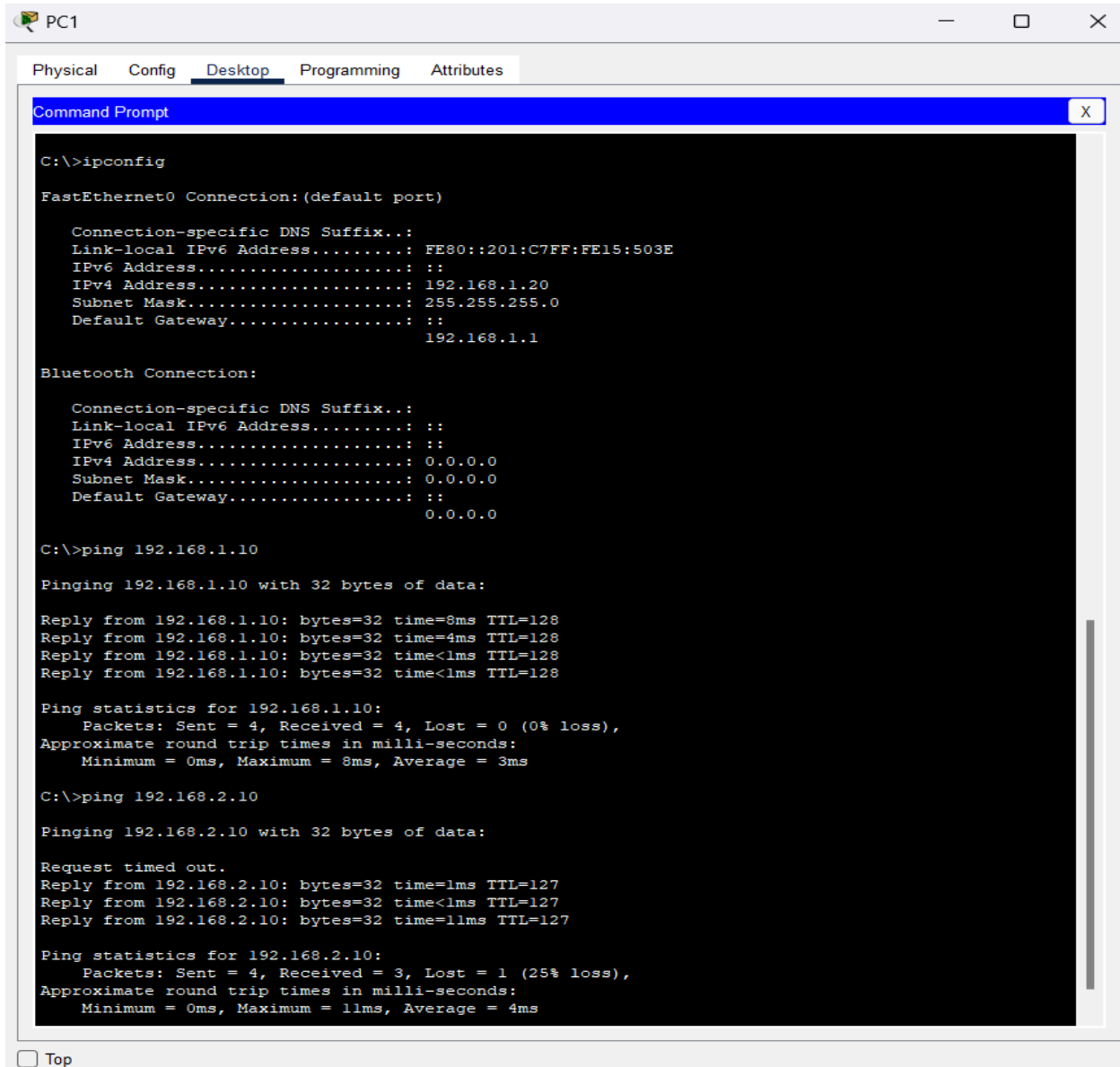
FastEthernet0/10

FastEthernet0/11

FastEthernet0/12

Add   Remove

VLAN No	VLAN Name
1	default
10	ACCT
20	LOGS
1002	fddi-default
1003	token-ring-default
1004	fddinet-default
1005	trnet-default

PC1 — □ ✕

Physical   Config   Desktop   Programming   Attributes

Command Prompt   X

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::201:C7FF:FE15:503E
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.20
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     192.168.1.1

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 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time=8ms TTL=128
Reply from 192.168.1.10: bytes=32 time=4ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 8ms, Average = 3ms

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.10: bytes=32 time=1ms TTL=127
Reply from 192.168.2.10: bytes=32 time<1ms TTL=127
Reply from 192.168.2.10: bytes=32 time=11ms TTL=127

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 4ms
```
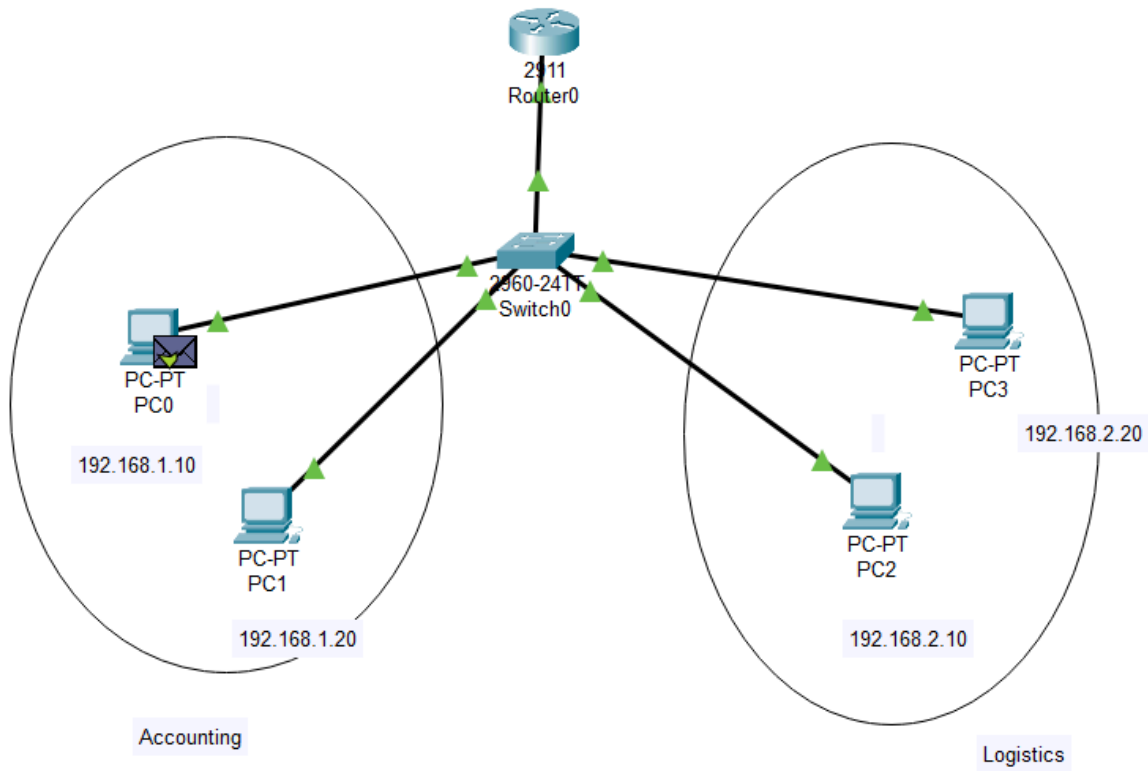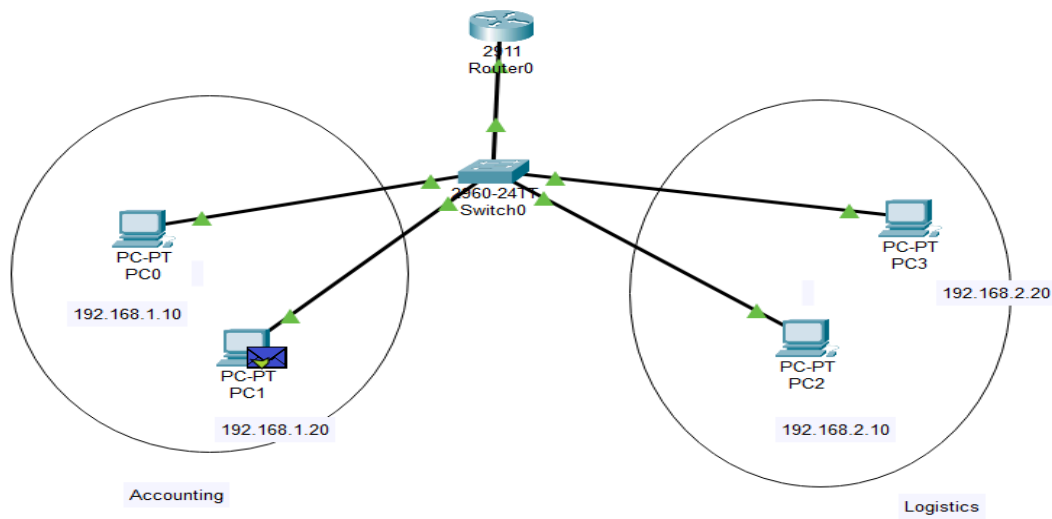
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1)Communication within VLAN:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete	
●	Successful	PC0	PC1	ICMP	■	0.000	N	0	(edit)		(delete)

2)Inter-VLAN Communication:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete	
●	Successful	PC1	PC2	ICMP	■	0.000	N	0	(edit)		(delete)

CONCLUSION:

In this assignment,I learnt about VLANs and implemented it in Cisco Packet Tracer.I also routed packets with the same VLAN and between different VLAN.