Exno : 04	ConfigurationofIntraVLANNetwork
Date:	
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Objective(s):

TodesignandimplementIntraVLANusingswitchconfiguration

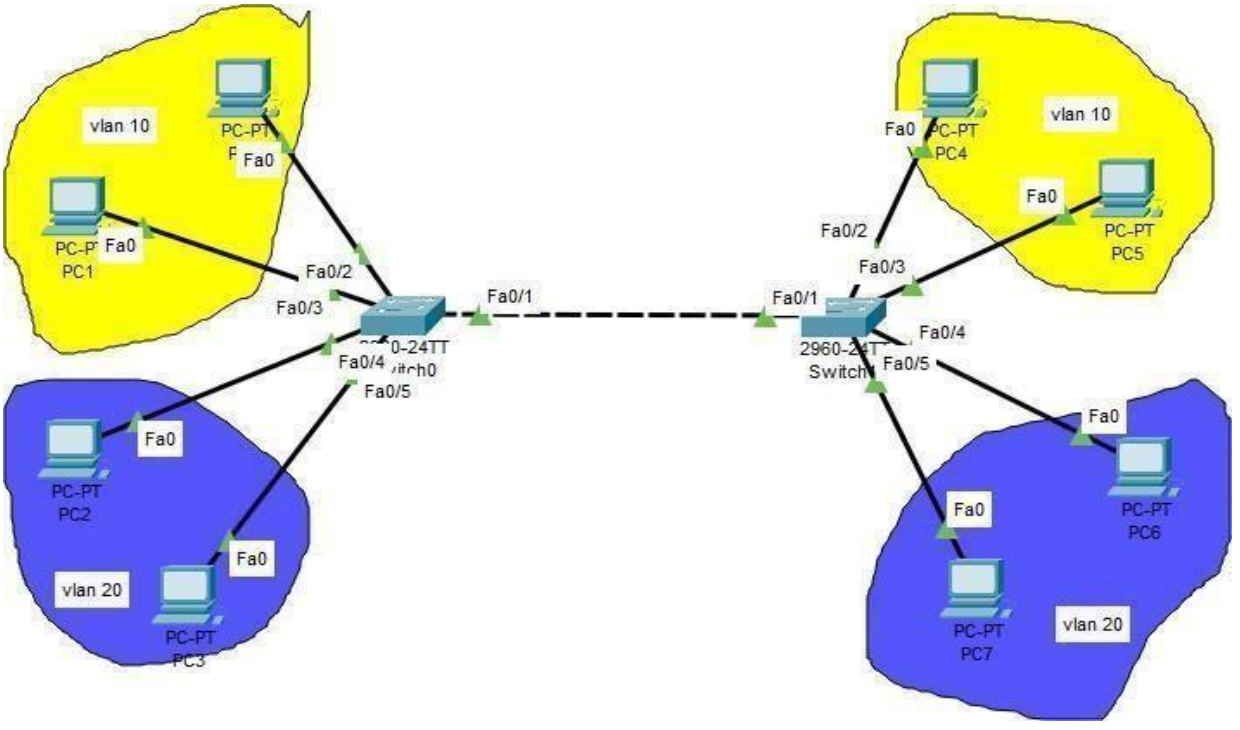
Introduction:

AVLANisagroupofdevicesononeormoreLANsthatareconfiguredtocommunicateasiftheywere attachedtothesamewire,wheninfacttheyarelocatedonanumberofdifferentLANsegments.Because VLANs are based on logical instead of physical connections, they are extremely flexible.

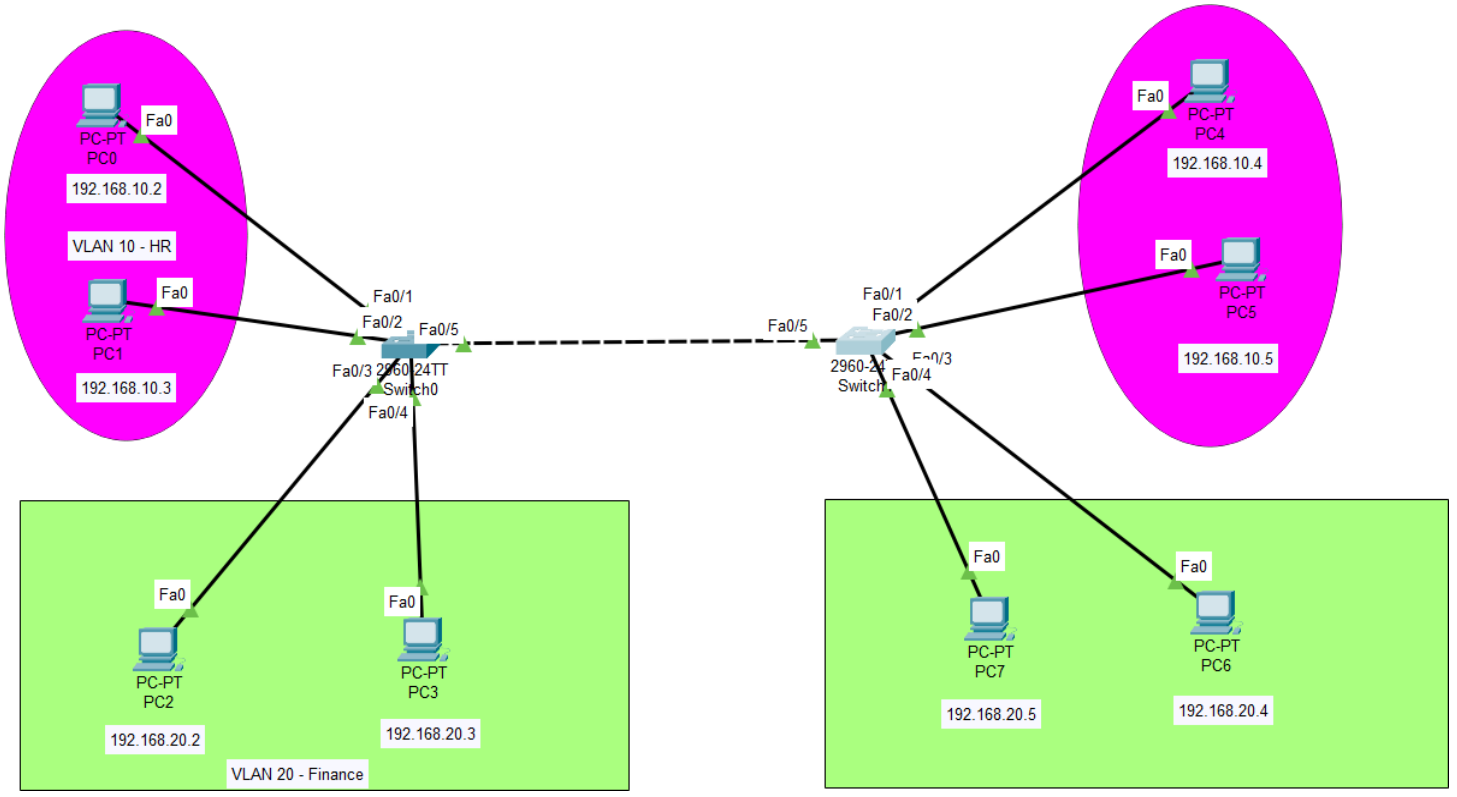
VLANsdefinebroadcastdomainsinaLayer2network.Abroadcastdomainisthesetofalldevicesthatwill receive broadcast frames originating from any device within the set. Broadcast domains are typically bounded by routers because routers do not forward broadcast frames. Layer 2 switches create broadcast domains based on the configurationoftheswitch.Switchesaremultiportbridgesthatallowyoutocreatemultiplebroadcastdomains. Each broadcast domain is like a distinct virtual bridge within a switch. Design the above mentioned topologies and verify the connectivity.

1. **DeviceRequirements:**
   1. Switch
   2. PC
   3. Wires

2. **NetworkDiagramforyourexperiment(drawthediagrameitherhanddrawing/mspaintoranyother drawingtools)**



3. **NetworkDiagram(Packettracerdiagrambeforeconfiguration):**



4. **Configurationdetails:**

DeviceName	InterfaceName	IP Address	Subnetmask
PC0	Fa0	198.168.10.2	255.255.255.0
PC1	Fa0	198.168.10.3	255.255.255.0
PC2	Fa0	198.168.20.2	255.255.255.0
PC3	Fa0	198.168.20.3	255.255.255.0
PC4	Fa0	198.168.10.4	255.255.255.0
PC5	Fa0	198.168.10.5	255.255.255.0
PC6	Fa0	198.168.20.4	255.255.255.0
PC7	Fa0	198.168.20.5	255.255.255.0
Switch0	Fa0/1-5		
Switch1	Fa0/1-5		

5. **Describestepbystepconfigurationstepsproperly(youmaycopythecommandsusedinthe configuration tab and paste it.)**

    1. **CreateVLANs**
    2. **Configureinterfaces**
    3. **Configuretrunking**

1. CreateVLANs,VLANsmustfirstbecreatedandassignedaname.

   Switch> enable

   Switch# configure terminal

   Switch(config)# vlan 10

   Switch(config-vlan)#nameHR

   Switch(config-vlan)# exit

2. AssignVLANstospecificswitchportsfortherespectivedepartmentsordevices.

   Switch(config)# interface FastEthernet0/1

   Switch(config-if)# switchport mode access

   Switch(config-if)# switchport access vlan 10

   Switch(config-if)# exit

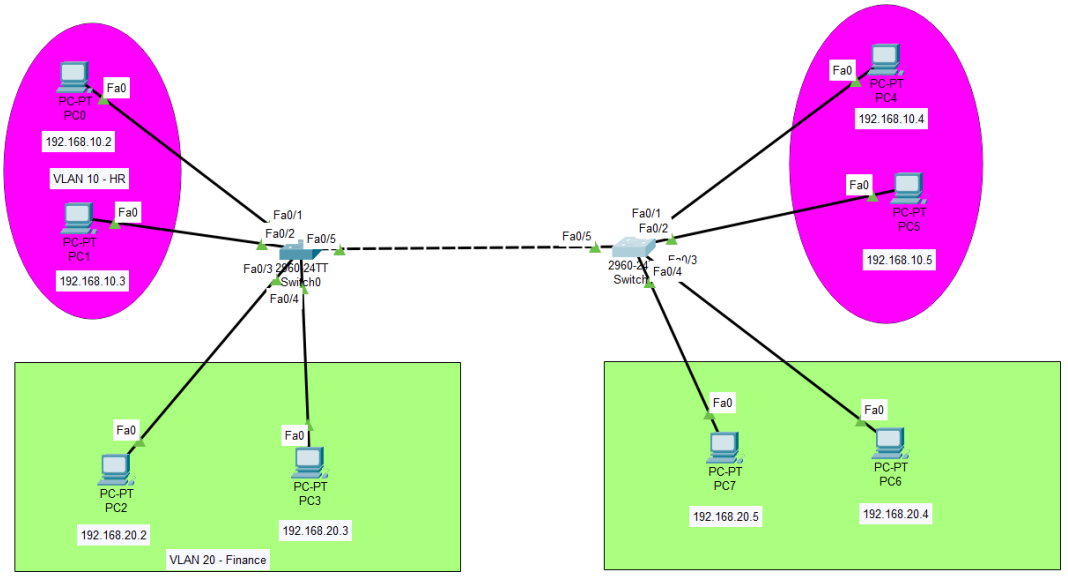
3. SetupatrunkporttoallowtrafficformultipleVLANstopassbetweenswitches.

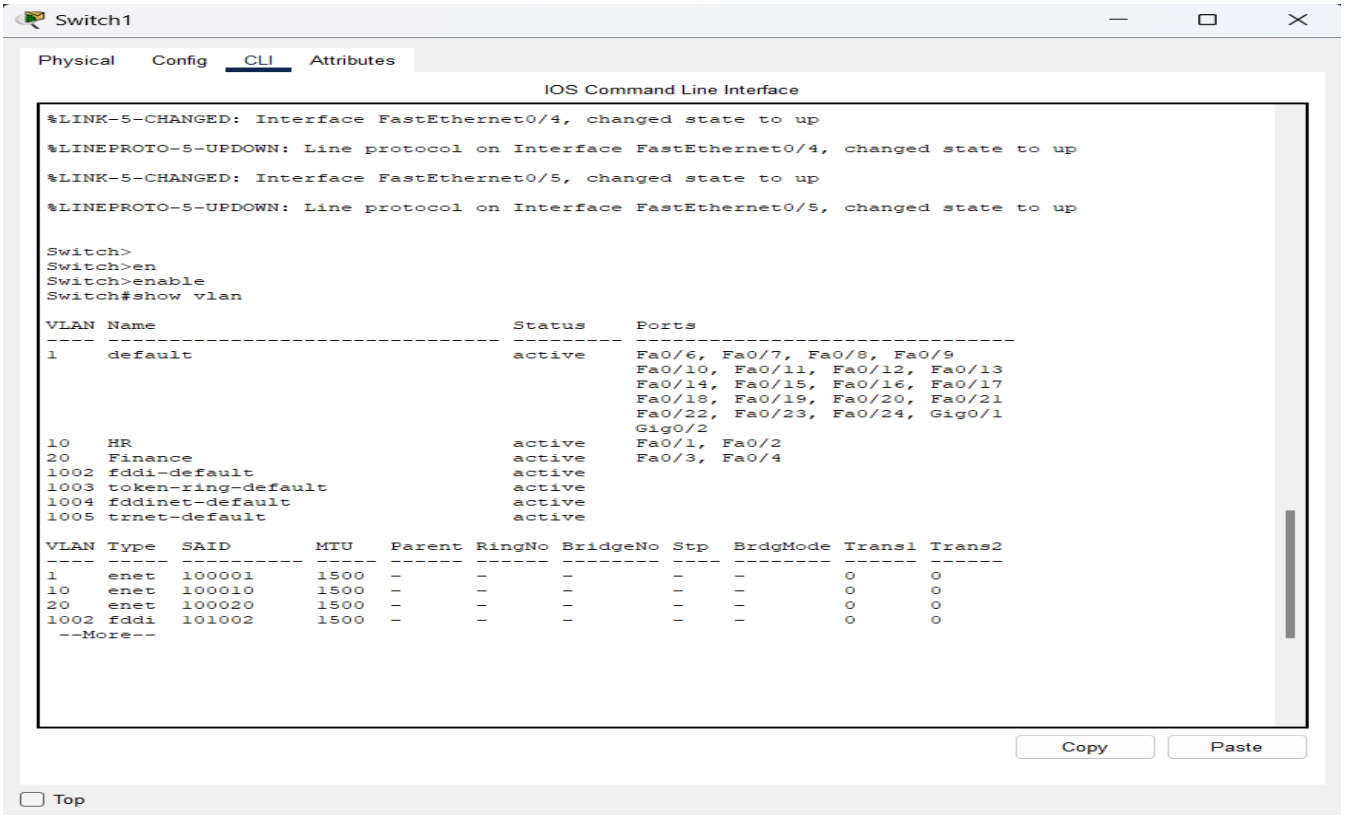
   Switch(config)# interface FastEthernet0/5

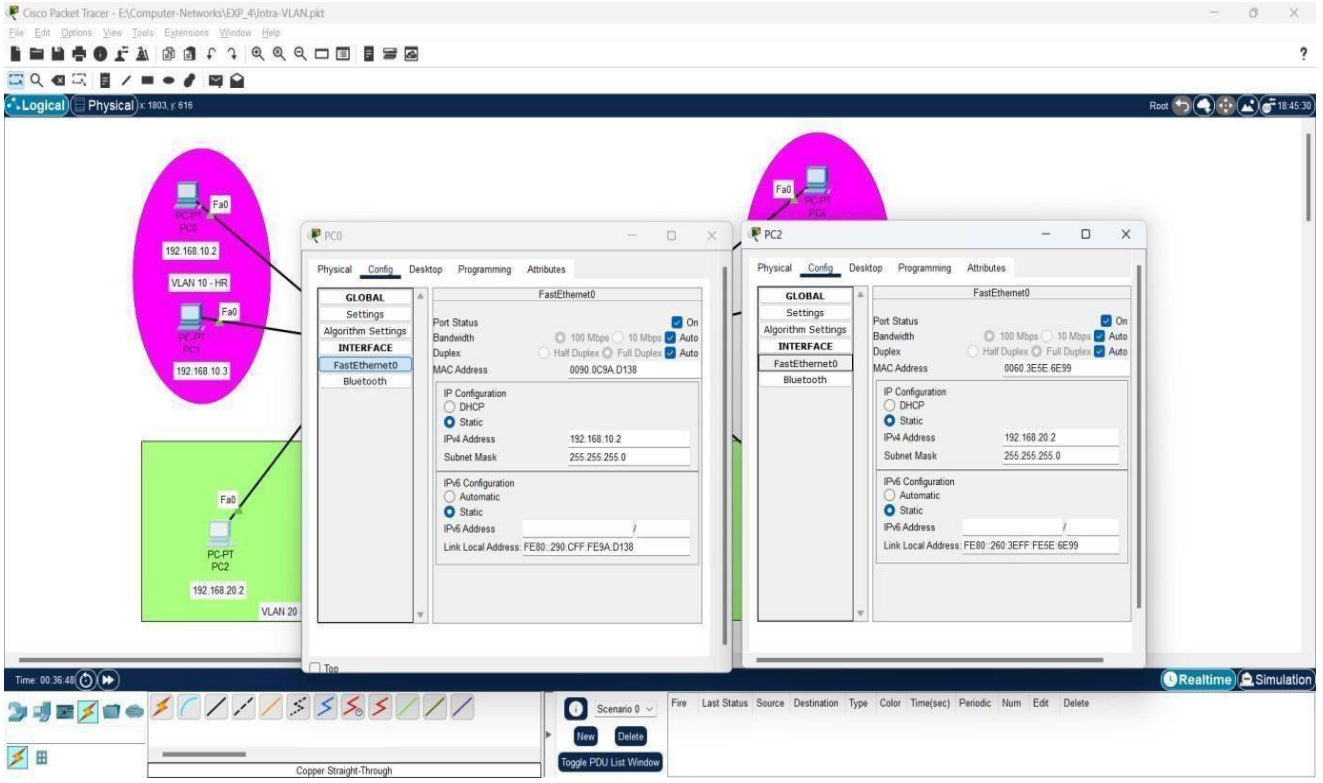
   Switch(config-if)#switchportmodetrunk

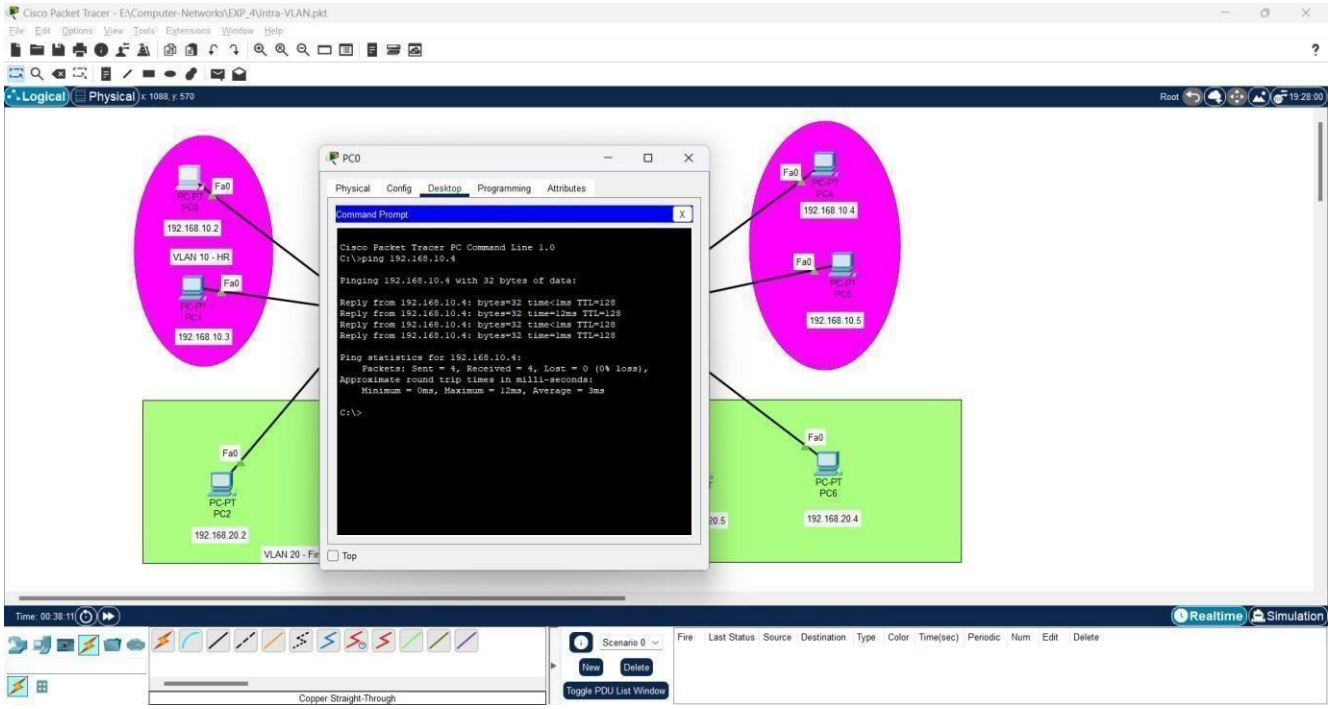
   Switch(config-if)# exit

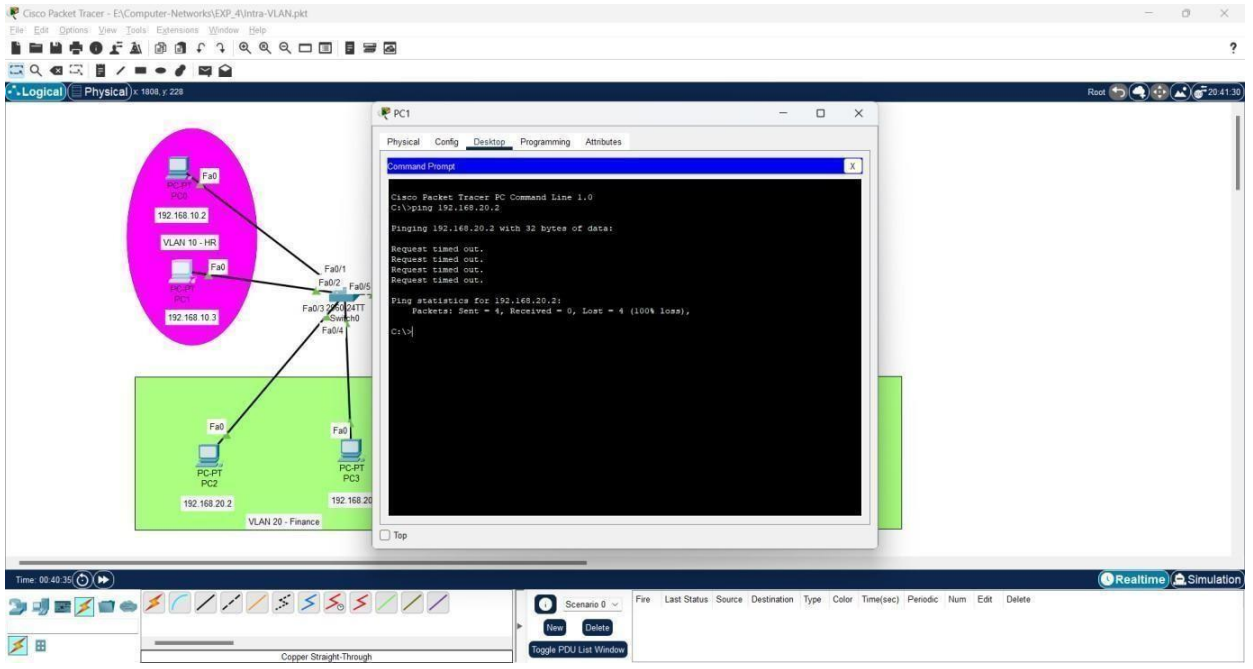
6. OutputDiagram(Minimum3screenshot):




Switch1
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up
Switch>
Switch>en
Switch>enable
Switch#show vlan
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 HR active Fa0/1, Fa0/2
20 Finance active Fa0/3, Fa0/4
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
1 enet 100001 1500 - - - - - 0 0
10 enet 100010 1500 - - - - - 0 0
20 enet 100020 1500 - - - - - 0 0
1002 fddi 101002 1500 - - - - - 0 0
--More--
Copy
Paste
Top


Cisco Packet Tracer - E:\Computer-Networks\EXP_4\Intra-VLAN.pkt
Logical
Physical
PC0
PC2
192.168.10.2
VLAN 10 - HR
192.168.10.3
192.168.20.2
VLAN 20
FastEthernet0
MAC Address
IP Configuration
IPv4 Address
Subnet Mask
IPv6 Configuration
Link Local Address
Realtime
Simulation
Copper Straight-Through
Toggle PDU List Window


Cisco Packet Tracer - E:\Computer-Networks\EXP_4\Intra-VLAN.pkt
PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.4
Pinging 192.168.10.4 with 32 bytes of data:
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time=12ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time=1ms TTL=128
Ping statistics for 192.168.10.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 12ms, Average = 3ms
C:\>
192.168.10.2
VLAN 10 - HR
192.168.10.3
192.168.10.4
192.168.10.5
192.168.20.2
192.168.20.4
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC4
PC-PT PC5
PC-PT PC6
Fa0
Top
Logical
Physical
Root
Realtime
Simulation
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window


Cisco Packet Tracer - E:\Computer-Networks\EXP_4\Intra-VLAN.pkt
PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.2
Pinging 192.168.20.2 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.20.2:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
192.168.10.2
VLAN 10 - HR
192.168.10.3
192.168.20.2
VLAN 20 - Finance
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Switch0
Fa0/1
Fa0/2
Fa0/4
Fa0/5
Fa0
Top
Logical
Physical
Root
Realtime
Simulation
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window

GoogleDrivelinkofthe packettracerfile(giveviewpermission):

Link:https://drive.google.com/drive/folders/1sQ5YironLIrvdRdLo1z_SHMdyp4GtBeX?usp=drive_link

CONCLUSION(provideconclusionaboutthisexperiment):

SuccessfullyCreatedaIntraVLANusingswitchconfigurationandverifiedtheconnectionsfromalltheends using Packet Tracer.

Rubrics	Good	Normal	Poor	Marks
Creationof Topology(4)	Created the topology,Identifythe properdevices and making the connections **(4)**	Created the topology, Identify the proper devices, makingthe connections But missing some features **(3)**	Created wrong topology, Failed to Identify the proper devices and making connections **(1)**	
Verify the connectivity (4)	Verified the connectivityinallthe levels **(4)**	Verified the connectivity at some levels (only some nodes) **(2)**	Verified the connectivity is not done. **(1)**	
Timely Completion (2)	Completed the lab before the allotted time **(2)**	Completed the lab after the deadline **(1)**	Did not submitted before grading **(0)**	
			Total	