



**PLATINUM JUBILEE**  
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**Walchand College of Engineering, Sangli**

*(Government Aided Autonomous Institute)*

**Department of Information Technology**

**Computer Networks Lab**

**EVEN SEMESTER AY 2021-22**

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Date: 19/04/2022

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# **Department of Information Technology**

2021-22

**Experiment Number: 2**

**Experiment Name:** Implement and execute VLAN 1 & 2 in CISCO packet tracer on router to connect two different networks, and observe route tables and VLAN databases.

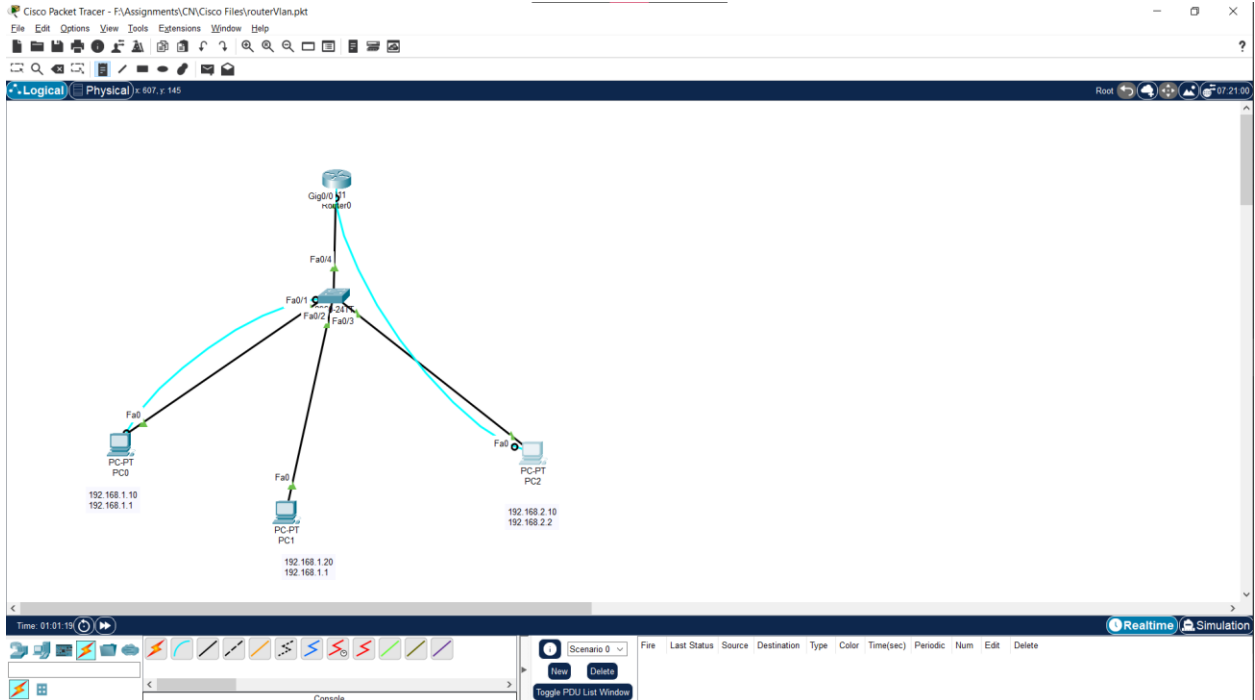
## **Contents:**

### **Problem Statement:**

Implement and execute VLAN 1 & 2 in CISCO packet tracer on router to connect two different networks, and observe route tables and VLAN databases.

**Devices Required:** PC, Switch, Router

## Design:



## Implementation:

1. Arrange components as shown in above diagram and assign IP to each PC and default gateway.
2. Create a LAN and Create two VLANs, One VLAN consisting of two PCs and One consisting of another one, using switch.

### Commands:

Enable switch

config t

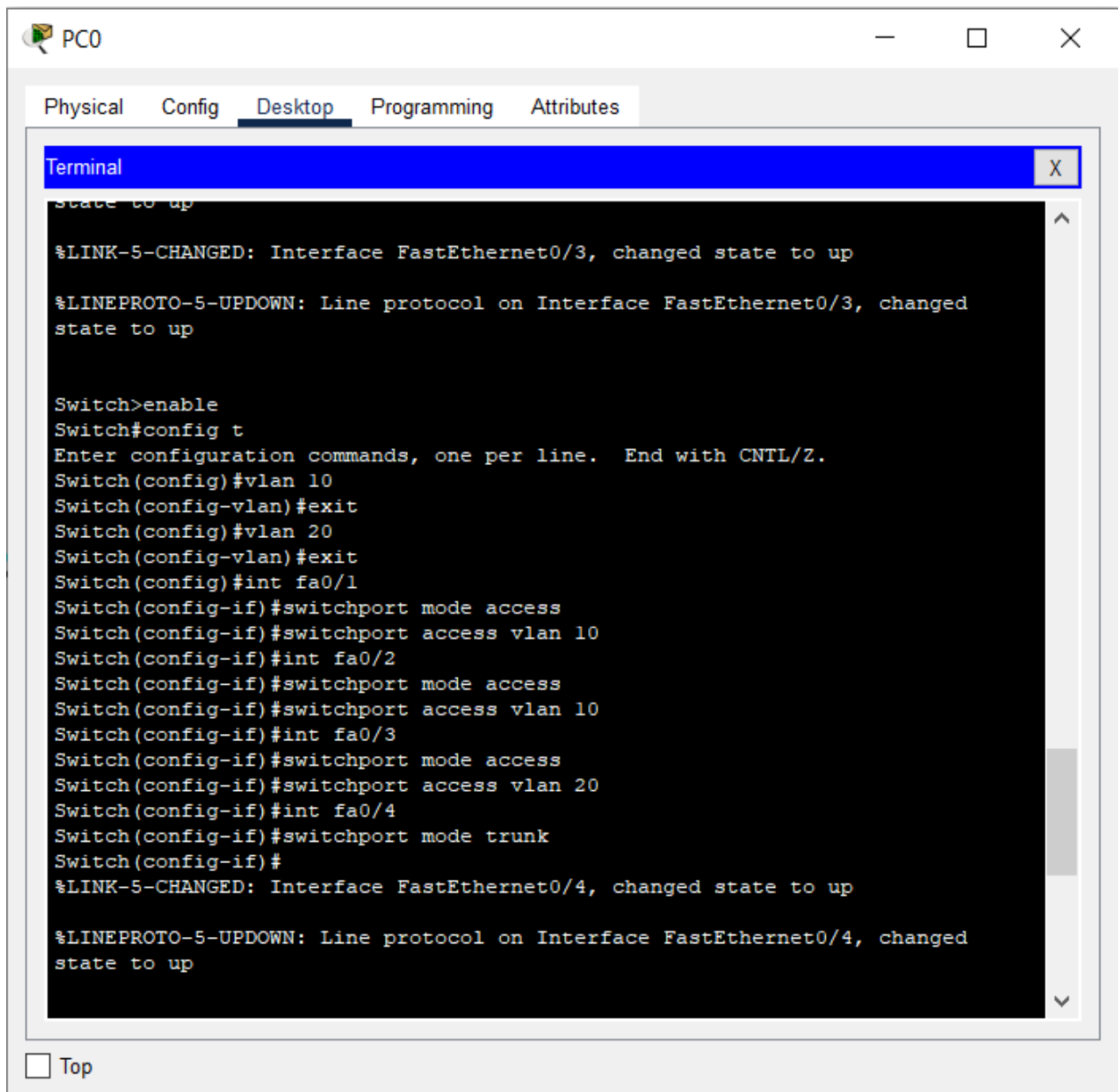
vlan 10

exit

vlan 20

exit

3. Add devices to the VLAN 10 and 20, make port Fa0/4 in trunk mode.



The screenshot shows a window titled "PC0" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a terminal window. The terminal shows the following commands and output:

```
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#exit
Switch(config)#int fa0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#int fa0/4
Switch(config-if)#switchport mode trunk
Switch(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed
state to up
```

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

4. Enable and configure the router through terminal

5. Configure VLAN 10 and VLAN 20 with following commands:

interface gigabitEthernet 0/0.10

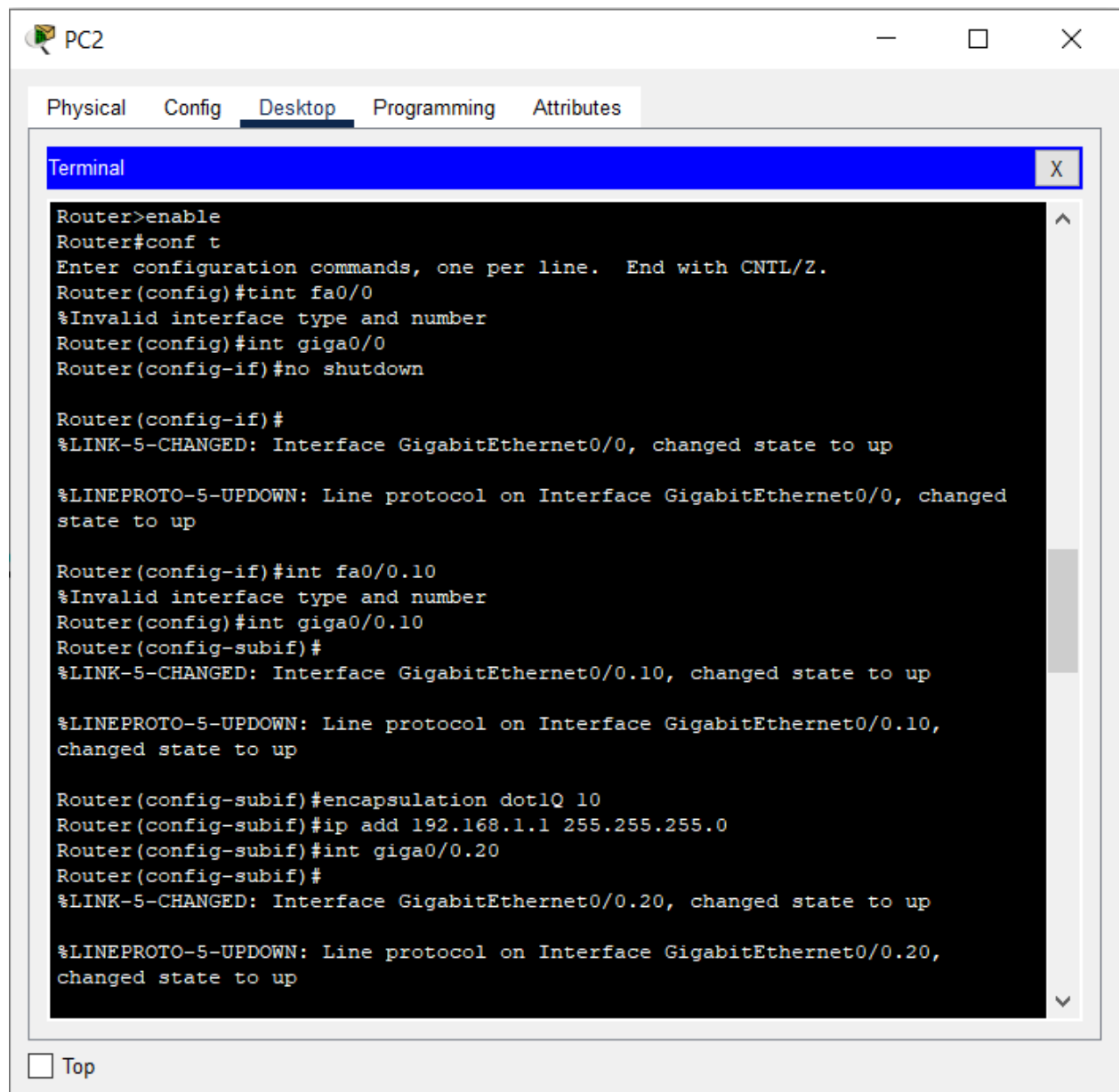
encapsulation dot1Q 10

ip address 192.168.1.1 255.255.255.0

No shutdown

Exit

Similarly configure VLAN 10



PC2

Physical Config **Desktop** Programming Attributes

Terminal

```
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#tint fa0/0
%Invalid interface type and number
Router(config)#int giga0/0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up

Router(config-if)#int fa0/0.10
%Invalid interface type and number
Router(config)#int giga0/0.10
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.10,
changed state to up

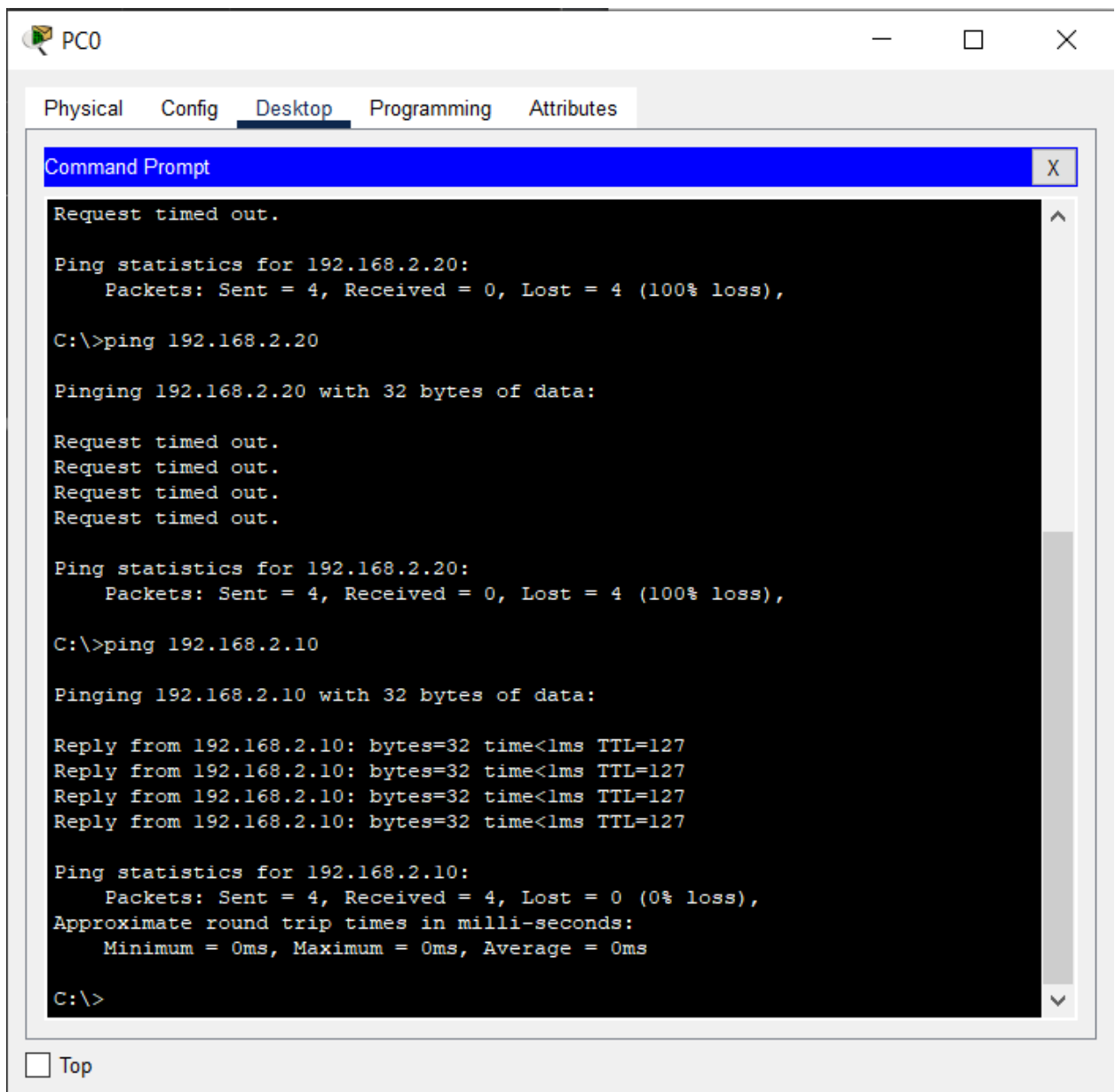
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip add 192.168.1.1 255.255.255.0
Router(config-subif)#int giga0/0.20
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.20,
changed state to up
```

☐ Top

6. Router is now configured, now ping pc0 and pc2 to check if packet transfer is possible in other VLAN

## Results:



The screenshot shows a window titled "PC0" with a tabbed interface. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of two ping commands. The first command, `C:\>ping 192.168.2.20`, results in a 100% loss of packets. The second command, `C:\>ping 192.168.2.10`, results in a 0% loss of packets.

```
Request timed out.

Ping statistics for 192.168.2.20:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.2.20

Pinging 192.168.2.20 with 32 bytes of data:

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

Ping statistics for 192.168.2.20:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

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<1ms TTL=127
Reply from 192.168.2.10: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

☐ Top

**Conclusion:**

Here PC 0 & PC1 have a successful packet transfer, thus router is successfully configured.

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(Course Teacher)