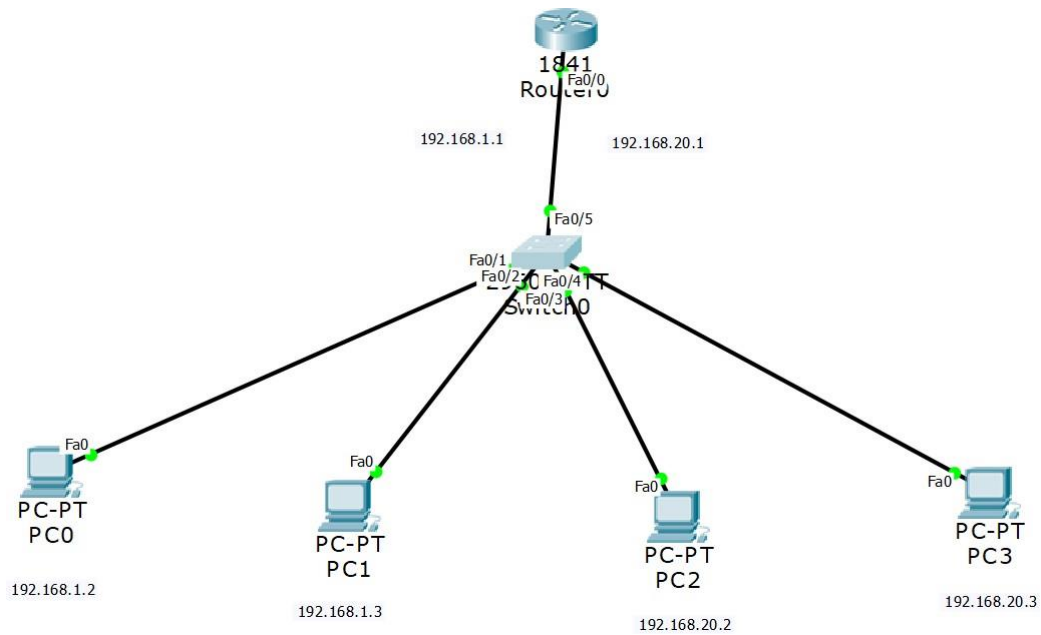


LAB 9:

Aim : To construct a VLAN and make the PC's communicate among a VLAN

Topology:



Configurations:

Switch VLAN Database:

Switch0

Physical Config CLI

VLAN Configuration

VLAN Number

VLAN Name

VLAN No	VLAN Name
1	default
20	NEWVLAN
1002	fddi-default

Equivalent IOS Commands

```
Switch(config-if) #  
Switch(config-if) #  
Switch(config-if) #switchport access vlan 1  
Switch(config-if) #  
Switch(config-if) #exit  
Switch(config) #
```

Switch FastEthernet0/5

Switch0

Physical Config CLI

FastEthernet0/5

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

Trunk VLAN

Tx Ring Limit

- ☒ 1:default
- ☒ 20:NEWVLAN
- ☒ 1002:fddi-defaul

Equivalent IOS Commands

```
Switch(config-if) #exit  
Switch(config) #interface FastEthernet0/6  
Switch(config-if) #  
Switch(config-if) #exit  
Switch(config) #interface FastEthernet0/5  
Switch(config-if) #
```

Switch FastEthernet0/3 and FastEthernet0/4

The screenshot shows the 'VLAN Configuration' window in the Switch0 configuration tool. The left sidebar has tabs for 'GLOBAL', 'SWITCH', and 'INTERFACE'. The 'VLAN Configuration' window has fields for 'VLAN Number' and 'VLAN Name'. Below these are 'Add' and 'Remove' buttons. A table lists existing VLANs:

VLAN No	VLAN Name
1	default
20	NEWVLAN
1002	fddi-default

Below the table is a section for 'Equivalent IOS Commands' with a text area containing the following commands:

```
Switch(config-if)#  
Switch(config-if)#  
Switch(config-if)#switchport access vlan 1  
Switch(config-if)#  
Switch(config-if)#exit  
Switch(config)#
```

Switch FastEthernet0/1 and FastEthernet0/2

The screenshot shows the 'FastEthernet0/1' configuration window in the Switch0 configuration tool. The left sidebar has tabs for 'Physical', 'Config', and 'CLI'. The 'FastEthernet0/1' window has a 'Port Status' section with 'On' checked. The 'Bandwidth' section has '100 Mbps' selected. The 'Duplex' section has 'Full Duplex' selected. The 'Access' dropdown is set to 'Access' and the 'VLAN' dropdown is set to '1'. The 'Tx Ring Limit' is set to '10'. Below the configuration fields is a section for 'Equivalent IOS Commands' with a text area containing the following commands:

```
Switch(config-if)#exit  
Switch(config)#interface FastEthernet0/3  
Switch(config-if)#  
Switch(config-if)#exit  
Switch(config)#interface FastEthernet0/1  
Switch(config-if)#
```

Router 0 :

VLAN DataBase:

Router0

PhysicalConfigCLI

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

VLAN Configuration

VLAN Number

VLAN Name

AddRemove

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

Equivalent IOS Commands

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
exit
Router(config)#int fa 0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up

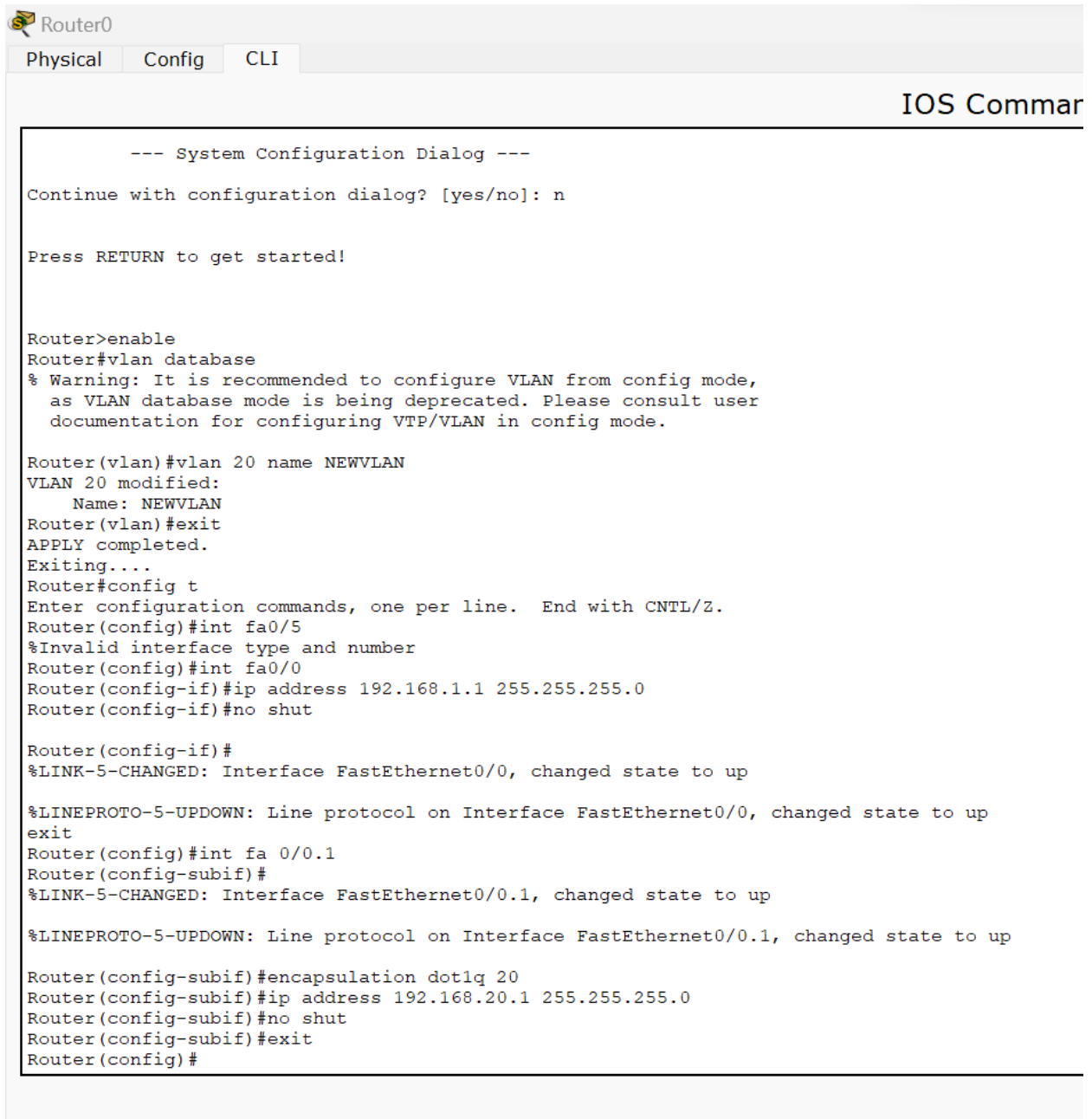
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1, changed state to up

Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#
Router(config)#exit
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.

Router(vlan)#
%SYS-5-CONFIG_I: Configured from console by console
```

Router 0 :

CLI:



```
Router0
Physical Config CLI
IOS Commar

--- System Configuration Dialog ---
Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.

Router(vlan)#vlan 20 name NEWVLAN
VLAN 20 modified:
  Name: NEWVLAN
Router(vlan)#exit
APPLY completed.
Exiting....
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/5
%Invalid interface type and number
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
exit
Router(config)#int fa 0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up

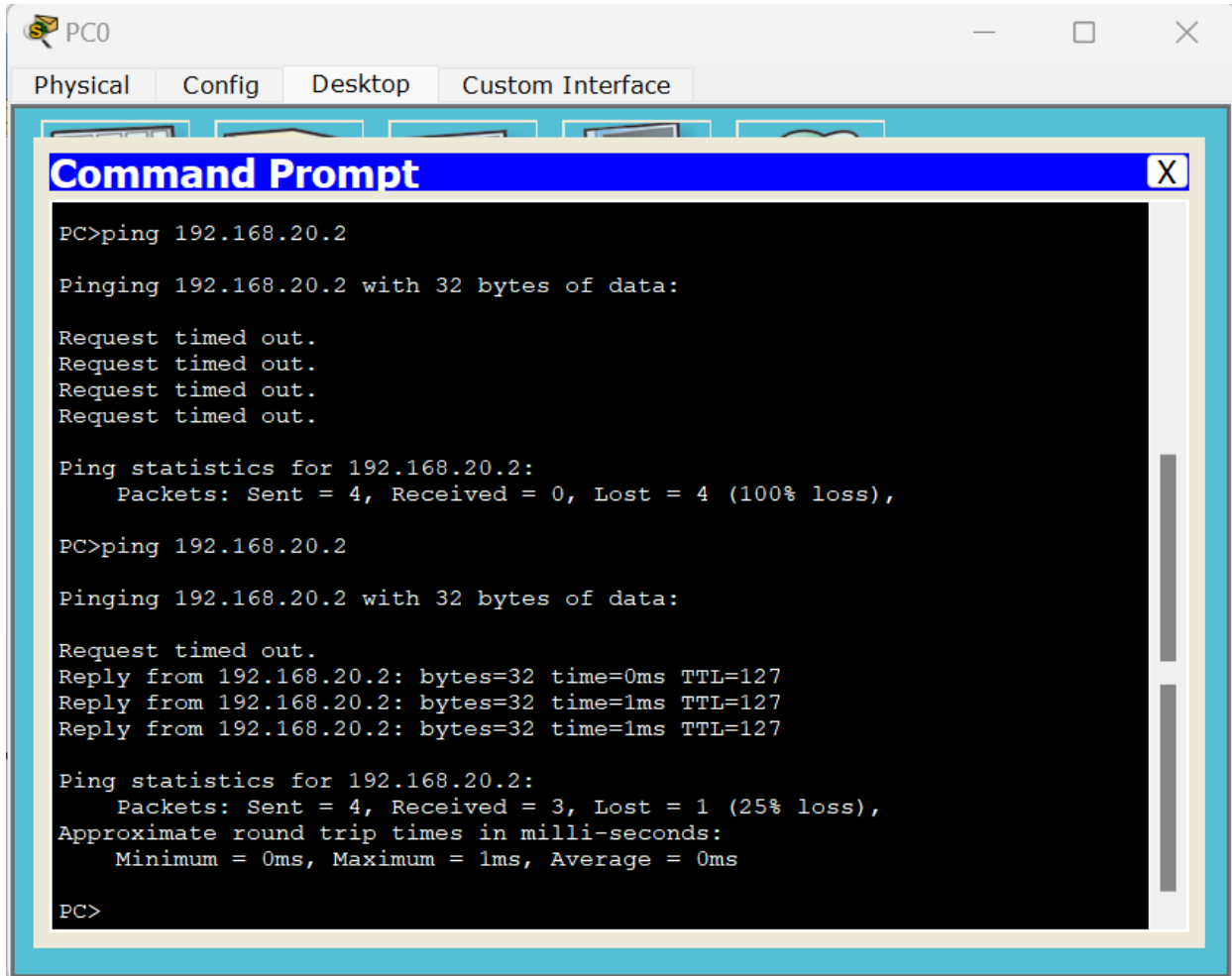
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1, changed state to up

Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#
```

Command Prompt:

P0:

Before and after VLAN configuration was successful.



The screenshot shows a window titled "PC0" with tabs for "Physical", "Config", "Desktop", and "Custom Interface". The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows two ping attempts to 192.168.20.2. The first attempt shows 100% packet loss, while the second attempt shows 25% packet loss and successful replies.

```
PC>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),

PC>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

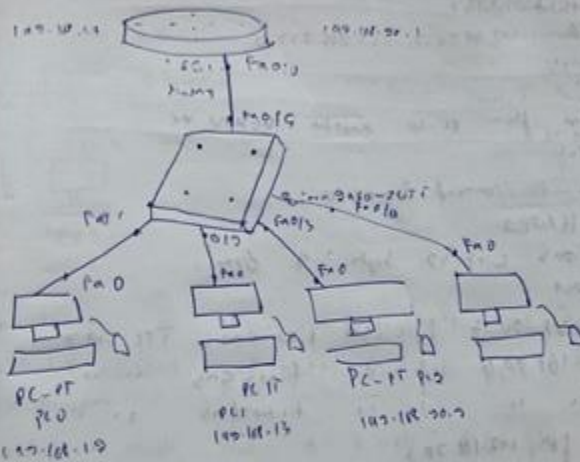
PC>
```

Lab - 09

Aim

To configure a VLAN and make a PC communication through VLAN

Topology



1) Create a PC topology of switch also, chip 1861 router and 2960-24T switch base

2) Set the IP address of the router and a PC's respectively, we set class c 16n address also set gate ways

3) In switch 190 to config tab and select VLAN Database. Give any VLAN no like 3 and name as VLAN

4) Select the interface fastethernet 0/1 and make it trunk

5) Now create the switch and give interface. Give the interface 0/1 and 0/2 on both of them and set VLAN name?

6) Go to host & config tab and select VLAN Database and create the new VLAN & no & checked

Step 1: Config
 1. Config for PC
 2. IP address 192.168.1.1 255.255.255.0
 3. Netmask
 4. Gateway
 5. DNS
 6. Default
 7. Config for PC
 8. Config for PC
 9. Config for PC
 10. Config for PC
 11. Config for PC
 12. Config for PC

1. Config for PC
 2. Config for PC
 3. Config for PC
 4. Config for PC
 5. Config for PC
 6. Config for PC
 7. Config for PC
 8. Config for PC
 9. Config for PC
 10. Config for PC
 11. Config for PC
 12. Config for PC

Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC
 Config for PC

Ping statistics for 192.168.1.1
 Round-trip times: 0.000, 0.000, 0.000 (25.000ms)
 Minimum = 0.000ms, Maximum = 0.000ms, Average = 0.000ms

We can have one device on one VLAN & route on other VLAN
 Connected to the same switch. This will only have other broadcast traffic
 from within the VLAN
 1) These VLANs don't have IP address
 2) Inter-VLAN routing is a function of the router to logically
 connect the networks.

