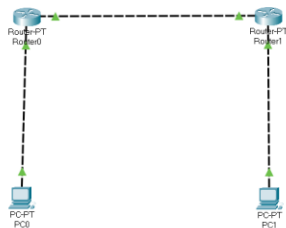


# **MAJOR :Computer Networking**

## **PRACTICAL NO 1**

**Aim:-** To study of address in networking devices

**Circuit diagram:-**



**Program:-**

**Router 1>CLI:-**

```
Router>enable
Router#configure terminal
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#ip address 20.0.0.2
Router(config-if)#no shutdown
Router(config-if)#exit
```

**Router 2>CLI:-**

```
Router>enable
Router#configure terminal
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 40.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)# ip address 20.0.0.1
Router(config-if)#no shutdown
Router(config-if)#exit
```

**PC 0>Desktop>IP configuration:-**

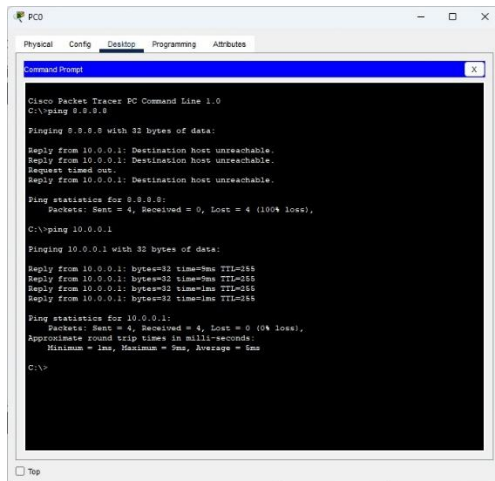
```
IPV4:10.0.0.2
Subnet mask : 255.0.0.0
Default gateway:10.0.0.1
```

**PC 1>Desktop>IP configuration**

IPV4:40.0.0.2

Subnet mask:255.0.0.0

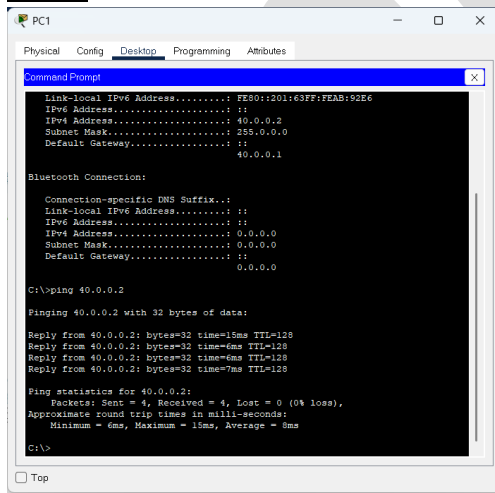
Default gateway:40.0.0.01

**Output:-****PC0:-**


```

PC0
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ping 9.9.9.9
Pinging 9.9.9.9 with 32 bytes of data:
Reply from 10.0.0.1: Destination host unreachable.
Reply from 10.0.0.1: Destination host unreachable.
Request timed out.
Reply from 10.0.0.1: Destination host unreachable.
Ping statistics for 9.9.9.9:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=5ms TTL=255
Reply from 10.0.0.1: bytes=32 time=5ms TTL=255
Reply from 10.0.0.1: bytes=32 time=1ms TTL=255
Reply from 10.0.0.1: bytes=32 time=1ms TTL=255
Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milliseconds:
        Minimum = 1ms, Maximum = 5ms, Average = 5ms
C:\>

```

**PC1:-**


```

PC1
Physical Config Desktop Programming Attributes
Command Prompt
Link-Local IPv6 Address..... FE80::1201:63FF:FEAB:92E6
IPv6 Address..... ::
IPv4 Address..... 40.0.0.2
Subnet Mask..... 255.0.0.0
Default Gateway..... 40.0.0.1

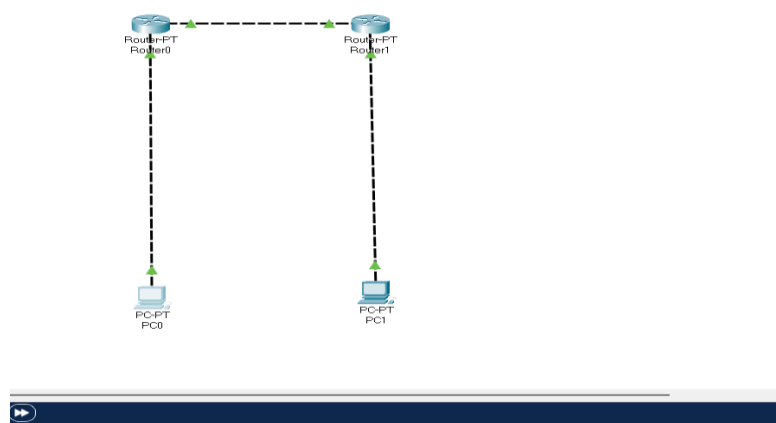
Bluetooth Connection:
Connection-specific DNS Suffix.:
Link-Local IPv6 Address..... ::
IPv6 Address..... ::
IPv4 Address..... 0.0.0.0
Subnet Mask..... 0.0.0.0
Default Gateway..... 0.0.0.0

C:\>ping 40.0.0.2
Pinging 40.0.0.2 with 32 bytes of data:
Reply from 40.0.0.2: bytes=32 time=15ms TTL=128
Reply from 40.0.0.2: bytes=32 time=6ms TTL=128
Reply from 40.0.0.2: bytes=32 time=6ms TTL=128
Reply from 40.0.0.2: bytes=32 time=7ms TTL=128
Ping statistics for 40.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milliseconds:
        Minimum = 6ms, Maximum = 15ms, Average = 8ms
C:\>

```

**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNPracticalno1.pkt>

**Conclusion:-**The program executed successfully.

**PRACTICAL NO 2****a) Static Routing****Aim:** To study static routing**Circuit diagram:-****Program:****Router 0>CLI:**

```

Router>enable
Router#config terminal
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shut down
Router(config-if)#exit
Router(config)#interface fastethernet1/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#ip route 40.0.0.0 255.0.0.0 20.0.0.2

```

**Router1>CLI:**

```

Router>enable
Router#config terminal
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 40.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface fastethernet1/0
Router(config-if)#ip address 20.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit

```

Router(config)#ip route 10.0.0.0 255.0.0.0 20.0.0.0

**Pc0>Desktop>IPConfiguration:-**

**IPV4:-**10.0.0.2

**Subnet mask:-**255.0.0.0

**Default gateway:-** 10.0.0.1

**Pc1>Desktop>IPConfiguration:-**

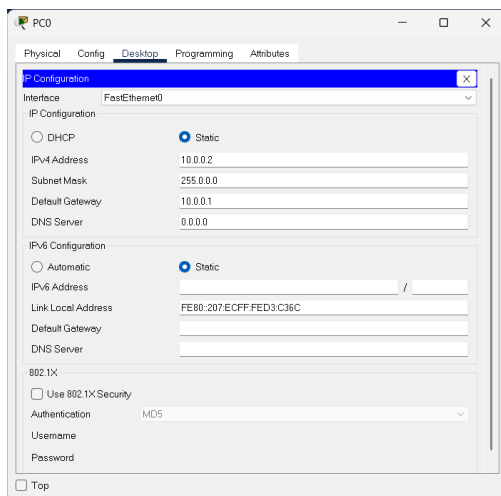
**IPV4:-**40.0.0.2

**Subnet mask:-**255.0.0.0

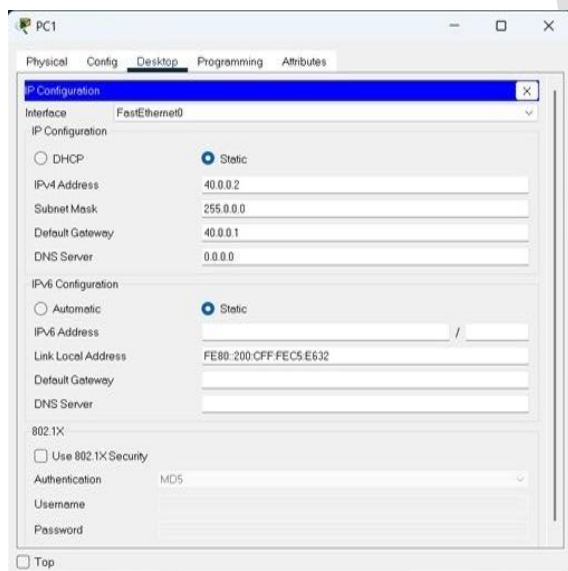
**Default gateway:-** 40.0.0.1

Output:-

Pc0



Pc1



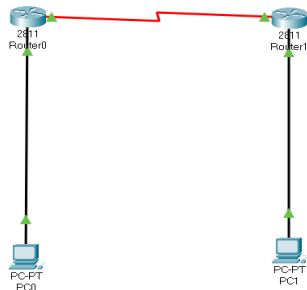
**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno2a.pkt>

**Conclusion:-** The program executed successfully.

## b) Rip Routing

Aim: To study rip routing

**Circuit diagram:-**



### **Program:**

#### **Router 0>CLI:**

```

Router>enable
Router#config terminal
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shut down
Router(config-if)#exit
Router(config)#interface serial0/0/0
Router(config-if)#ip address 20.0.0.3 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#route rip
Router(config-rip)#version 2
Router(config-rip)# network 10.0.0.0
Router(config-rip)#network 20.0.0.0
Router(config-rip)#exit
Router(config)#show ip router
Router(config)#tracert 40.0.0.2
  
```

#### **Router1>CLI:**

```

Router>enable
Router#config terminal
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface serial0/0/0
Router(config-if)#ip address 20.0.0.2 255.0.0.0
  
```

```

Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#router rip
Router(config-rip)#version 2
Router(config-rip)# network 40.0.0.0
Router(config-rip)#network 20.0.0.0
Router(config-rip)#exit
Router(config)#show ip route
Router(config)#tracert 10.0.0.2

```

**Pc0>Desktop>IPConfiguration:-****IPV4:-10.0.0.2****Subnet mask:-255.0.0.0****Default gateway:- 10.0.0.1****Pc1>Desktop>IPConfiguration:-****IPV4:-40.0.0.2****Subnet mask:-255.0.0.0****Default gateway:- 40.0.0.1****Output:****Router0**

```

Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown

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)#interface serial0/0/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#exit
Router(config)#show ip route

% Invalid input detected at '^' marker.

```

**Router 1**

```

Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#no shutdown

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)#interface serial0/0/0
Router(config-if)#ip address 20.0.0.2 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
exit
Router(config)#route
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 40.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#exit
Router(config)#ip route
% Incomplete command.
Router(config)#show ip route

```

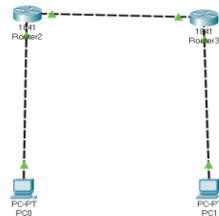
**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno2b.pkt>

**Conclusion:-**The program executed successfully.

## c) OSPF Routing

Aim: To study OSPF routing

**Circuit diagram:-**



### **Program:**

#### **Router 0>CIL**

Router>enable

Router#config terminal

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface fastethernet0/1

Router(config-if)#ip address 20.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#router ospf 1

Router(config-router)#network 10.0.0.0 0.255.255.255 area 0

Router(config-router)#network 20.0.0.0 0.255.255.255 area 0

Router(config-router)#exit

#### **Router 1>CIL**

Router>enable

Router#config terminal

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 40.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

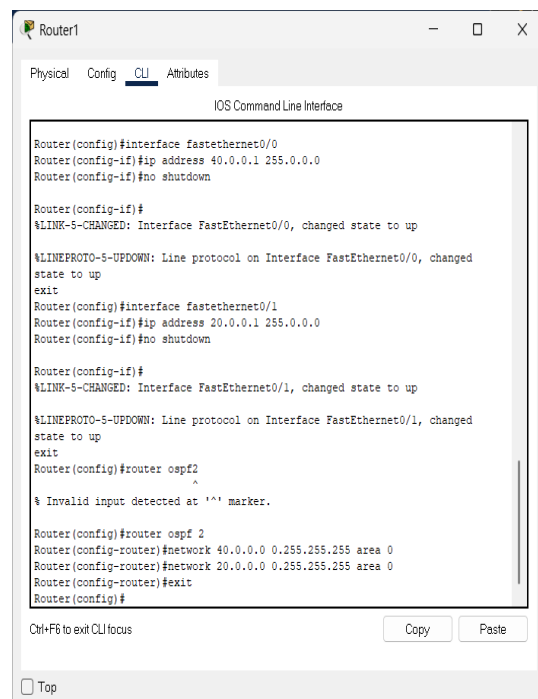
Router(config)#interface fastethernet0/1

Router(config-if)#ip address 20.0.0.2 255.0.0.0

Router(config-if)#no shutdown



```
Router(config-if)#exit
Router(config)#router ospf 2
Router(config-router)#network 40.0.0.0 0.255.255.255 area 0
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
```

**Pc0>Desktop>IPConfiguration:-****IPV4:-10.0.0.2****Subnet mask:-255.0.0.0****Default gateway:- 10.0.0.1****Pc1>Desktop>IPConfiguration:-****IPV4:-40.0.0.2****Subnet mask:-255.0.0.0****Default gateway:- 40.0.0.1****Output:-****Rourter 0:**


```
Router1
Physical Config CLI Attributes
IOS Command Line Interface

Router(config)#interface fastEthernet0/0
Router(config-if)#ip address 40.0.0.1 255.0.0.0
Router(config-if)#no shutdown

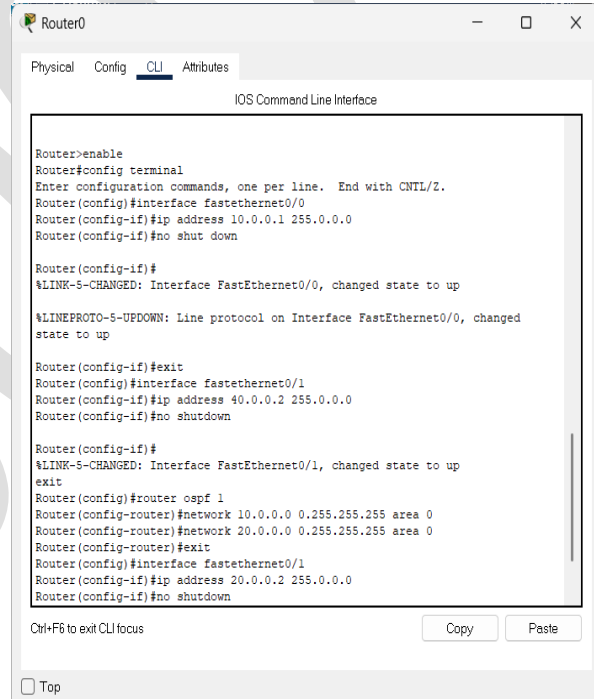
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up
exit
Router(config)#interface fastEthernet0/1
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up
exit
Router(config)#router ospf2
^
% Invalid input detected at '^' marker.

Router(config)#router ospf 2
Router(config-router)#network 40.0.0.0 0.255.255.255 area 0
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
```

**Router1:**


```
Router0
Physical Config CLI Attributes
IOS Command Line Interface

Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastEthernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shut down

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

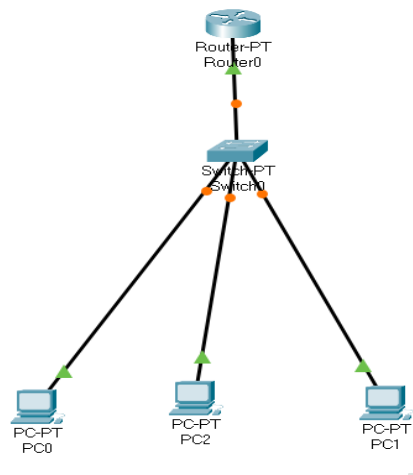
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up

Router(config-if)#exit
Router(config)#interface fastEthernet0/1
Router(config-if)#ip address 40.0.0.2 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
exit
Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#interface fastEthernet0/1
Router(config-if)#ip address 20.0.0.2 255.0.0.0
Router(config-if)#no shutdown
```

**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno2c.pkt>

**Conclusion:-**The program is successfully executed

**PRACTICAL NO:3****a) DHCP****Aim:** To study DHCP**Circuit diagram:-****Router 0>CLI**

Router&gt;enable

Router#config terminal

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#ip dhcp pool syit

Router(dhcp-config)#network 10.0.0.0 255.0.0.0

Router(dhcp-config)#default-router 10.0.0.1

Router(dhcp-config)#ip dhcp excluded-address 10.0.0.2 10.0.0.1

Router(config)#exit

Router#config terminal

Router(config)#ip dhcp pool syit

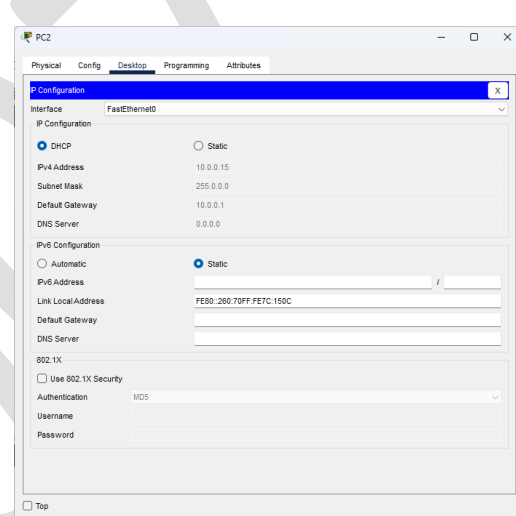
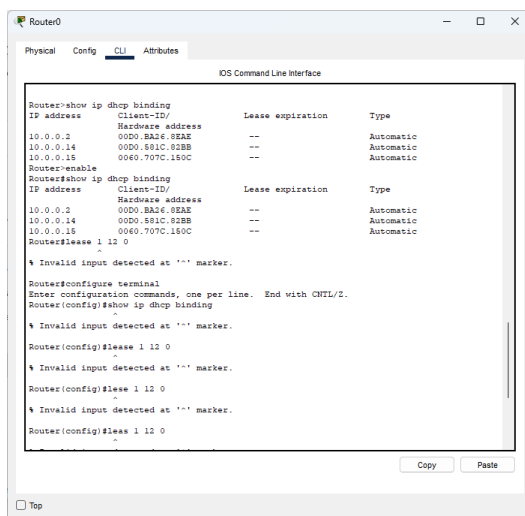
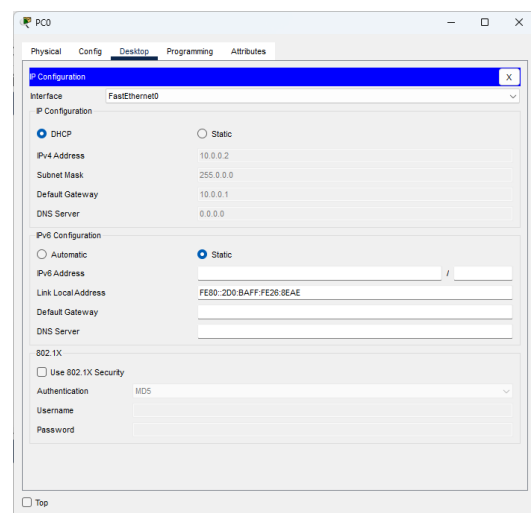
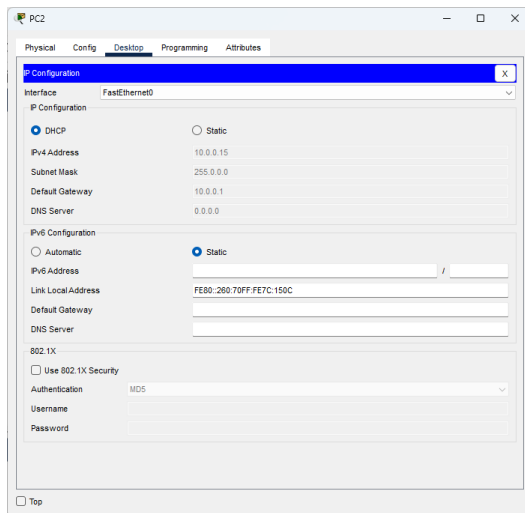
Router(dhcp-config)#network 10.0.0.0 255.0.0.0

Router(dhcp-config)#default-router 10.0.0.1

Router(dhcp-config)#ip dhcp excluded-address 10.0.0.2 10.0.0.13

Router(config)#exit

Output:-



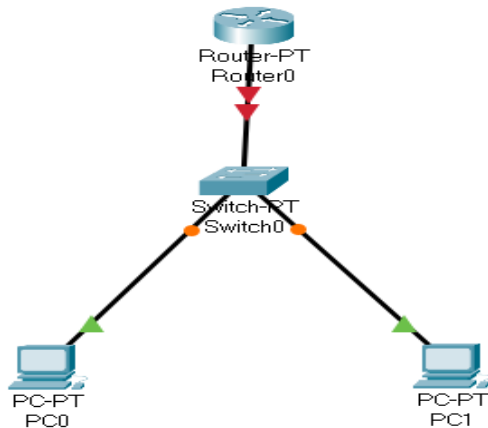
**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno3a.pkt>

**Conclusion:-** The program executed successfully.

## b) DNS

Aim:-To study DNS

**Circuit diagram:-**



### Program:-

#### Router 0>CLI

```

Router>enable
Router#config terminal
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#ip dhcp pool syit
Router(dhcp-config)#network 10.0.0.0 255.0.0.0
Router(dhcp-config)#default-router 10.0.0.1
Router(dhcp-config)#dns-server 8.8.8.8
Router(dhcp-config)#exit
Router(config)#ip host www.syit.com 10.0.0.1
Router(config)#exit
  
```

#### Pc0>Desktop>IPConfiguration:-

**IPV4:-**10.0.0.2

**Subnet mask:-**255.0.0.0

**Default gateway:-** 10.0.0.1

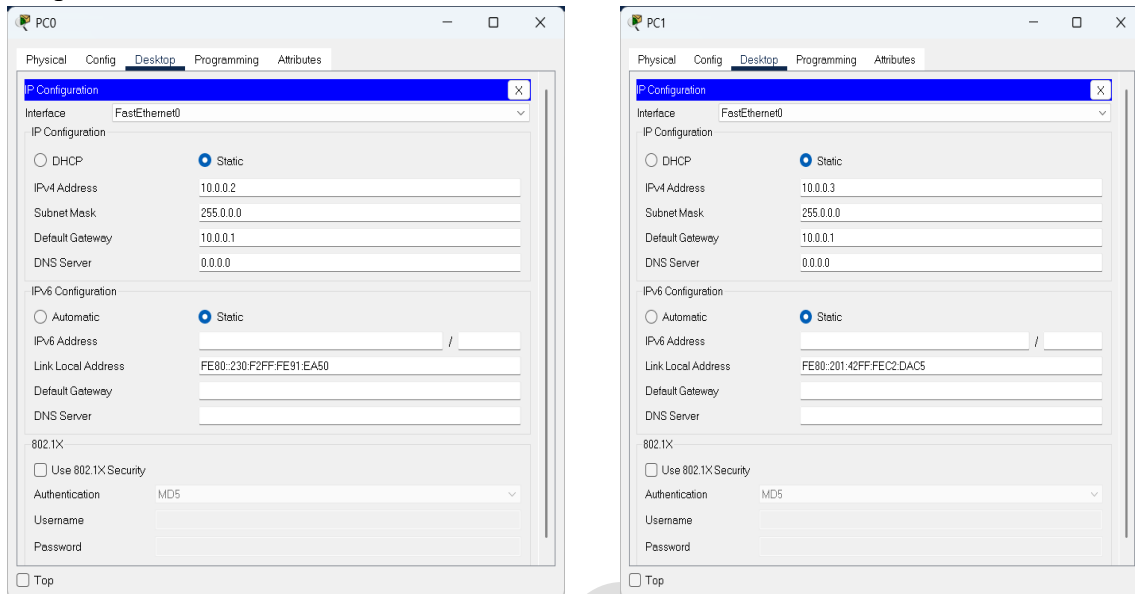
#### Pc1>Desktop>IPConfiguration:-

**IPV4:-**10.0.0.3

**Subnet mask:-**255.0.0.0

**Default gateway:-** 10.0.0.1

Output:-



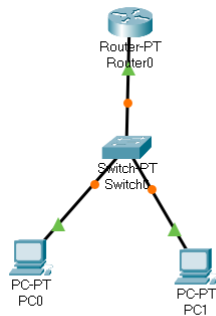
**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno3b.pkt>

**Conclusion:-** The program executed successfully.

## C) FTP

Aim:- To study FTP

**Circuit diagram:-**



**Program:-**

**Router0>CLI**

Router>enable

Router#config terminal

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface fastethernet1/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#ip ftp username bscit

Router(config)#ip ftp password syit

Router(config)#exit

**Pc0>Desktop>IPConfiguration:-**

**IPV4:-**10.0.0.2

**Subnet mask:-**255.0.0.0

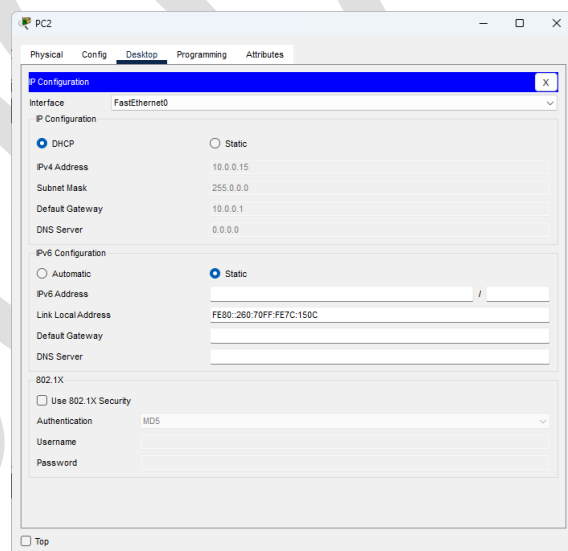
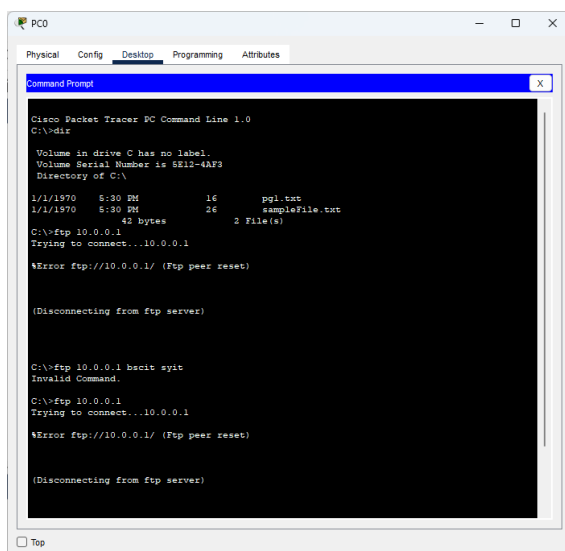
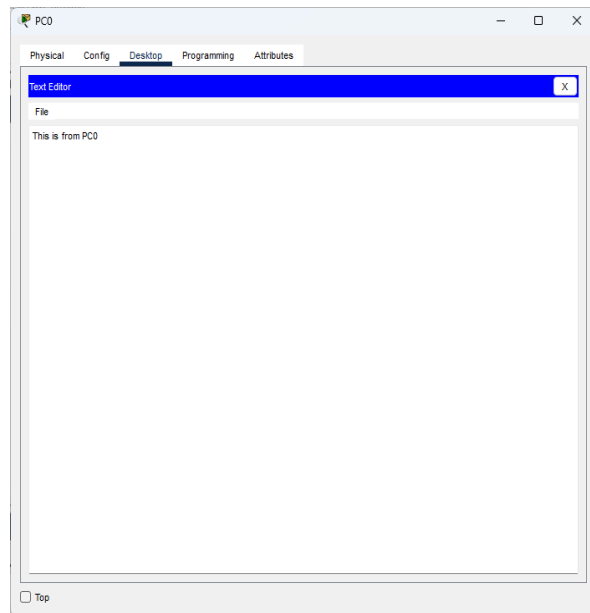
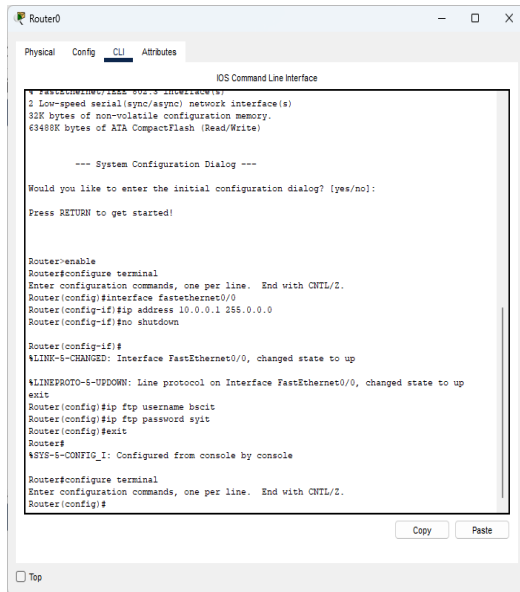
**Default gateway:-** 10.0.0.1

**Pc1>Desktop>IPConfiguration:-**

**IPV4:-**10.0.0.3

**Subnet mask:-**255.0.0.0

**Default gateway:-** 10.0.0.1



**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno3c.pkt>

**Conclusion:-**The program executed successfully.

## D)\_HTTP

Aim:To study HTTP

Circuit diagram:-



Program:-

Server0>Desktop>IPConfiguration:-

IPV4:-10.0.0.2

Subnet mask:-255.0.0.0

Default gateway:-\_0.0.0.0

Server0>Desktop>HTTP:-

HTTP :on

HTTP :on

Server0>Desktop>HTTP>index.html>edit:-

<html>

<head>

<title>Syit</tilte>

</head>

<body>

<h1>I am syit</h2>

</body>

</html>

Pc0>Desktop>IPConfiguration:-

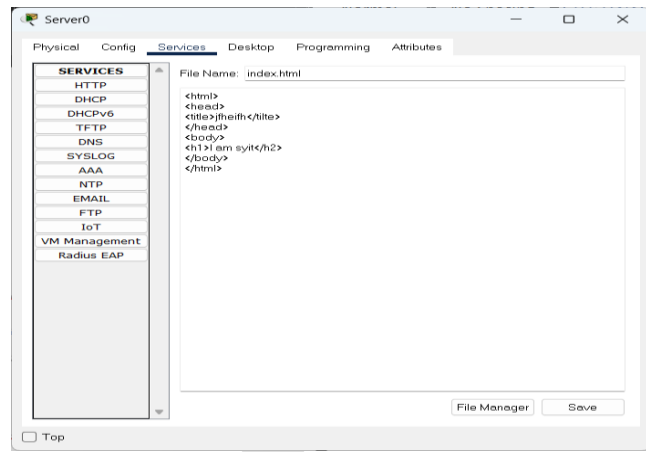
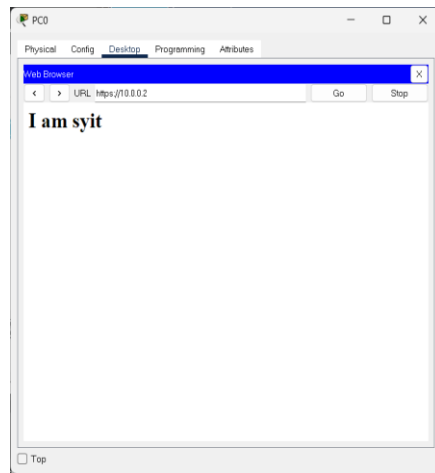
IPV4:-10.0.0.3

Subnet mask:-255.0.0.0

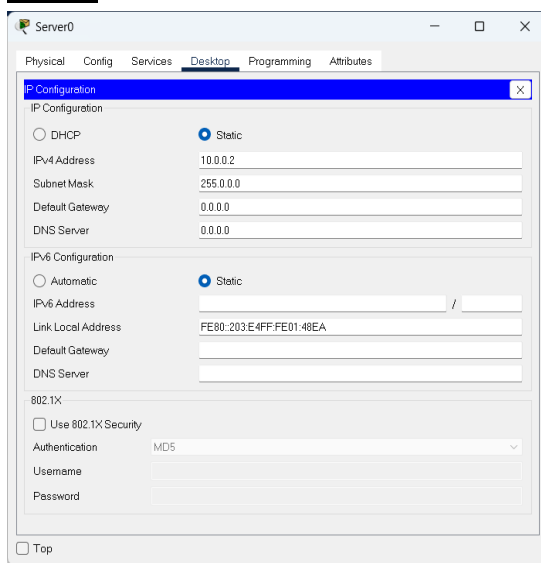
Default gateway:- 10.0.0.2

PC0>Texteiditer

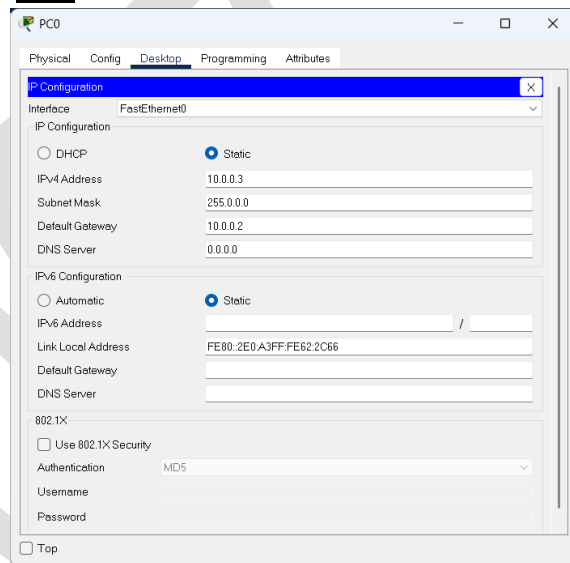




## Server



## PC0



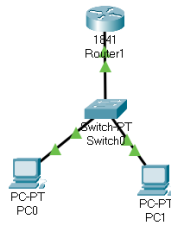
**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNparcticalno3d.pkt>

**Conclusion:-The program executed successfully.**

## E) Telnet

Aim:-To study the Telnet

Circuit diagram:-



Program:-

Router>CLI:-

```

Router>enable
Router#config terminal
Router(config)#interface fastethernet0/1
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#line vty 0 10
Router(config-line)#password syit
Router(config-line)#login
Router(config-line)#transport input telnet
Router(config-line)#exit
Router(config)#exit
Router#show user
  
```

Pc0>Desktop>IPConfiguration:-

**IPV4:-**10.0.0.2

**Subnet mask:-**255.0.0.0

**Default gateway:-** 10.0.0.1

Pc1>Desktop>IPConfiguration:-

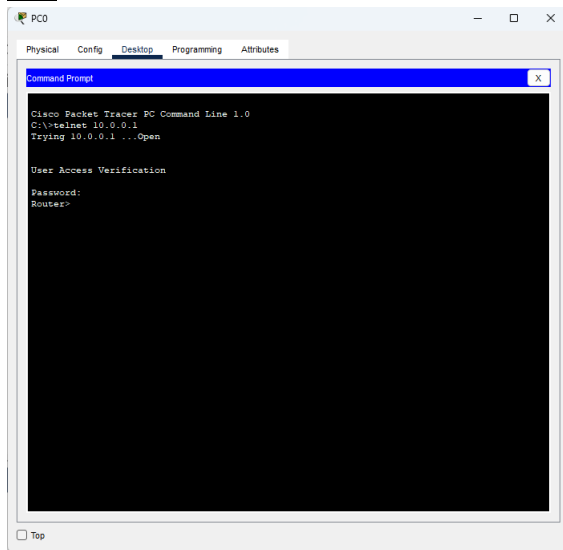
**IPV4:-**10.0.0.3

**Subnet mask:-**255.0.0.0

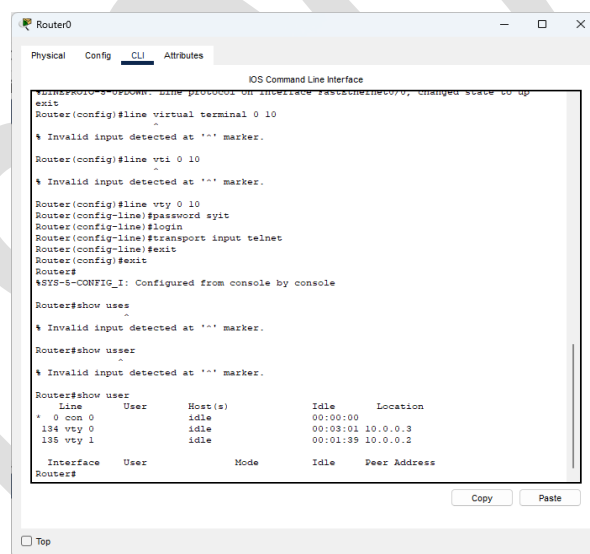
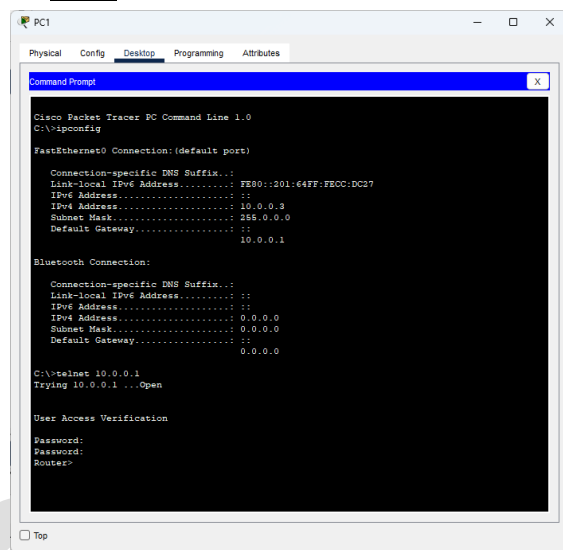
**Default gateway:-** 10.0.0.1

**Output:**

**Pc0**



## PC 1



**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNPracticalno3e.pkt>

**Conclusion:-**The program executed successfully.