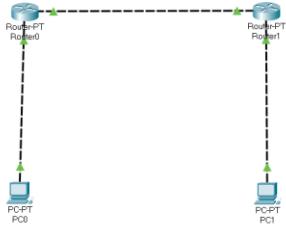


## MAJOR :Computer Networking

### 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 0.0.0.0

Pinging 0.0.0.0 with 32 bytes of data:
Request timed out.

Reply from 10.0.0.1: Destination host unreachable.
Request from 10.0.0.1: Destination host unreachable.
Request timed out.
Reply from 10.0.0.1: Destination host unreachable.

Ping statistics for 0.0.0.0:
    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=1ms TTL=255

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 9ms, Average = 5ms
C:\>
```

□ Top

**PC1:-**

PC1

Physical Config Desktop Programming Attributes

Command Prompt

```
Link-local IPv6 Address.....: fe80::201:63ff:feab:92e6
IPv4 Address.....: 10.0.0.2
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.....: fe80::201:63ff:feab:92e6
IPv4 Address.....: :: 10.0.0.2
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: :: 0.0.0.0

C:\>ping 40.0.0.2

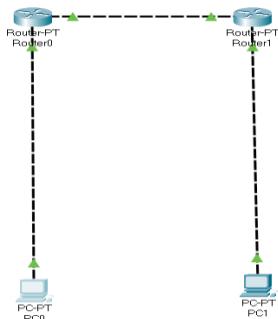
Pinging 40.0.0.2 with 32 bytes of data:
Reply from 40.0.0.2: bytes=32 time=1ms TTL=128

Ping statistics for 40.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 15ms, Average = 8ms
C:\>
```

□ Top

**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>IPCConfiguration:-**

**IPV4:-**10.0.0.2

**Subnet mask:-**255.0.0.0

**Default gateway:-** 10.0.0.1

**Pc1>Desktop>IPCConfiguration:-**

**IPV4:-**40.0.0.2

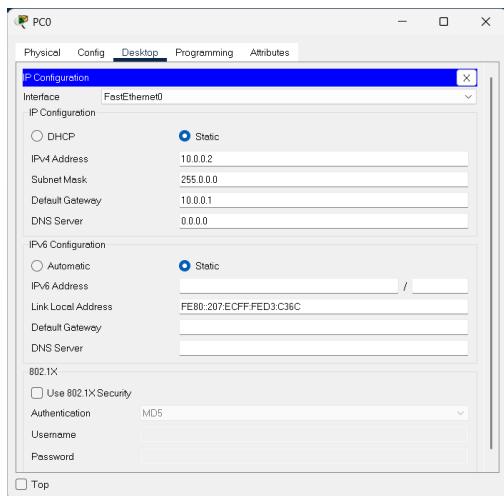
**Subnet mask:-**255.0.0.0

**Default gateway:-** 40.0.0.1

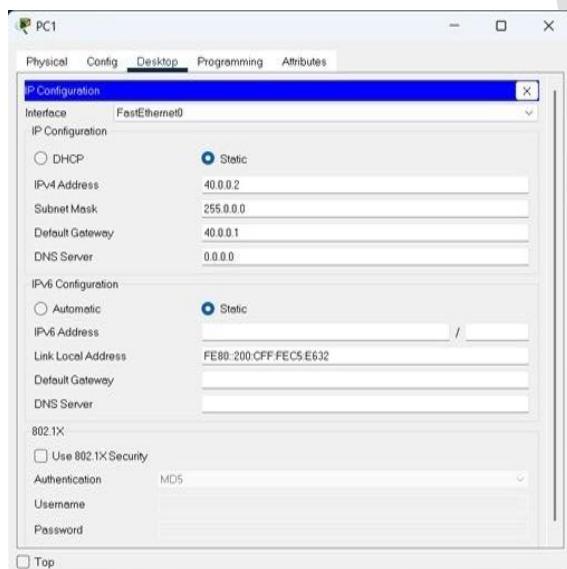


**Output:-**

Pc0



**Pc1**



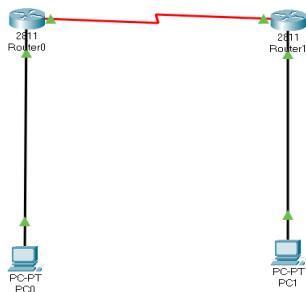
**Program File Link :- <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno2a.pkt>**

**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>IPCConfiguration:-**

---

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



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 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.
```

Ctrl+F6 to exit CLI focus

Top

**Copy**

**Paste**

The screenshot shows the Router1 CLI interface with the following details:

- Router1** is the device name.
- Physical Config CLI Attributes** are the tabs at the top.
- IOS Command Line Interface** is the title of the main window.
- Router>enable** starts the configuration mode.
- Router#config terminal** enters configuration mode.
- Enter configuration commands, one per line. End with CNTL/Z.** is the prompt.
- Router(config)#interface fastethernet0/0** configures the FastEthernet0/0 interface.
- Router(config-if)#no shutdown** enables the interface.
- Router(config-if)#** ends the interface configuration.
- %LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up** is a log message.
- #LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up** is another log message.
- exit** exits the interface configuration.
- Router(config)#interface serial0/0/0** configures the Serial0/0/0 interface.
- Router(config-if)#ip address 20.0.0.2 255.0.0.0** sets the IP address and subnet mask.
- Router(config-if)#no shutdown** enables the interface.
- Router(config-if)#** ends the interface configuration.
- %LINK-5-CHANGED: Interface Serial0/0/0, changed state to up** is a log message.
- exit** exits the interface configuration.
- Router(config)#route** starts route configuration.
- %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to t** is a log message.
- Router(config)#router rip** selects the RIP routing protocol.
- Router(config-router)#version 2** sets the RIP version.
- Router(config-router)#network 40.0.0.0** defines the RIP network.
- Router(config-router)#network 20.0.0.0** defines the RIP network.
- Router(config-router)#exit** exits the route configuration.
- Router(config)#ip route** starts route configuration.
- \* Incomplete command.** is a warning message.
- Router(config)#show ip route** displays the current routing table.

At the bottom, there are buttons for **Ctrl+F6 to exit CLIfocus**, **Copy**, and **Paste**. A **Top** button is also present.

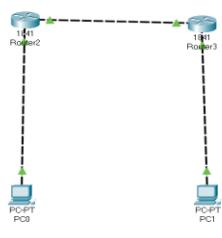
Program File Link :- <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno2b.pkt>

**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>IPCConfiguration:-

**IPV4:-10.0.0.2**

**Subnet mask:-255.0.0.0**

**Default gateway:- 10.0.0.1**

#### Pc1>Desktop>IPCConfiguration:-

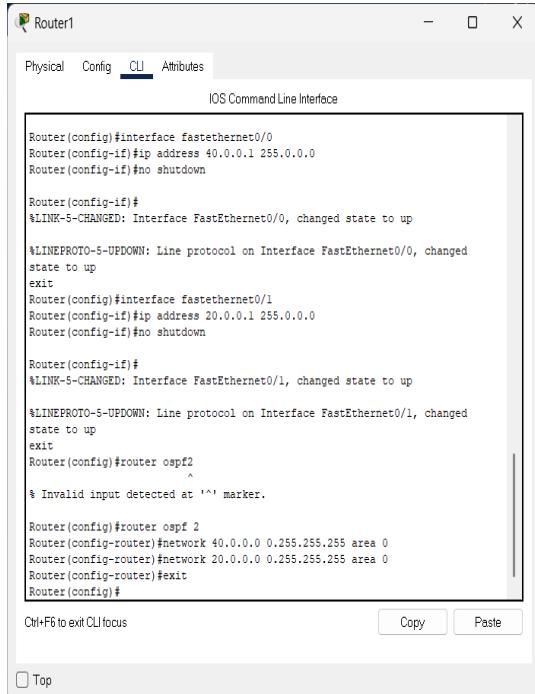
**IPV4:-40.0.0.2**

**Subnet mask:-255.0.0.0**

**Default gateway:- 40.0.0.1**

**Output:--**

Rourter 0:



```

Router#interface fastethernet0/0
Router(config-if)#ip address 40.0.0.1 255.255.255.0
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-if)#interface fastethernet0/1
Router(config-if)#ip address 20.0.0.1 255.255.255.0
Router(config-if)#no shutdown

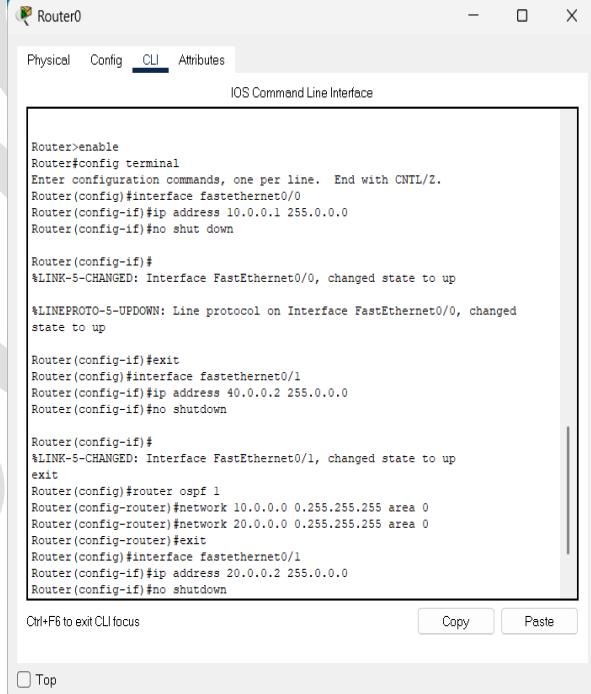
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%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:



```

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

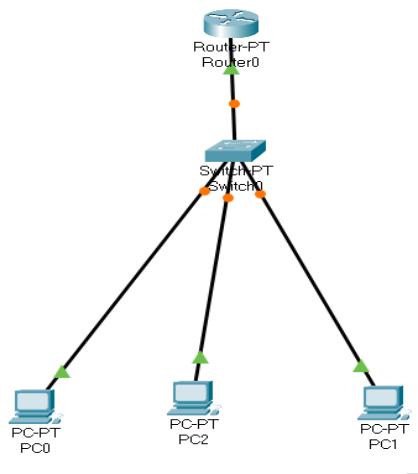
Router(config-if)#exit
Router(config)#interface fastethernet0/1
Router(config-if)#ip address 40.0.0.2 255.0.0.0
Router(config-if)#no shutdown

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>**

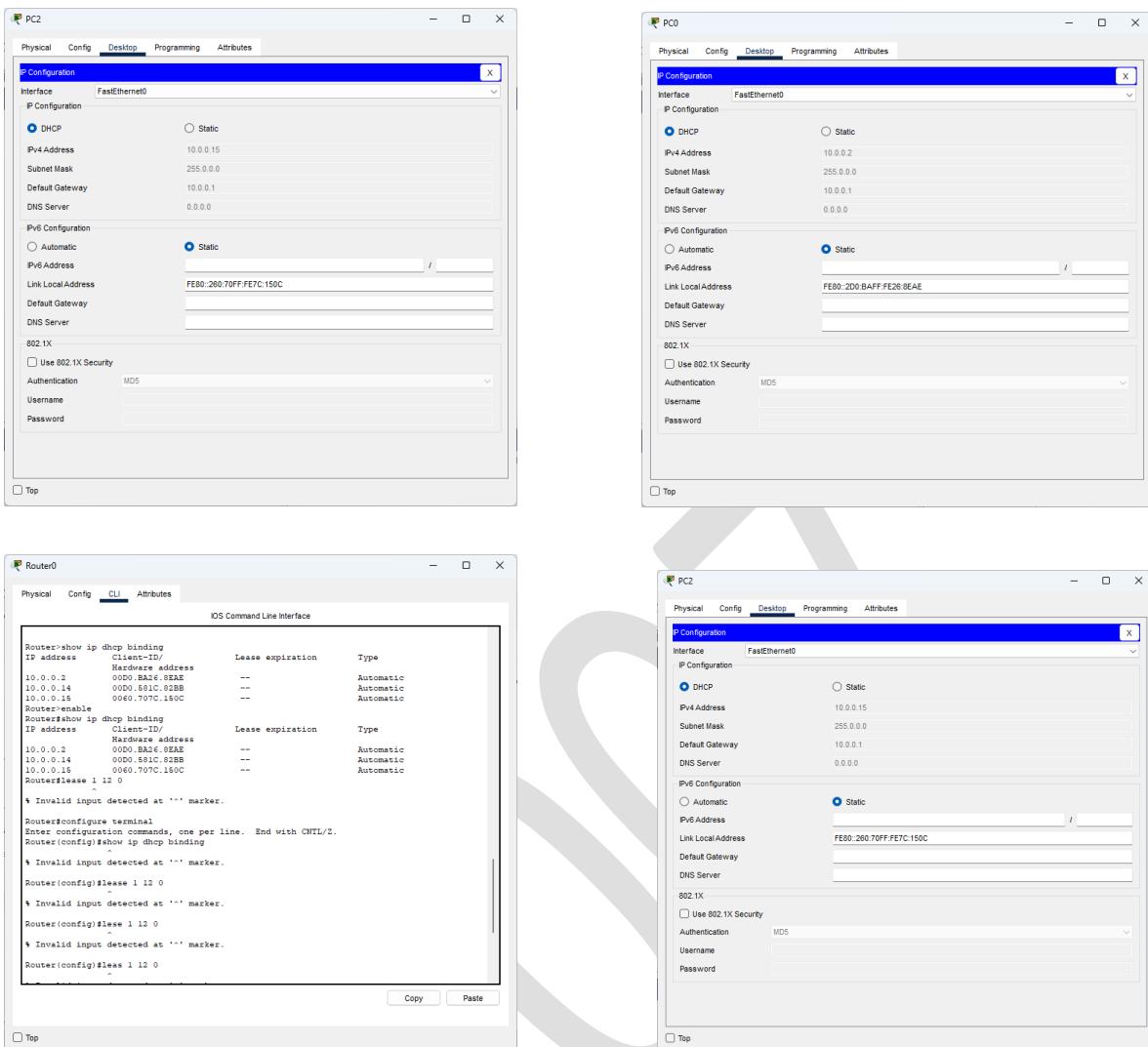
**Conclusion:-The program is successfully executed**

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

```

Router>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:-**



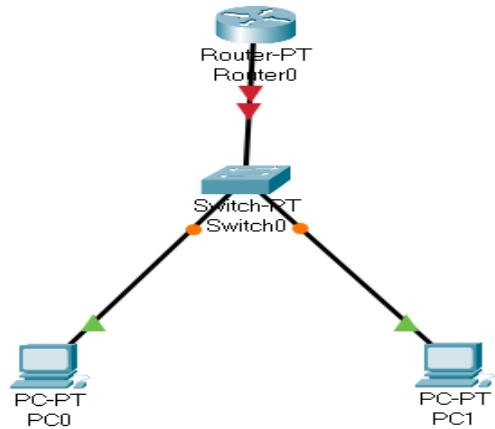
**Program File Link :- <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno3a.pkt>**

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

## b) DNS

Aim:-To study DNS

**Circuit diagram:-**



**Program:-**

### **Router 0>CLI**

```

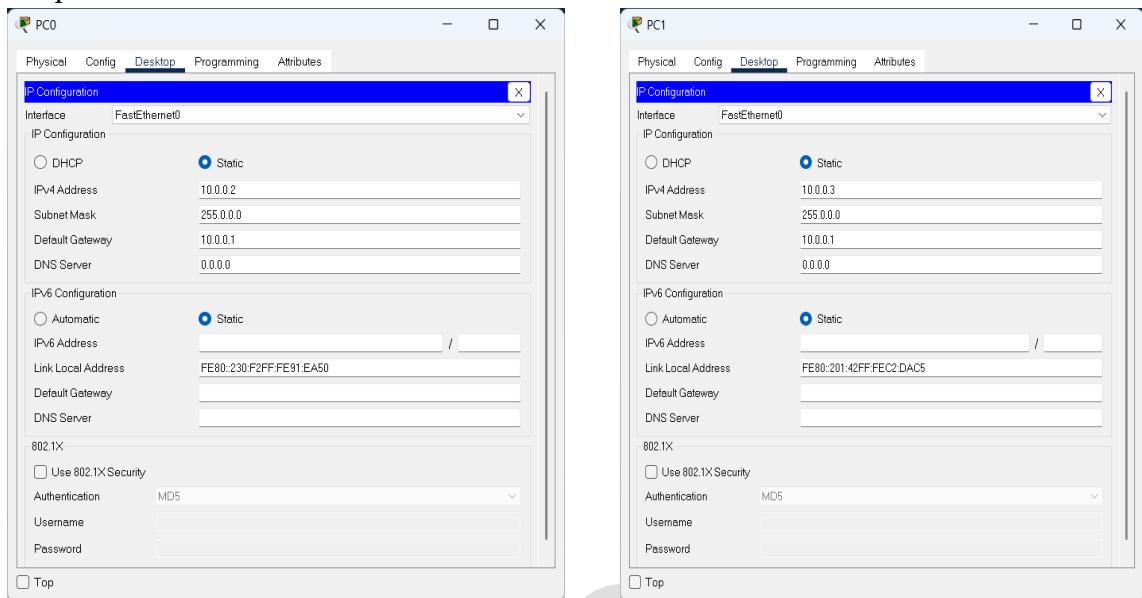
Router>enable
Router#config terminal
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#ip dhcp pool syit
Router(dhcp-config)#network 10.0.0.0 255.0.0.0
Router(dhcp-config)#default-router 10.0.0.1
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>IPCConfiguration:-**

**IPV4:-**10.0.0.2  
**Subnet mask:-**255.0.0.0  
**Default gateway:-** 10.0.0.1

### **Pc1>Desktop>IPCConfiguration:-**

**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>



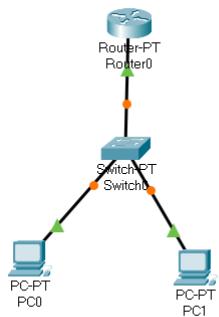
\

**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>IPCConfiguration:-**

**IPV4:-**10.0.0.2

**Subnet mask:-**255.0.0.0

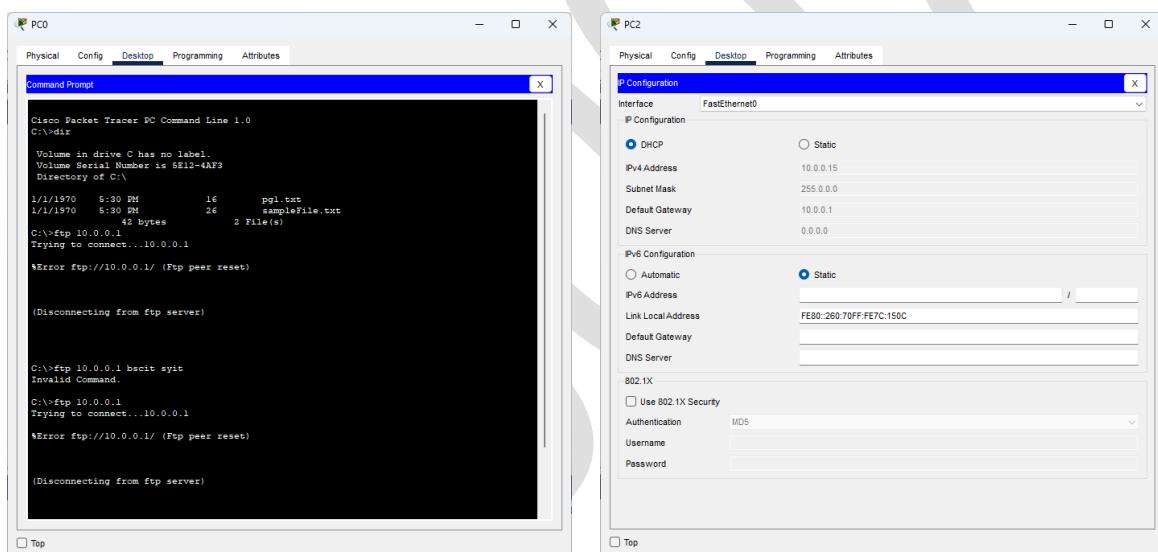
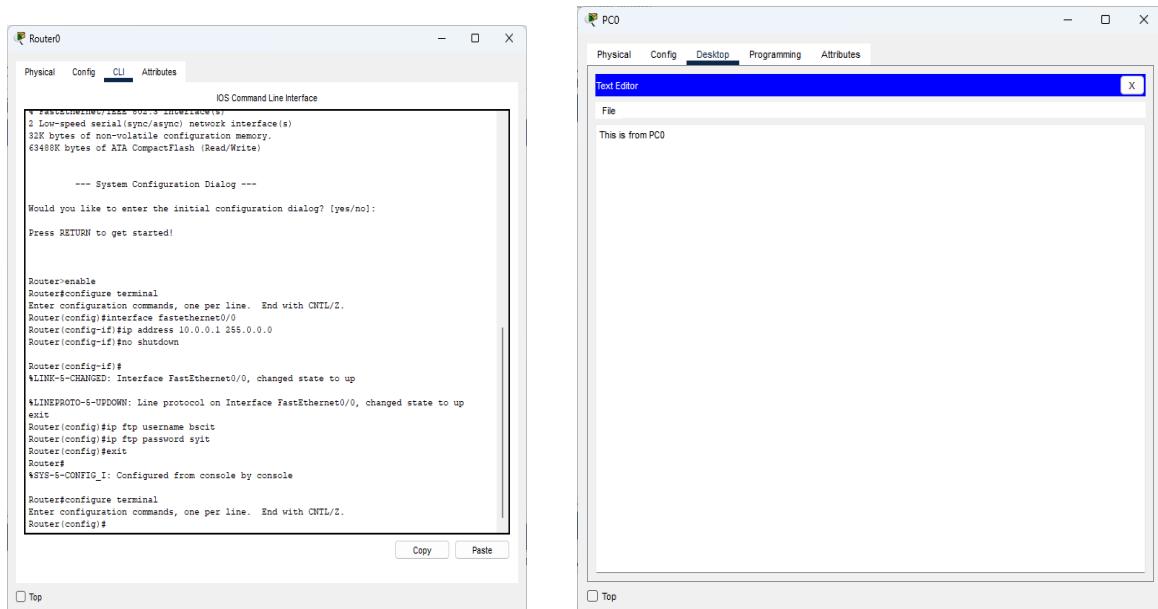
**Default gateway:-** 10.0.0.1

**Pc1>Desktop>IPCConfiguration:-**

**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>
  
```

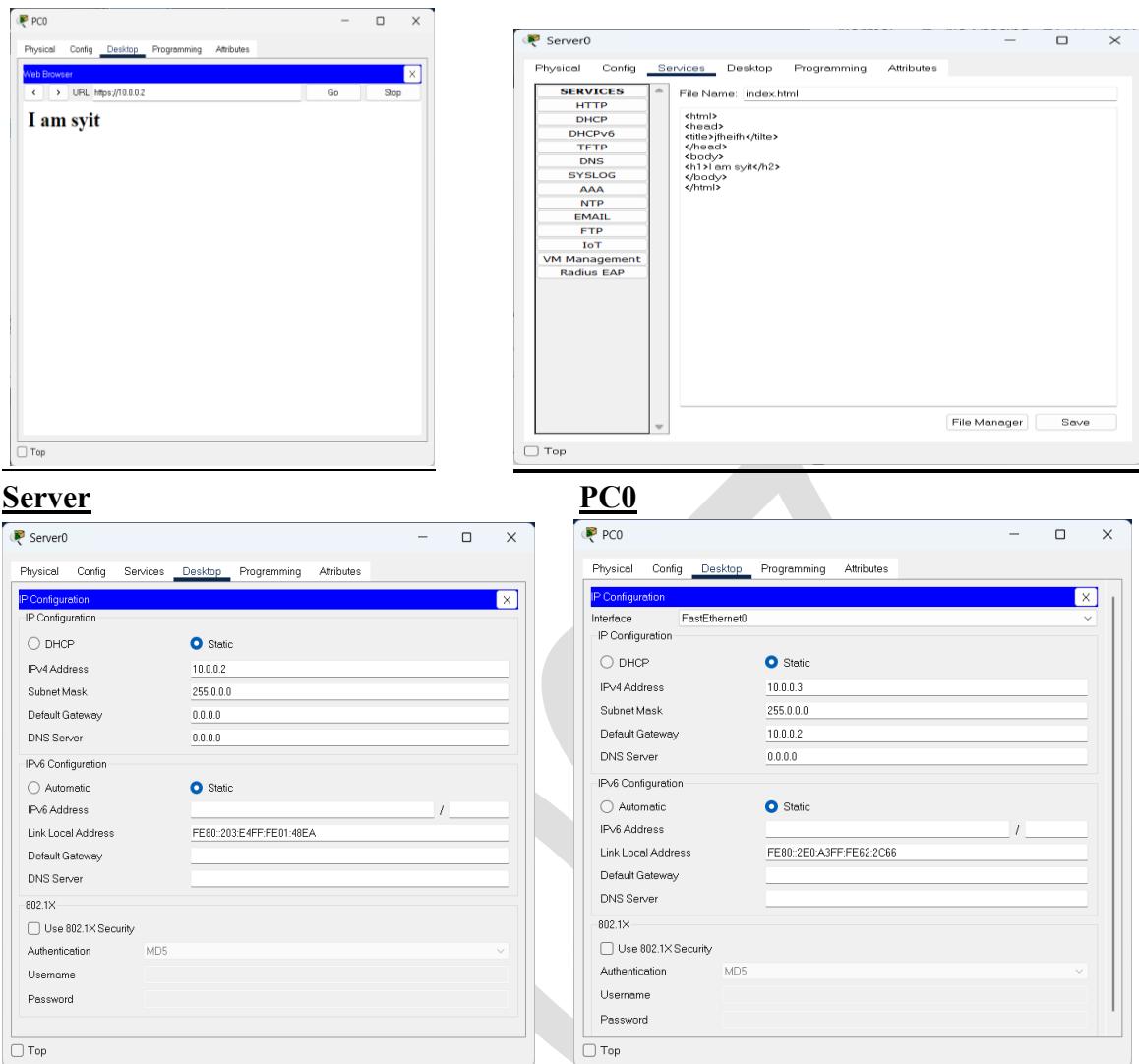
Pc0>Desktop>IPConfiguration:-

**IPV4:-**10.0.0.3

**Subnet mask:-**255.0.0.0

**Default gateway:-** 10.0.0.2

PC0>Texteiditer



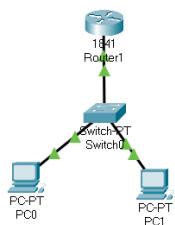
**Program File Link :-** <https://github.com/devendra-pixel/Major-PRACTICAL-by-devendra/blob/main/DCNpracticalno3d.pkt>

**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**

```
Cisco Packet Tracer PC Command Line 1.0
C:\telnet 10.0.0.1
Trying 10.0.0.1 ...Open

User Access Verification

Password:
Router>
```

**PC 1**

```
Cisco Packet Tracer PC Command Line 1.0
C:\ipconfig

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....:: FE80::201:64FF:FECC:DC27
IPv4 Address.....:: 10.0.0.3
IPv4 Subnet Mask.....:: 255.0.0.0
Default Gateway.....:: 10.0.0.1

Bluetooth Connection:

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

C:\telnet 10.0.0.1
Trying 10.0.0.1 ...Open

User Access Verification

Password:
Password:
Router>
```

```
IOS Command Line Interface
Router#line vty 0 10
Router(config)#line vty 0 10
* Invalid input detected at '^' marker.

Router(config)#line vty 0 10
^
* Invalid input detected at '^' marker.

Router(config)#line vty 0 10
Router(config-line)#password sylt
Router(config-line)#login
Router(config-line)#transport input telnet
Router(config-line)#exit
Router(config)#exit
Router#
*SYS-5-CONFIG_I: Configured from console by console

Router#show uses
^
* Invalid input detected at '^' marker.

Router#show user
^
* Invalid input detected at '^' marker.

Router#show user
Line      User      Host(s)          Idle      Location
* 0       vty 0      idle             00:00:00
134 vty 0      idle             00:03:01 10.0.0.3
135 vty 1      idle             00:01:39 10.0.0.2

Interface     User      Mode      Idle      Peer Address
Router#
```

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

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