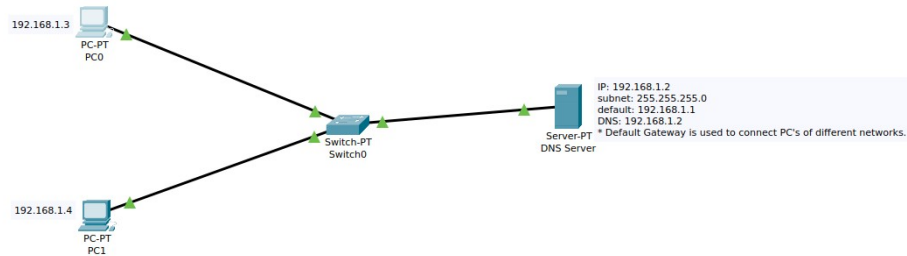


Name : Jawad Ahmed
Roll No : 20P-0165
Section : BCS-5A

HOME WORK NO 4

Task1: DNS server configuration in Packet Tracer.

DNS Server Configuration



```
C:\>ping pc1

Pinging 192.168.1.4 with 32 bytes of data:

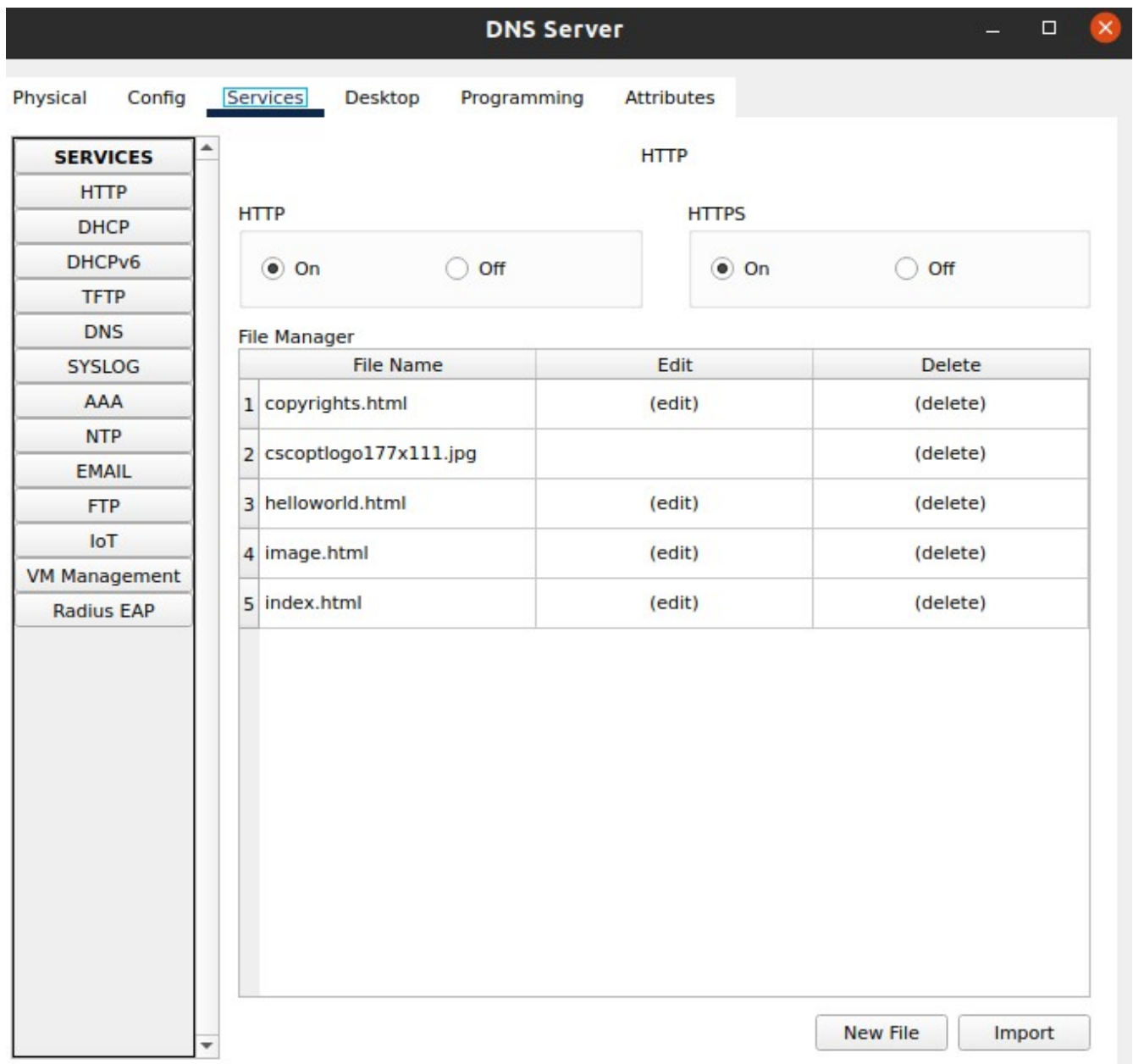
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

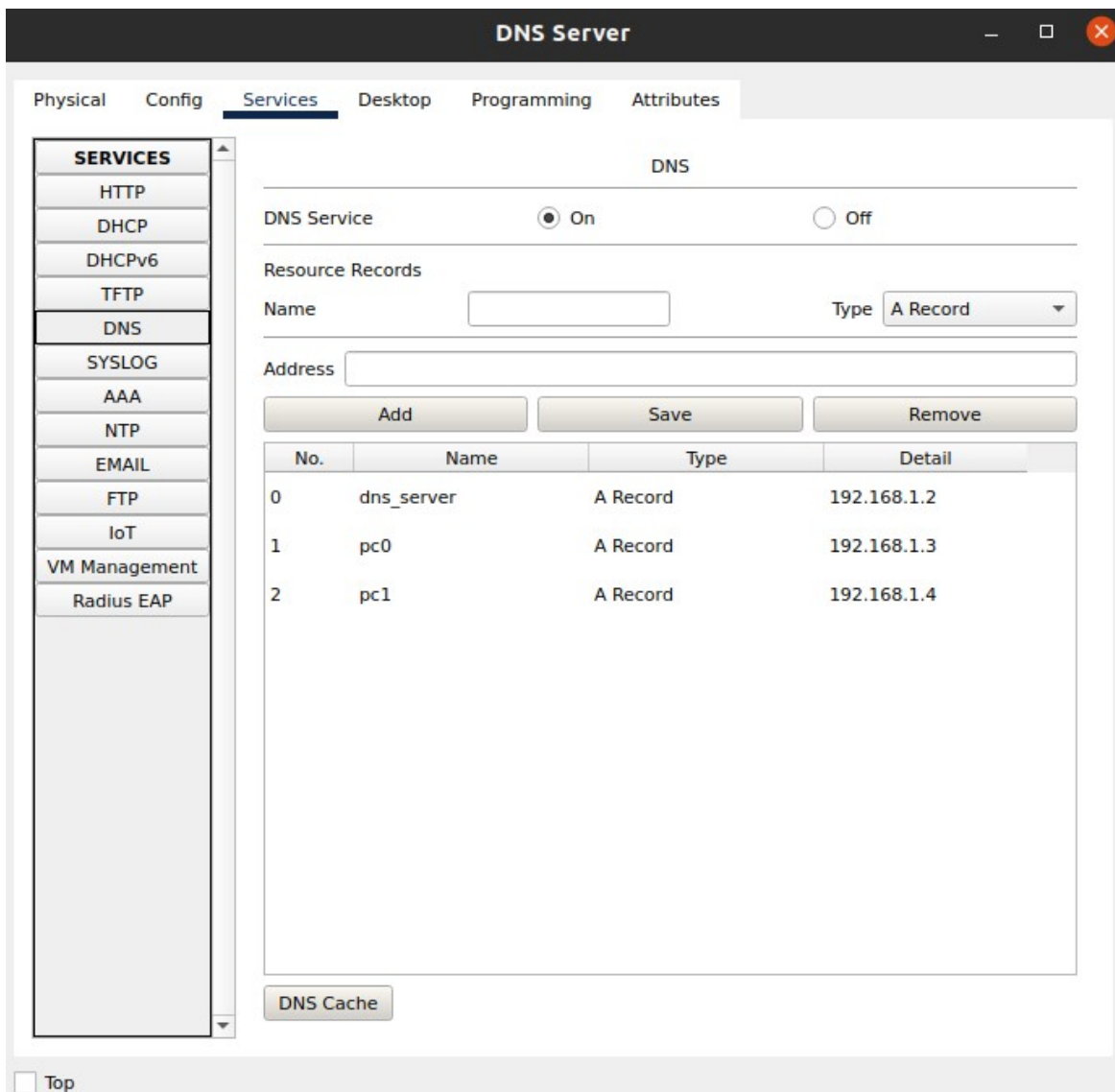
C:\>
```

In this task we have to create connection between pc's using the DNS server so the PC's can ping each other using pc's name.

1: First of all the **ON** the DNS service. Click on the **services** and then select DNS.



2: Provide the IP's of the PC's to which you want to ping.



Once that provided then go the command prompt of PC0 and issue the command
=> ping pc1

You will see pc0 will start pinging pc1. Pc1 is the name of the PC now it is the task of the DNS server to translate the name of the PC to corresponding IP address.

```
C:\>ping pc1

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

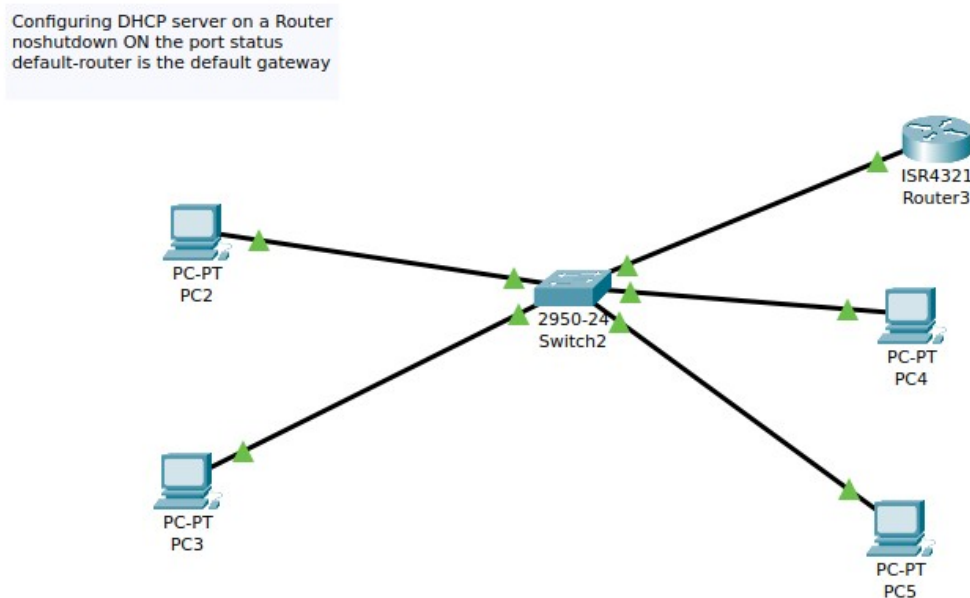
Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Task2: Configuring DHCP server on a Router.

The DHCP is used to assign IP's randomly. We can make mistakes while assigning IP's so we are using the DHCP that will assign IP for our PC's and also the default gateway and DNS Ip also assigned. I will be using the router CLI to activate the DHCP and provide the network for the IP's.

First of all create this topology and then we will do configuration for all the DHCP.



Once that done go to the router CLI and then issue these commands to configure router.

1: Enter no first.

```
Would you like to enter the initial configuration dialog? [yes/no]: no
```

```
Press RETURN to get started!
```

```
Router>
```

2: Then issue these commands in the cli and all the configuration of DHCP is done.

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface 
Router(config)#interface 
Router(config)#interface Gig
Router(config)#interface GigabitEthernet
Router(config)#interface GigabitEthernet
Router(config)#interface GigabitEthernet
Router(config)#interface GigabitEthernet 0
Router(config)#interface GigabitEthernet 0
Router(config)#interface GigabitEthernet 0/
Router(config)#interface GigabitEthernet 0/0/0
%Invalid interface type and number
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
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
```

3: Once that done go the PC0 and in the IP configuration instead of static select DHCP. It take some time to assign IP's.

PC5

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.1.5

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.10

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::201:63FF:FE7C:9D22

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

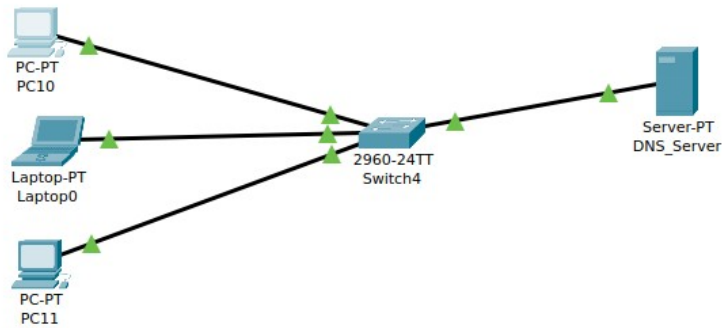
☐ Top

The IP is assigned using the DHCP. You can ping two PC'S using IP's to verify this.

Task3: Configuring DHCP service on a generic server

1: First of all build I have built this Topology.

Configuring DHCP service on a generic service.



2: Once that create then click on the DNS_Server and assign IP's, subnet mask and the DNS_Ip to it.

The screenshot shows the 'DNS_Server' configuration window with the 'Desktop' tab selected. The window has a title bar with standard OS controls and a menu bar with 'Physical', 'Config', 'Services', 'Desktop', 'Programming', and 'Attributes'. A blue header bar at the top of the main content area says 'IP Configuration' with a close button 'X'.

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.2

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.10

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: [] / []

Link Local Address: FE80::201:C7FF:FEA5:E79C

Default Gateway: []

DNS Server: []

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username: []

Password: []

☐ Top

Once that configuration done then next step go the services tab and click on the DHCP service. The serverPool is by default created provide the default gateway and subnet mask and start IP address. We sometime reserved some IP addresses in this case I have reserved first 10 Ip addresses and the Max users will change from 255 to 245. After the click on the save and pool is created successfully.

DNS_Server

PhysicalConfigServicesDesktopProgrammingAttributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DHCP

Interface

FastEthernet0

Service

On

Off

Pool Name

serverPool

Default Gateway

192.168.1.1

DNS Server

192.168.1.10

Start IP Address :

192

168

1

11

Subnet Mask:

255

255

255

0

Maximum Number of Users :

245

TFTP Server:

0.0.0.0

WLC Address:

0.0.0.0

Add

Save

Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
p1	192.16...	192.16...	192.16...	255.25...	245	0.0.0.0	0.0.0.0
serverPool	192.16...	192.16...	192.16...	255.25...	245	0.0.0.0	0.0.0.0

☐ Top

After pool is created go to any PC and in the IP configuration click on the dhcp instead of static IP configuration and IP will be assigned to the PC by DHCP.

Laptop0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.1.12

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.10

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:58FF:FEDB:47A9

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

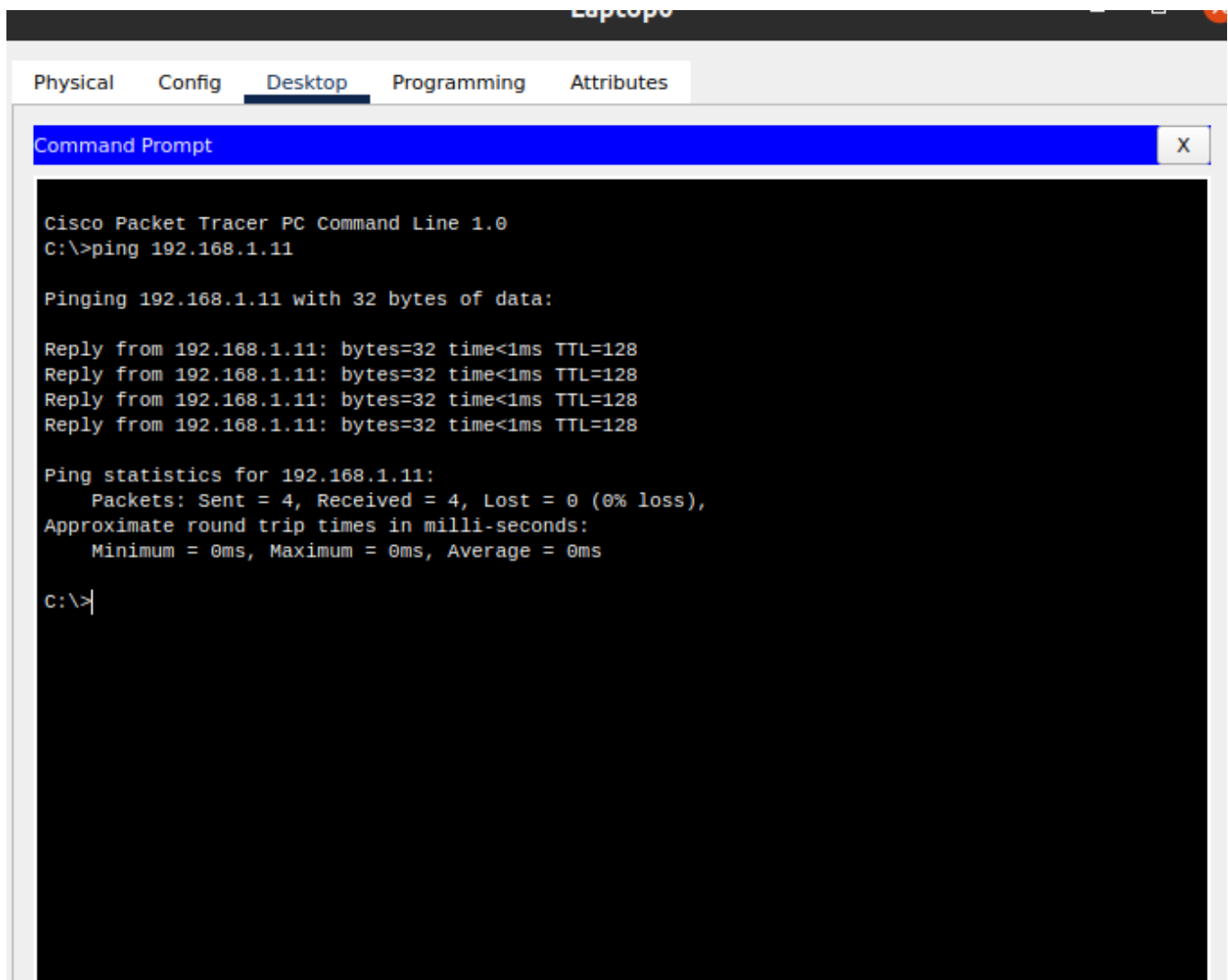
Authentication MD5

Username

Password

☐ Top

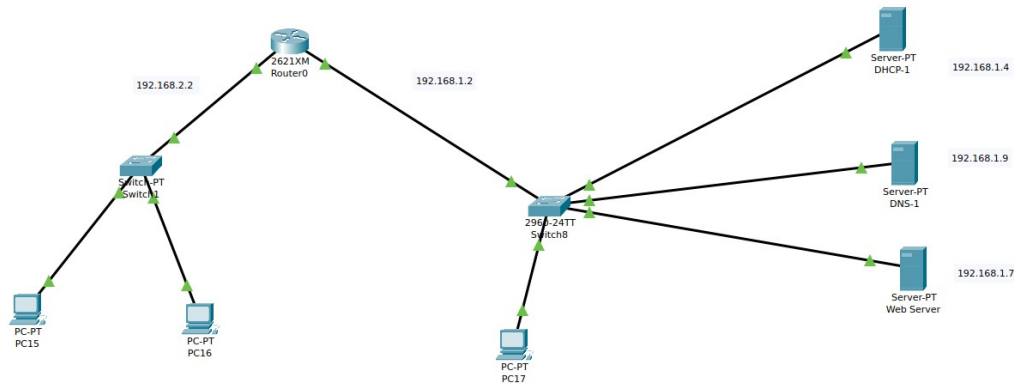
The Ip assigned successfully by using the DNS server.
Pinging PC10 to Laptop0 the IP assigned by DHCP.



Task4:: Configuring DHCP, DNS and Web Server configuration in cisco packet tracer.

Step1: Create This Topology.

Task: Configuring DHCP, DNS and Web Server configuration in cisco packet tracer



Step2: Assign Ip address to F0/0 and F0/1 of router.

Router0

Physical Config CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

ROUTING

- Static
- RIP

INTERFACE

- FastEthernet0/0
- FastEthernet0/1

FastEthernet0/0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0002.4A9A.1A01

IP Configuration

IPv4 Address 192.168.2.2

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Equivalent IOS Commands

```
Router(config)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 192.168.1.4.
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

☐ Top

The screenshot shows the Router0 configuration window with the 'Config' tab selected. The left sidebar contains a tree view with categories: GLOBAL (Settings, Algorithm Settings), ROUTING (Static, RIP), and INTERFACE (FastEthernet0/0, FastEthernet0/1). The main area displays the configuration for FastEthernet0/1. The 'Port Status' is 'On', 'Bandwidth' is '100 Mbps', 'Duplex' is 'Full Duplex', and 'MAC Address' is '0002.4A9A.1A02'. The 'IP Configuration' section shows 'IPv4 Address' as '192.168.1.2' and 'Subnet Mask' as '255.255.255.0'. The 'Tx Ring Limit' is set to '10'. Below the configuration area, a section titled 'Equivalent IOS Commands' shows the following commands:

```
Router(config-if)#  
Router(config-if)#exit  
Router(config)#interface FastEthernet0/1  
Router(config-if)#  
Router(config-if)#exit  
Router(config)#interface FastEthernet0/0  
Router(config-if)#  
Router(config-if)#exit  
Router(config)#interface FastEthernet0/1  
Router(config-if)#  
Router(config-if)#exit  
Router(config)#interface FastEthernet0/1  
Router(config-if)#
```

At the bottom left, there is a 'Top' button.

Step3: Open the CLI tab in the **Router0** and go the configuration mode and execute the following commands.

To Go To the configuration mode
=> **configure terminal**


```
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp pool P1
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.2
Router(dhcp-config)#ip dhcp pool P2
Router(dhcp-config)#network 192.168.2.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.2.2
Router(dhcp-config)#
```

Step4: Apply follows setting on DHCP IP configurations.

The screenshot shows a window titled "DHCP-1" with a tabbed interface. The "Desktop" tab is selected. Below the tabs, there is a blue header bar labeled "IP Configuration" with a close button (X). The main content area is divided into three sections: "IP Configuration", "IPv6 Configuration", and "802.1X".

IP Configuration:

- ☐ DHCP
- ☒ Static
- IPv4 Address: 192.168.1.4
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.1.2
- DNS Server: 192.168.1.9

IPv6 Configuration:

- ☐ Automatic
- ☒ Static
- IPv6 Address: [Empty field] / [Empty field]
- Link Local Address: FE80::290:2BFF:FE1C:6217
- Default Gateway: [Empty field]
- DNS Server: [Empty field]

802.1X:

- ☐ Use 802.1X Security
- Authentication: MD5 (dropdown menu)
- Username: [Empty field]
- Password: [Empty field]

At the bottom left, there is a checkbox labeled "Top".

Step5: Open the services tab and enable DHCP Services and Add Pool P1 and Pool P2 with respective Ip Address.

The screenshot shows the DHCP configuration window for DHCP-1. The 'Services' tab is selected, and the DHCP service is enabled. The configuration includes a pool named 'serverPool' with a start IP of 192.168.1.1, a subnet mask of 255.255.255.0, and a maximum of 255 users. The DNS server is set to 192.168.1.9. Below the configuration fields is a table listing the configured pools.

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
P1	192.168.1.2	192.168.1.9	192.168.1.0	255.255.255.0	255	0.0.0.0	0.0.0.0
P2	192.168.2.2	192.168.1.9	192.168.1.0	255.255.255.0	255	0.0.0.0	0.0.0.0
serverPool	192.168.1.2	192.168.1.9	192.168.1.0	255.255.255.0	255	0.0.0.0	0.0.0.0

Step 6: Apply follows setting on DNS Ip configuration.

The screenshot shows the DNS configuration window for DNS-1. The 'Desktop' tab is selected, and the 'IP Configuration' section is highlighted. The configuration includes a static IPv4 address of 192.168.1.9, a subnet mask of 255.255.255.0, a default gateway of 192.168.1.2, and a DNS server of 192.168.1.9. The IPv6 configuration is also shown, with a static address of FE80::209:7CFF:FE68:B631. The 802.1X security section is also visible, with the 'Use 802.1X Security' checkbox checked and the authentication method set to MD5.

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.9

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.2

DNS Server: 192.168.1.9

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::209:7CFF:FE68:B631

Default Gateway:

DNS Server:

802.1X

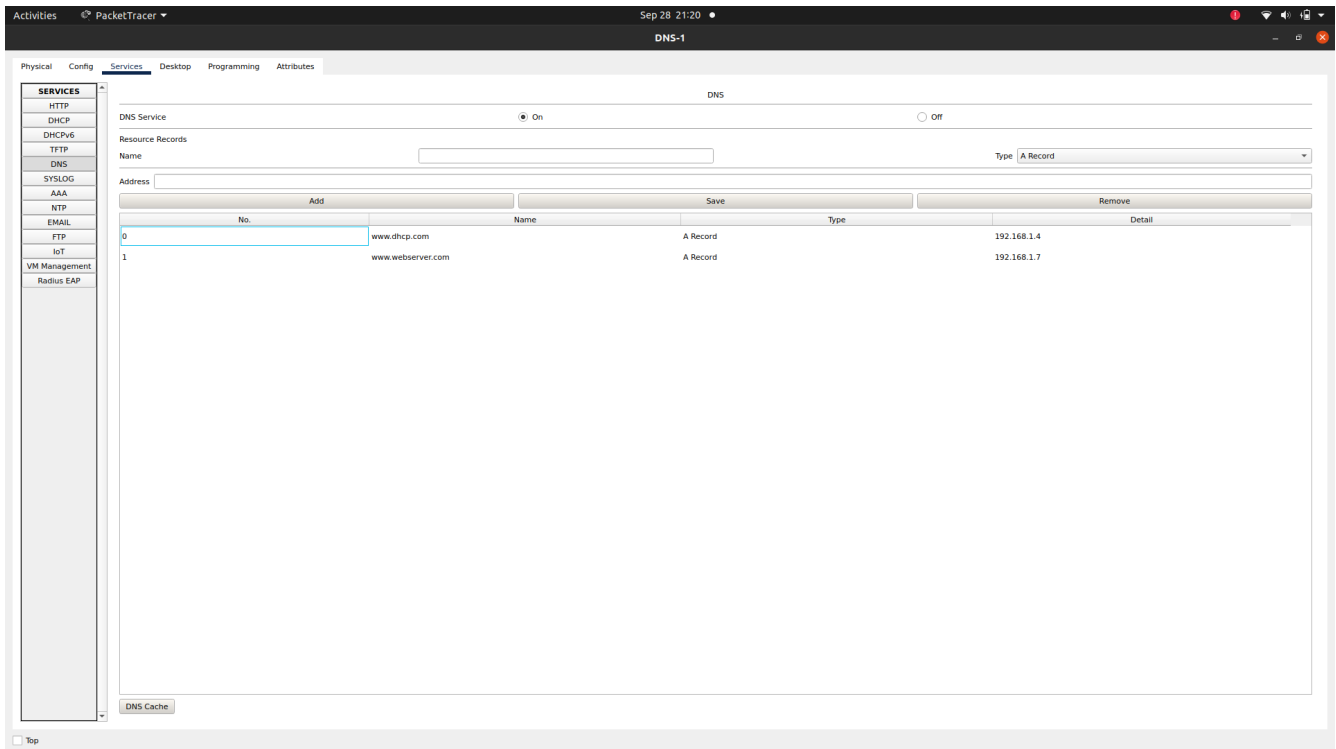
☒ Use 802.1X Security

Authentication: MD5

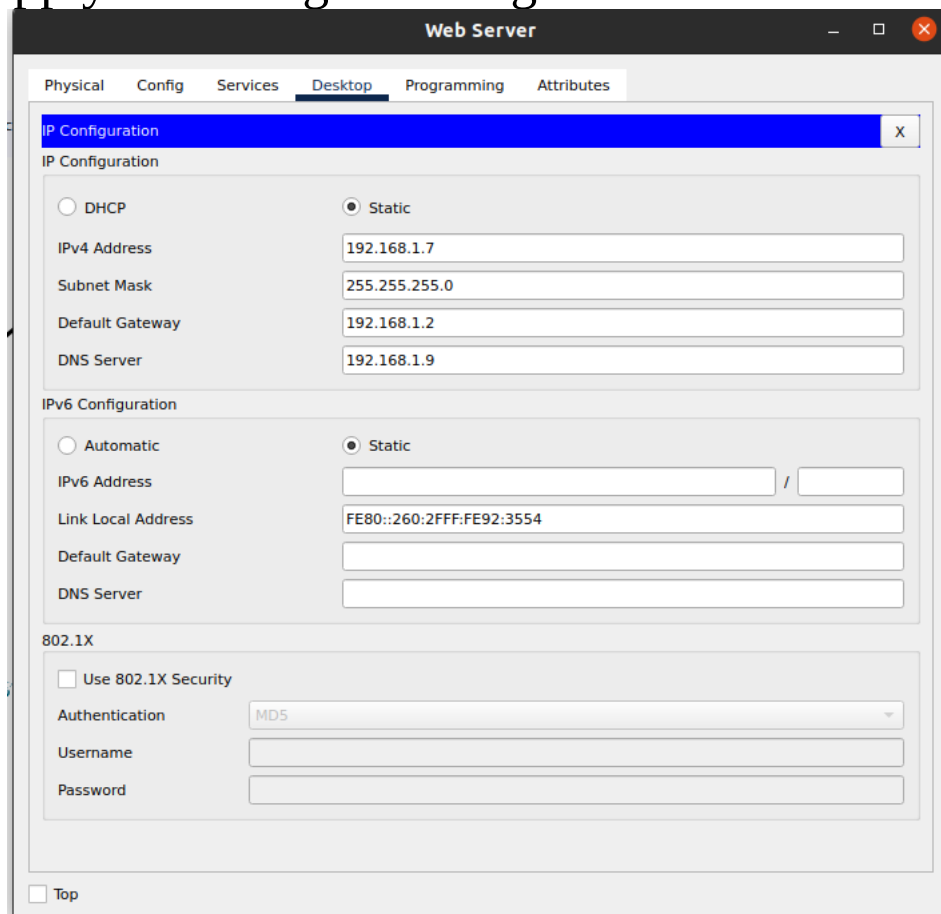
Username:

Password:

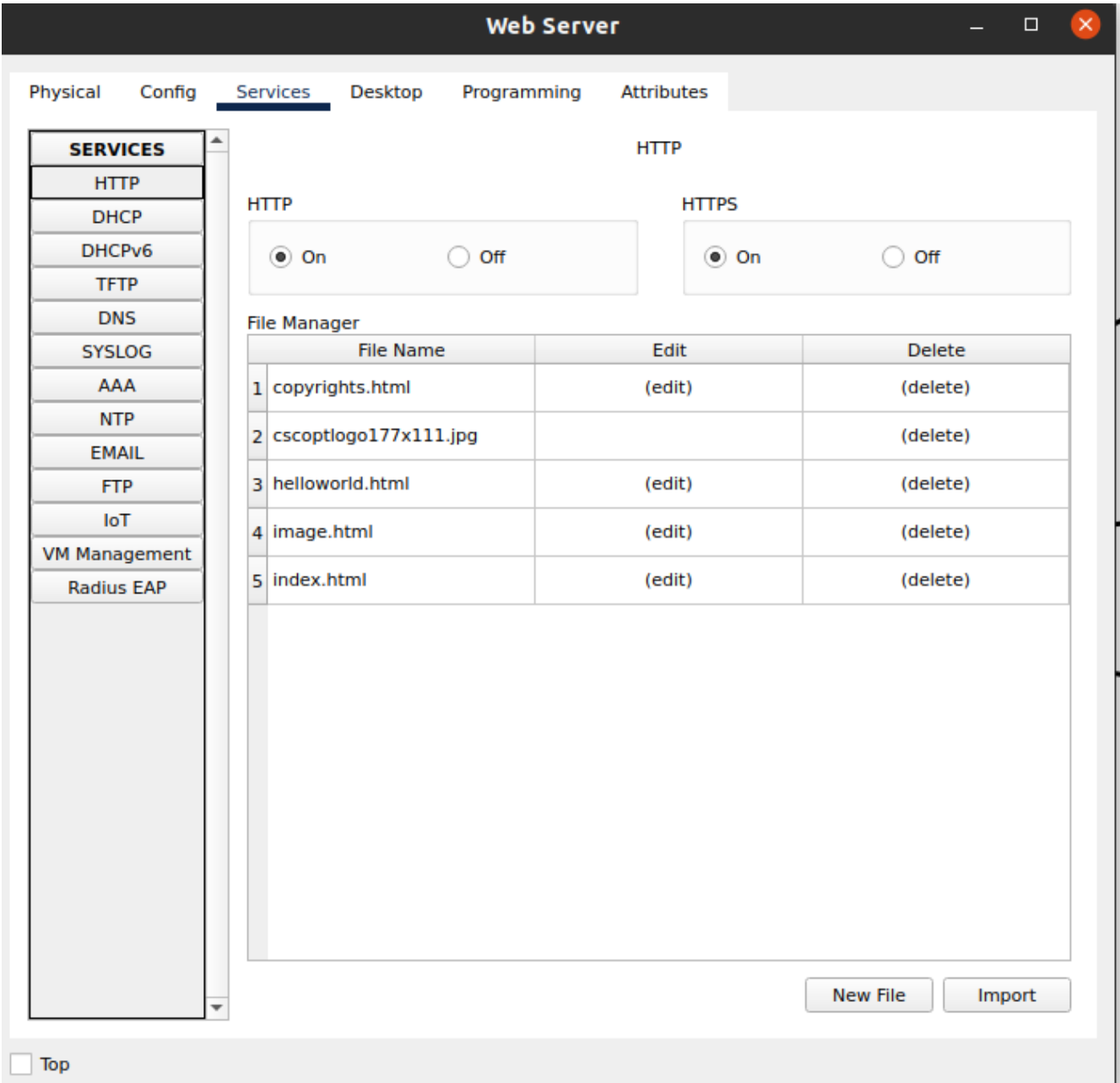
Step7: Enable DNS Services of DNS and add two resources records. Remember To On the DNS Service.



Step8: Apply following IP configuration on the Web Server.



Step9: Go to Services Tab and then Enable Http and Https in Web Server.



The screenshot shows the 'Web Server' configuration window with the 'Services' tab selected. The 'HTTP' and 'HTTPS' services are both enabled, indicated by the 'On' radio buttons being selected. Below these, the 'File Manager' section displays a table of files with their names, edit links, and delete links. At the bottom right, there are 'New File' and 'Import' buttons. A 'Top' button is located at the bottom left of the window.

Web Server

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

HTTP

☒ On ☐ Off

HTTPS

☒ On ☐ Off

File Manager

	File Name	Edit	Delete
1	copyrights.html	(edit)	(delete)
2	cscoptlogo177x111.jpg		(delete)
3	helloworld.html	(edit)	(delete)
4	image.html	(edit)	(delete)
5	index.html	(edit)	(delete)

New File Import

☐ Top

Step10: Edit the index.html file

The screenshot shows the 'Web Server' configuration window in Cisco Packet Tracer. The 'Services' tab is selected, displaying a list of services on the left and the 'index.html' file content on the right.

Web Server

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

File Name:

```
<html>
<center><font size='+2' color='blue'>Cisco Packet Tracer</font></center>
<hr>Welcome To Computer Network Lab
<p>Quick Links:
<br><a href='helloworld.html'>A small page</a>
<br><a href='copyrights.html'>Copyrights</a>
<br><a href='image.html'>Image page</a>
<br><a href='cscoptlogo177x111.jpg'>Image</a>
</html>
```

☐ Top

Step11: Now go to every PC and on their IP configuration tabs, enable DHCP. Every PC should be able to obtain an IP address, default gateway and DNS server.

Click PC17->Desktop->IP configuration. Then enable DHCP:

The screenshot shows the configuration window for PC17. The 'Desktop' tab is selected, and the 'IP Configuration' sub-tab is active. The 'Interface' is set to 'FastEthernet0'. Under 'IP Configuration', the 'DHCP' radio button is selected, and a message states 'DHCP request successful.'. The 'IPv4 Address' is 192.168.1.1, 'Subnet Mask' is 255.255.255.0, 'Default Gateway' is 192.168.1.2, and 'DNS Server' is 192.168.1.9. Under 'IPv6 Configuration', the 'Static' radio button is selected. The 'IPv6 Address' field is empty, 'Link Local Address' is FE80::201:63FF:FE98:80D2, 'Default Gateway' is empty, and 'DNS Server' is empty. Under '802.1X', the 'Use 802.1X Security' checkbox is unchecked, 'Authentication' is set to MD5, and 'Username' and 'Password' fields are empty. A 'Top' button is at the bottom left.

PC17

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.1.1

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.2

DNS Server 192.168.1.9

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::201:63FF:FE98:80D2

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

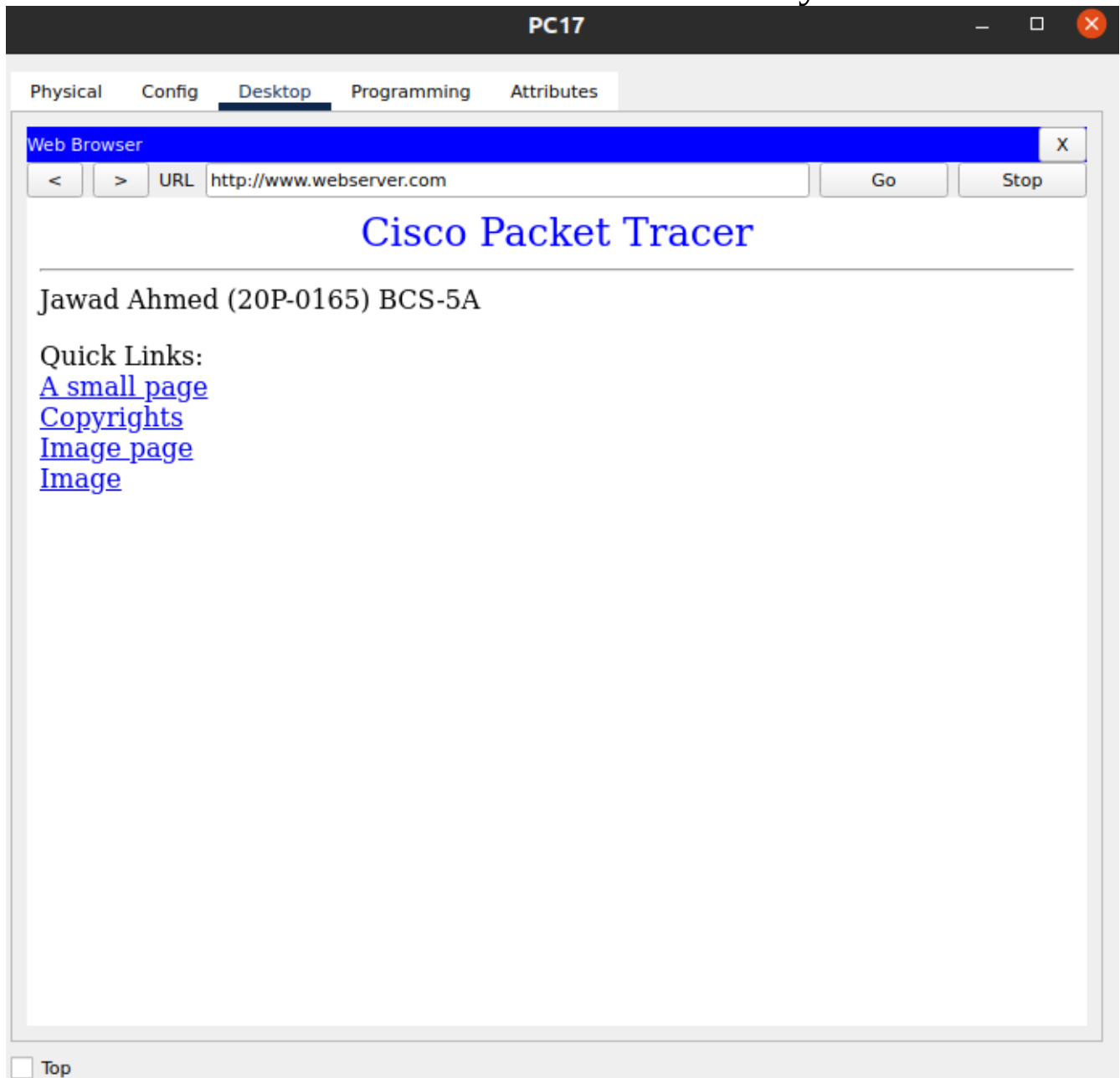
Username

Password

☐ Top

Do it for all the PC's.

Now let's Open the PC17 browser and open the URL that you have added. The index file will be shown to you.



How it works?

We have **DNS-1** in which we save domain name and told that when this domain name typed go to that IP server and pick index file from that server and how to user.

For Example: When user type www.webserver.com then the webserver (192.168.1.7) index file is shown and work same for all the other PC's.

Test the configuration by pinging PC2 from PC1. Ping should succeed.