Assignment No. 2c

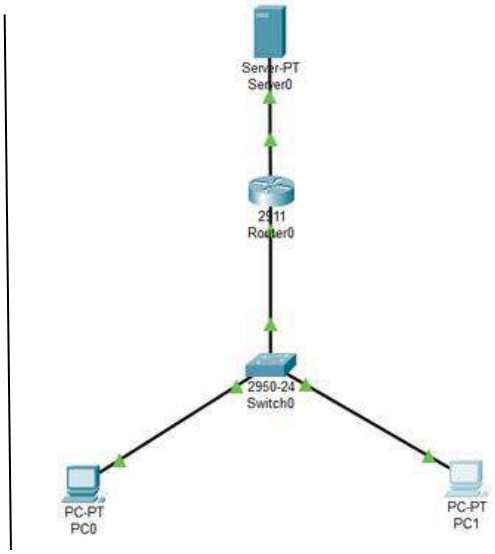
Problem Statement : Configuration of Router, DNS, FTP, HTTP and Mail Server.

File transfer protocol configuration using cisco packet tracer

File Transfer Protocol(FTP) is an application layer protocol that moves files between local and remote file systems. It runs on top of TCP, like HTTP. To transfer a file, 2 TCP connections are used byFTP in parallel: control connection and data connection.

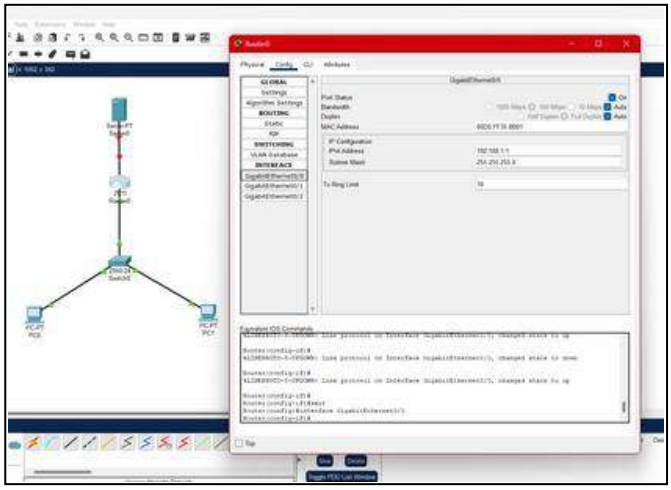
Procedure :

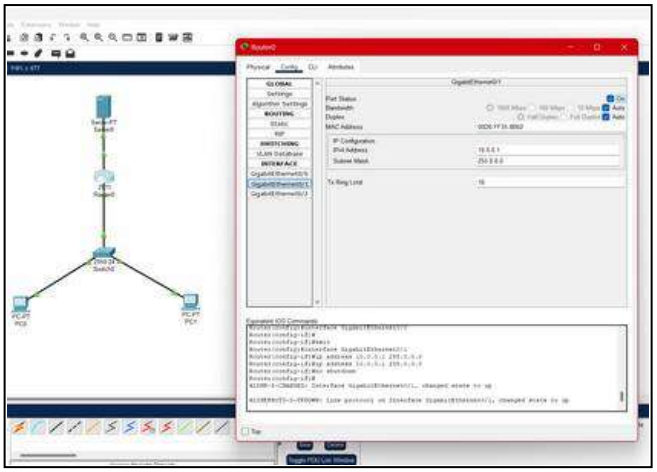
To configure an FTP server, first, we need a server, router, switch, and two PCs. With the help of this scenario, we will try to send a file to the server and download it from there.



Step-1 (Router Setup):

1. Select a 2911 Router from Network Devices.
2. Select Router0 and Go to Config.
3. Configure the GigabitEthernet0/0 by assigning IP address as 192.168.1.1 and subnet mask as 255.255.255.0 and turn on the port status
4. Configure the GigabitEthernet0/1 by assigning IP address as 10.0.0.1 and subnet mask as
5. 255.0.0.0 and turn on the port status.



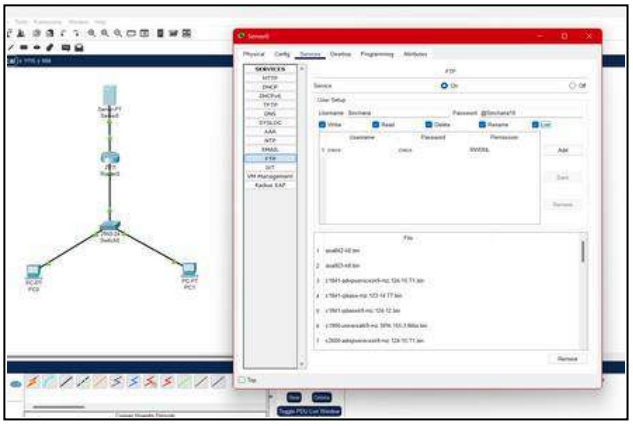


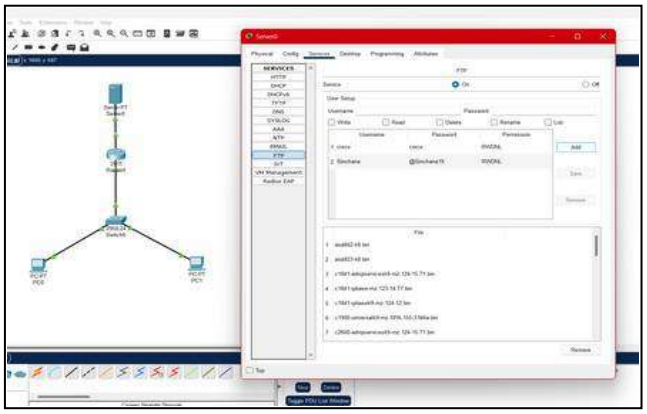
Step-2 (PC Setup):

1. Select PC0 and go to FastEthernet0 in config and assign IP address and subnet mask for the PC0 as 192.168.1.2, 255.255.255.0
2. Select PC1 and go to FastEthernet0 in config and assign IP address and subnet mask for the PC1 as 192.168.1.3, 255.255.255.0
3. For both the PCs (PC0, PC1) go to Global settings in config and Assign default gateway as 192.168.1.1

Step-3 (Server Setup):

1. Connect GigabitEthernet0/1 port of Router0 to the FastEtherner0 of server0 using Copper Straight-Through cable.
2. Go to the global settings in config and assign default gateway as 10.0.0.1
3. Go to FastEthernet0 and assign IP address and subnet mask as 10.0.0.2, 255.0.0.0
4. Go to services and open FTP Service.
5. Go to user setup and create a username and password.
6. Select all the permissions (Write, Read, Delete, Rename, List) and add the user.



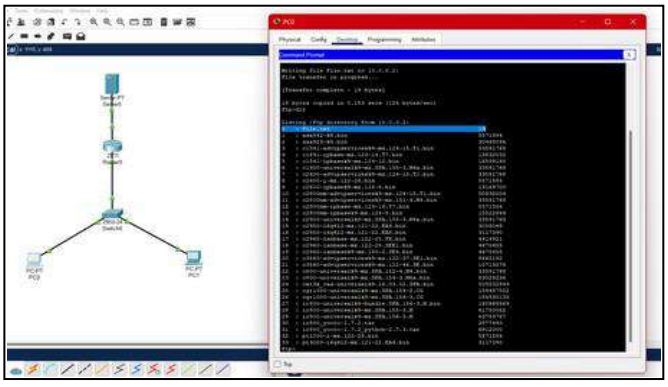


Step-4 (Setup Switch):

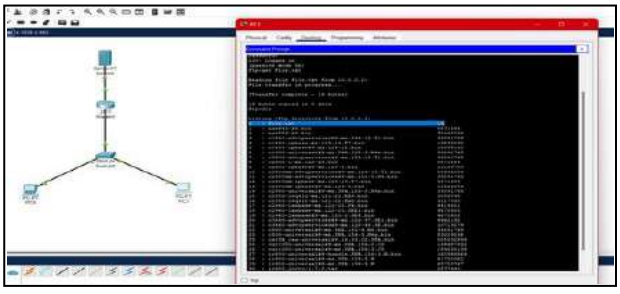
1. Select a 2950-24 Switch from the network devices.
2. Connect FastEthernet0 port of PC0 to the FastEthernet0/1 port of switch0 using Copper Straight-Through cable.
3. Connect FastEthernet0 port of PC1 to the FastEthernet0/2 port of switch0 using Copper Straight-Through cable.
4. Connect FastEthernet0/3 port of switch0 to the GigabitEthernet0/0 of Router0 using Copper Straight-Through cable.

Step-5:

1. Writing(uploading) the file named File.txt into FTP Server from PC0 using put 2.txt command and verifying this file transfer using dir command.
2. Writing(uploading) the file named File.txt into FTP Server from PC0 using put 2.txt command and verifying this file transfer using dir command.



3. Reading(Downloading) the file named File.txt present in FTP Server from PC1 using get File.txt command and verifying this file transfer using dir command.



DNS server configuration using Cisco Packet Tracer

Domain Name System (DNS) is a hostname for IP address translation service. DNS is a distributed database implemented in a hierarchy of name servers. It is an application layer protocol for message exchange between clients and servers. It is required for the functioning of the Internet.

Procedure:

Step-1:

To configure a DNS server in Cisco Packet Tracer, we need one server, one switch, and two or more computers (as desired). Connect them using copper straight-through cables.

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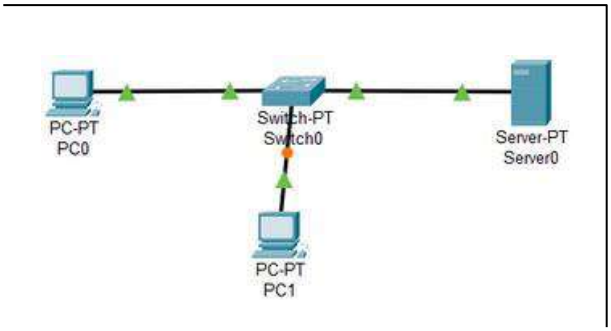
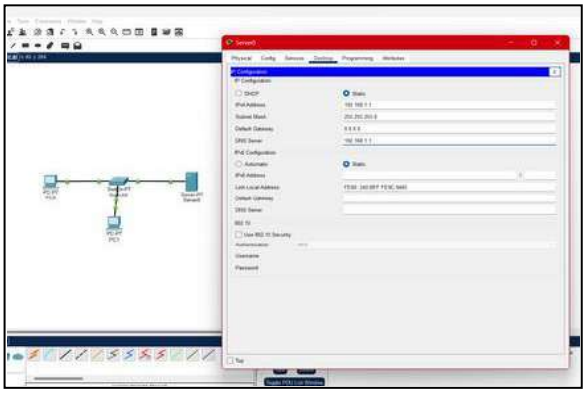


Step-2 (Server Setup):

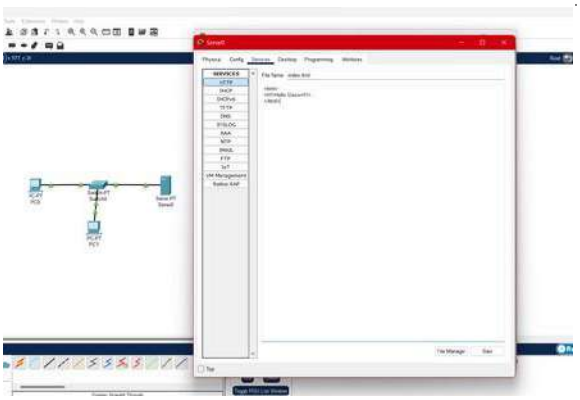
Substep-1:

1. Click on the server.
2. Go to the "Desktop" option.
3. Navigate to "IP address."
4. Assign the IP address.
5. Ensure that the DNS server IP addressis the same as the server's.



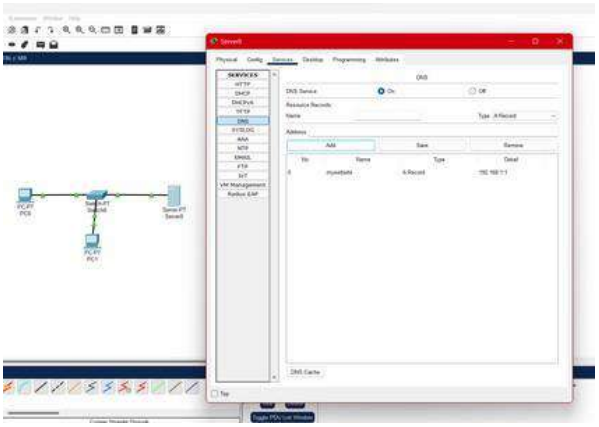
Substep-2:

1. Proceed to the "Services" option.
2. Select "HTTP."
3. Click the "Edit" option for the index.html file.
4. Write a basic HTML code.
5. Save the HTML code.



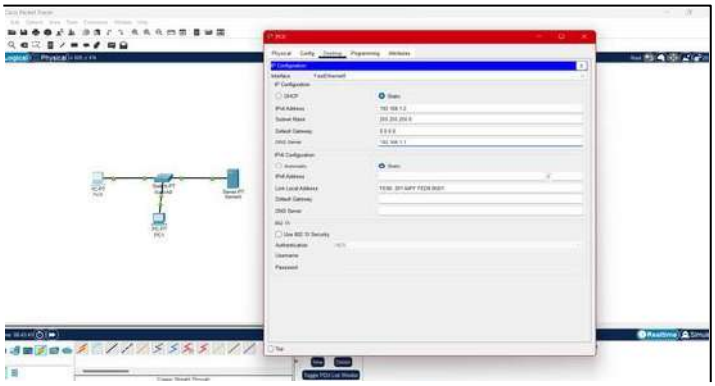
Substep-3:

1. Navigate to "DNS."
2. Turn on the DNS service.
3. Provide a name for the website.
4. Input the address of the DNS server.
5. Click on "Add."



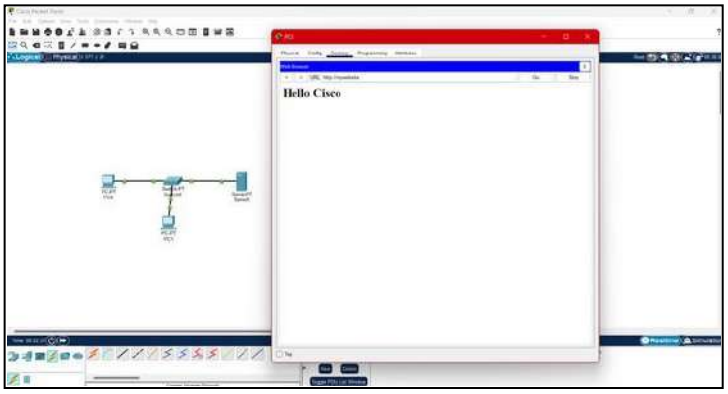
Step-3 (PC Setup):

1. Select PC0 and go to desktop then IP configuration and assign IP address and subnet mask for thePC0 as 192.168.1.2, 255.255.255.0
2. Select PC1 and go to desktop then IP configuration in config and assign IP address and subnetmask for the PC1 as 192.168.1.3, 255.255.255.0
3. Set the DNS Server address to the IP address of the DNS server.



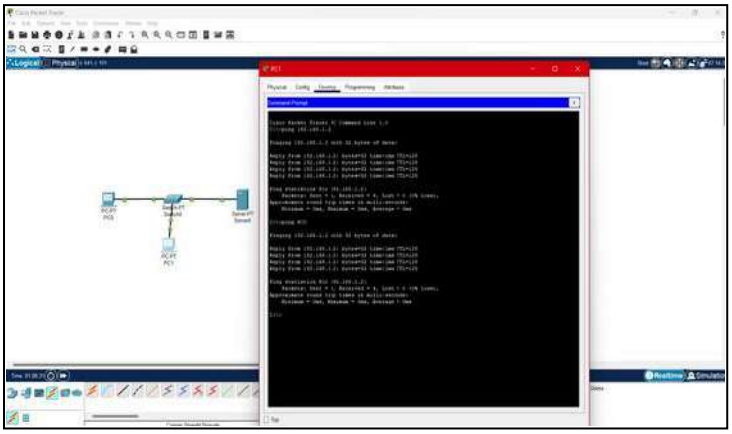
Step-4:

1. Go to the "Desktop" option for any one PC.
2. Open the web browser.
3. In the URL section, enter the name of the website you created or its IP address.



Step-5

1. Access the DNS server settings.
2. Add the details of each PC, including the IP address and the name of the PC. This enablescommunication using both the IP address and the assigned name for each device.

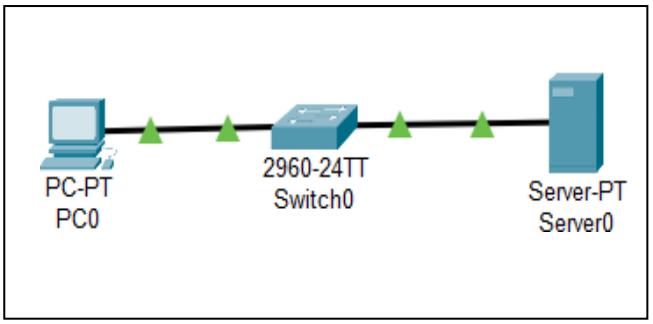


HTTP configuration using cisco packet tracer

HTTP stands for HyperText Transfer Protocol. The protocol used to transfer hypertext between twocomputers is known as HyperText Transfer Protocol.
HTTP provides a standard between a web browser and a web server to establish communication. Itis a set of rules for transferring data from one computer to another. Data such as text, images, and
other multimedia files are shared on the World Wide Web. Whenever a web user opens their webbrowser, the user indirectly uses HTTP. It is an application protocol that is used for distributed,
collaborative, hypermedia information systems.

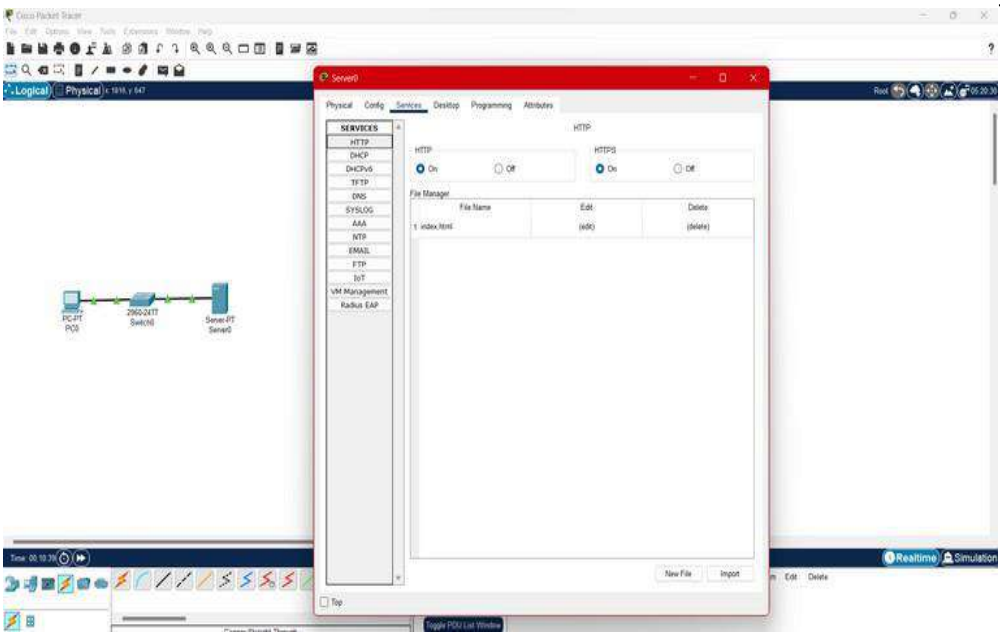
Procedure:

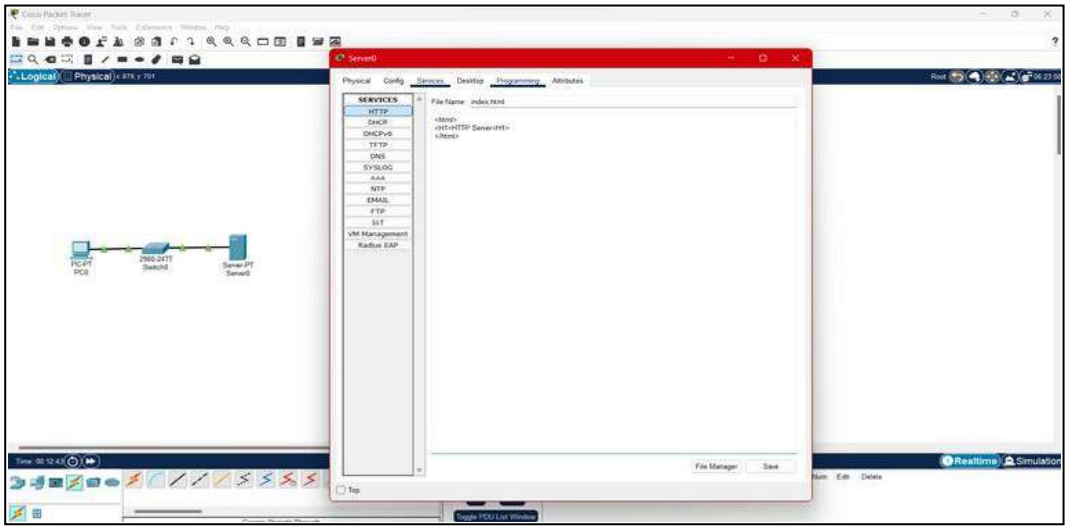
To configure an HTTP server, you first need a server, a switch, and PCs and connect them with straight-through cable.



Step-1(Configure the HTTP sever0):

1. Click on Server.
2. Go to services then click on HTTP
3. The delete all of the files except the index.html and edit it. And Click on Save.





Step-2 (Switch Setup and PC):

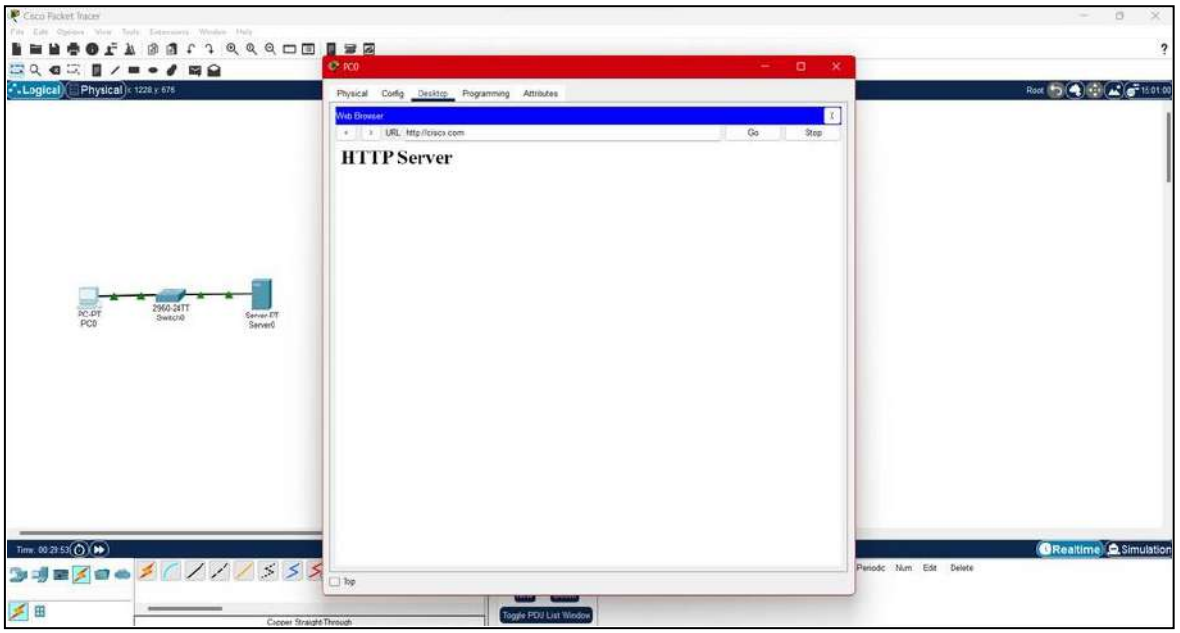
1. Select a 2960 Switch from Network Devices.
2. Connect the FastEthernet0/0 with pc.
3. Configure the FastEthernet0/1 with Server.
4. Select PC0 and go to desktop, click on IP Configuration and assign IP address and subnet maskfor the PC0 as 192.168.1.2, 255.255.255.0

Step 4 (Configure the DNS server):

1. To configure the DNS server.
2. Go to services then click on DNS.
3. Then turn on the DNS services.
4. Name the server cisco.com and type address 192.168.10.1
5. And add the record.

Step-3: Verify the server by using the web browser in the Host.

1. Click on PC0.
2. Go to the "Desktop" option for any one PC.



3. Open the web browser.
4. In the URL section, enter the name of the website you created or its IP address.

Router configuration using cisco packet tracer

In this network, a router and 2 PCs are used. Computers are connected with routers using a copper straight-through cable. After forming the network, to check network connectivity a simple PDU is transferred from PC0 to PC1. The network simulation status is successful. **From this network, it can be observed that the router handles data transfers between multiple devices.**

Procedure:

Step-1(Configuring Router1):

1. Select the router and Open CLI.
2. Press ENTER to start configuring Router1.
3. Type **enable** to activate the privileged mode.
4. Type **config t(**configure terminal) to access the configuration menu.
5. Configure interfaces of Router1:

- *Type **interface FastEthernet0/0** to access FastEthernet0/0 and Configurethe FastEthernet0/0 interface with the IP address 192.168.10.1 and Subnet mask 255.255.255.0.*

- *Type i**nterface FastEthernet0/1** to access GigabitEthernet0/0 and Configurethe FastEthernet0/1 interface with IP address 192.168.20.1 and Subnet mask 255.255.255.0.*

6. Type **no shutdown** to finish.

Router1 Command Line Interface:

Router>enable

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface FastEthernet0/0

Router(config-if)#ip address 192.168.10.1 255.255.255.0

Router(config-if)#no shutdown

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

Router(config-if)#interface FastEthernet0/1

Router(config-if)#ip address 192.168.20.1 255.255.255.0

Router(config-if)#no shutdown

Step-2(Configuring PCs):

1. Assign IP Addresses to every PC in the network.
2. Select the PC, Go to the desktop and select IP Configuration andassign an IP address, Default gateway, Subnet Mask
3. Assign the default gateway of PC0 as 192.168.10.1.
4. Assign the default gateway of PC1 as 192.168.20.1.

Step-3(Connecting PCs with Router):

1. Connect FastEthernet0 port of PC0 with FastEthernet0/0 port ofRouter1 using a copper straight-through cable.
2. Connect FastEthernet0 port of PC1 with FastEthernet0/1 port ofRouter1 using a copper straight-through cable.

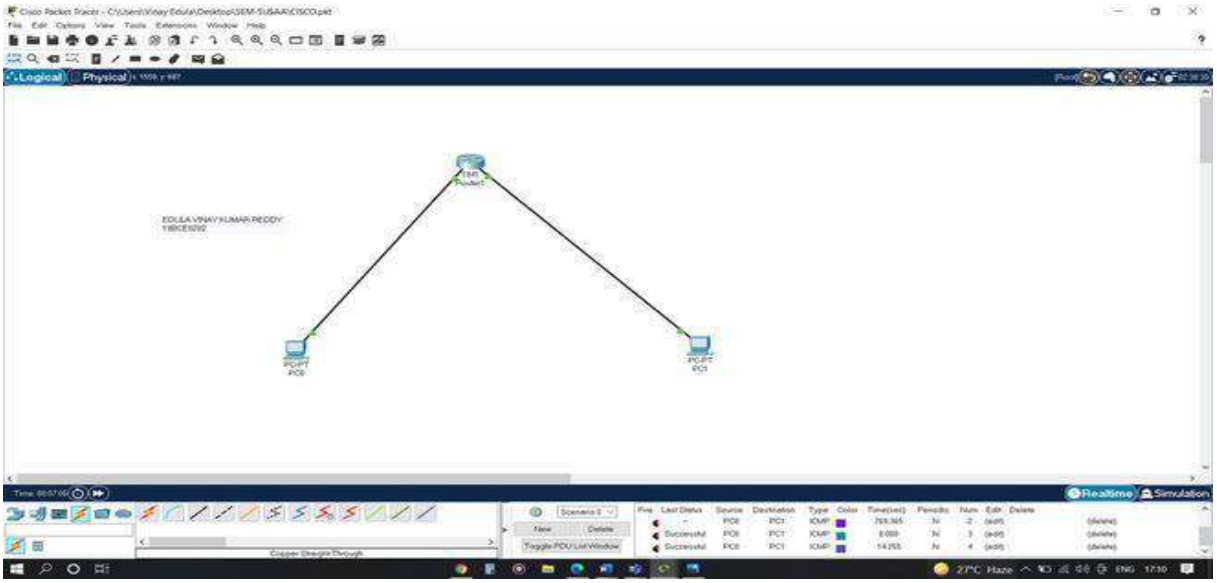
Router Configuration Table:

Device Name	IP address FastEthernet0/0	Subnet Mask	IP Address FastEthernet0/1	Subnet Mask
Router1	192.168.10.1	255.255.255.0	192.168.20.1	255.255.255.0

PC Configuration Table:

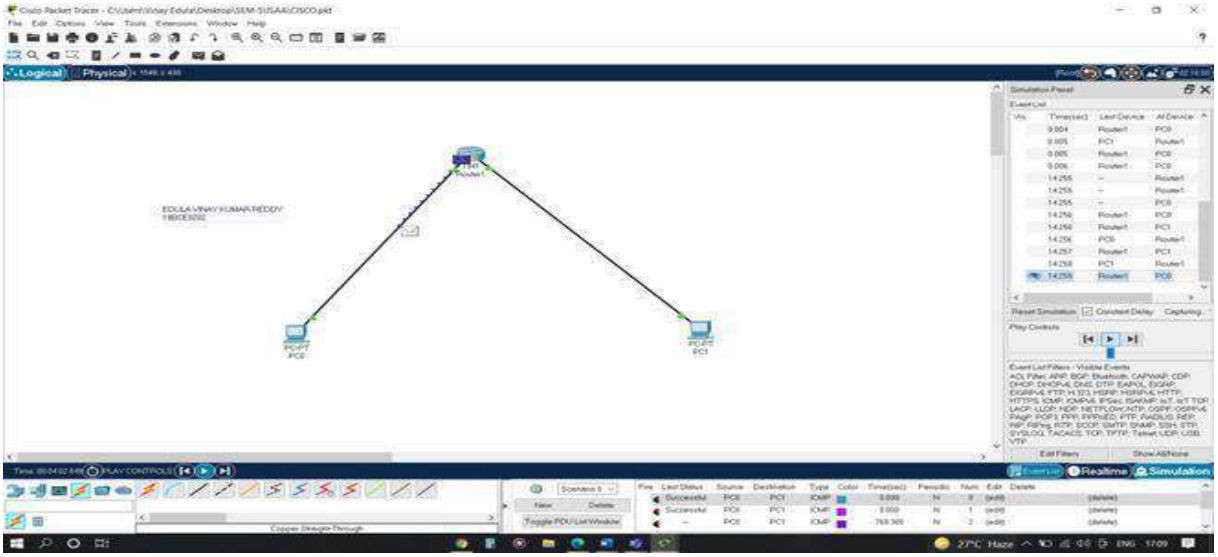
Device Name	IP address	SubnetMask	Gateway
PC 0	192.168.10.2	255.255.255.0	192.168.10.1
PC 1	192.168.20.2	255.255.255.0	192.168.20.1

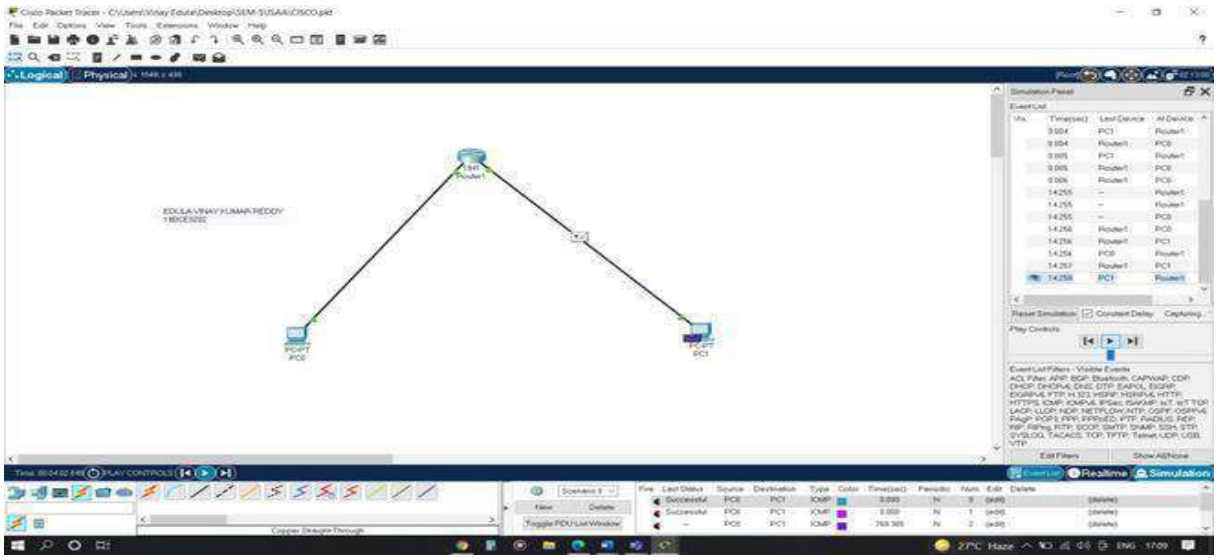
Designed Network topology:



Simulation of Designed Network Topology:

Sending a PDU From PC0 to PC1:





Acknowledgment From PC1 to PC0: