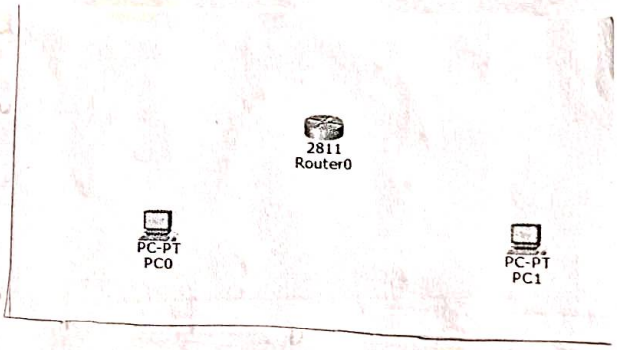
Expt: 10a,b

Date: 6.10.25

AIM:

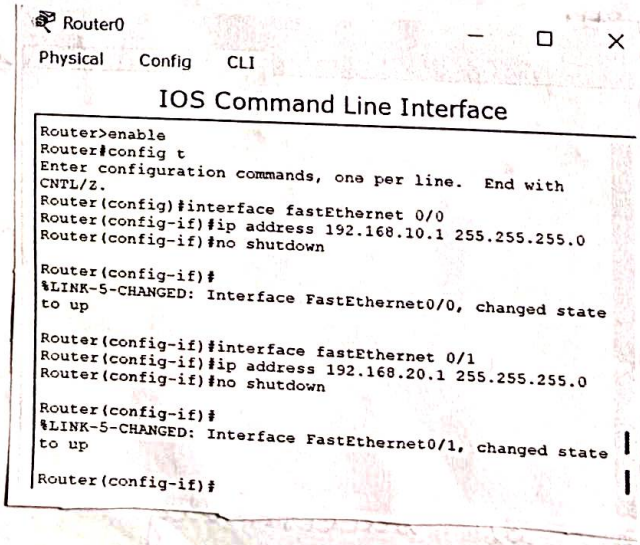
a) Internetworking with routers in CISCO PACKET TRACER simulator

In this network, a router and 2 PCs are used. Computers are connected with the routers using a copper straight through cable

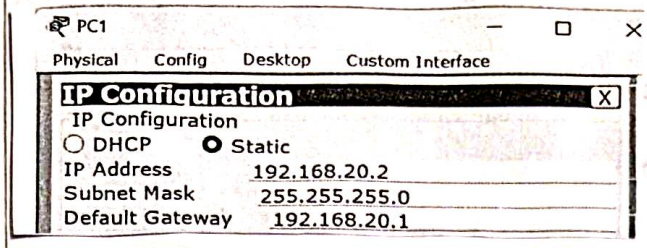


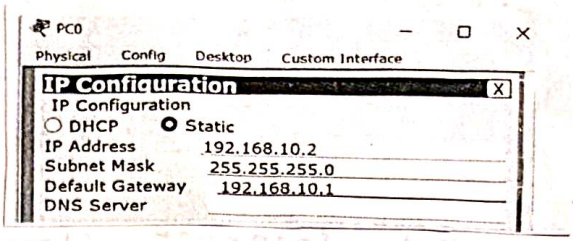
Procedure:

1. Configure Router,

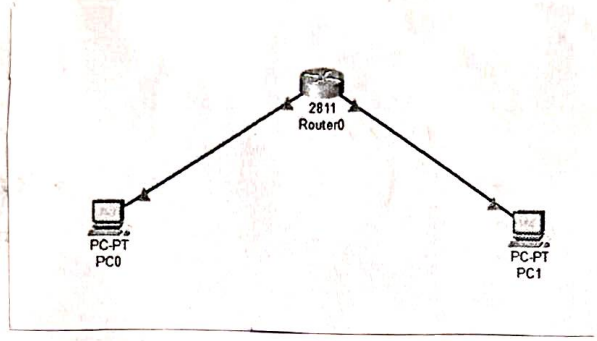


2. configure PCs

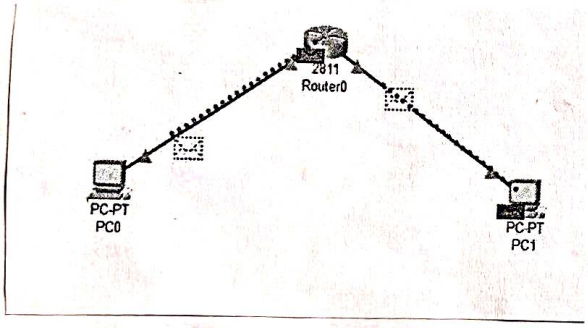




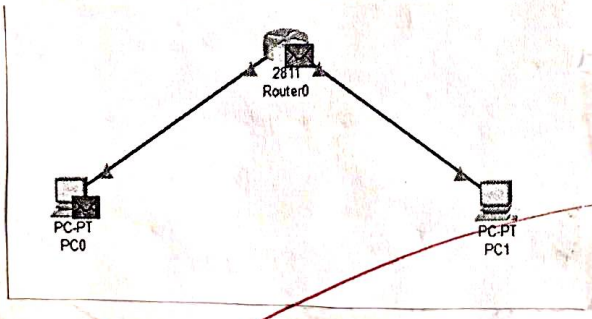
3. connect PCs with Router

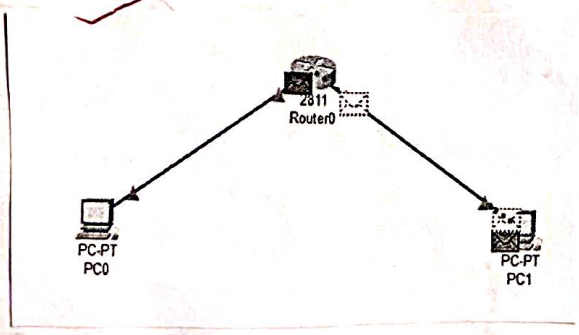


sending a PDU from PC0 to PC1



In the simulation tab, auto-capture of the packets is done.





AIM:

b) Design and configure an internetwork using wireless router, DHCP Server and Internet cloud

Addressing Table:

Device	Interface	IP Addr.	Subnet Mask	Default Gateway
PC	Ethernet()	DHCP		
Wireless Router	LAN	192.168.0.1	255.255.255.0	
Wireless Router	Internet	DHCP		
Cisco.com Server	Ethernet()	208.67.220.220	255.255.255.0	
Laptop	Wireless()	DHCP		

Objectives

1. Build a simple Network in the Logical Topology Workspace

Step 1: Launch Packet Tracer

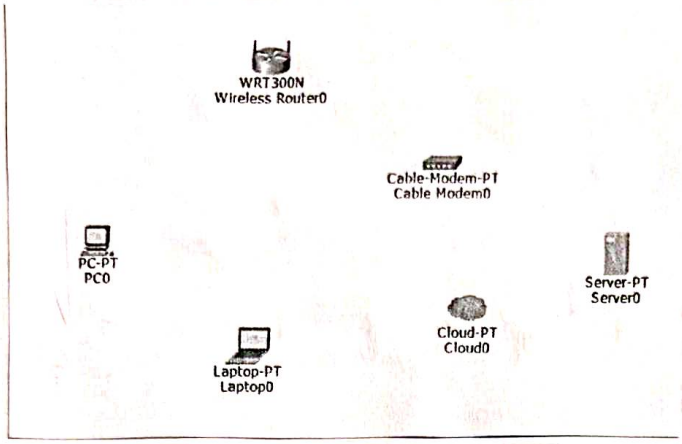
Step 2: Build the Topology

a) Add the devices

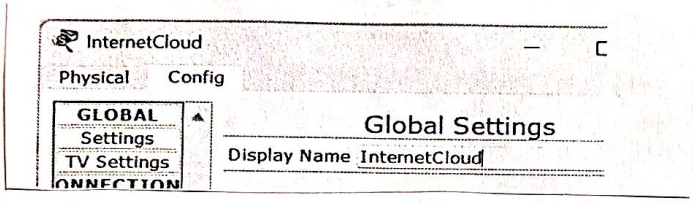
b) Change display names

c) Add the physical cabling between devices

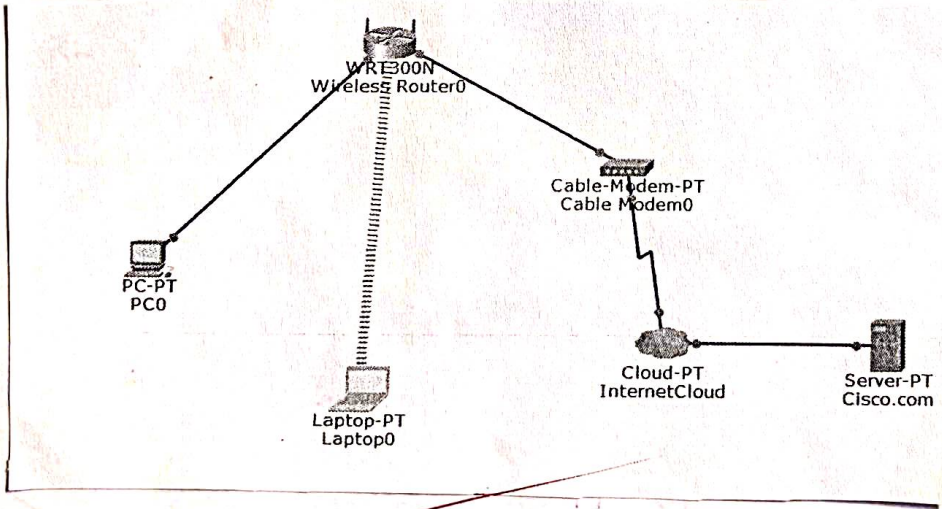
Devices:



Rename the display name:



Physical connection:

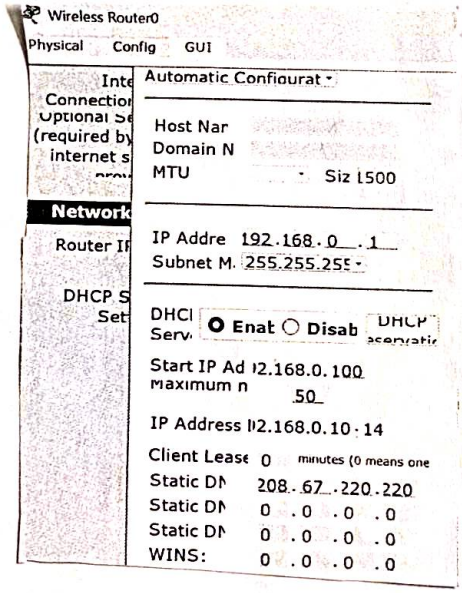


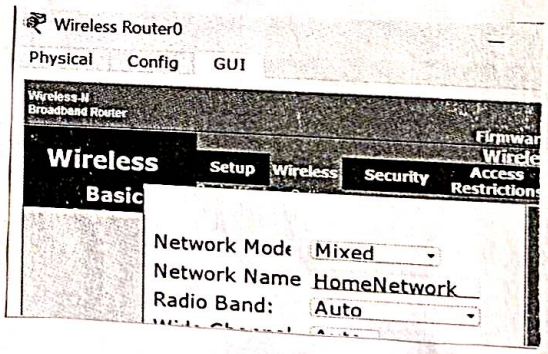
2. Configure the Network Devices

1. Configure the Wireless Router

a) Create Wireless Network on the Wireless Router

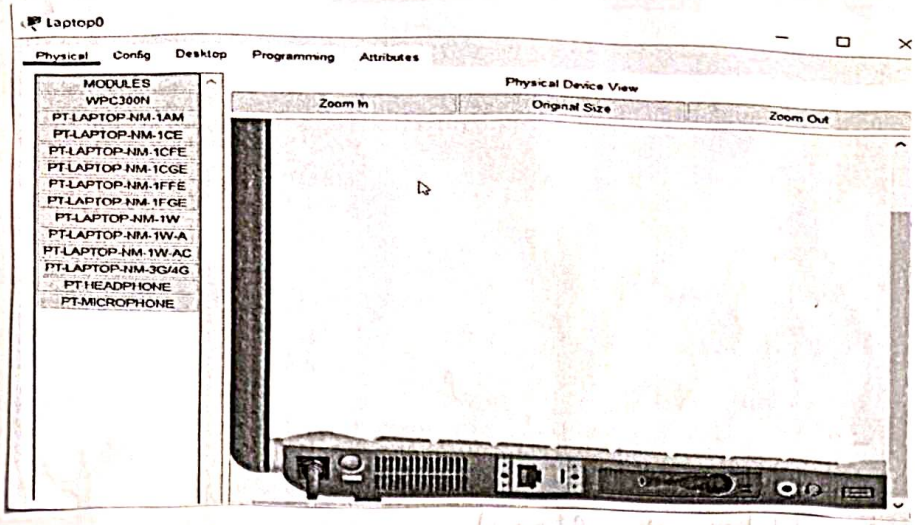
- Click Wireless Router Device
- In the Wireless tab, changed Network Name to Home Network
- In setup tab, configured the static IP address of the DNS server as 208.67.220.220
- Saved settings



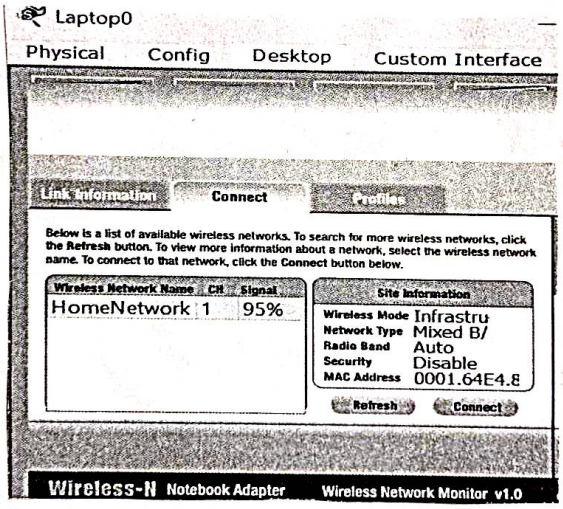


2. Configure the Laptop

- clicked Laptop device and selected Physical tab.
- Remove the Ethernet copper module and replace it with the Wireless WPC300N module

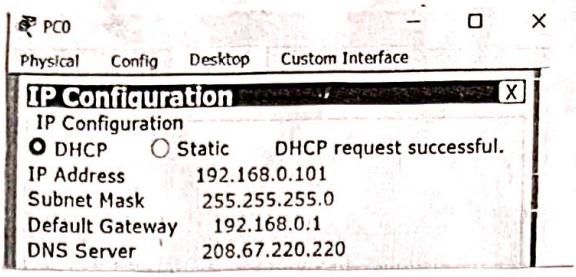


- In the desktop tab, select PC wireless icon
- In the connect tab, the wireless network 'HomeNetwork' should be visible. Select the network and click connect button



3. Configure the PC

Click on PC icon → Desktop Tab → IP config
Select the DHCP button. The PC will use DHCP to receive an IPV4 address from the wireless router.



4. Configure the Internet Cloud

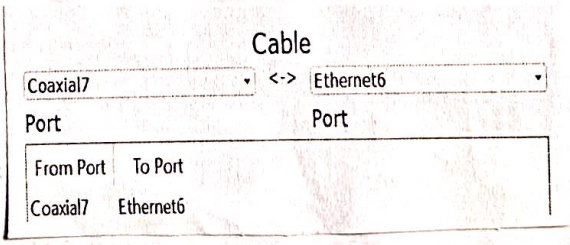
a) Network Modules

click on Internet cloud device. click the Physical tab.

b) Identify the From and To ports

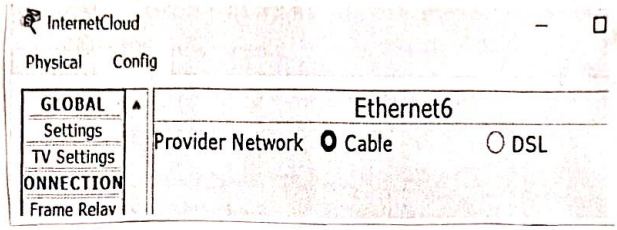
In the config tab → click cable in the panel

Add the From Port and To Port



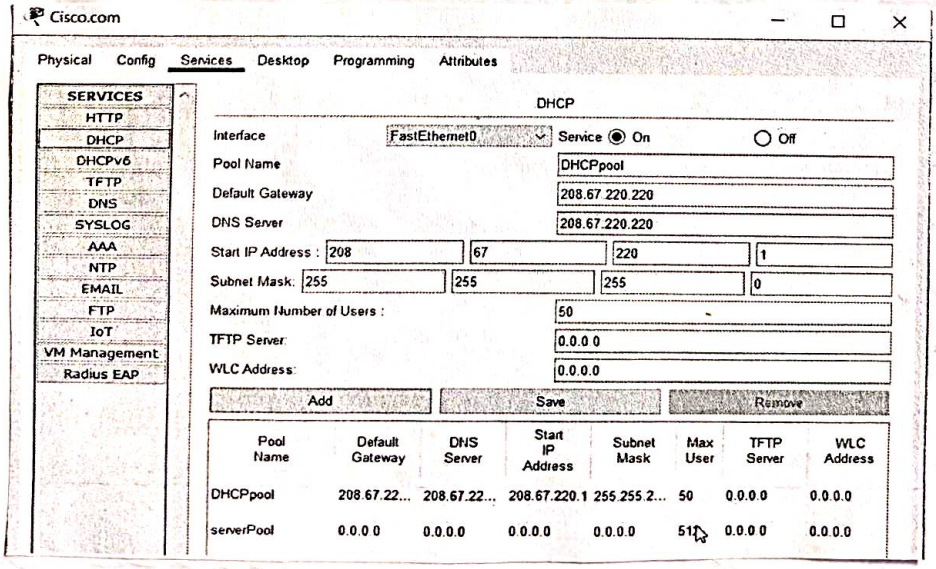
c) Identify the type of provider

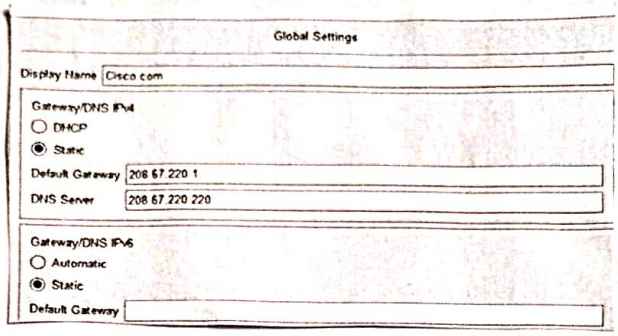
In the left pane, click Ethernet6 and select cable.



5) Configure the cisco.com server

- Configure the cisco.com server as DHCP server
- Configure the cisco.com server as a DNS server
- Configure the cisco.com server Global settings
- Configure the FastEthernet() Interface settings





Part 3: Verify connectivity

a) click on the PC device

→ Ipconfig / release

IP address ..... : 0.0.0.0
Subnet Mask..... : 0.0.0.0
Def Gateway..... : 0.0.0.0
DNS server..... : 0.0.0.0

→ Ipconfig / renew

IP address ..... : 192.168.0.101
Subnet Mask..... : 255.255.255.0
Default Gateway..... : 192.168.0.1
DNS server..... : 208.67.220.220

b) Test connectivity to the Cisco.com server from the PC

From the Command Prompt, issue the command

ping Cisco.com

```
C:\>ping cisco.com

Pinging 208.67.220.220 with 32 bytes of data:

Reply from 208.67.220.220: bytes=32 time=2ms TTL=127
Reply from 208.67.220.220: bytes=32 time=5ms TTL=127
Reply from 208.67.220.220: bytes=32 time=6ms TTL=127
Reply from 208.67.220.220: bytes=32 time=8ms TTL=127

Ping statistics for 208.67.220.220:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 8ms, Average = 5ms

C:\>
```

Student Observation

1. Write down the key features of configuring Wireless Router and DHCP server

A:

Wireless router provides Wi-Fi connectivity, IP routing, and network security

DHCP server automatically assigns IP address to connected devices

2. Significance of DHCP server in internetworking

A:

DHCP server simplifies IP address management across networks. It avoids IP conflics and saves time by automatic IP addr. allocation

RESULT:

The Internetwork was successfully designed and configured using wireless router, DHCP server and Internet cloud in Cisco Packet Tracer.

9/10/18