9/10/25 Internetworking with Routers & Wireless Networks (Packet Tracer).
EX.NO: 8(a)

AIM: 1) Design & configure a simple internetwork using a router & a 2 PC's wired

2) Design & configure an internetwork using a wireless router, DHCP server & internet cloud.

Part A: Wired Internetwork with Router

PROCEDURE:

1) Router configuration (Router 1):

Router > enable
Router # config t
Router (config) # interface FastEthernet 0/0
Router (config-if) # ip address 192.168.0.1 255.255.255.0
Router (config-if) # no shutdown
Router (config-if) # interface FastEthernet 0/1
Router (config-if) # ip address 192.168.20.1 255.255.255.0
Router (config-if) # no shutdown

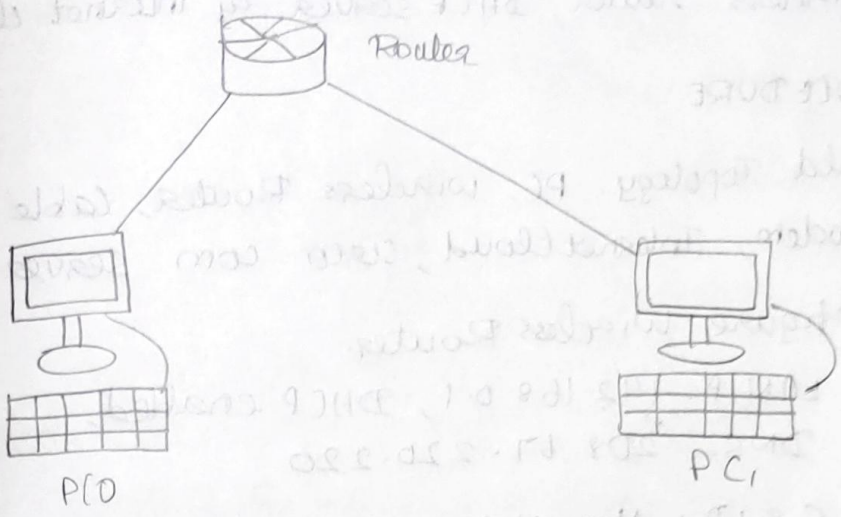
2) PC configuration:

- PC0: 192.168.10.2, Subnet: 255.255.255.0
  Gateway: 192.168.10.1
- PC1: 192.168.20.2, Subnet: 255.255.255.0
  Gateway: 192.168.20.1

3) Connect PC's to Router using copper straight-through cables:
PC0 → FastEthernet 0/0 of Router

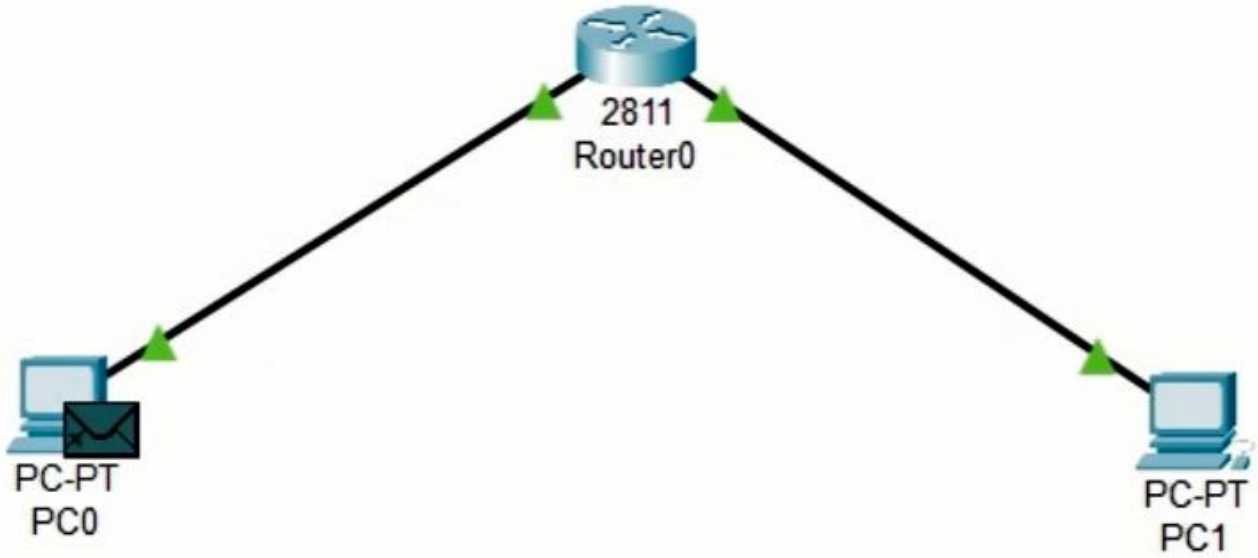
PC1 → Fast Ethernet 0/1 of Router 1.

OUTPUT:



RESULT:

- PC0 can successfully ping PC1 using a simple PDU.
- Network connectivity verified.


2811
Router0
PC-PT
PC0
PC-PT
PC1

Part - B Wireless Network with DHCP & Internet

AIM: Design & configure an internetwork using wireless Router, DHCP server & internet cloud.

PROCEDURE:

Build Topology: PC, wireless Router, Cable Modem, Internet Cloud, cisco.com Server.

Configure Wireless Router:

LAN IP: 192.168.0.1, DHCP enabled,

DNS: 208.67.220.220

SSID: HomeNetwork.

Configure PC:

Enable DHCP to obtain IP automatically

Configure cisco.com Server

DHCP Pool: 208.67.220.1 - 208.67.220.50

DNS: 208.67.220.220

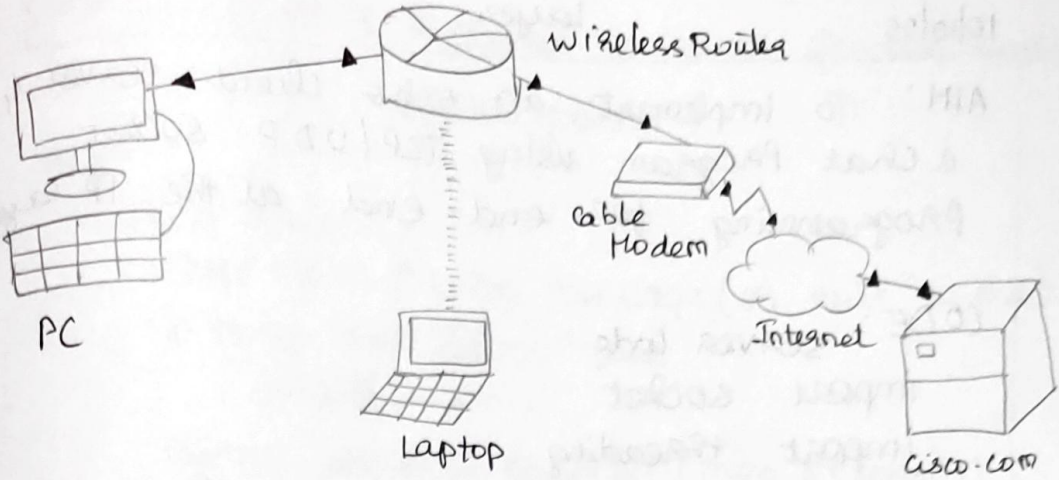
IP: 208.67.220.220, Subnet: 255.255.0

Verify Connectivity:

Refresh IP on PC (ipconfig/Release → ipconfig/Renew)

Ping cisco.com → 4 replies received

DIAGRAM:



RESULT:

- PC successfully receives IP from DHCP & accesses cisco.com via wireless network
- Connectivity verified.

STUDENT OBSERVATION:

Key Features of Configuring Wireless Router & DHCP Server:

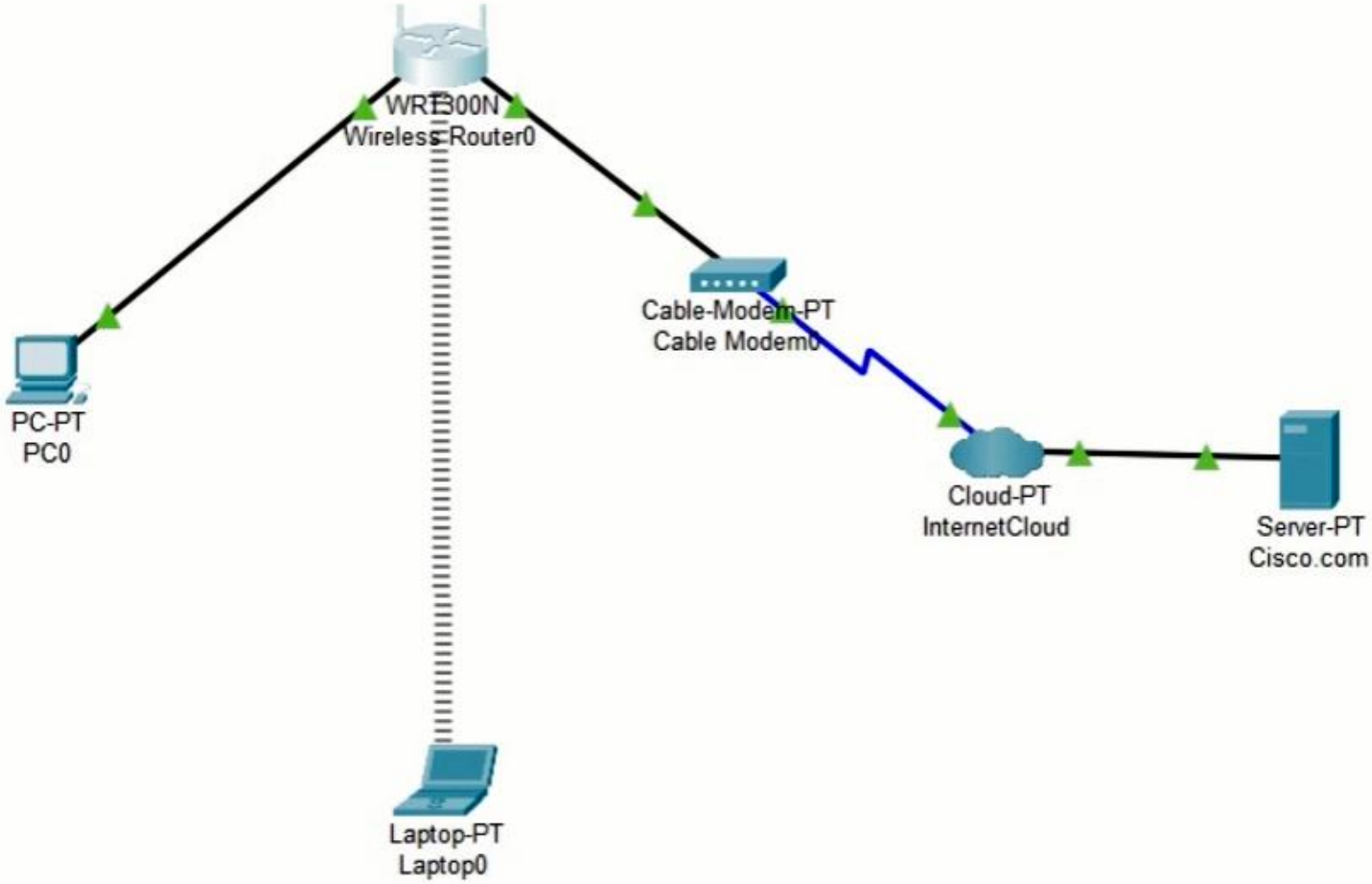
Provides wireless connectivity, assigns IP's dynamically & manages network settings.

Significance of DHCP server in internetworking.

Automatically assigns IP addresses to devices, reducing manual configuration errors.

Design an inter network using switch, router configure IPs. & Ethernet cables.

Connect PC's to a switch, switch to router, configure IPs & gateways for each device.


WRT300N
Wireless Router0
PC-PT
PC0
Cable-Modem-PT
Cable Modem0
Cloud-PT
InternetCloud
Server-PT
Cisco.com
Laptop-PT
Laptop0