



P. D. Hinduja Trust's

**K. P. B. Hinduja College of Commerce**

(Autonomous)

NAAC Re-accredited with 'A+' grade, CGPA:3.59.

**S. Y. B. Sc.**

**(Information Technology)**

**Computer Network Practical Journal**

**Name of the student:** \_\_\_\_\_

**Roll Number:** \_\_\_\_\_ **Submission Date:** \_\_\_\_\_

**Teacher's Signature:** \_\_\_\_\_



P. D. Hinduja Trust's

# K. P. B. Hinduja College of Commerce (Autonomous)

NAAC Re-accredited with 'A+' grade, CGPA:3.59

## CERTIFICATE

This is to certify that Mr. / Miss / Mrs. \_\_\_\_\_

**Roll No.** \_\_\_\_\_, of **S. Y. B. Sc. [IT]** 2025-26 has completed his/her practical work in the subject of **Computer Network**, as required by the University of Mumbai for the partial fulfillment of **S. Y. B. Sc. IT SEM III**. The information submitted is true and original to the best of my knowledge.

\_\_\_\_\_  
Subject Teacher

\_\_\_\_\_  
Co-ordinator,  
B. Sc. IT

\_\_\_\_\_  
College Seal

Date: \_\_\_\_\_

\_\_\_\_\_  
Principal

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<b>Sr. No</b>	<b>Title</b>		<b>Date</b>	<b>Sign</b>
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**Practical 01 :** Colour code for crimping LAN (Cat 5/6/7) cable

- Study of Different color codes
- Study of different connecting devices and their differences
- Crimping LAN Cable

**STRIGHT**

Senders End Color Code				Receivers End Color Code
	1			1
	2			2
	3			3
	4			4
	5			5
	6			6
	7			7
	8			8

**CROSS OVER**

Senders End Color Code				Receivers End Color Code
	1			1
	2			2
	3			3
	4			4
	5			5
	6			6
	7			7
	8			8

Draw a labelled diagram of following Connecting Devices and write the working of the device

1) NETWORK SWITCH

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Diagram:

## 2) WIRED ROUTER

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Diagram:

### 3) WIRELESS ROUTER

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Diagram:

#### 4) HUB

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Diagram:



## 5) MODEM

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Diagram:

## 6) ETHERNET CARD

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Diagram:

7) RJ-45

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Diagram:

## 8) Fiber Optic Cable and Connector

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Diagram:

## 9) SATELLITE

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Diagram:

## 10) CELL PHONE TOWER

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Diagram:

## Practical 2 A

**AIM:** Given an IP4 address and network mask, find the network address, total number of hosts bits & network bits, total number of hosts and Broad cast address.

1. An address in a block is given as 180.8.17.9. Find the number of addresses in the block, the first address, and the last address.

**Solution:**

Value of the first octet is \_\_\_\_\_, is between \_\_\_\_\_ to \_\_\_\_\_,  
therefore the address belongs to class \_\_\_\_\_.

Value for N = \_\_\_\_\_ n = \_\_\_\_\_ Total Address 2<sup>n</sup> = \_\_\_\_\_  
Addresses

[illegible]

**Solution:**

## Addresses

[illegible]





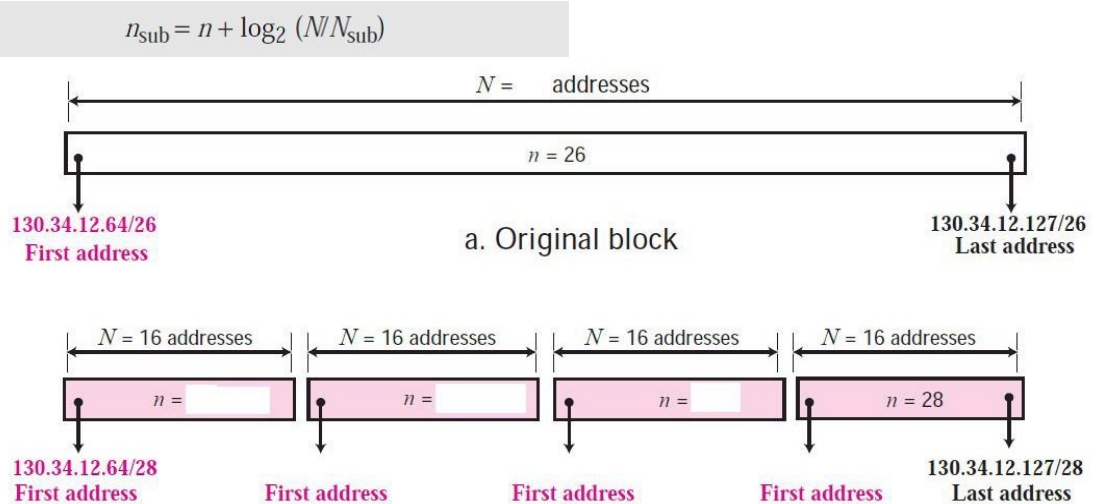
## Practical 2 B

**AIM:** Given an IP address, network mask, and subnetwork mask, determine other information about the IP address such as:

- The subnet address of this subnet
- The broadcast address of this subnet
- The range of host addresses for this subnet
- The maximum number of subnets for this subnet mask
- The number of hosts for each subnet
- The number of subnet bits
- The number of this subnet.

An organization is granted the block 130.34.12.64/26. The organization needs four subnetworks, each with an equal number of hosts. Design the subnetworks and find the information about each network.

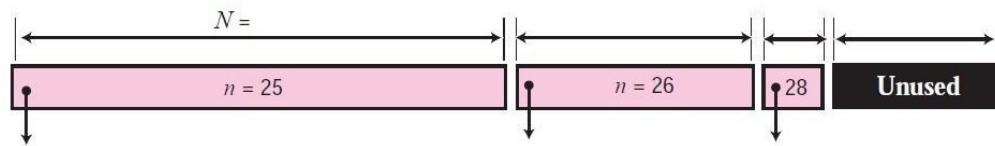
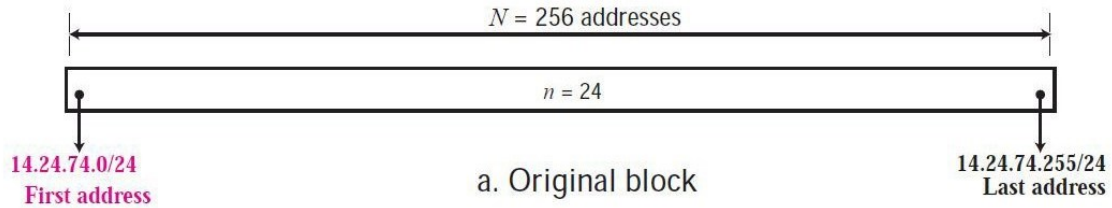
**Solution:** The number of addresses for the whole network can be found as  $N = 2^{32-26} = 64$ . Using the process described in the previous section, the first address in the network is 130.34.12.64/26 and the last address is 130.34.12.127/26. We now design the subnetworks:



An organization is granted a block of addresses with the beginning address 14.24.74.0/24. The organization needs to have 3 subblocks of addresses to use in its three subnets as shown below:

- ☐ One subblock of 120 addresses.
- ☐ One subblock of 60 addresses.
- ☐ One subblock of 10 addresses.

Solution:

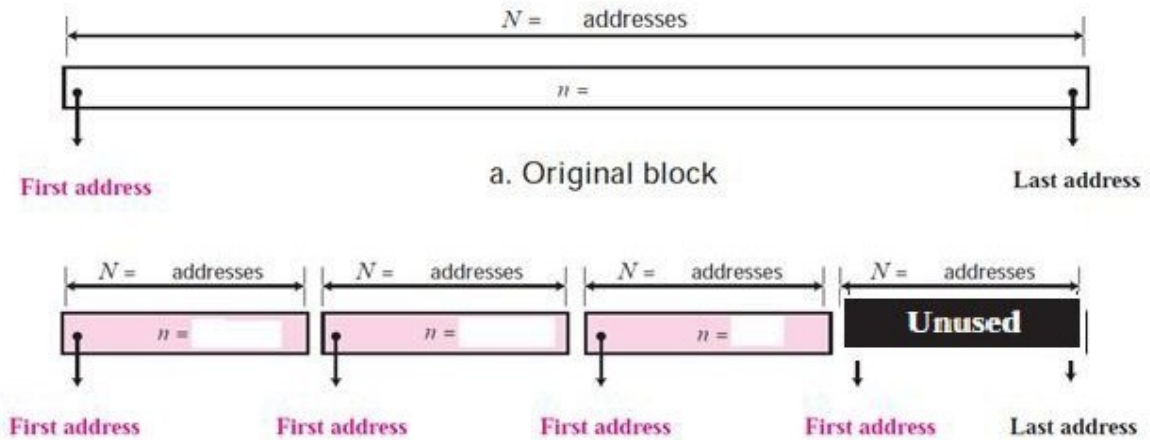


b. Subblocks

8. An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). The ISP needs to distribute these addresses to three groups of customers as follows:

- The first group has 64 customers; each needs approximately 256 addresses.
- The second group has 128 customers; each needs approximately 128 addresses.
- The third group has 128 customers; each needs approximately 64 addresses.

We design the subblocks and find out how many addresses are still available after these allocations.



**AIM:**

- ## Use of hostname, ipconfig, Ping, tracert / traceroute, and arp utilities.

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[illegible]



**Command: netstat**

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**Command: tracert**

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**Command: arp**

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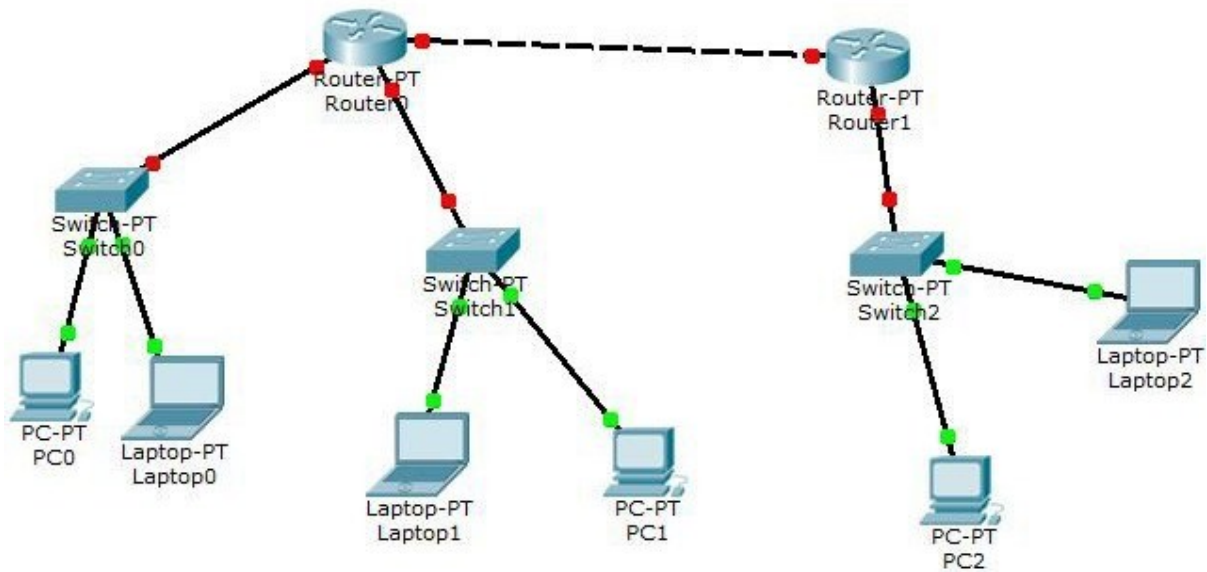
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## Practical 4

**AIM:** Configure IP static routing



Configuration:

Router 0:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

Router 0:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

Router 0:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_



Configuration:

Router 1:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

Router 1:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

PC0:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

Laptop0:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

PC1:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

Laptop1:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_



PC2:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

Laptop2:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

Static Routing:

Router 0:

Network Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Next Hop: \_\_\_\_\_

Router 1:

Network Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Next Hop: \_\_\_\_\_

Router 1:

Network Address: \_\_\_\_\_

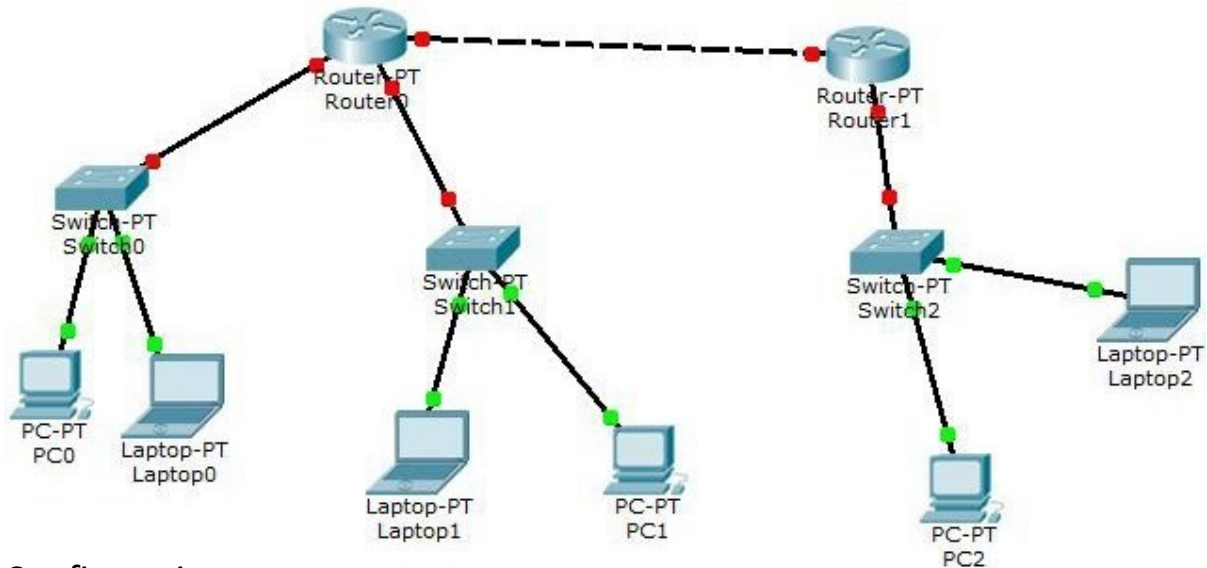
Subnet Mask: \_\_\_\_\_

Next Hop: \_\_\_\_\_



## Practical 5

**AIM:** Configure RIP routing



Configuration:

Router 0:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

Router 0:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

Router 0:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_



Configuration:

Router 1:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

Router 1:

Network interface name: \_\_\_\_\_

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Port status: \_\_\_\_\_

Configuration:

PC0:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

Laptop0:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

PC1:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

Laptop1:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_



PC2:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

Laptop2:

IP Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Default Gateway: \_\_\_\_\_

RIP Routing:

Router 0:

Network Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Router 1:

Network Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

Router 1:

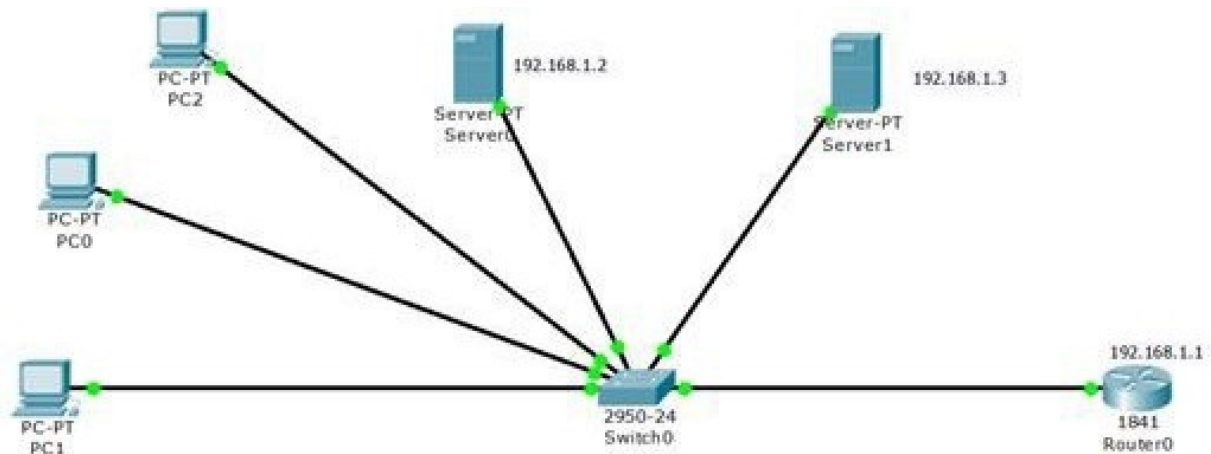
Network Address: \_\_\_\_\_

Subnet Mask: \_\_\_\_\_

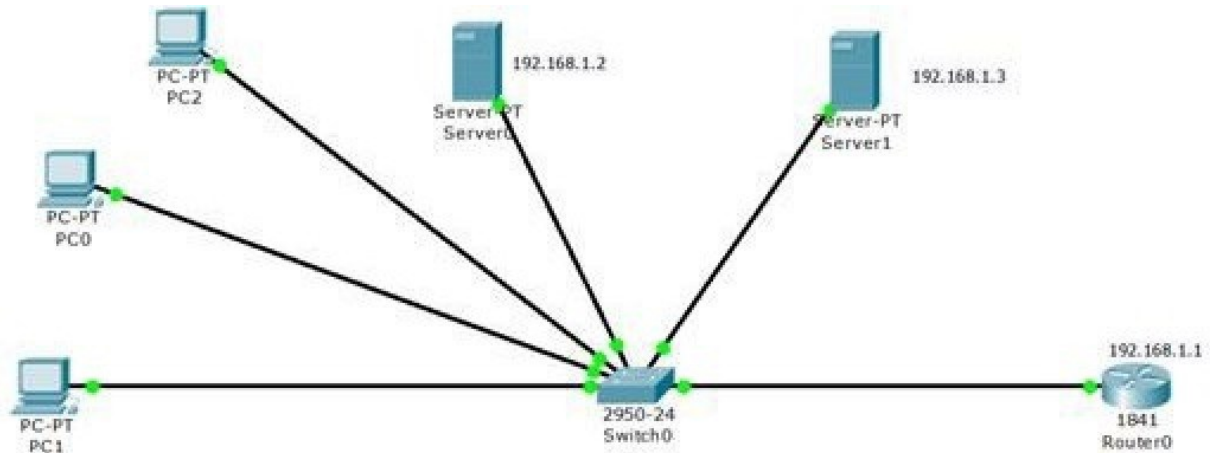


## Practical 6 A

**AIM:** Configure DHCP

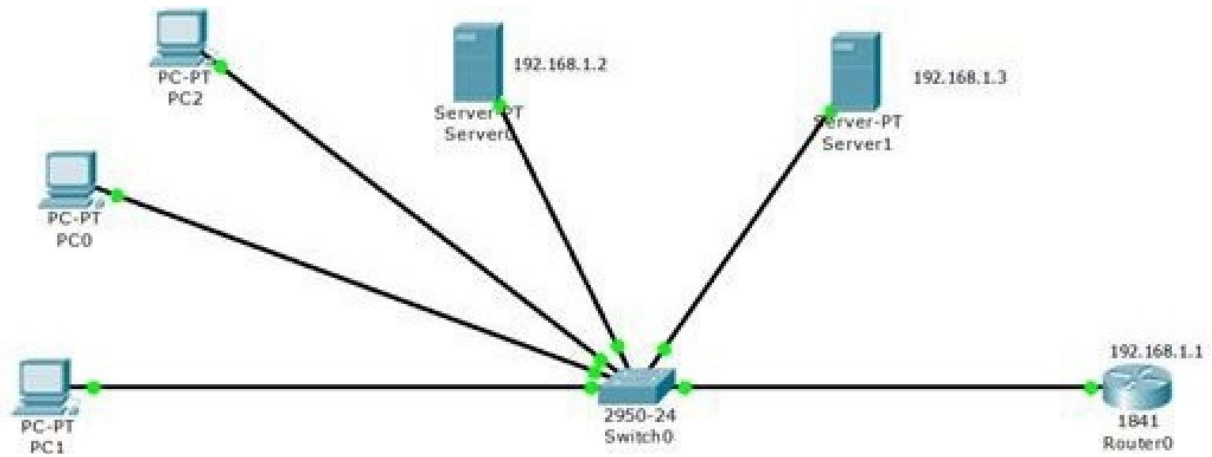


## Practical 07 B & C: DNS and HTTP



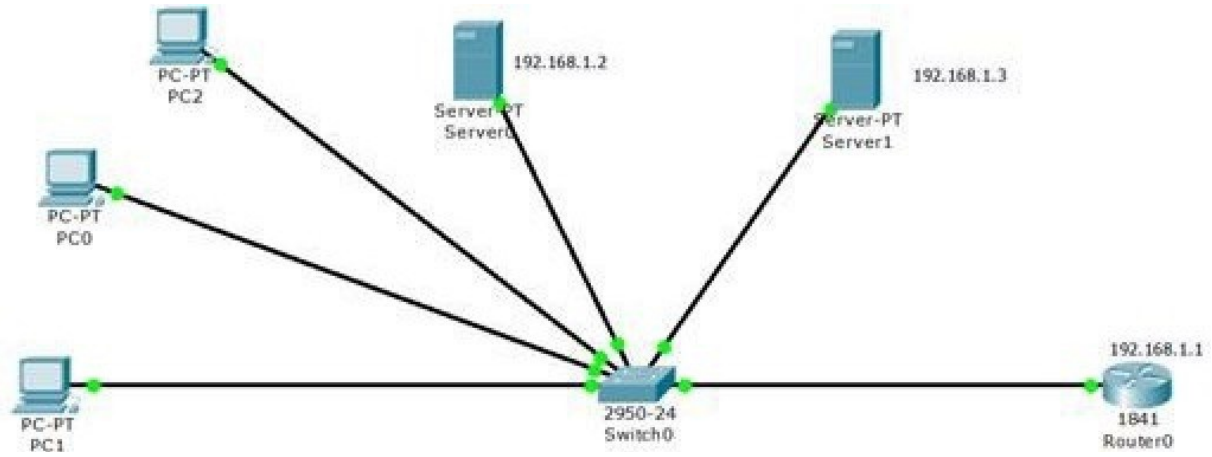
## Practical 6 D

### Configure Telnet



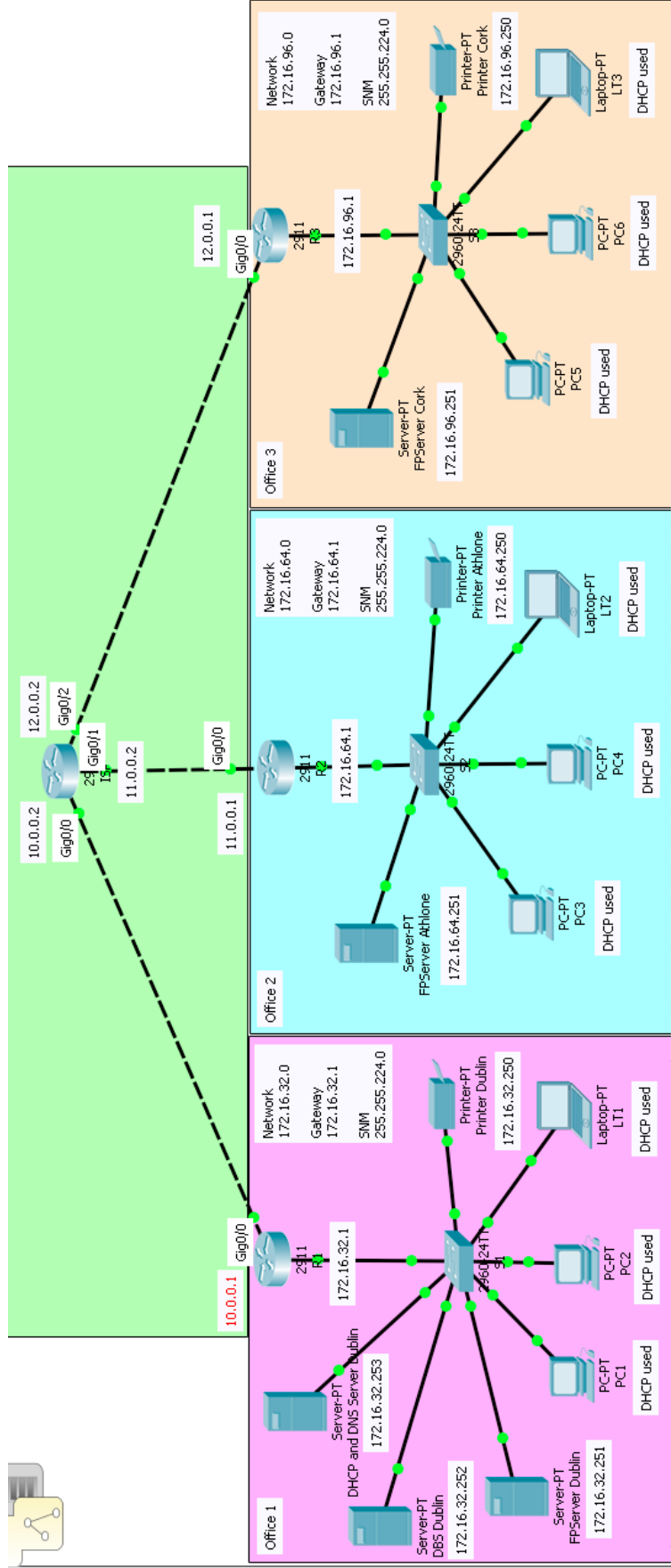
## Practical 6E

**AIM:** Configure FTP.

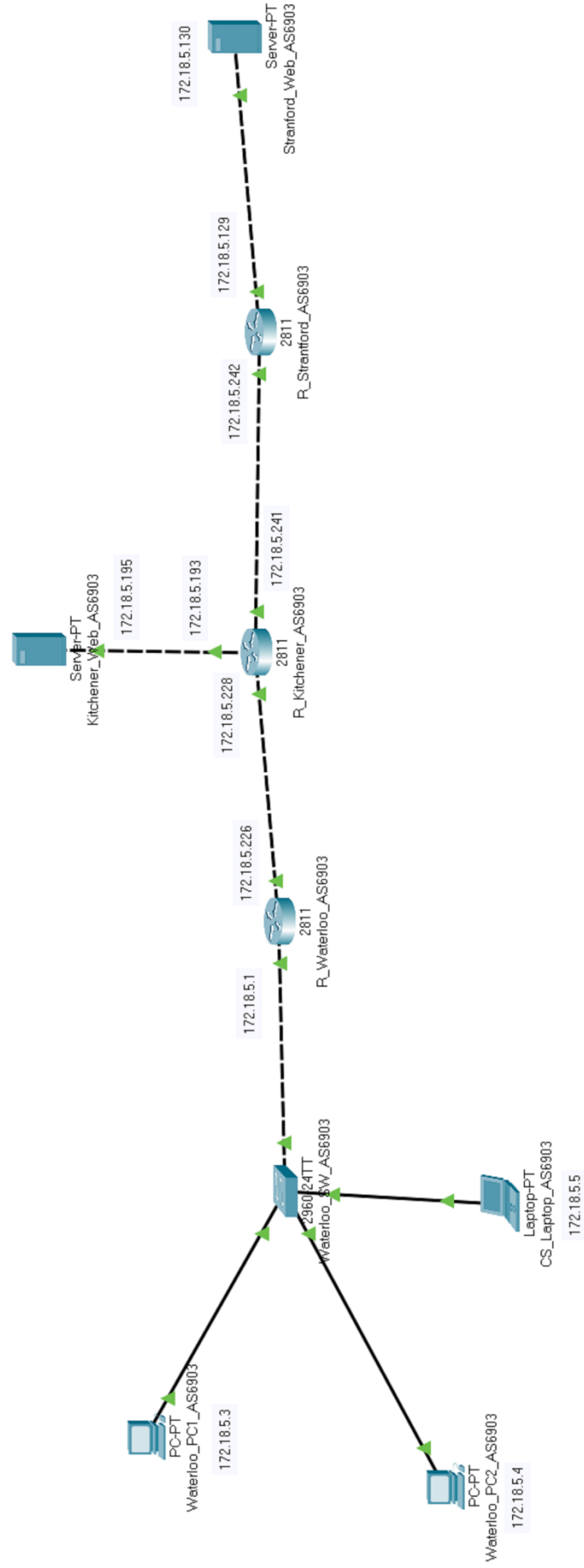


## Dynamic Routing Practice Topology

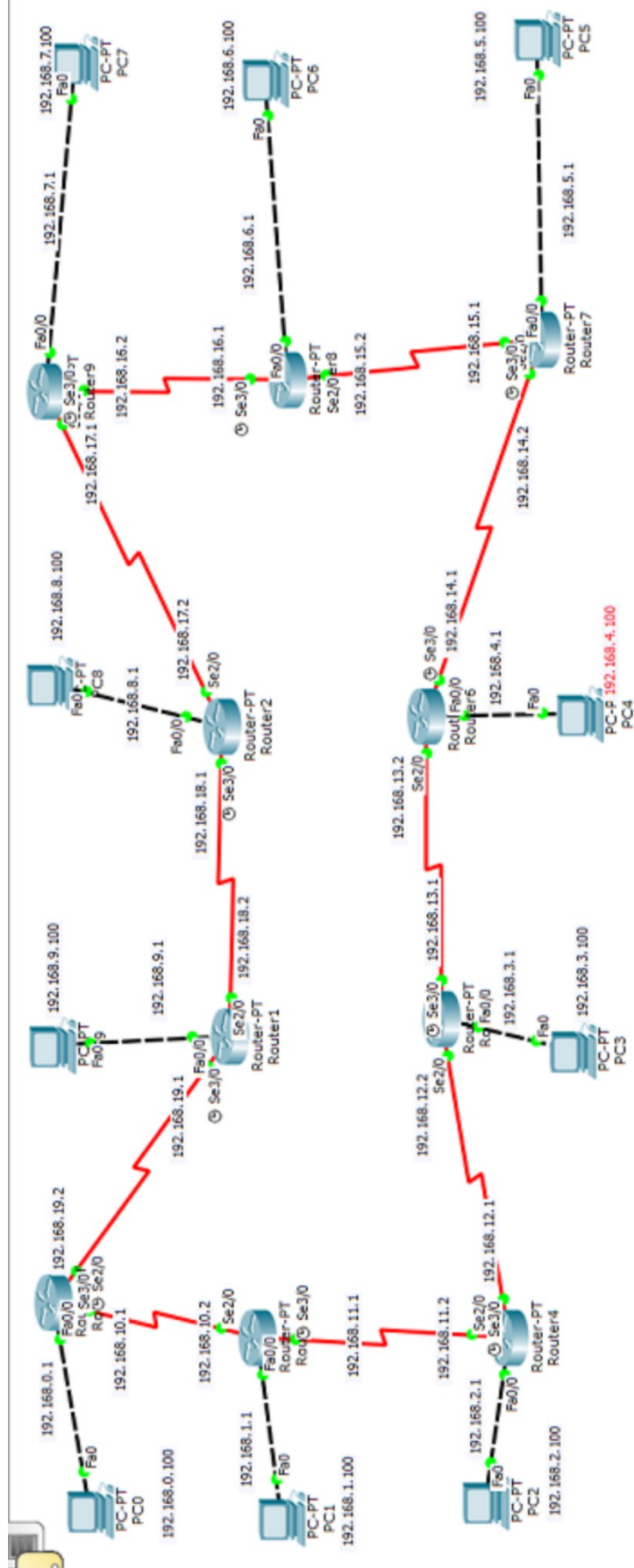




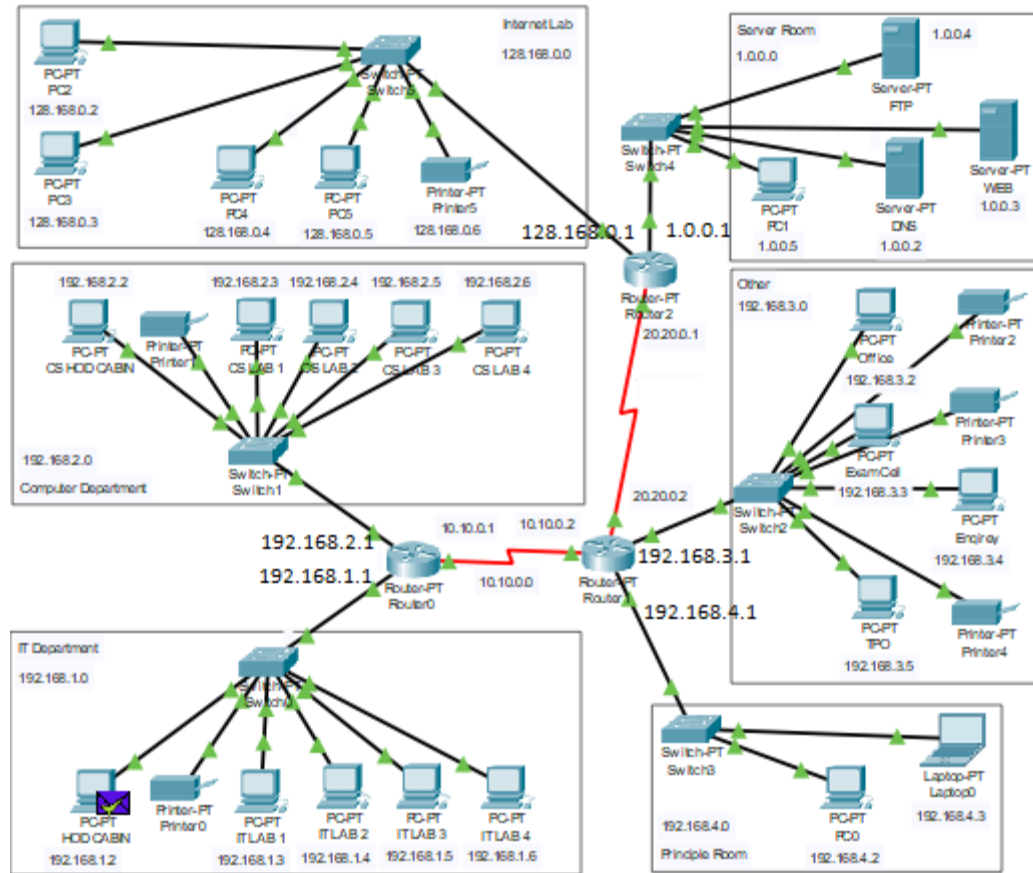
Output



## OUTPUT



OUTPUT



OUTPUT

