K. J. Somaiya College of Engineering, Mumbai-77
(A Constituent College of Somaiya Vidyavihar University)

Batch: A1	**Roll No.: 16010120015**
Experiment / assignment / tutorial No.___7____	
Grade: AA / AB / BB / BC / CC / CD /DD	
Signature of the Staff In-charge with date	

Experiment No.:7

TITLE: Study Cisco Router Configuration Command using Cisco packet tracer

AIM: To study basic Cisco Router configuration Commands

Expected Outcome of Experiment:
CO: Study of Basic Cisco Switch & Router Configuration Commands & Static Routing implementation using Cisco Packet Tracer.

Books/ Journals/ Websites referred:
1. S. Tanenbaum, “Computer Networks”, Pearson Education, Fourth Edition
2. Forouzan, “Data Communications and Networking”, TMH, Fourth Edition

Pre Lab/ Prior Concepts: Basics of Routing and Cisco Packet Tracer

New Concepts to be learned: Different Modes of Operation of Cisco router

Cisco IOS Modes of Operation:

- The Cisco IOS software provides access to several different command modes. Each command mode provides a different group of related commands.
- For security purposes, the Cisco IOS software provides two levels of access to commands:
  - User mode
  - Privileged mode
- The unprivileged user mode is called user EXEC mode. The privileged mode is called privileged EXEC mode and requires a password. The commands available

in user EXEC mode are a subset of the commands available in privileged EXEC mode.

- The following table describes some of the most commonly used modes, how to enter the modes, and the resulting prompts. The prompt helps you identify which mode you are in and, therefore, which commands are available to you

Modes of Operation	Usage	How to enter the mode	Prompt
User EXEC	Change terminal settings on a temporary basis, perform basic tests, and list system information.	First level accessed.	Router>
Privileged EXEC	System administration, set operating parameters.	From user EXEC mode, enter enable password command	Router#
Global Config	Modify configuration that affect the system as a whole.	From privileged EXEC, enter configure terminal.	Router(config)#
Interface Config	Modify the operation of an interface.	From global mode, enter interface type number.	Router(config-if)#
Setup	Create the initial configuration.	From privileged EXEC mode, enter command setup.	Prompted dialog

User EXEC Mode:
When you are connected to the router, you are started in user EXEC mode. The user EXEC commands are a subset of the privileged EXEC commands.

Privileged EXEC Mode:
Privileged commands include the following:
• Configure – Changes the software configuration.
• Debug – Display process and hardware event messages.
• Setup – Enter configuration information at the prompts.
Enter the command disable to exit from the privileged EXEC mode and return to user EXEC mode.

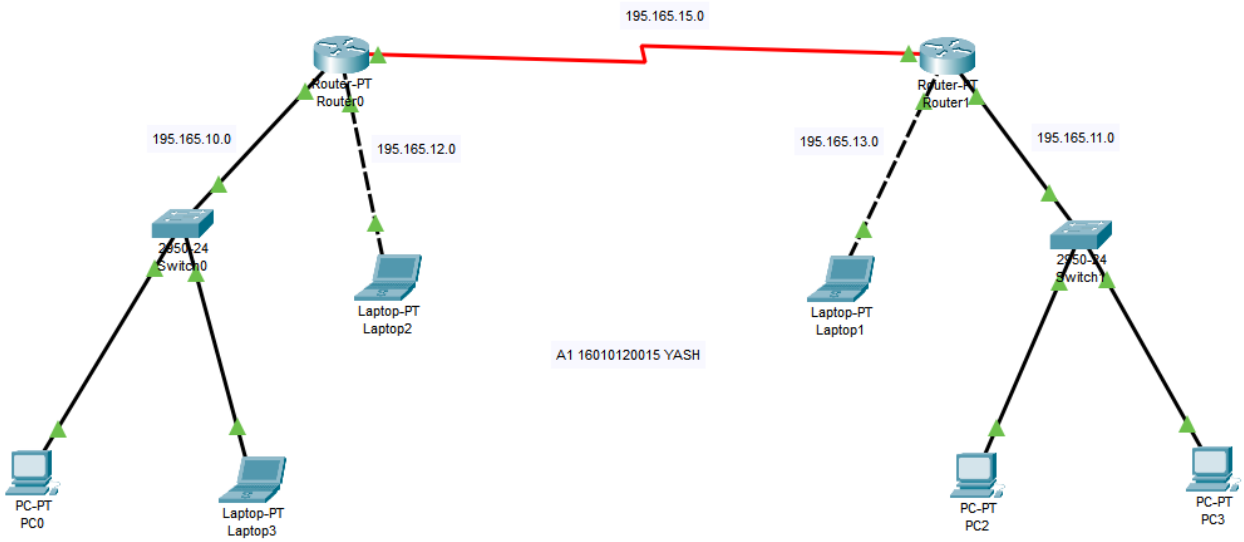
Configuration Mode:

Configuration mode has a set of sub-modes that you use for modifying interface settings, routing protocol settings, line settings, and so forth. Use caution with configuration mode because all changes you enter take effect immediately.
To enter configuration mode, enter the command configure terminal and exit by pressing Ctrl-Z.

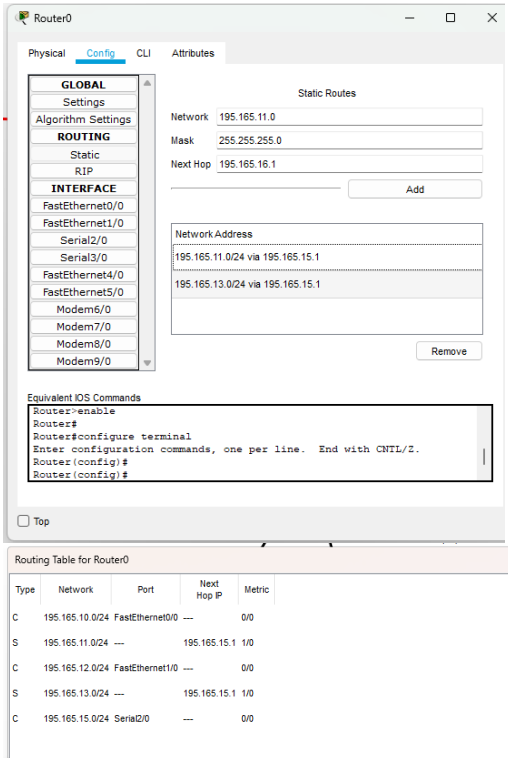
Note: Almost every configuration command also has a no form. In general, use the no form to disable a feature or function. Use the command without the keyword no to re-enable a disabled feature or to enable a feature that is disabled by default. For example, IP routing is enabled by default. To disable IP routing, enter the no ip routing command and enter ip routing to re-enable it.

IMPLEMENTATION: (printout of code)

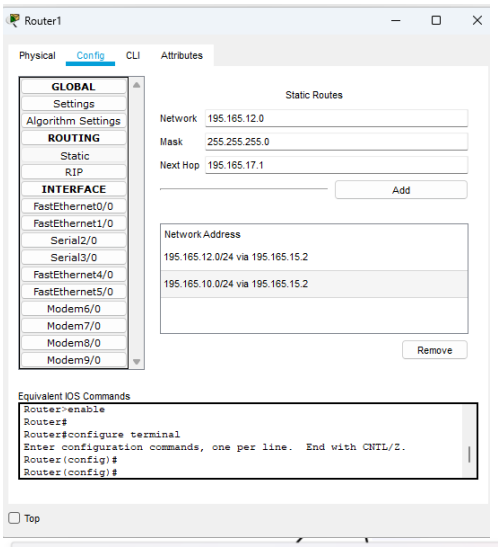
DESIGNED TOPOLOGY :

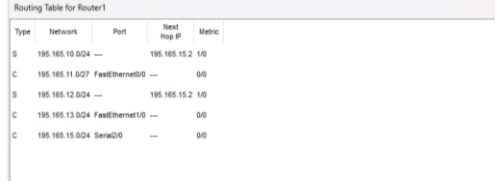


ROUTER 0 Conf



ROUTER 1 Conf





ROUTER 0 CLI

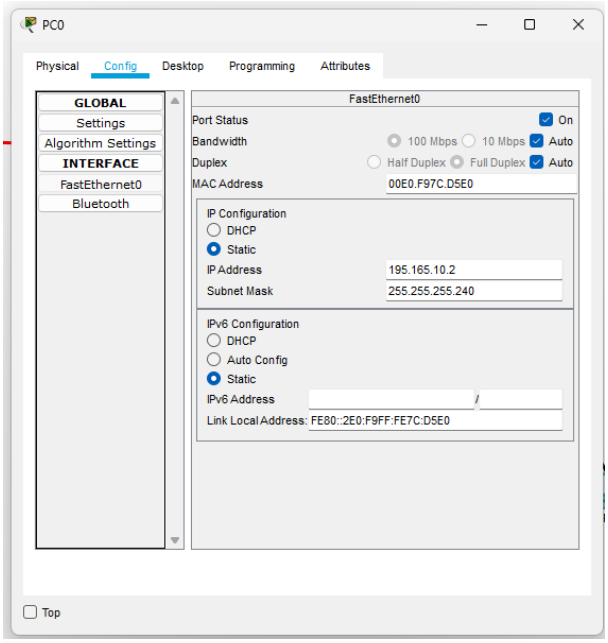
```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to
up
ip address 195.165.10.1 255.255.255.0
Router(config-if)#ip address 195.165.10.1 255.255.255.0
Router(config-if)#ip address 195.165.10.1 255.255.255.0
Router(config-if)#
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/1/0
Router(config-if)#no shutdown
Router(config-if)#ip address 195.165.12.1 255.0.0.0
Router(config-if)#ip address 195.165.12.1 255.0.0.0
Router(config-if)#
Router(config-if)#exit
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed state to up
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#ip route 195.165.10.1  255.255.255.0  195.165.12.1
Router(config)#
Router(config)#
```

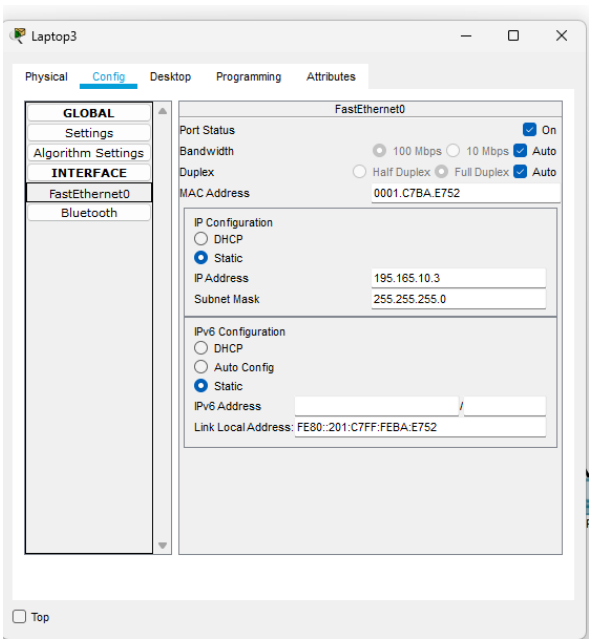
ROUTER 1 CLI

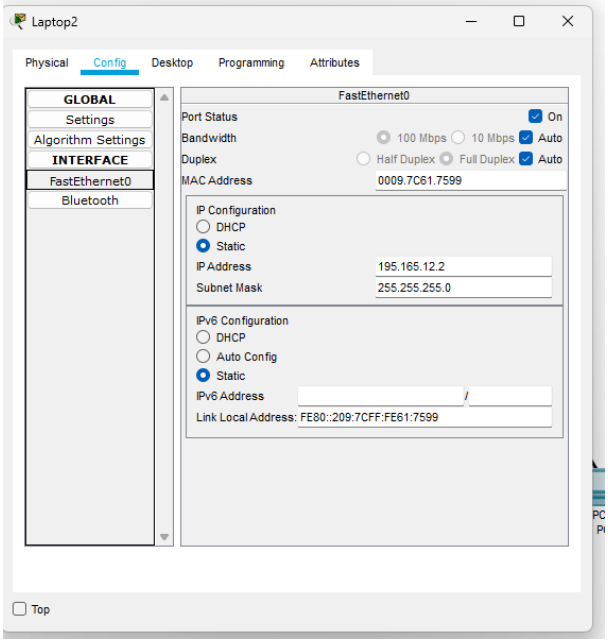
```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
```

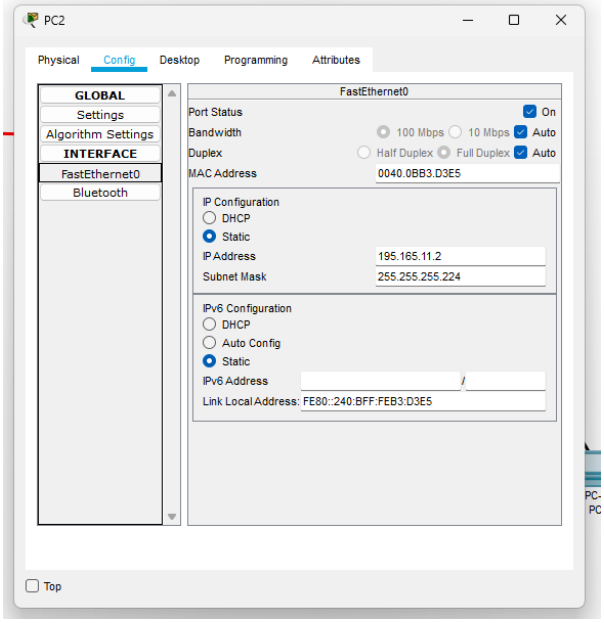
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
ip address 195.165.1.1 255.255.255.0
Router(config-if)#ip address 195.165.15.1 255.255.255.0
Router(config-if)#ip address 195.165.15.1 255.255.255.0
Router(config-if)#
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/1/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up
ip address 195.165.13.1 255.0.0.0
Router(config-if)#ip address 195.165.13.1 255.0.0.0
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed state to up
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#ip route 195.165.13.1 255.255.255.0 195.165.15.1
Router(config)#
Router(config)#
Router(config)#

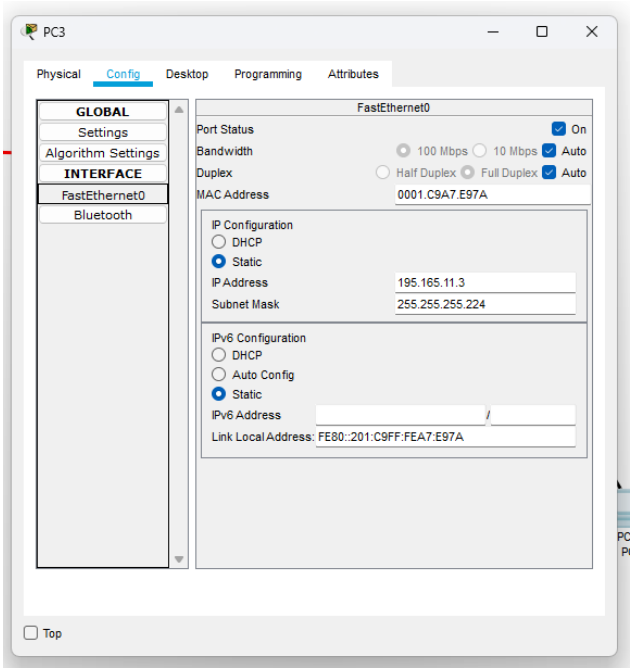
ALL PC/LAPTOP CONFIGURATION :

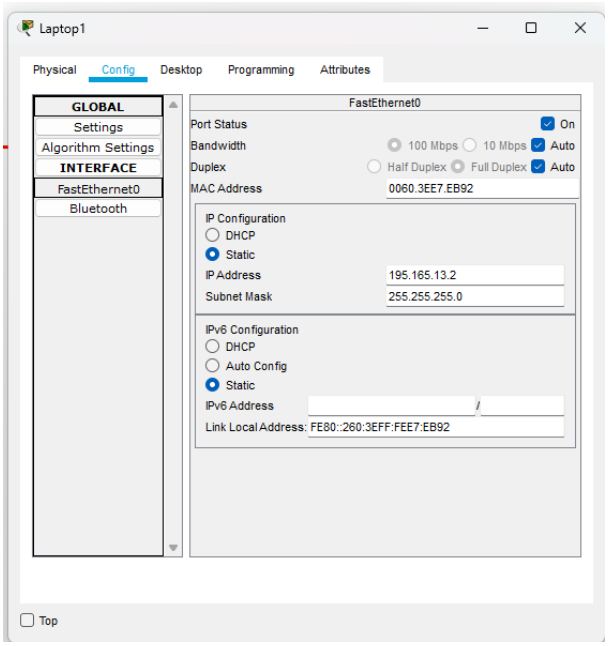

PC0
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
00E0.F97C.D5E0
IP Configuration
DHCP
Static
IP Address
195.165.10.2
Subnet Mask
255.255.255.240
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address: FE80::2E0:F9FF:FE7C:D5E0
Top


Laptop3
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.C7BA.E752
IP Configuration
DHCP
Static
IP Address
195.165.10.3
Subnet Mask
255.255.255.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address: FE80::201:C7FF:FEBA:E752
Top

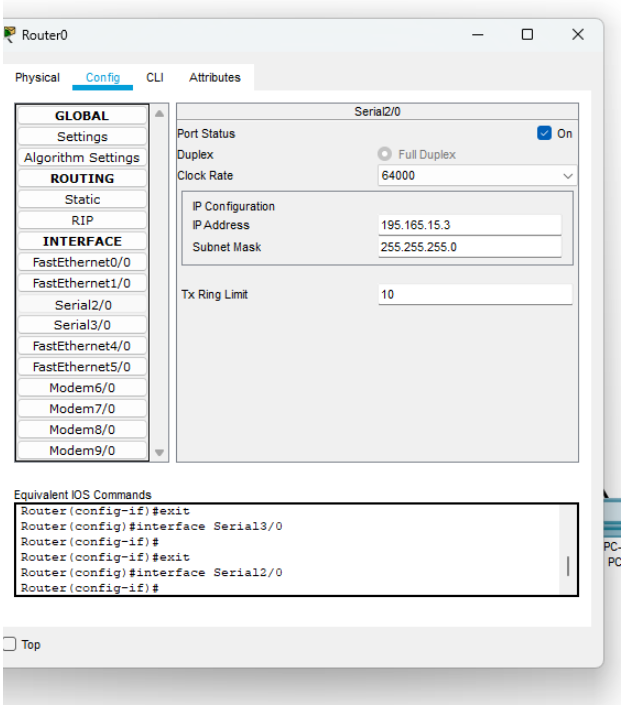

Laptop2
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0009.7C61.7599
IP Configuration
DHCP
Static
IP Address
195.165.12.2
Subnet Mask
255.255.255.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address: FE80::209:7CFF:FE61:7599
Top

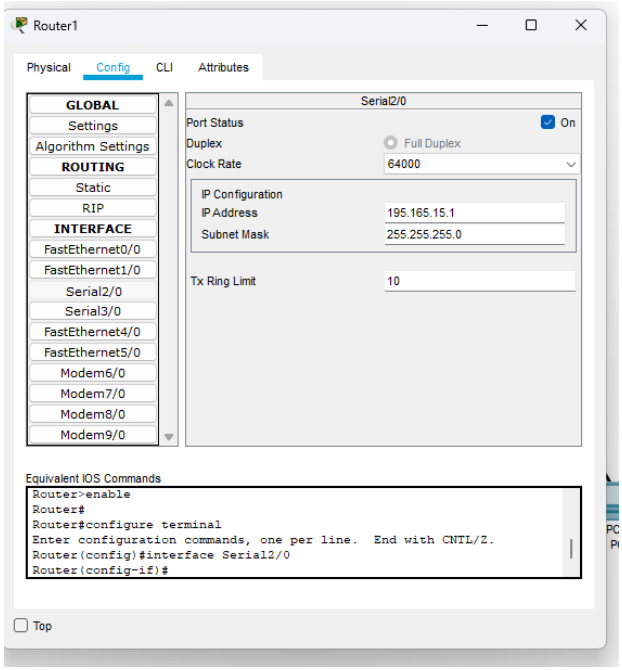

PC2
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0040.0BB3.D3E5
IP Configuration
DHCP
Static
IP Address
195.165.11.2
Subnet Mask
255.255.255.224
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address: FE80::240:BFF:FEB3:D3E5
Top



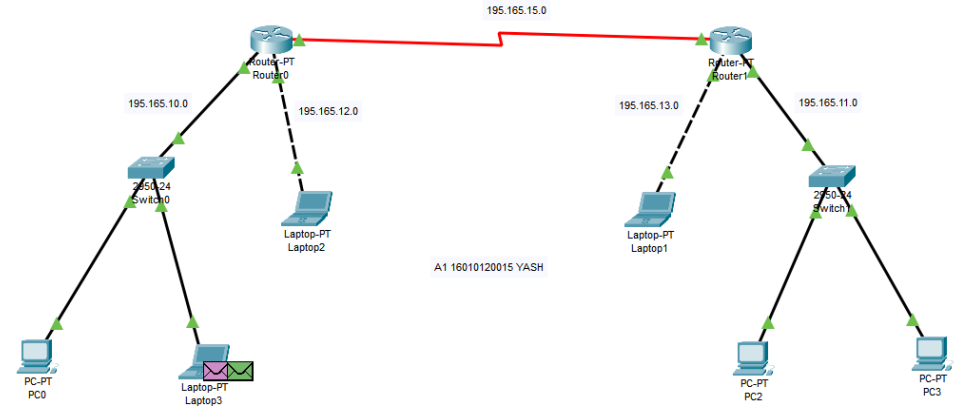


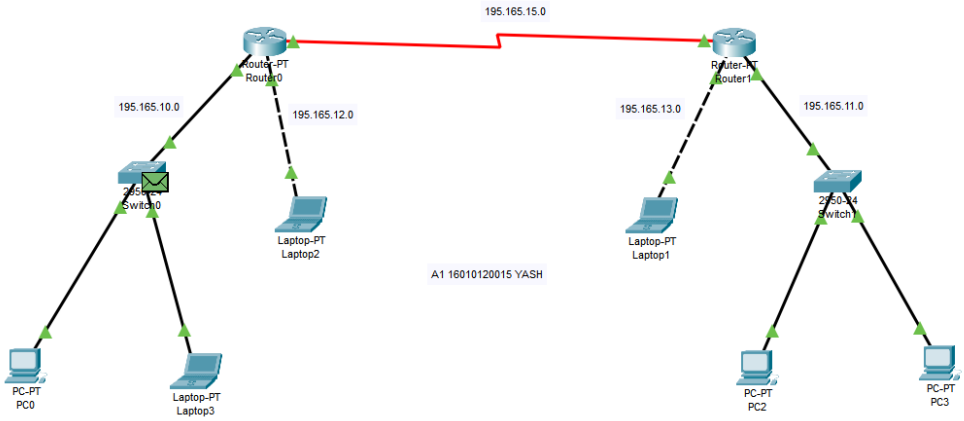
ALL ROUTER CONFIGURATION :

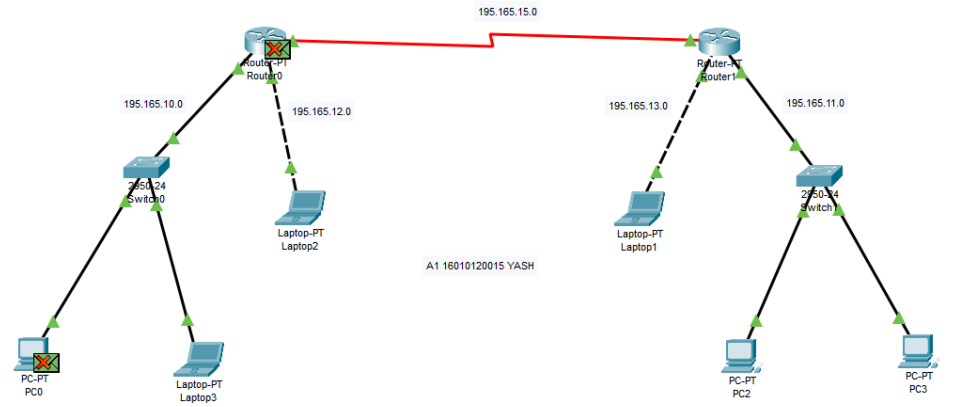


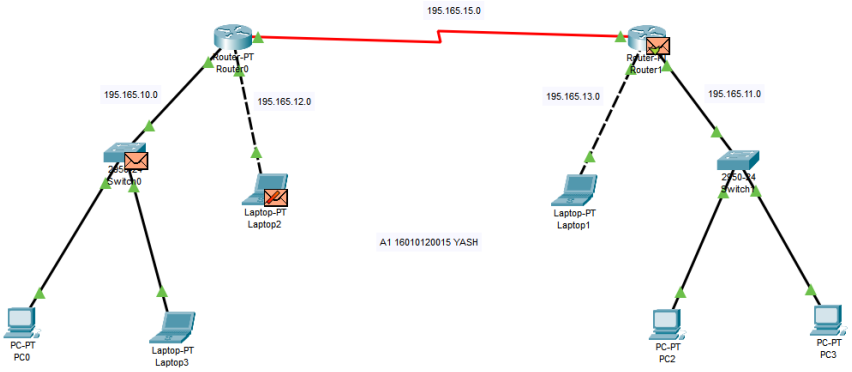


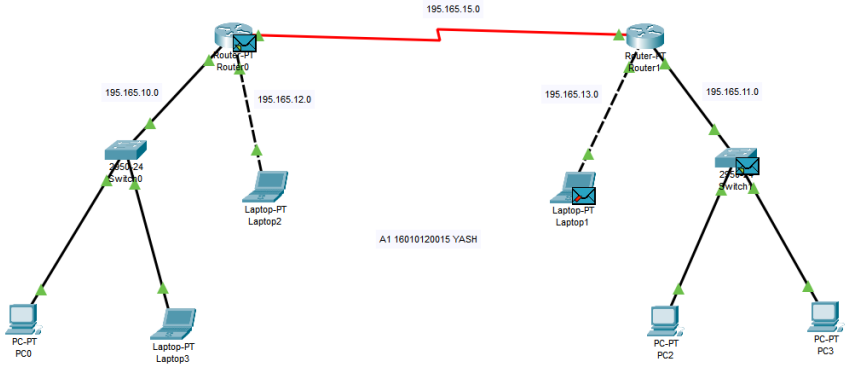
Simulation frm Laptop3 to pc3

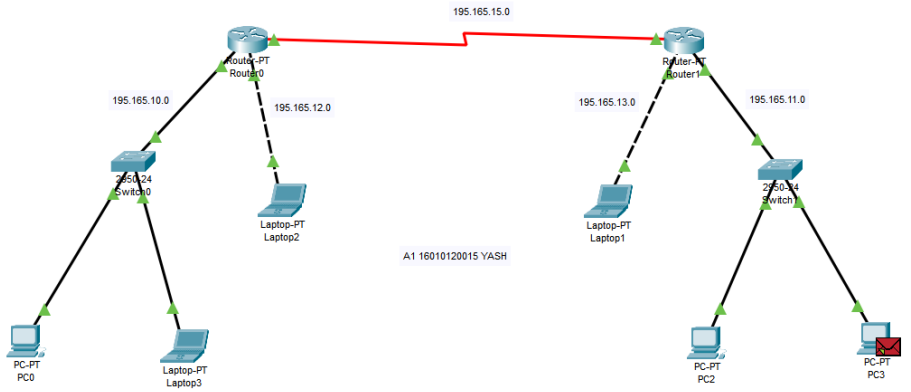


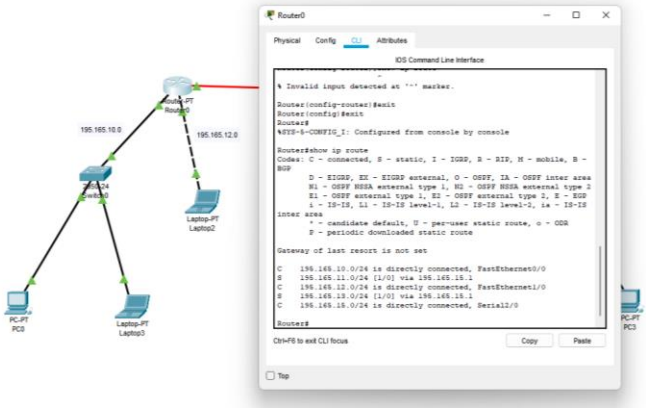


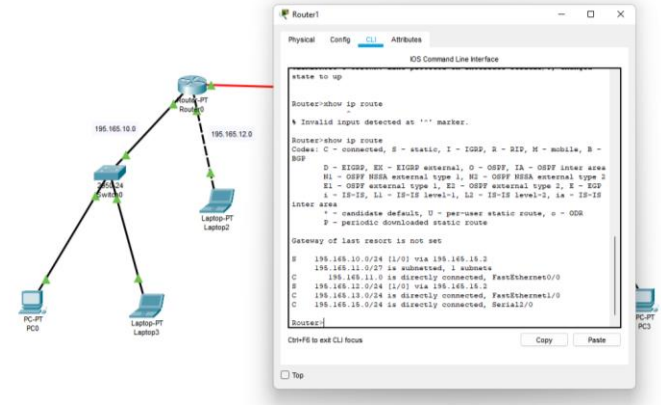



195.165.15.0
Router-PT Router0
Router-PT Router1
195.165.10.0
195.165.12.0
195.165.13.0
195.165.11.0
2950-24 Switch0
2950-24 Switch1
Laptop-PT Laptop2
Laptop-PT Laptop1
A1 16010120015 YASH
PC-PT PC0
Laptop-PT Laptop3
PC-PT PC2
PC-PT PC3


195.165.15.0
Router-PT Router0
Router-PT Router1
195.165.10.0
195.165.12.0
195.165.13.0
195.165.11.0
2950-24 Switch0
2950-24 Switch1
Laptop-PT Laptop2
Laptop-PT Laptop1
A1 16010120015 YASH
PC-PT PC0
Laptop-PT Laptop3
PC-PT PC2
PC-PT PC3


195.165.15.0
Router-PT Router0
Router-PT Router1
195.165.10.0
195.165.12.0
195.165.13.0
195.165.11.0
2950-24 Switch0
2950-24 Switch1
Laptop-PT Laptop2
Laptop-PT Laptop1
A1 16010120015 YASH
PC-PT PC0
Laptop-PT Laptop3
PC-PT PC2
PC-PT PC3





CONCLUSION:

Thus, in this experiment we Understood basic Cisco Router configuration Commands and Implemented Static Routing using Cisco Packet Tracer successfully.

Date: ___11/07/2022_____ **Signature of faculty in-charge**