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Institute of Computer Technology
B. Tech Computer Science and Engineering

Sub:CN
Practical 5

Aim: To configure and utilize Telnet (teletype network), SSH (Secure Socket Shell) and FTP (File Transfer Protocol) in a network

Scenario:

Design the network of an organization having 3 different departments. Make sure the below mentioned requirements must be fulfilled.

1) Create 3 users which will be able to get the access of the router using Telnet.

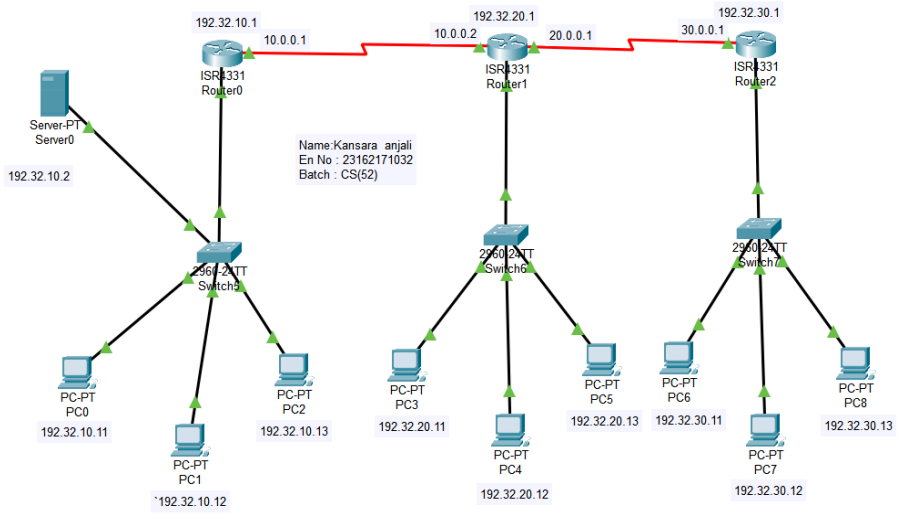
2) Create a single password to get the access of the router using Telnet. Configure in such a way at a time 2 users can access router at a time.

3) Create 3 users which will be able to get the access of the router using SSH. Configure in such a way at a time 2 users can access router at a time.

4) Create FTP server and perform the operation to upload and download a file from one department to other department.

Procedure:

1) Create network as given below



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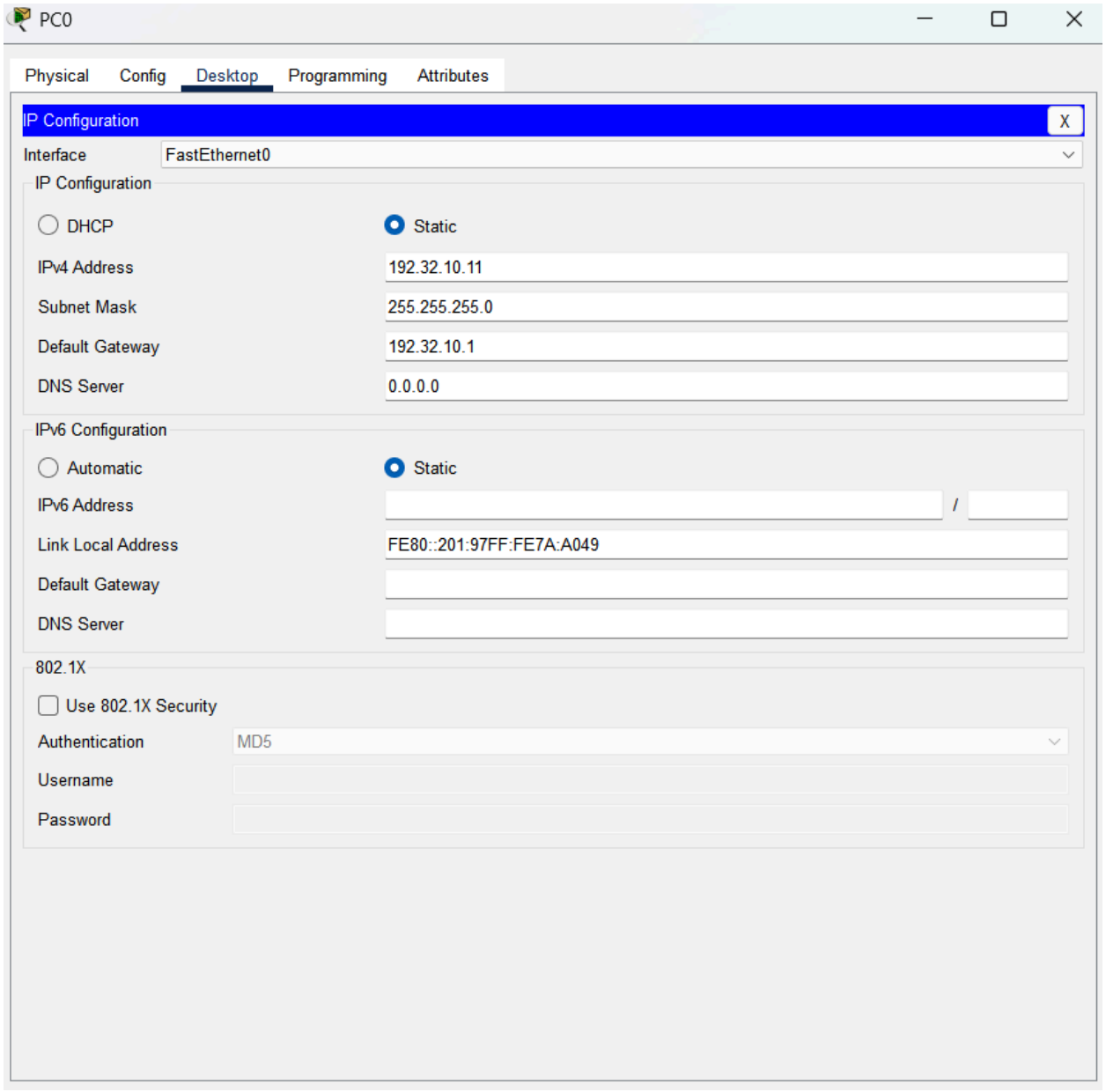
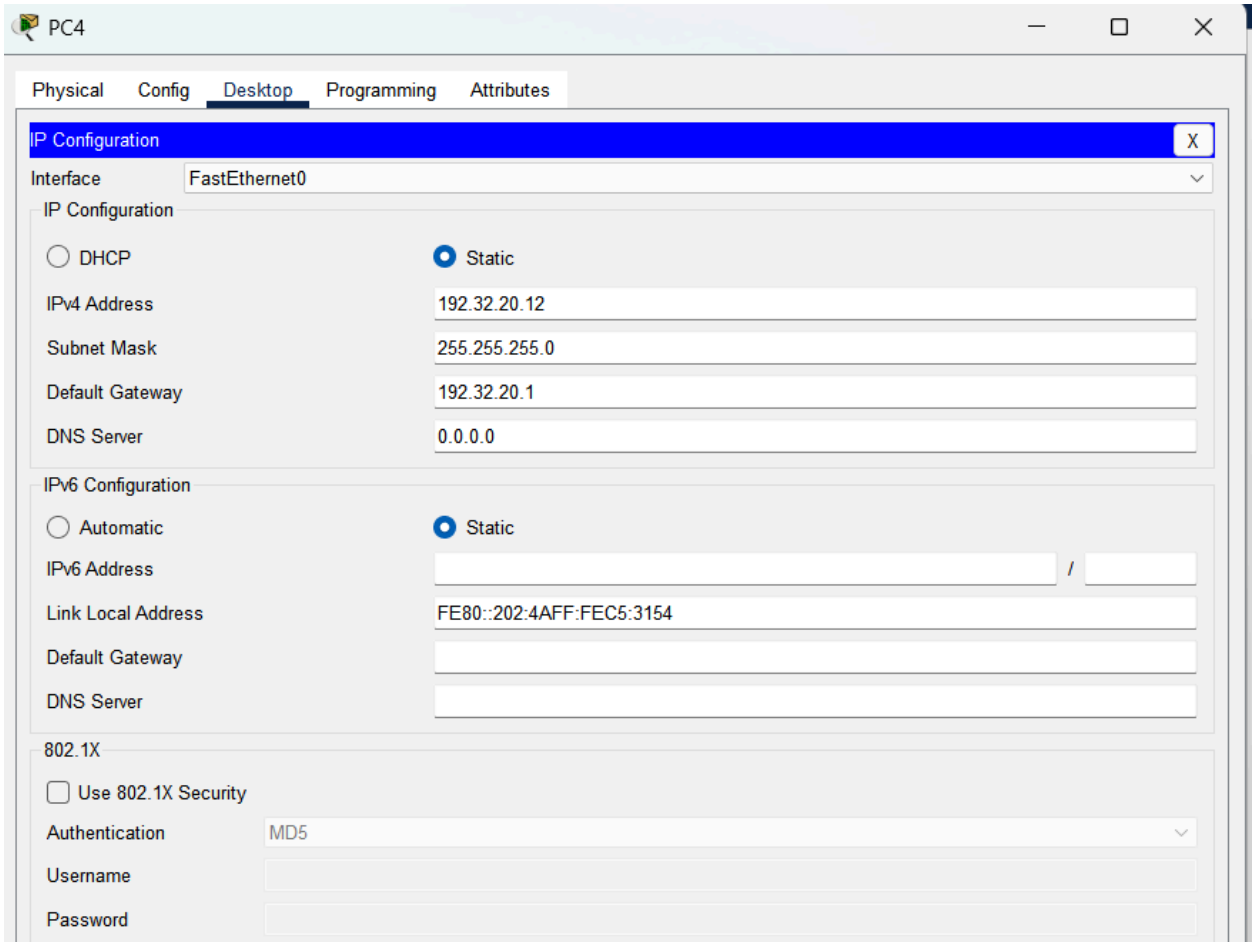
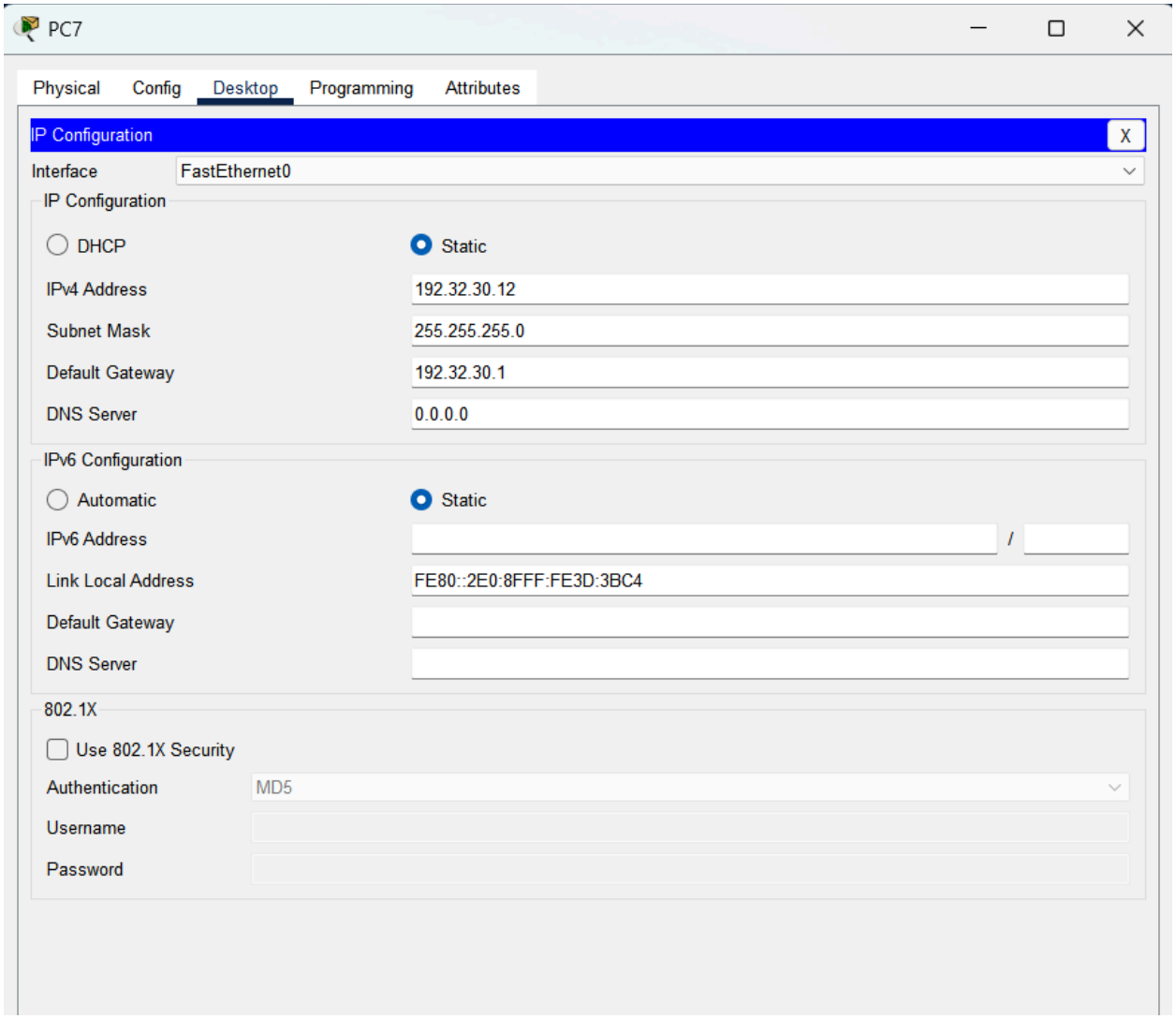
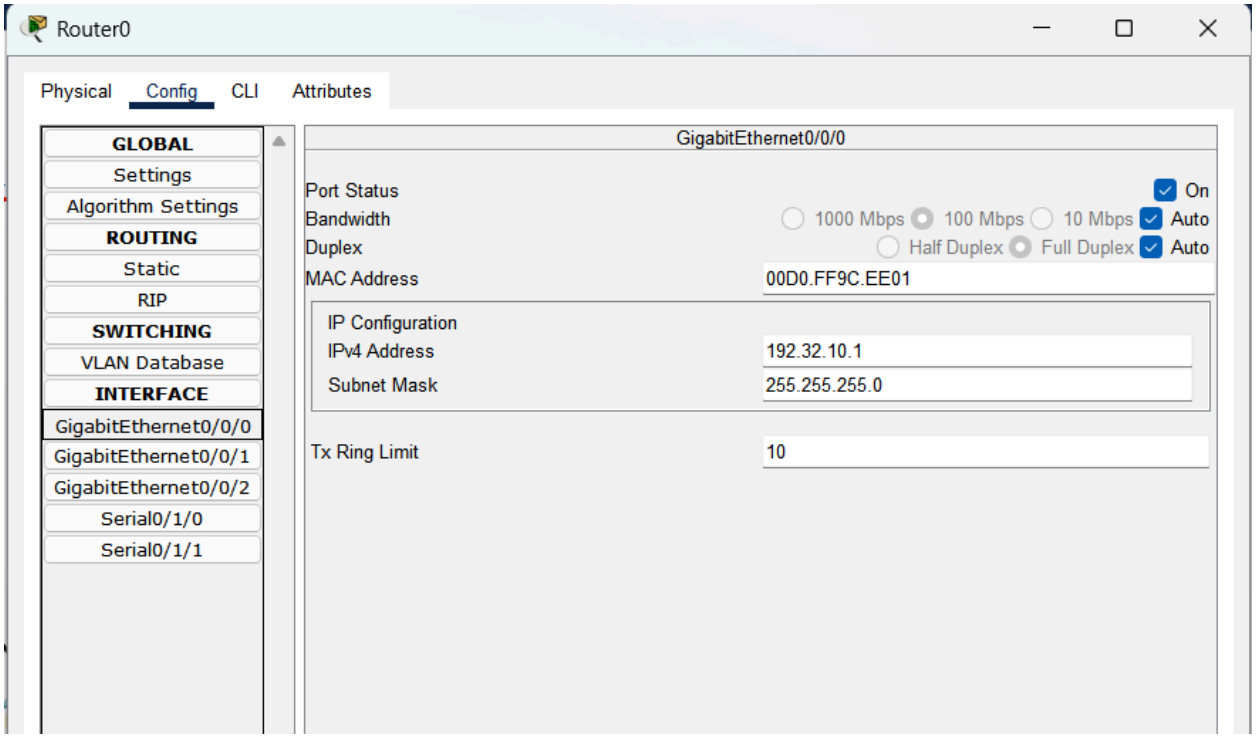
Department	Device	IP address	Subnet Mask	Default Gateway
Dept.1	Server	192.33.10.2	255.255.255.0	192.33.10.1
	PC0	192.33.10.11	255.255.255.0	192.33.10.1
	PC1	192.33.10.12	255.255.255.0	192.33.10.1
	PC2	192.33.10.13	255.255.255.0	192.33.10.1
Dept.2	PC3	192.33.20.11	255.255.255.0	192.33.20.1
	PC4	192.33.20.12	255.255.255.0	192.33.20.1
	PC5	192.33.20.13	255.255.255.0	192.33.20.1
Dept.3	PC6	192.33.30.11	255.255.255.0	192.33.30.1
	PC7	192.33.30.12	255.255.255.0	192.33.30.1
	PC8	192.33.30.13	255.255.255.0	192.33.30.1

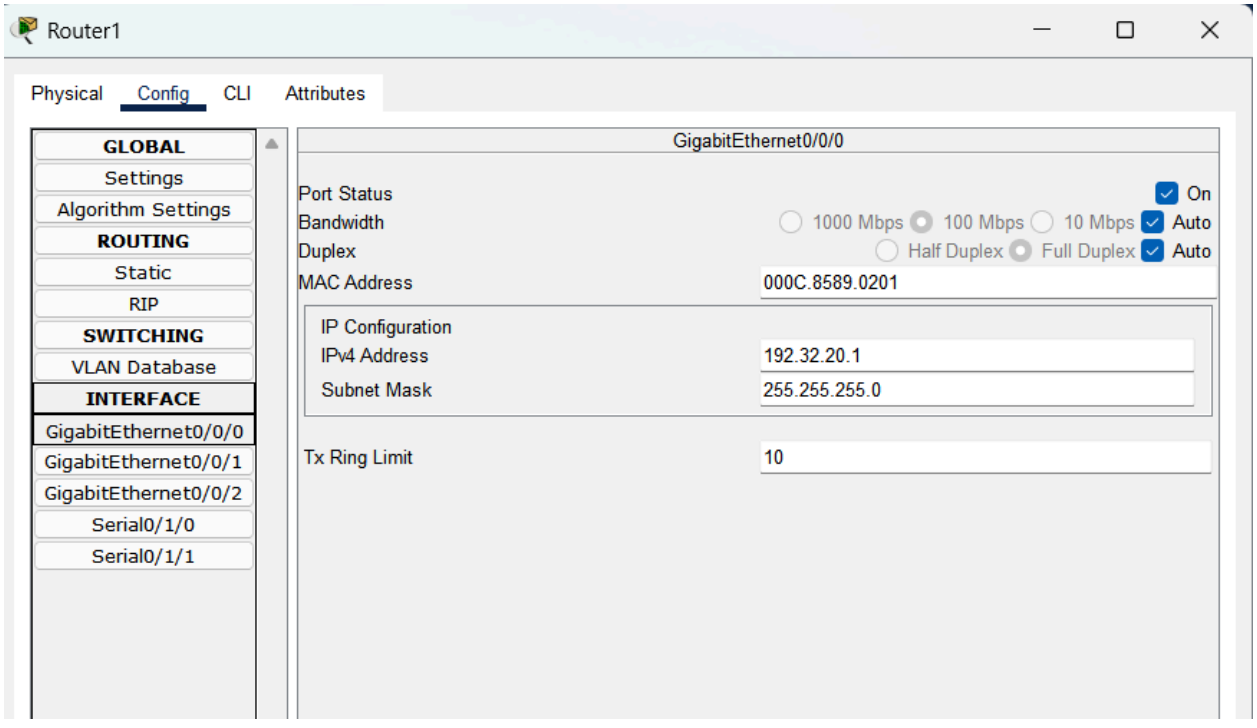
2) Configure IP address (All Devices, Routers)

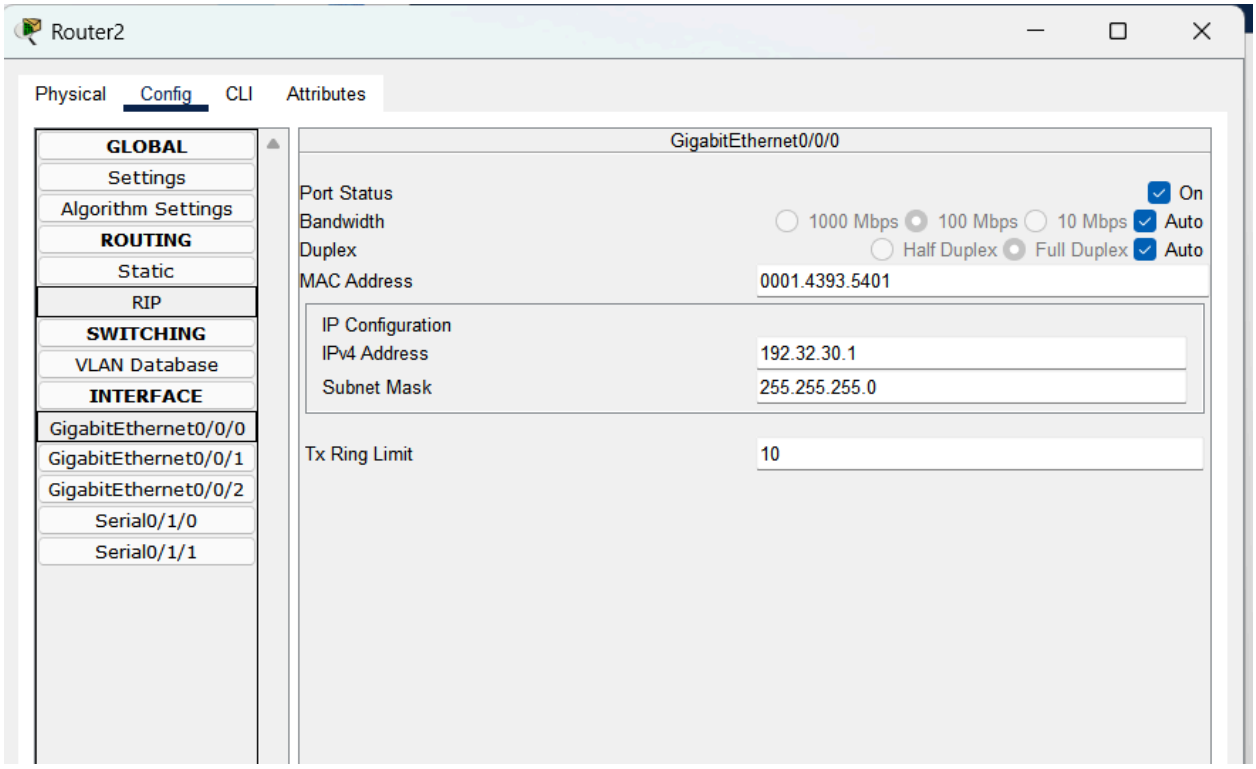

PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.32.10.11
Subnet Mask
255.255.255.0
Default Gateway
192.32.10.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::201:97FF:FE7A:A049
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password


PC4
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.32.20.12
Subnet Mask
255.255.255.0
Default Gateway
192.32.20.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::202:4AFF:FEC5:3154
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

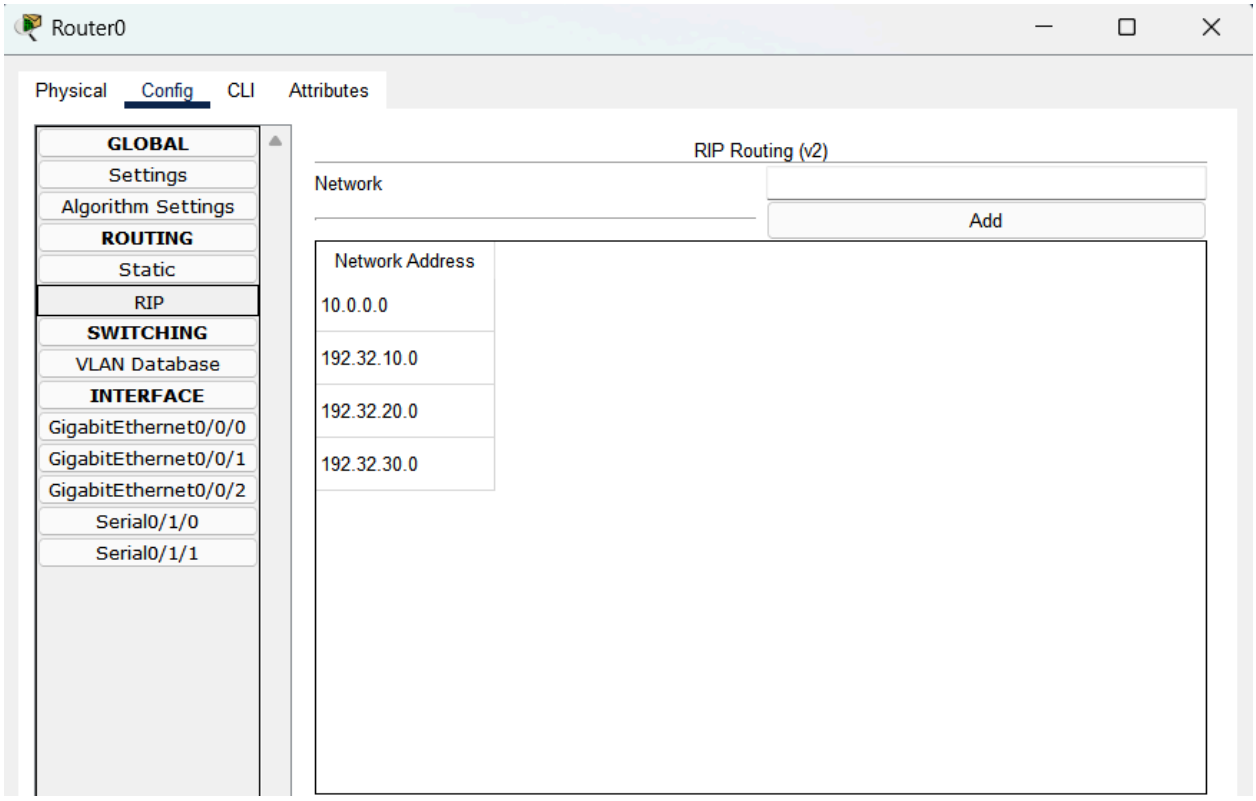

PC7
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.32.30.12
Subnet Mask
255.255.255.0
Default Gateway
192.32.30.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::2E0:8FFF:FE3D:3BC4
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

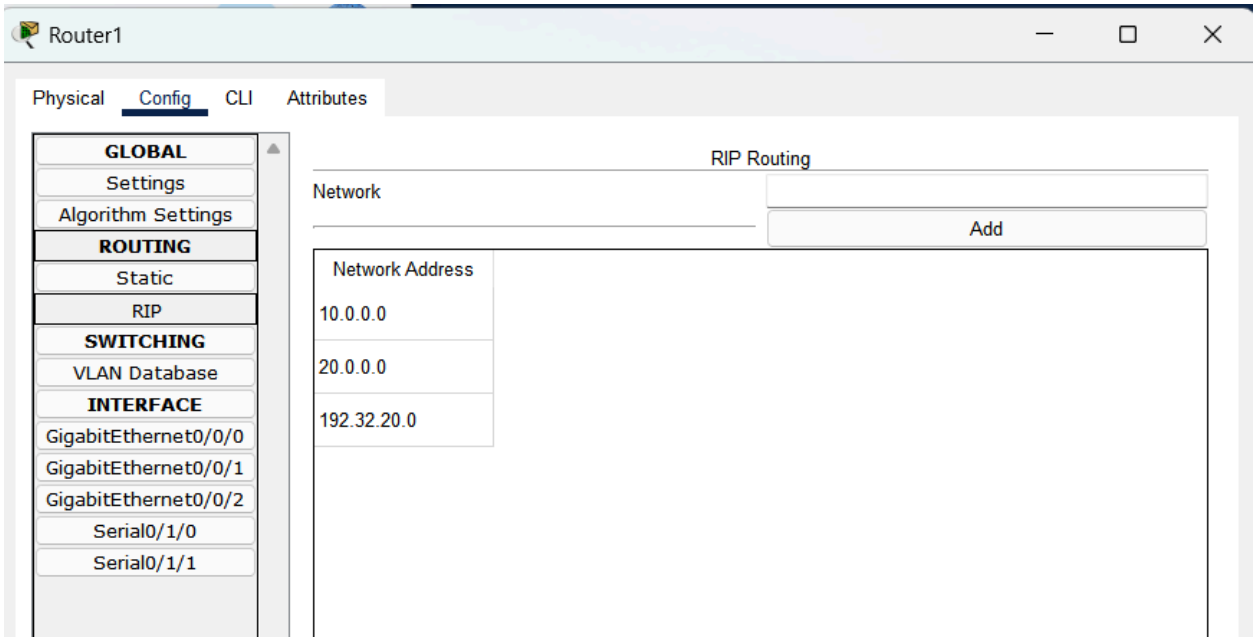

Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
GigabitEthernet0/0/2
Serial0/1/0
Serial0/1/1
GigabitEthernet0/0/0
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
00D0.FF9C.EE01
IP Configuration
IPv4 Address
192.32.10.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10

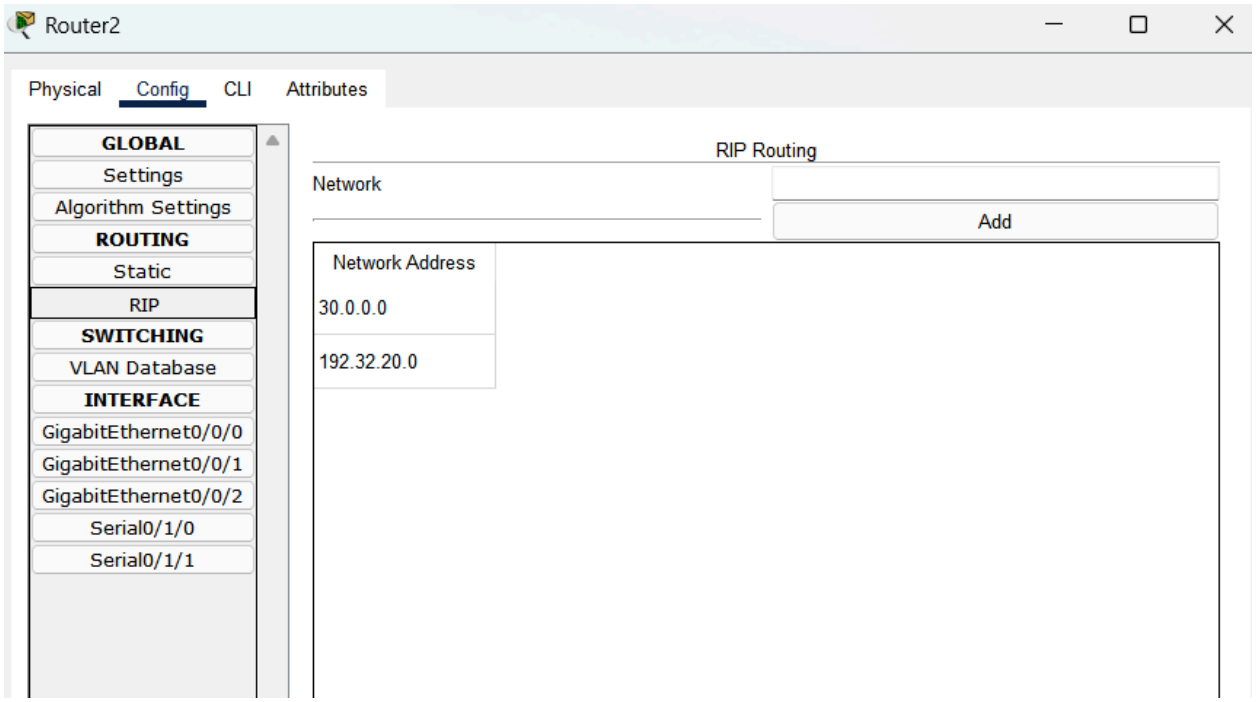

Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
GigabitEthernet0/0/2
Serial0/1/0
Serial0/1/1
GigabitEthernet0/0/0
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
000C.8589.0201
IP Configuration
IPv4 Address
192.32.20.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10



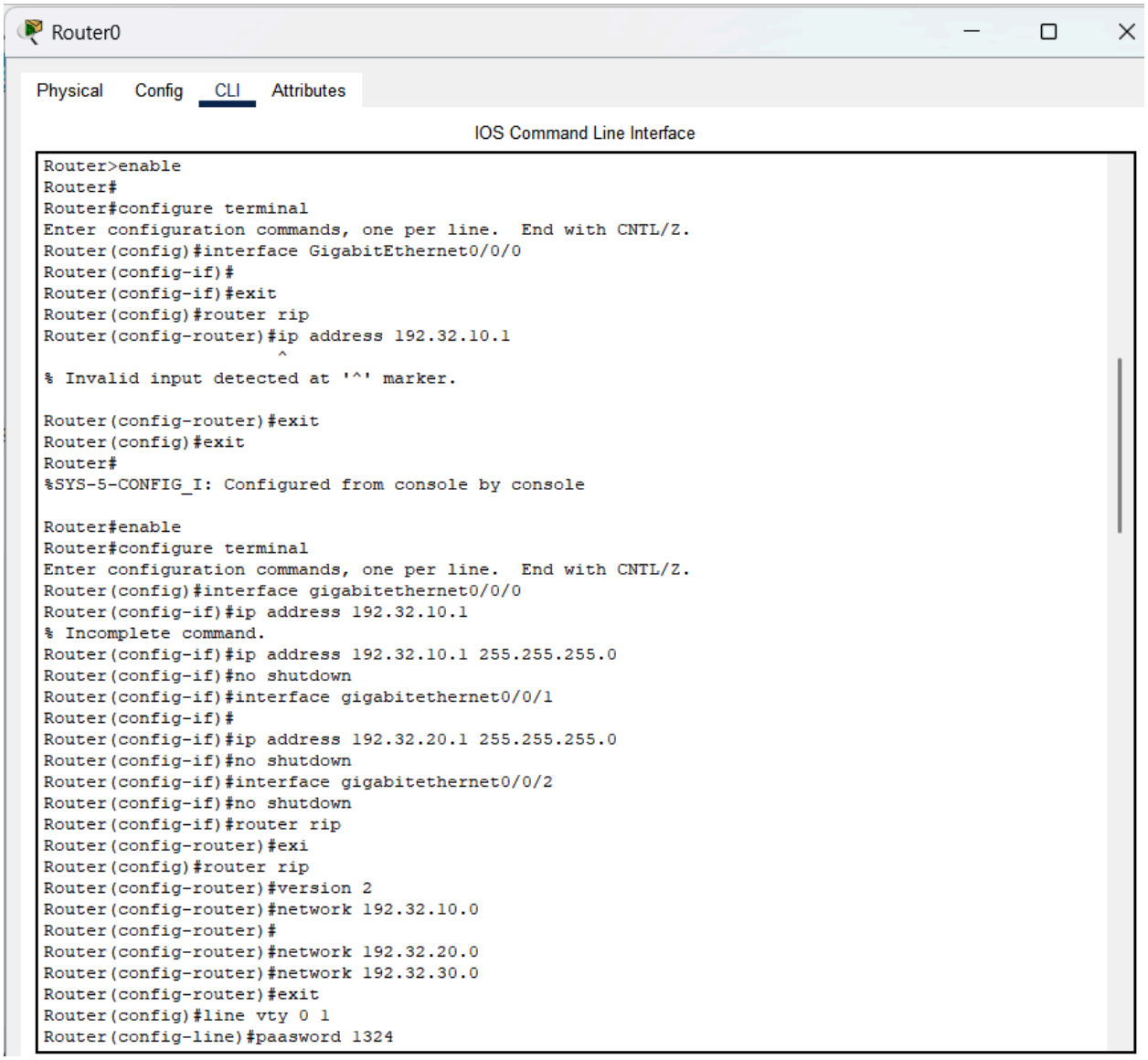
3) Configure dynamic routing table (RIP in routers)


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
GigabitEthernet0/0/2
Serial0/1/0
Serial0/1/1
RIP Routing (v2)
Network
Add
Network Address
10.0.0.0
192.32.10.0
192.32.20.0
192.32.30.0

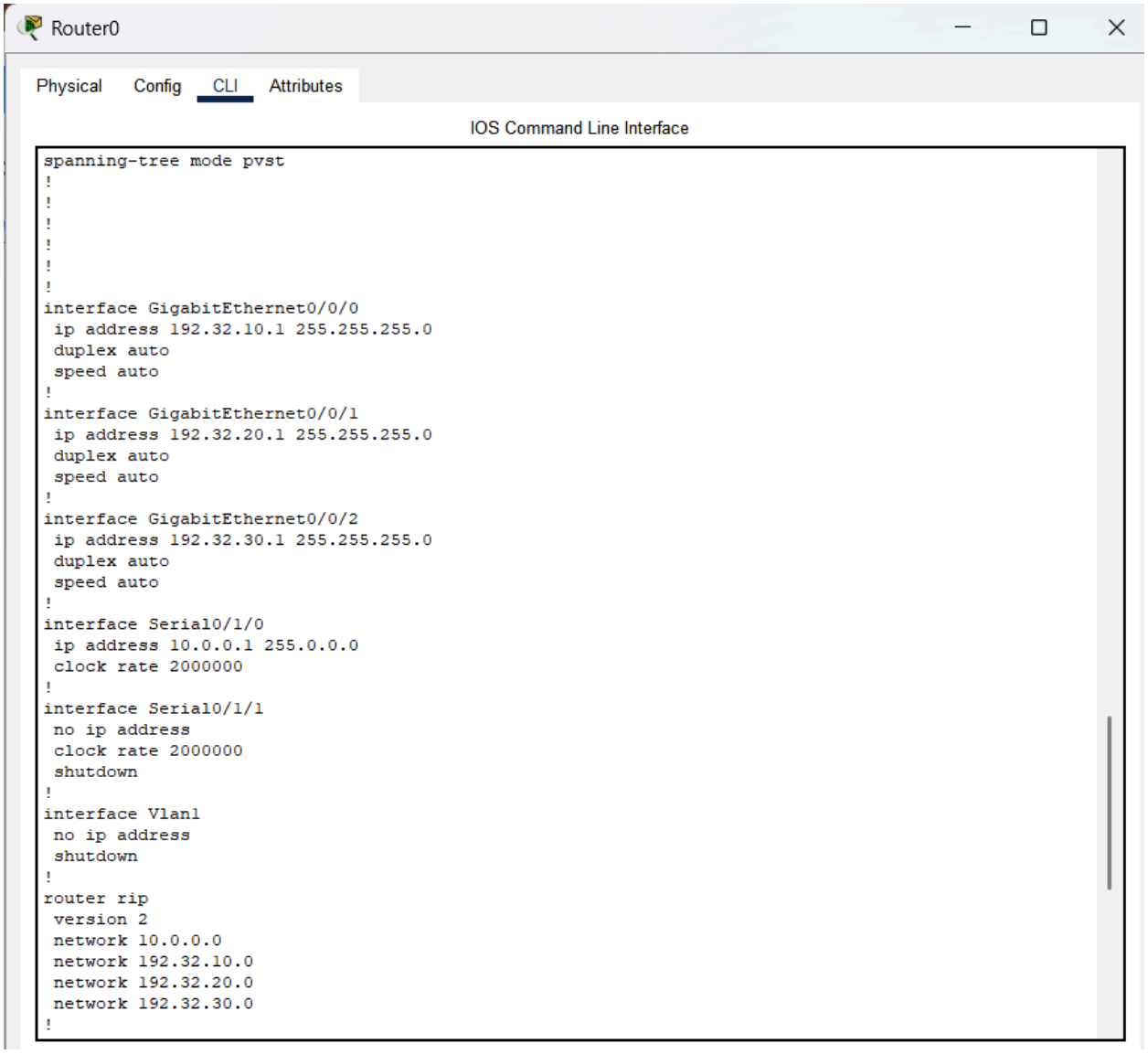

Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
GigabitEthernet0/0/2
Serial0/1/0
Serial0/1/1
RIP Routing
Network
Add
Network Address
10.0.0.0
20.0.0.0
192.32.20.0



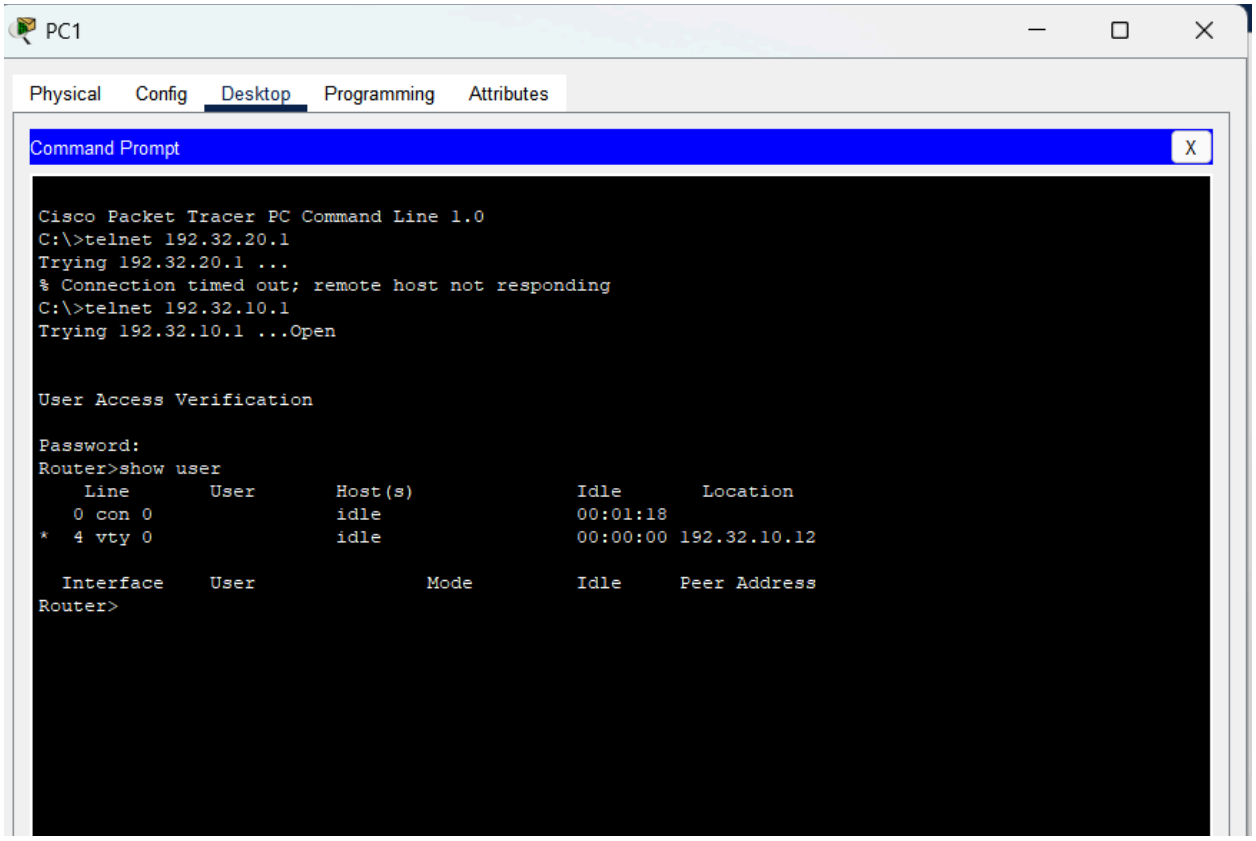
4) Configure TELNET on Router0


Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#ip address 192.32.10.1
                     ^
% Invalid input detected at '^' marker.
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface gigabitethernet0/0/0
Router(config-if)#ip address 192.32.10.1
% Incomplete command.
Router(config-if)#ip address 192.32.10.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#interface gigabitethernet0/0/1
Router(config-if)#
Router(config-if)#ip address 192.32.20.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#interface gigabitethernet0/0/2
Router(config-if)#no shutdown
Router(config-if)#router rip
Router(config-router)#exi
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.32.10.0
Router(config-router)#
Router(config-router)#network 192.32.20.0
Router(config-router)#network 192.32.30.0
Router(config-router)#exit
Router(config)#line vty 0 1
Router(config-line)#paasword 1324

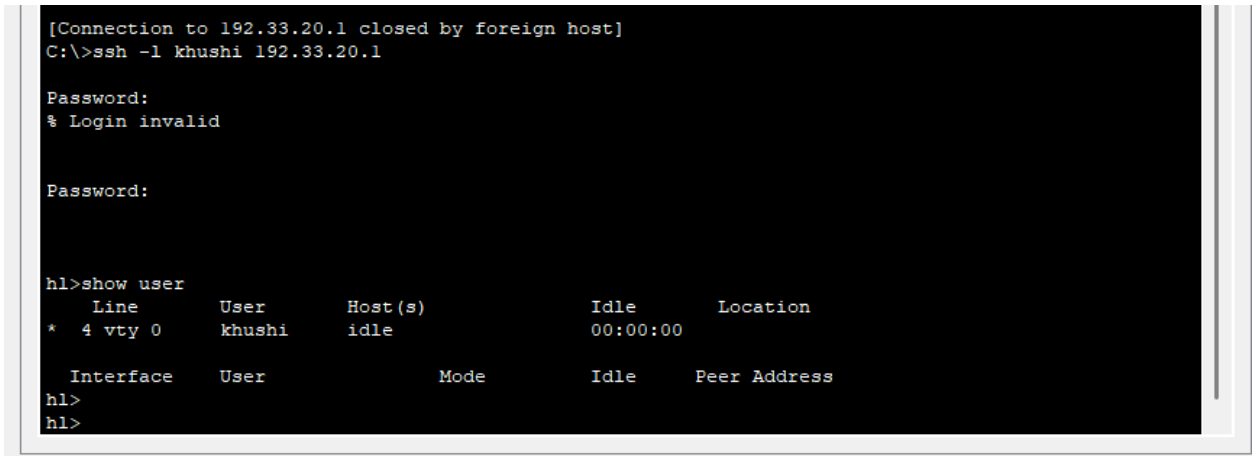
```
Router(config-line)#password 1324
Router(config-line)#login
Router(config-line)#exit
Router(config)#username user1 password pass1
Router(config)#username user2 password pass2
Router(config)#username user3 password pass3
Router(config)#do show run
Building configuration...

Current configuration : 1068 bytes
!
version 15.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
username user1 password 0 pass1
username user2 password 0 pass2
username user3 password 0 pass3
!
!
!
!
!
!
!
!
!
```

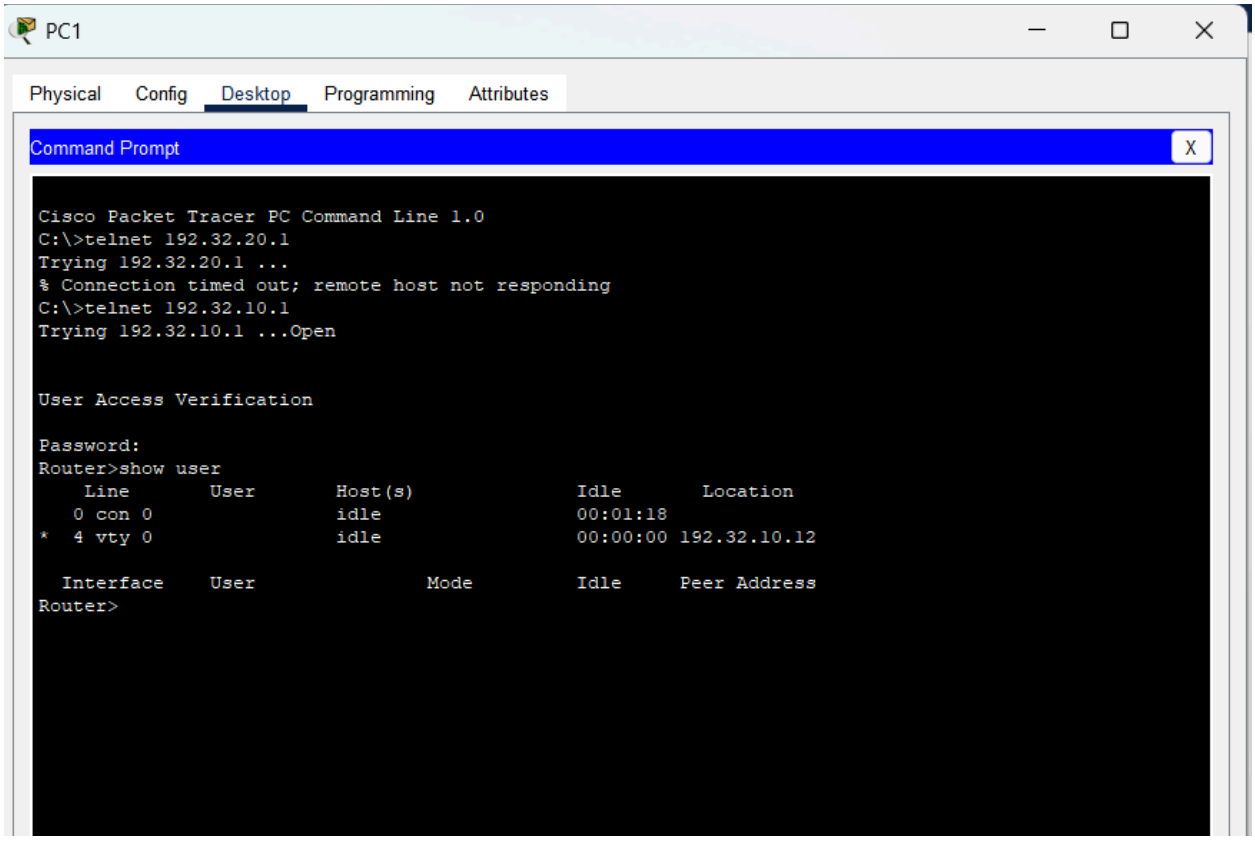

Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
spanning-tree mode pvst
!
!
!
!
!
!
interface GigabitEthernet0/0/0
 ip address 192.32.10.1 255.255.255.0
 duplex auto
 speed auto
!
interface GigabitEthernet0/0/1
 ip address 192.32.20.1 255.255.255.0
 duplex auto
 speed auto
!
interface GigabitEthernet0/0/2
 ip address 192.32.30.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/1/0
 ip address 10.0.0.1 255.0.0.0
 clock rate 2000000
!
interface Serial0/1/1
 no ip address
 clock rate 2000000
 shutdown
!
interface Vlan1
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.32.10.0
 network 192.32.20.0
 network 192.32.30.0
!

```
 shutdown
!
interface Vlan1
 no ip address
 shutdown
!
router rip
 version 2
 network 10.0.0.0
 network 192.32.10.0
 network 192.32.20.0
 network 192.32.30.0
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 1
 password 1324
 login
line vty 2 4
 login
!
!
!
end
```



5) Configure SSH on Router1




PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>telnet 192.32.20.1
Trying 192.32.20.1 ...
% Connection timed out; remote host not responding
C:\>telnet 192.32.10.1
Trying 192.32.10.1 ...Open
User Access Verification
Password:
Router>show user
Line User Host(s) Idle Location
0 con 0 idle 00:01:18
* 4 vty 0 idle 00:00:00 192.32.10.12
Interface User Mode Idle Peer Address
Router>