

PRACTICAL:5

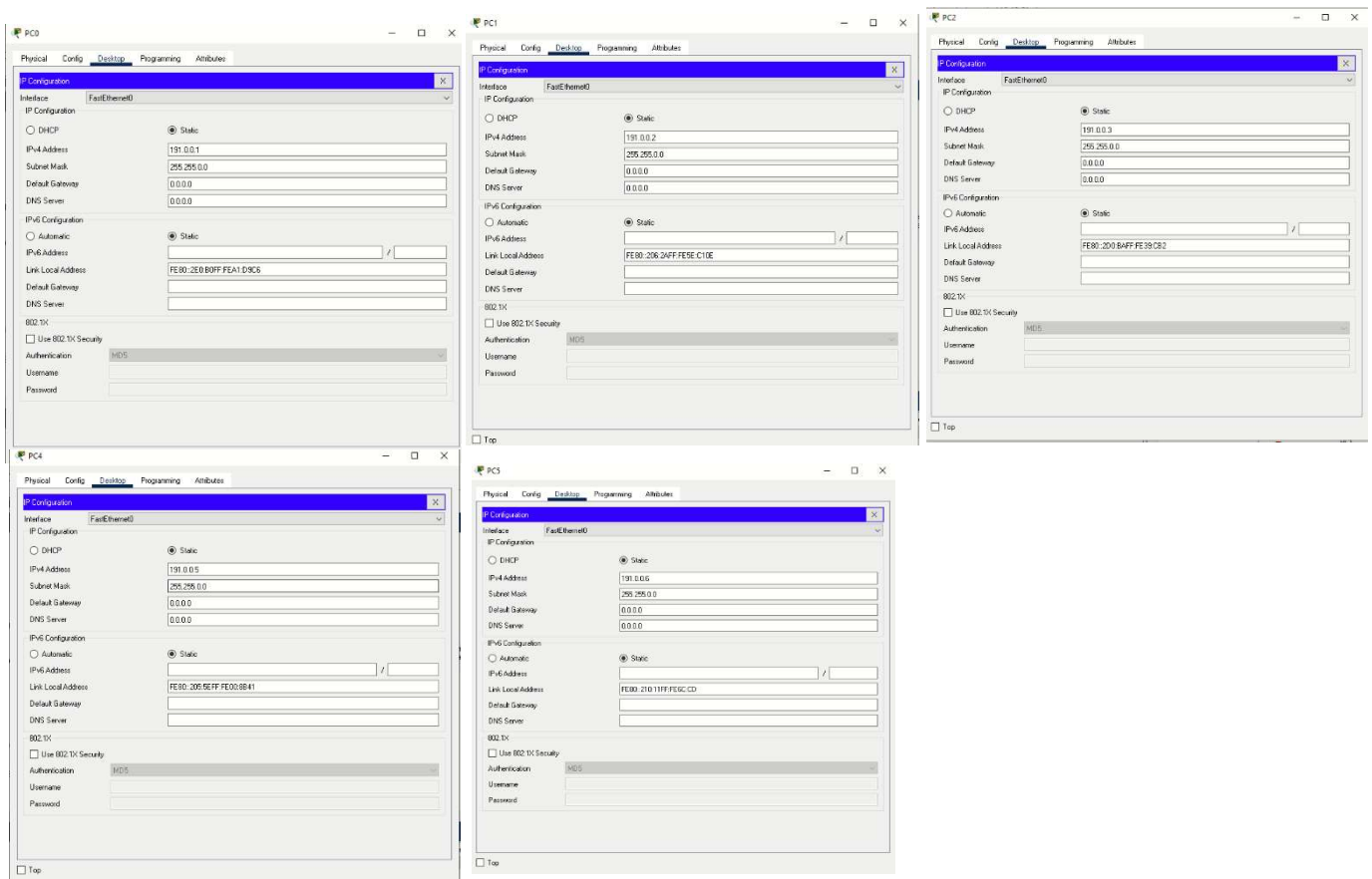
AIM : Create a VLAN on CISCO PACKET TRACER.

Theory:

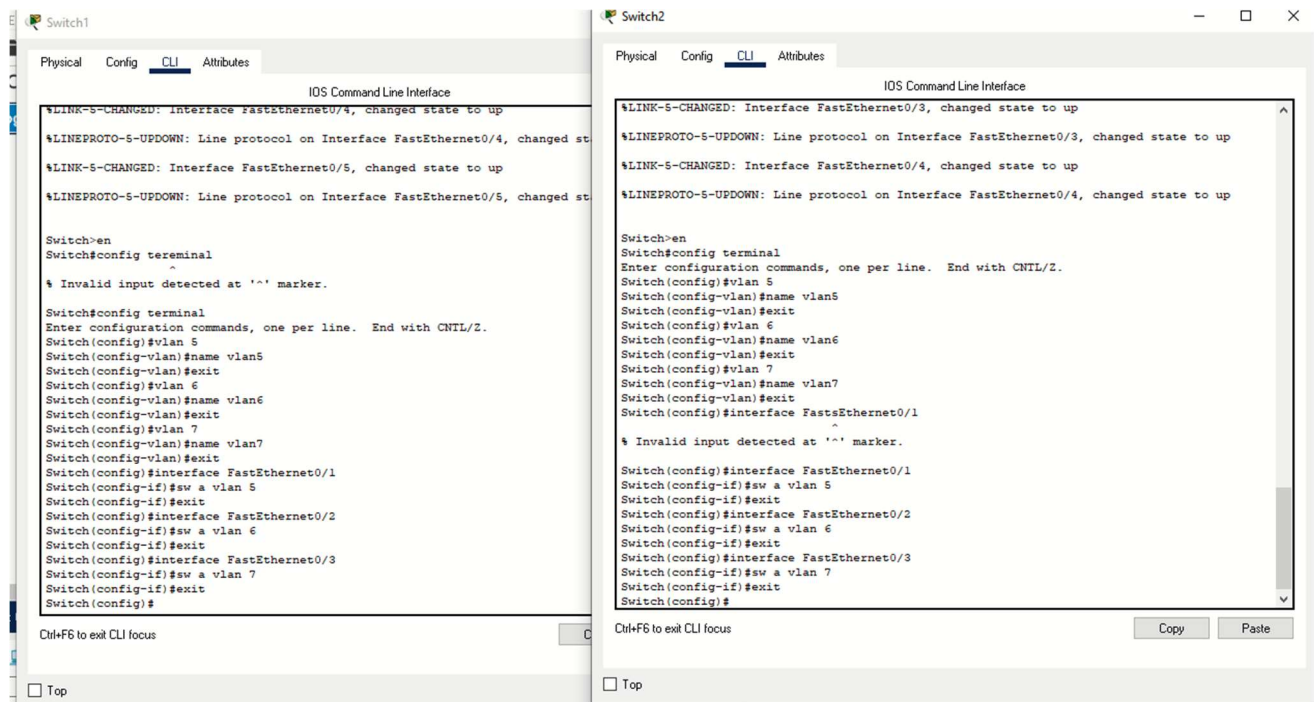
A VLAN (virtual LAN) is a subnetwork which can virtually group together collections of devices on separate physical local area networks (LANs).

Steps:

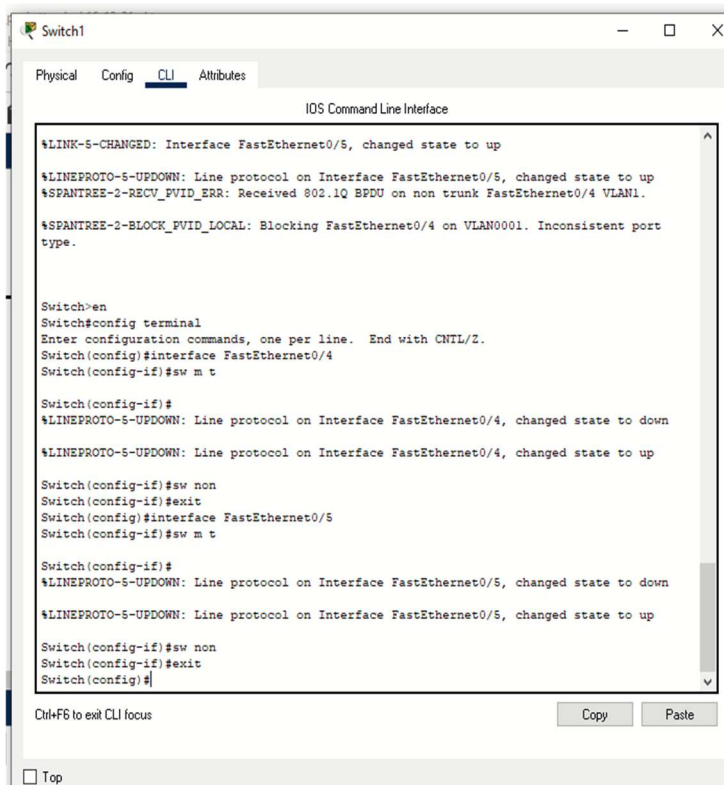
1. First make a network as in the photo, and give IP address from same class to all the PCs.

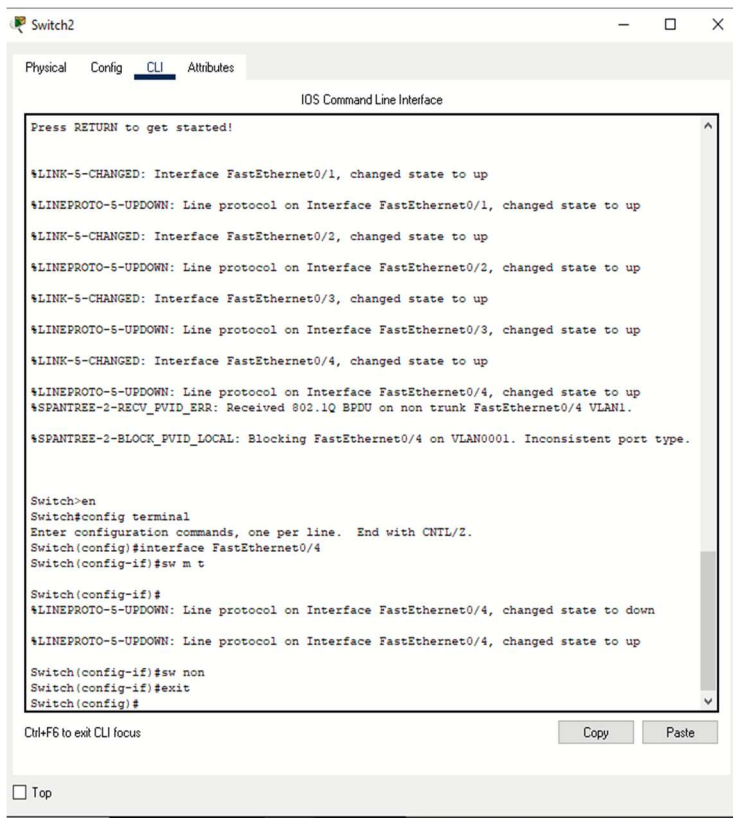


2. Then click on switch 1 and go to CLI and take following steps
enable > config > vlan 5 > name vlan5 > exit > vlan 6 > name vlan6 > exit
3. Do the same for switch 2.



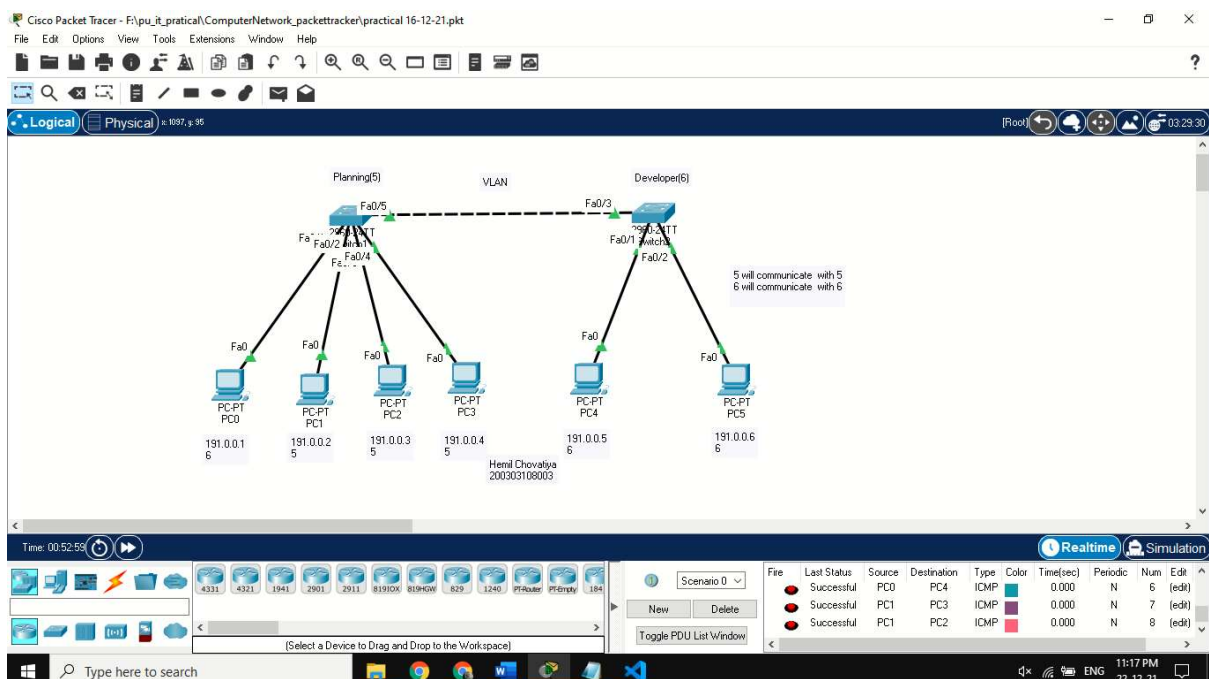
4. Click on switch 1 and go to CLI and set every PC to the VLAN from vlan 5 or vlan 6. i.e. **enable> configure terminal > interface fastethernet 0/1 > sw a vlan 6 > exit.**
5. To successfully connect two switches take following steps in CLI of both switches.i.e. **en > config terminal > interface fastethernet 0/5 > sw m t > sw non>exit.**





After this process even if PCs are in physical connection they won't be able to transfer packet.

Implementation:



PRACTICAL:6

AIM: Wireless LAN.

Theory:

Procedure

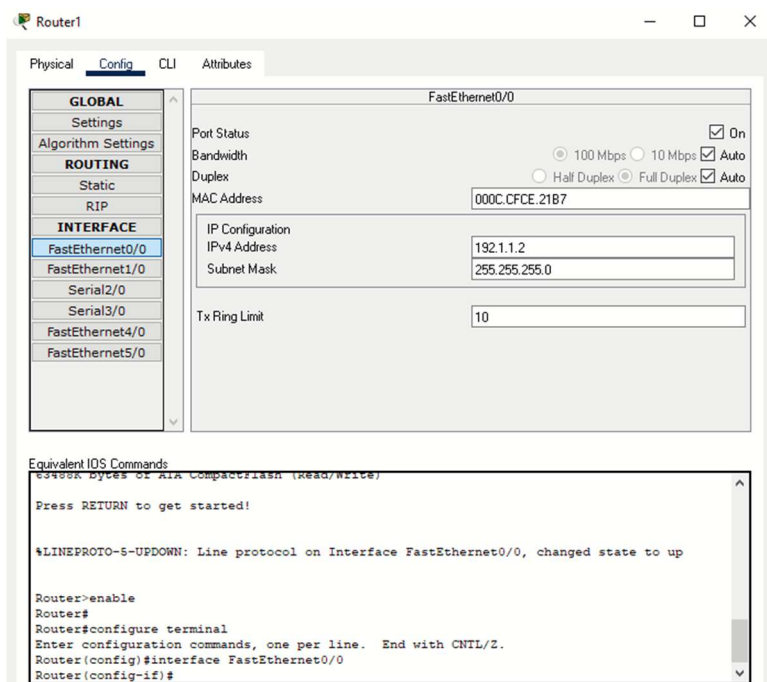
Step 1: Take 1 Switch ,1 Router, 2 Pc,1 access point.

Step 2: Connect to each other with copper straight-through wire.

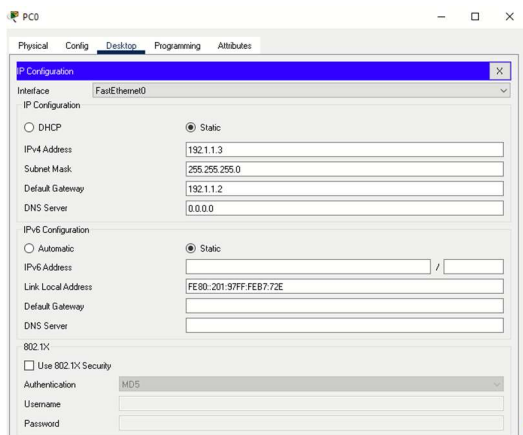
Step 3: Take 1 access point-PT and it connect with switch with straight-through wire.

Step 4: Take wireless components like 1 pc,1 laptop,1 tablet,1 smartphone,1 printer.

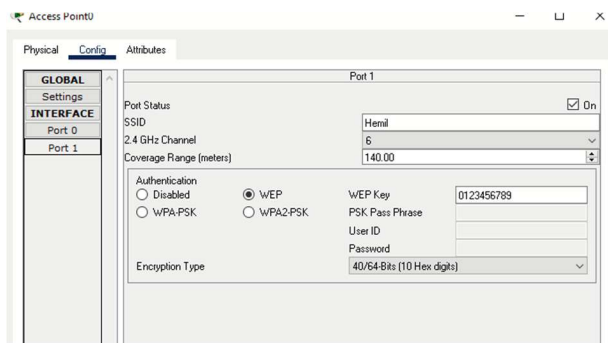
Step 5: Assign IP Address to router (192.1.1.2) and port status is on



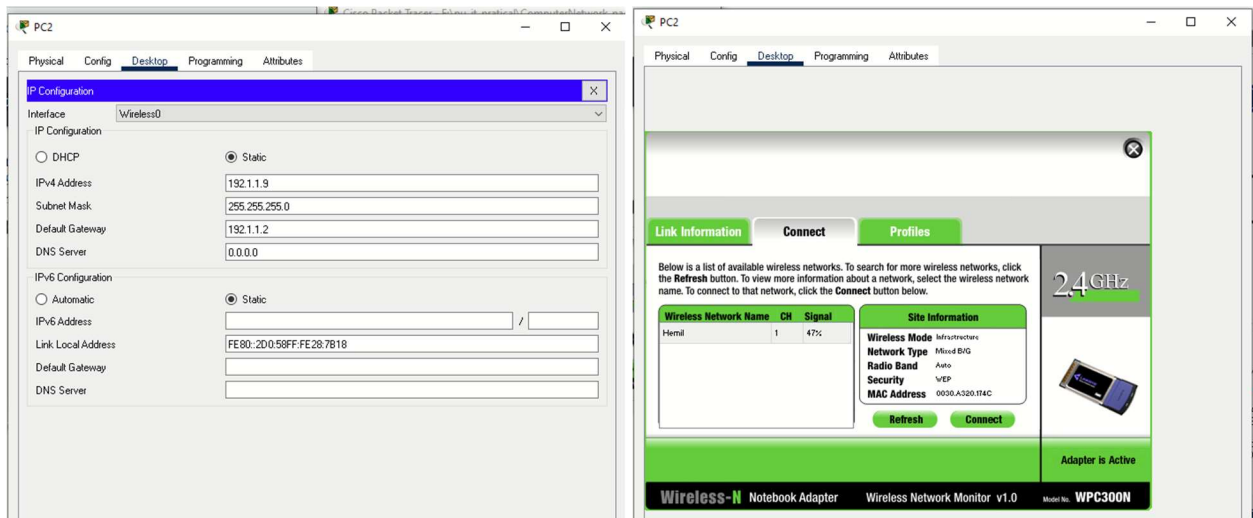
Step 6: Assign IP Address to Pc and default gateway to them.



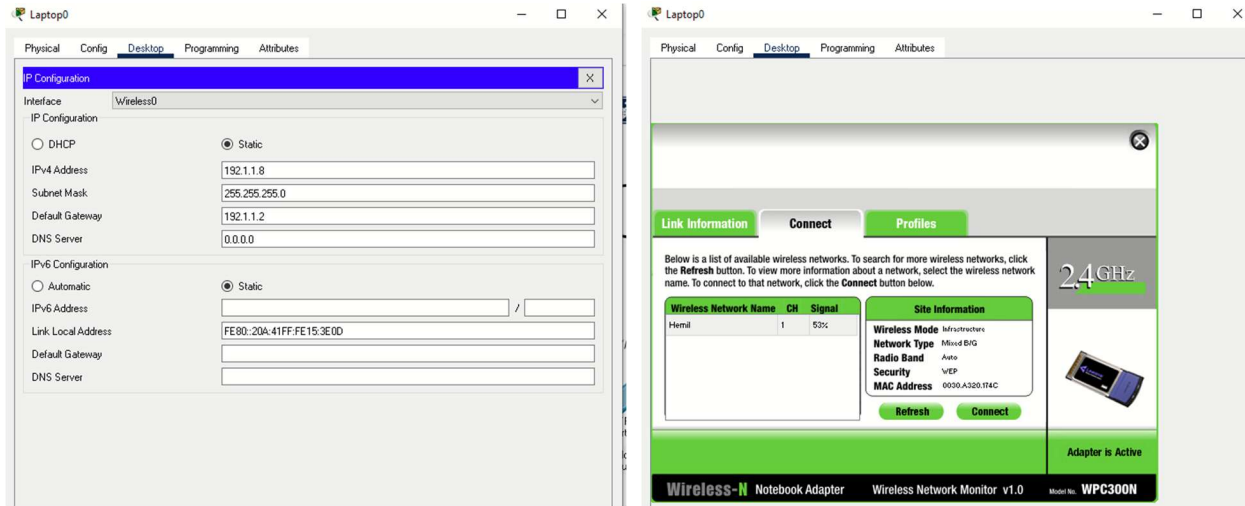
Step 7: In the access point config > port 1 select WEP, WEP Key is (0123456789) and SSID change default to name.



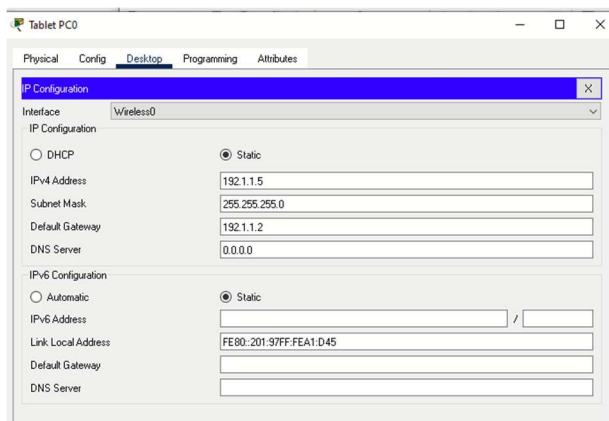
Step 8: In wireless component pc in physical section switch off and remove the port and provide WMP300N and switch on. Assign IP Address and also provide default gateway. In pc wireless section connect given wireless network.



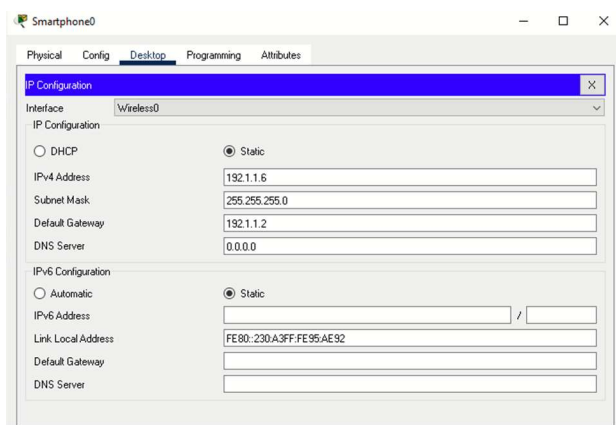
Step 9: In wireless component laptop in physical section switch off and remove the port and provide WPC300N and switch on. Assign IP Address it and also provide default gateway. In pc wireless section connect given wireless network.



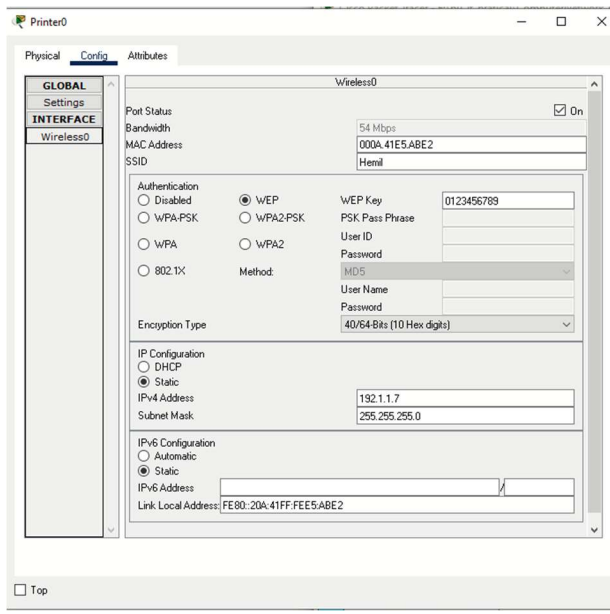
Step 10: In wireless component tablet in Assign IP Address and also provide default gateway.



Step 11: In wireless component Smartphone in Assign IP Address and also provide default gateway.

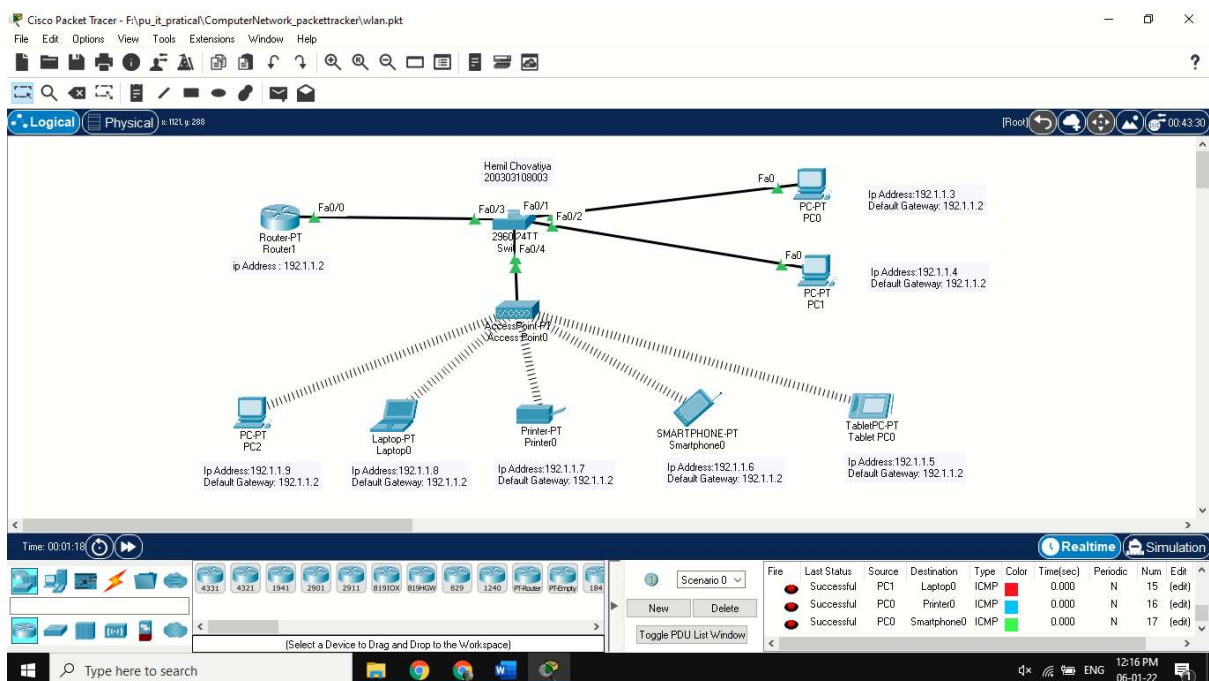


Step 12: In wireless component printer config section select WEP, write WEP Key (1234567890) and change SSID default to name. In physical section >switch off and remove the port and provide WPC300N and switch on.



Step 13: send the packet wireless devices to pc or router.

Output:



PRACTICAL:7

AIM: Internetworking with routers.

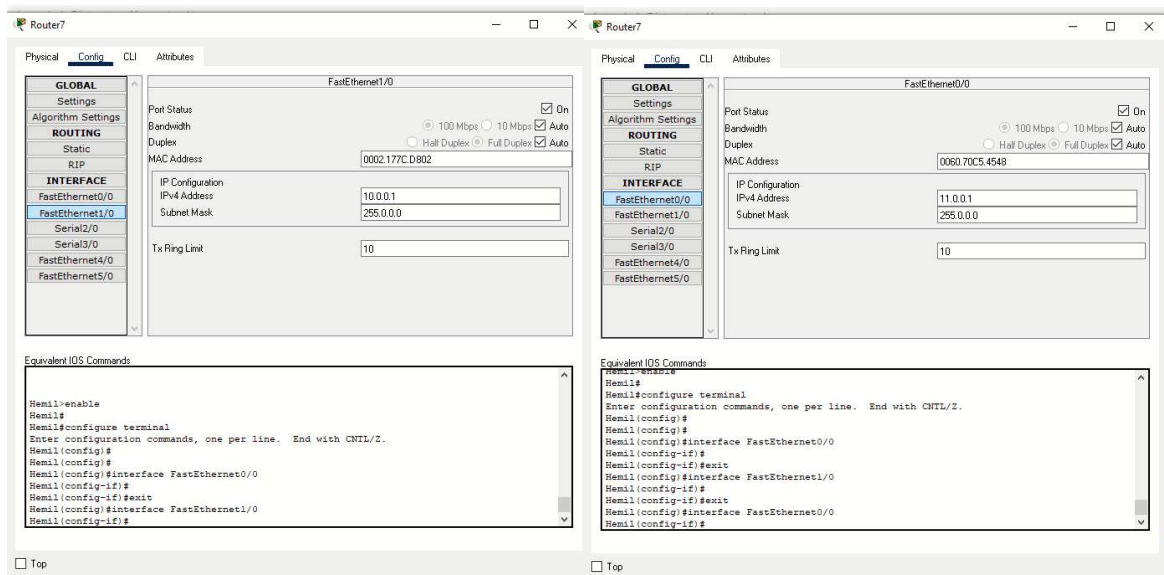
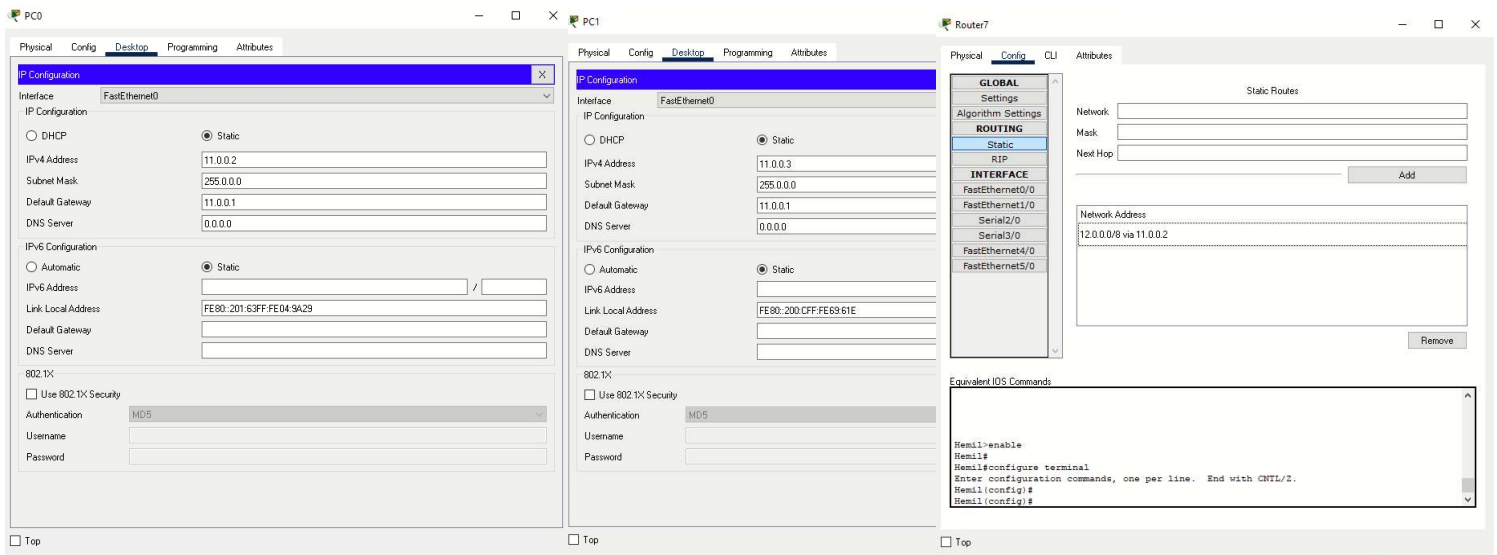
1. Experiment on same Subnet. 2. Perform Experiment across the subnet and observe functioning of Router via selecting suitable pair of Source and destination.

Theory:

Perform Experiment across the subnet and observe functioning of Router via selecting suitable pair of Source and destination.

Step 1: take 2 router,2 switch,(2960-40),4 pc and Create 3 subnet assign ip address to all pc and outer.

Step 2: assign IP Address according to subnet to PC and router.also assign subnet mask and default gateway.

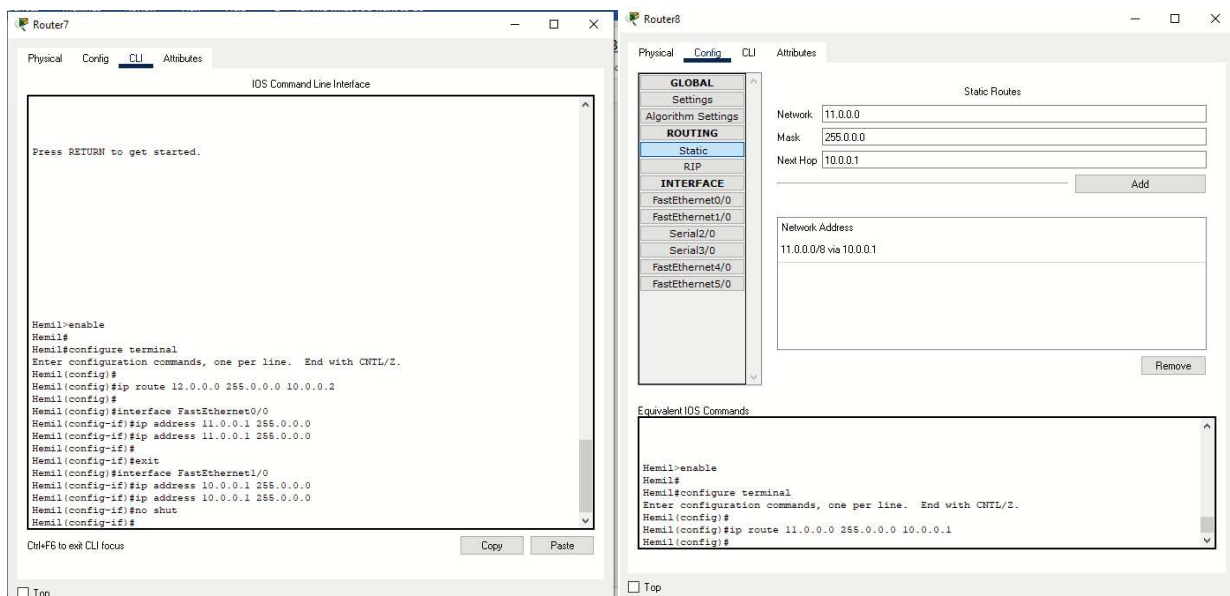


**Step 3: for router0, enable> configure terminal > interface fastethernet 0/0
> ip address 11.0.0.1 255.255.192.0 > exit.**

**for router0, enable> configure terminal > interface fastethernet 1/0
> ip address 10.0.0.1 255.255.192.0 > no shut>exit.**

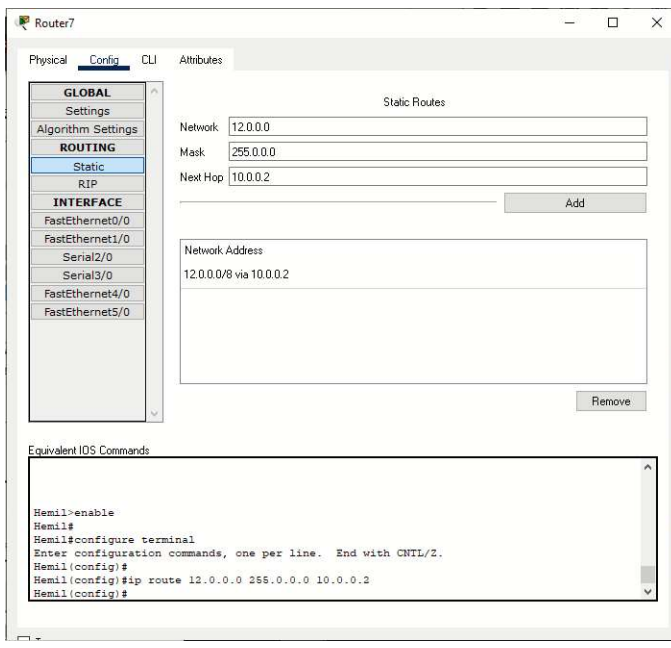
**for router1, enable> configure terminal > interface fastethernet 1/0
> ip address 10.0.0.2 255.255.192.0 > exit.**

**for router1, enable> configure terminal > interface fastethernet 0/0
> ip address 12.0.0.1 255.255.192.0 > no shut>exit. And also ip route**



Cli command For Router 8> Hemil(config)#ip route 11.0.0.0 255.0.0.0 10.0.0.1

Cli command For Router 7 >Hemil(config)#ip route 12.0.0.0 255.0.0.0 10.0.0.2



Router7

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

Static Routes

Network: 12.0.0.0

Mask: 255.0.0.0

Next Hop: 10.0.0.2

Add

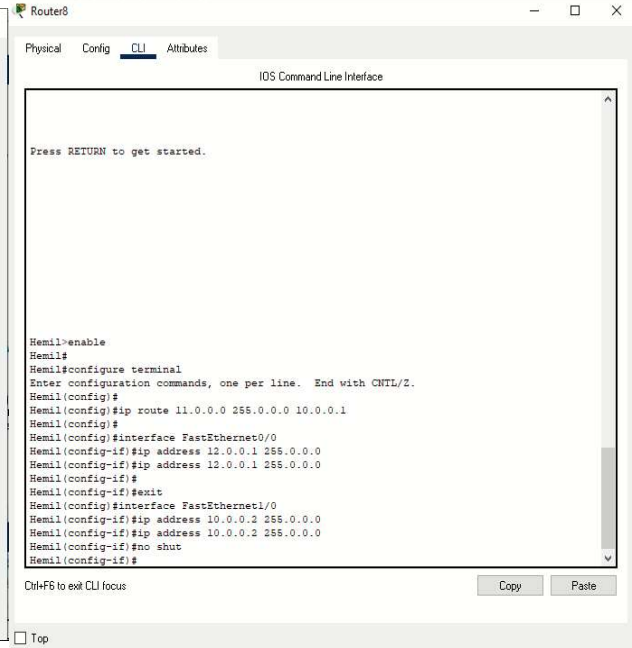
Network Address

12.0.0.0/8 via 10.0.0.2

Remove

Equivalent IOS Commands

```
Hemil>enable
Hemil#
Hemil#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Hemil(config)#
Hemil(config)#ip route 12.0.0.0 255.0.0.0 10.0.0.2
Hemil(config)#
```



Router8

Physical Config CLI Attributes

IOS Command Line Interface

Press RETURN to get started.

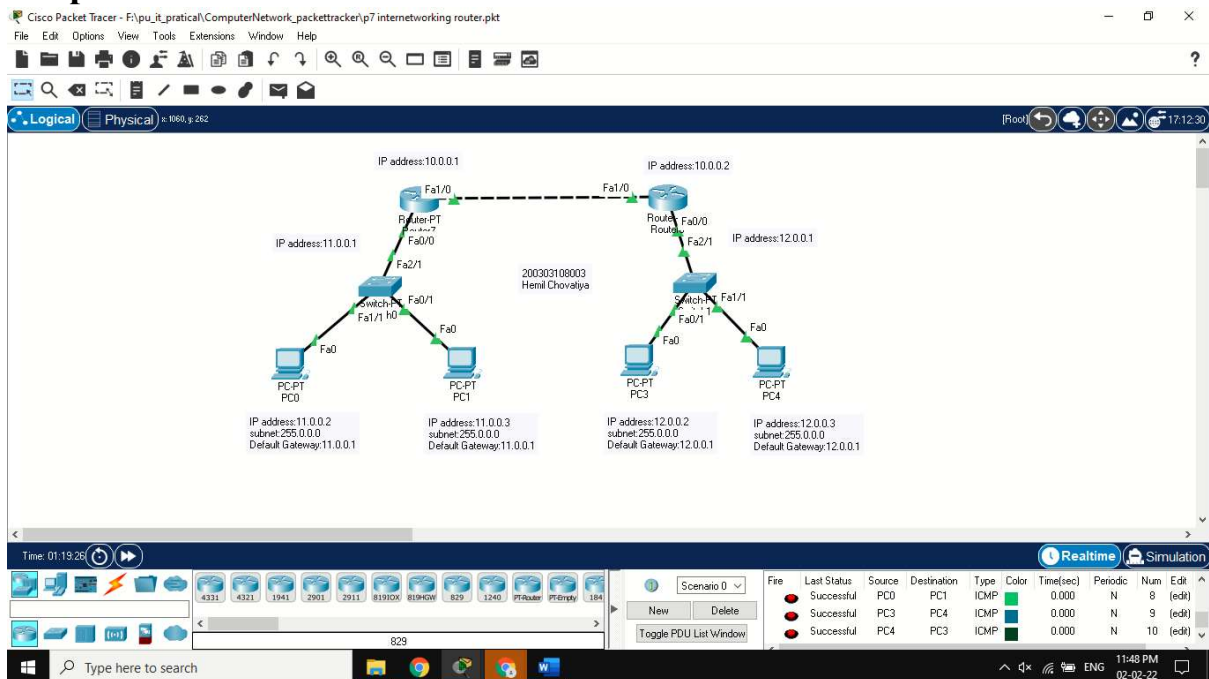
```
Hemil>enable
Hemil#
Hemil#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Hemil(config)#
Hemil(config)#ip route 11.0.0.0 255.0.0.0 10.0.0.1
Hemil(config)#
Hemil(config)#interface FastEthernet0/0
Hemil(config-if)#ip address 12.0.0.1 255.0.0.0
Hemil(config-if)#ip address 12.0.0.1 255.0.0.0
Hemil(config-if)#
Hemil(config-if)#exit
Hemil(config)#interface FastEthernet1/0
Hemil(config-if)#ip address 10.0.0.2 255.0.0.0
Hemil(config-if)#ip address 10.0.0.2 255.0.0.0
Hemil(config-if)#no shut
Hemil(config-if)#
Hemil(config-if)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

Output:



PRACTICAL:8

AIM: Implementation of SUBNETTING.

Theory:

SUBNETTING:

Procedure:

Step 1: Take 2 switch(2950-24TT), 2 router and 4 pc.

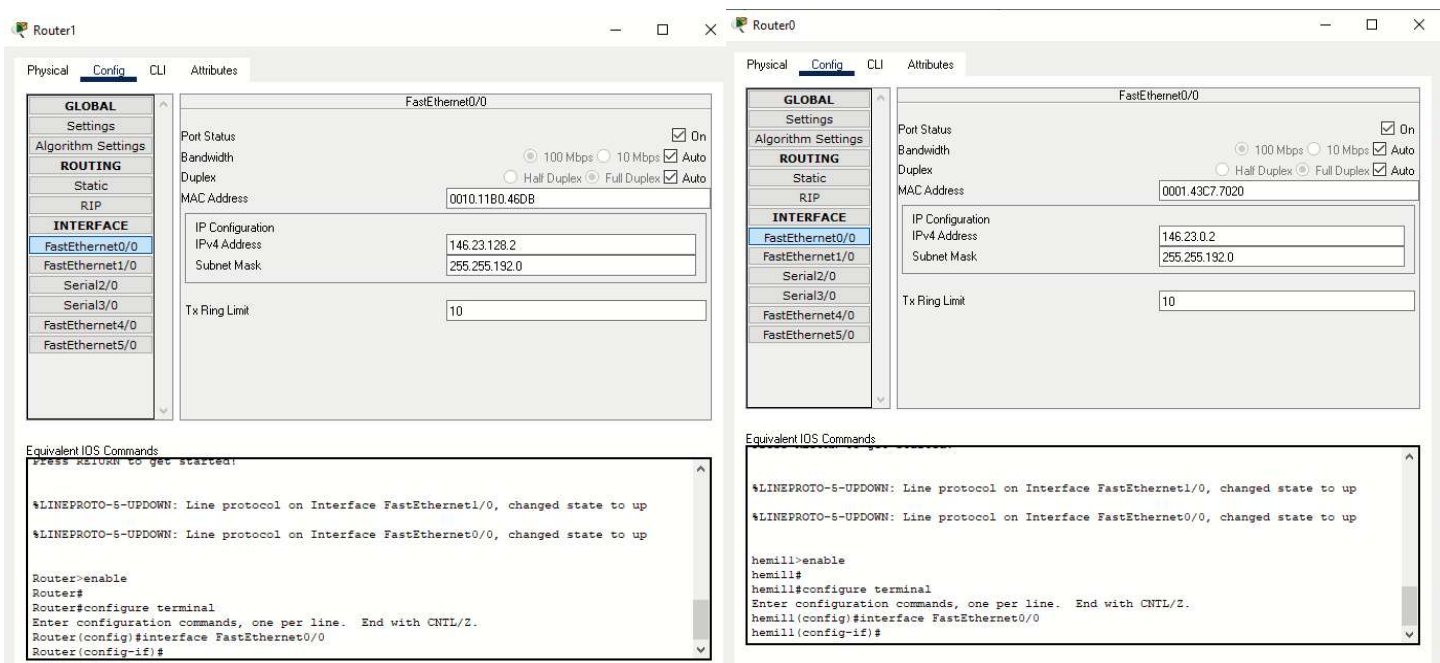
Step 2: 2 pc connected to 1st switch and remaining 2 pc connected to 2nd switch with copper straight-through wire.

Step 3: Assign ip address, default gateway and subnet mask to each pc.

Step 4: Take 2 routers and it connects with switch through copper straight wire.

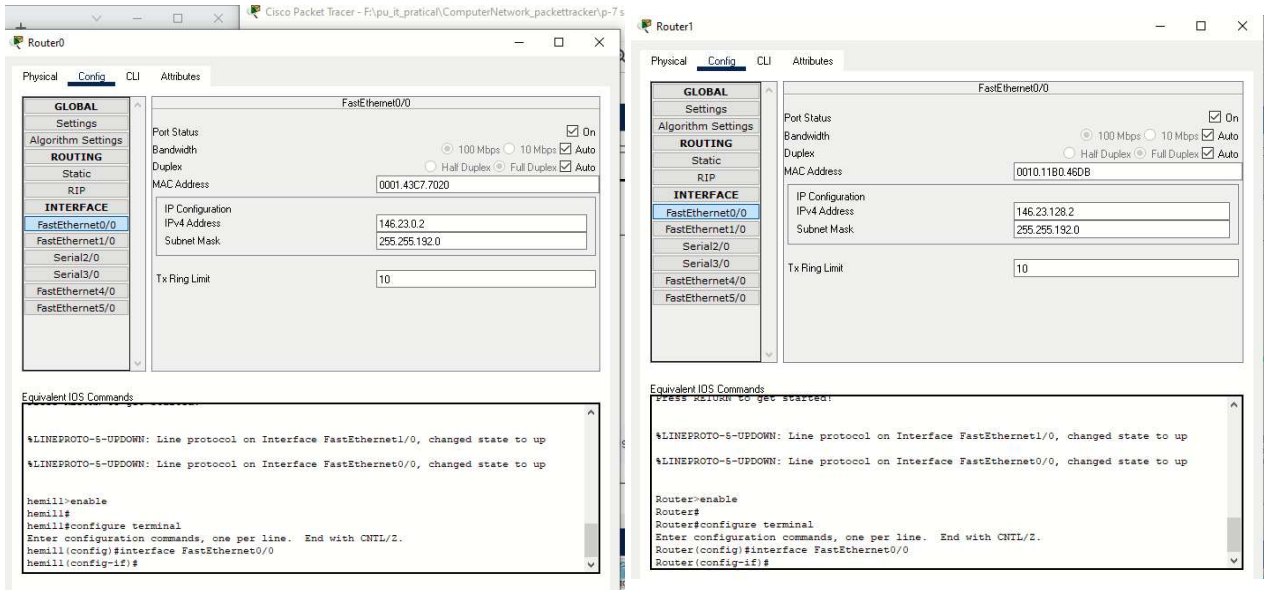
Step 5: For 1st router config section assign ip address and subnet mask of fast ethernet0/0.and port status is also on.

Step 6: For 2nd router config section assign ip address and subnet mask of fast ethernet0/0.and port status is also on.



Step 7: Connect routers with Serial DTE cable.

Step 8: In routers config section assign ip address and subnet mask of serial 0/3/0 and serial 0/3/1 and port status is also on.



The image shows two screenshots of the Cisco Packet Tracer interface. The left screenshot shows the configuration for Router0, specifically the FastEthernet0/0 interface. The right screenshot shows the configuration for Router1, also for the FastEthernet0/0 interface. Both screenshots show the 'Config' tab with the 'INTERFACE' section selected. The 'FastEthernet0/0' interface is highlighted in the left sidebar. The configuration fields show the IP address and subnet mask for each interface. The 'Port Status' is set to 'On' for both interfaces. The 'Equivalent IOS Commands' section at the bottom of each window shows the commands entered in the CLI.

Router0 Configuration:

- Port Status: ☒ On
- Bandwidth: 100 Mbps
- Duplex: ☒ Full Duplex
- MAC Address: 0001.43C7.7020
- IP Configuration:
 - FastEthernet0/0: 146.23.0.2
 - FastEthernet1/0: 255.255.192.0
 - Serial2/0:
 - Serial3/0:
 - FastEthernet4/0:
 - FastEthernet5/0:
- Tx Ring Limit: 10

Router1 Configuration:

- Port Status: ☒ On
- Bandwidth: 100 Mbps
- Duplex: ☒ Full Duplex
- MAC Address: 0010.1180.46D8
- IP Configuration:
 - FastEthernet0/0: 146.23.128.2
 - FastEthernet1/0: 255.255.192.0
 - Serial2/0:
 - Serial3/0:
 - FastEthernet4/0:
 - FastEthernet5/0:
- Tx Ring Limit: 10

Equivalent IOS Commands:

```

Router0:
$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

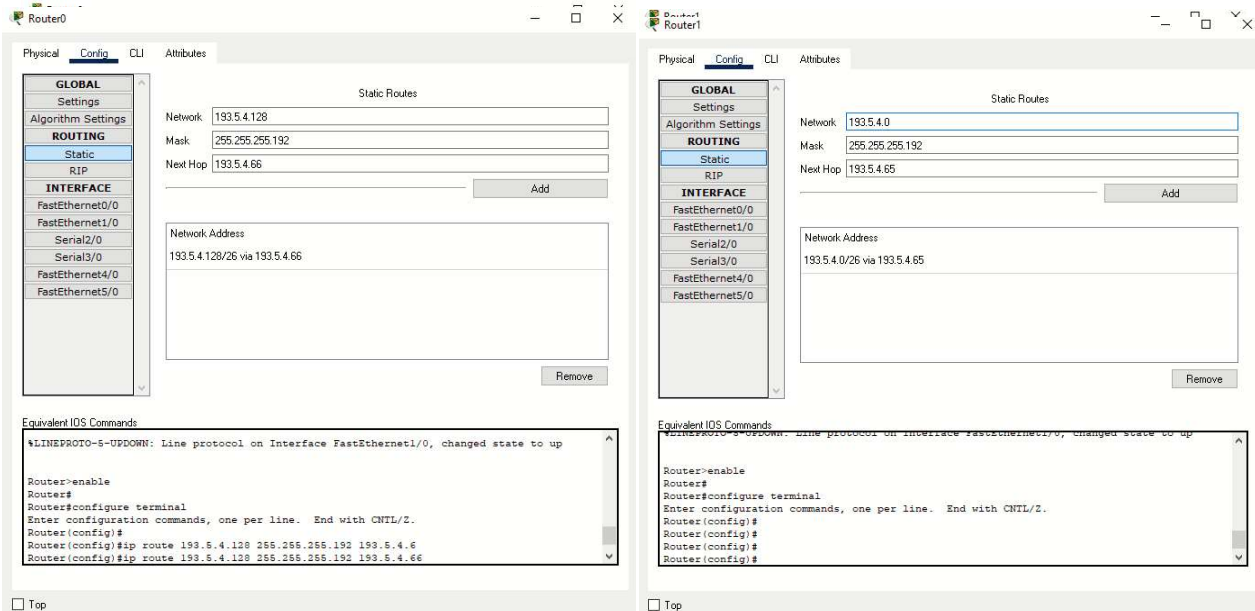
Router#enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#

Router1:
$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router#enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
  
```

Step 9: Go to static section and add the network address.

Step 10: Go to setting and save the added network address.



The image shows two screenshots of the Cisco Packet Tracer interface. The left screenshot shows the configuration for Router0, specifically the 'Static Routes' section. The right screenshot shows the configuration for Router1, also for the 'Static Routes' section. Both screenshots show the 'Config' tab with the 'Static' section selected. The 'Static Routes' table shows the network address, mask, and next hop for each route. The 'Equivalent IOS Commands' section at the bottom of each window shows the commands entered in the CLI.

Router0 Configuration:

- Static Routes:

Network	Mask	Next Hop
193.5.4.128	255.255.255.192	193.5.4.66
- Network Address: 193.5.4.128/26 via 193.5.4.66

Router1 Configuration:

- Static Routes:

Network	Mask	Next Hop
193.5.4.0	255.255.255.192	193.5.4.65
- Network Address: 193.5.4.0/26 via 193.5.4.65

Equivalent IOS Commands:

```

Router0:
$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router#enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#ip route 193.5.4.128 255.255.255.192 193.5.4.66
Router(config)#ip route 193.5.4.128 255.255.255.192 193.5.4.66

Router1:
$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router#enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#
Router(config)#
Router(config)#
  
```

Step 11: Send the packet between different subnetting.

