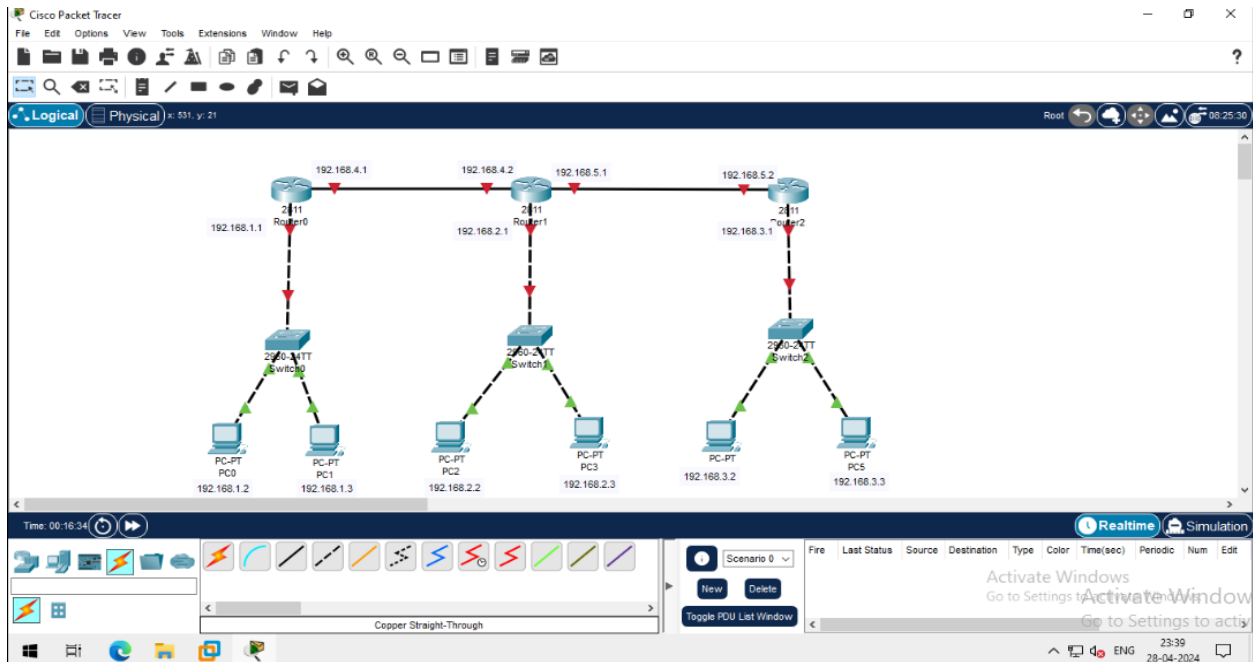


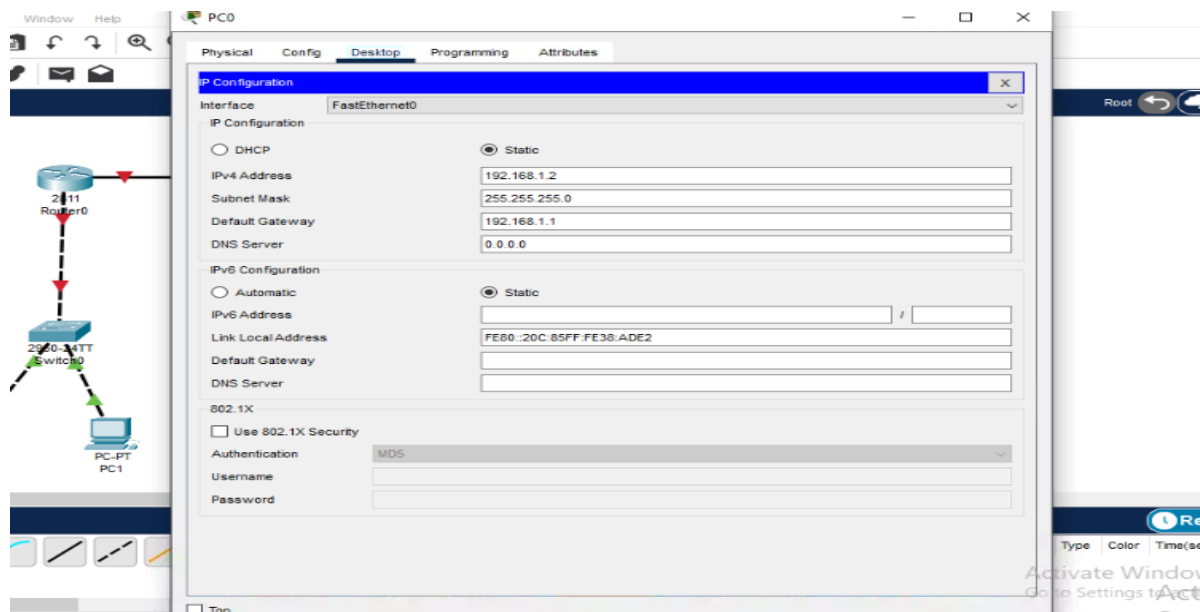
TASK

Implement static routing , OSPF ,RIP ,BGP using 3 routers

Here i am using packet tracer to do this task



After that giving ip address for every pc's



Here giving ip address to ports on router 1 .

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>en
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int f
Router(config)#int fastEthernet 0/0
Router(config-if)#ip addr
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

Router(config-if)#exit
^
% Invalid input detected at '^' marker.

Router(config-if)#exit
Router(config)#int fa0/1
Router(config-if)#ip addr
Router(config-if)#ip address 192.168.4.1 255.255.255.0
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#
```

In router 2 ,

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>en
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#no ip domain-look
Router(config)#no ip domain-lookup
Router(config)#int eth
Router(config)#int ethernet 1/0
Router(config-if)#ip add
Router(config-if)#ip address 192.168.4.2 255.255.255.0
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Ethernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/0, changed state to up

Router(config-if)#exit
Router(config)#int
Router(config)#interface f
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip add
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#int
Router(config)#interface f
Router(config)#interface fastEthernet 1/0
%Invalid interface type and number
Router(config)#ip add
Router(config)#ip add192.168.5.1 255.255.255.0
```

Top

Activate Windows
Go to Settings to activate Windows.

Copy

Activate Windows
Go to Settings to activate Windows.

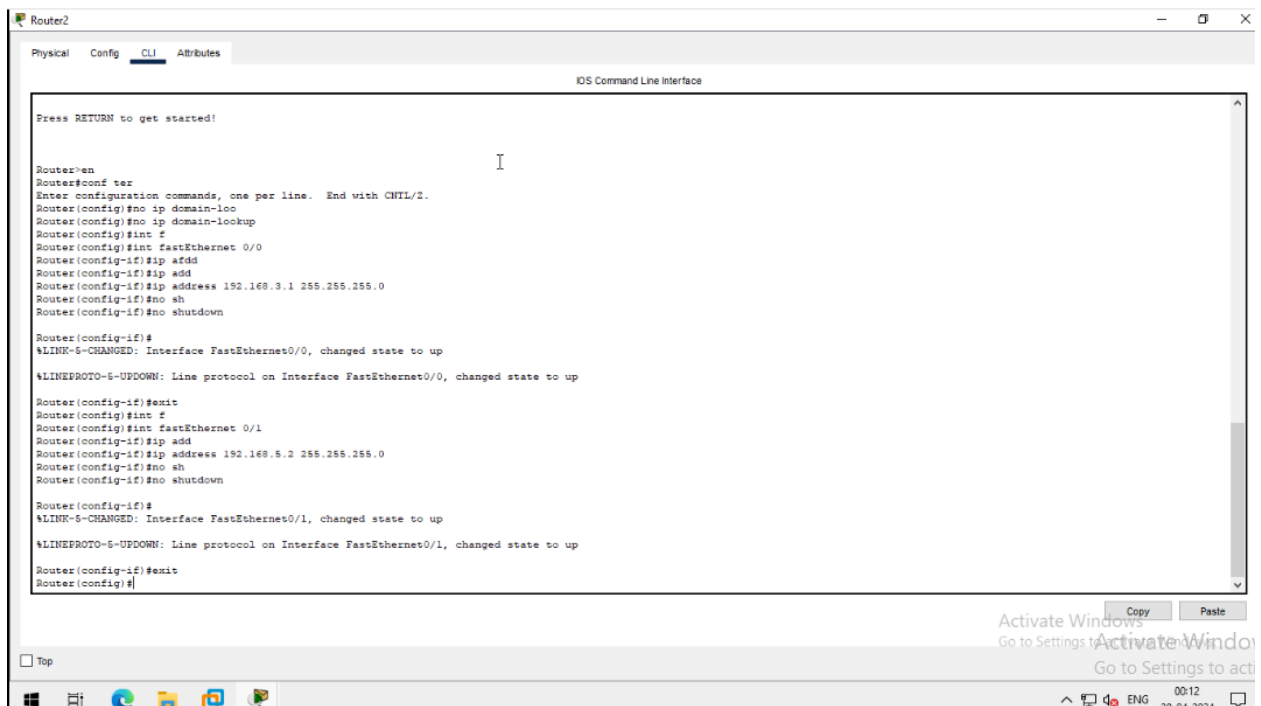
00

```
Router(config)#interface fastEthernet 0/1
Router(config-if)#ip add 192.168.5.1 255.255.255.0
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#
```

In router 3,



```
Router2
Physical Config CLI Attributes
IOS Command Line Interface

Press RETURN to get started!

Router>en
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#no ip domain-loc
Router(config)#no ip domain-lookup
Router(config)#int f
Router(config)#int fastEthernet 0/0
Router(config-if)#ip addd
Router(config-if)#ip add
Router(config-if)#ip address 192.168.3.1 255.255.255.0
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

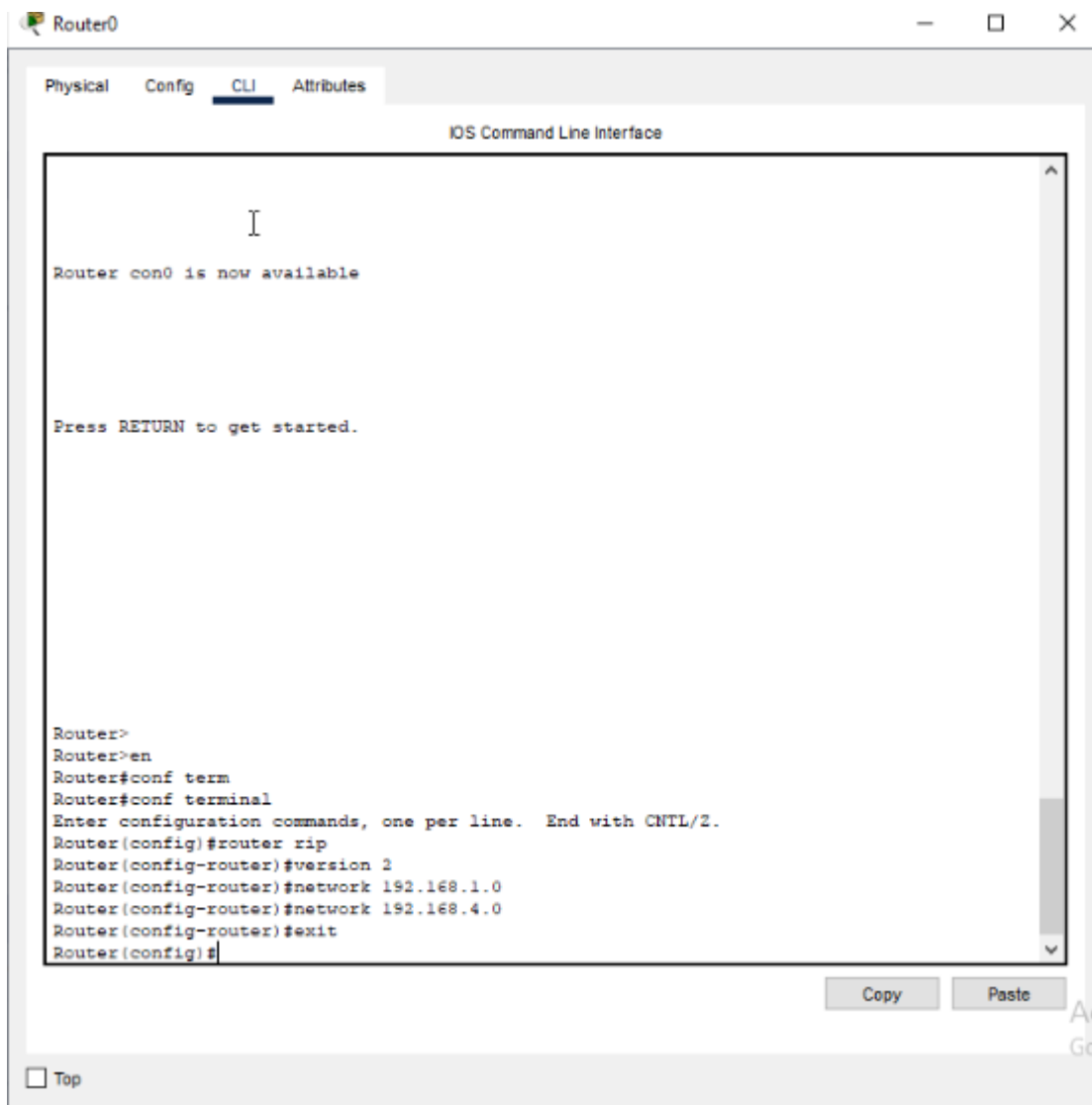
Router(config-if)#exit
Router(config)#int f
Router(config)#int fastEthernet 0/1
Router(config-if)#ip add
Router(config-if)#ip address 192.168.5.2 255.255.255.0
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

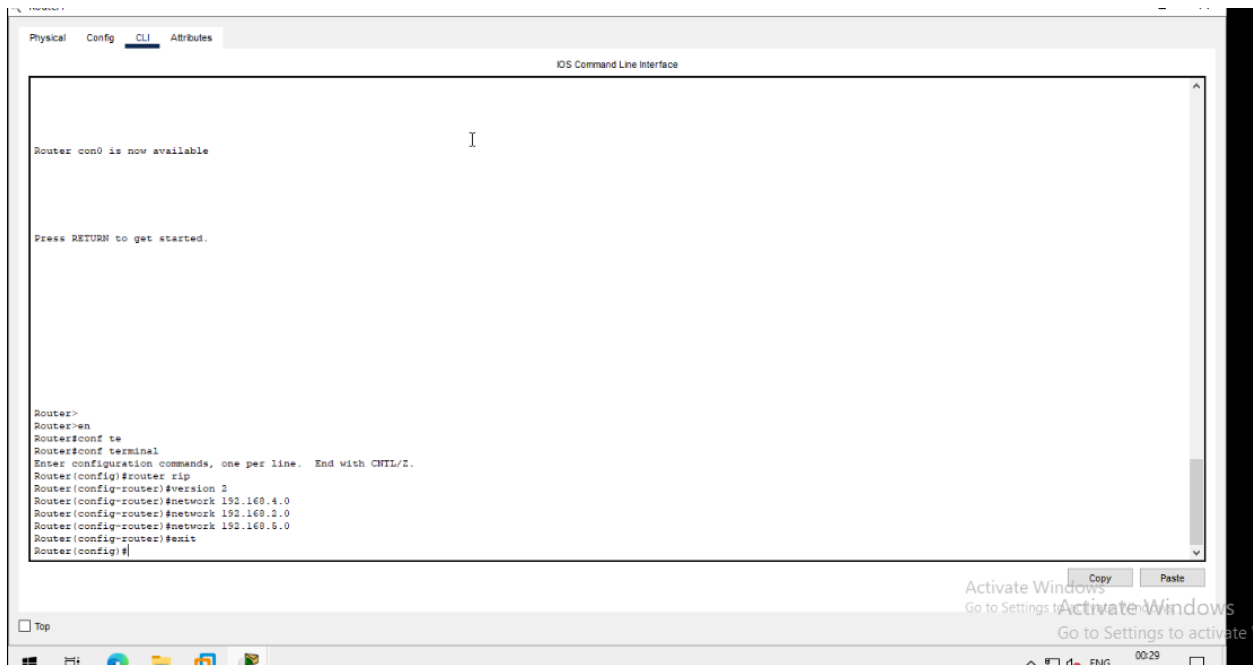
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#
```

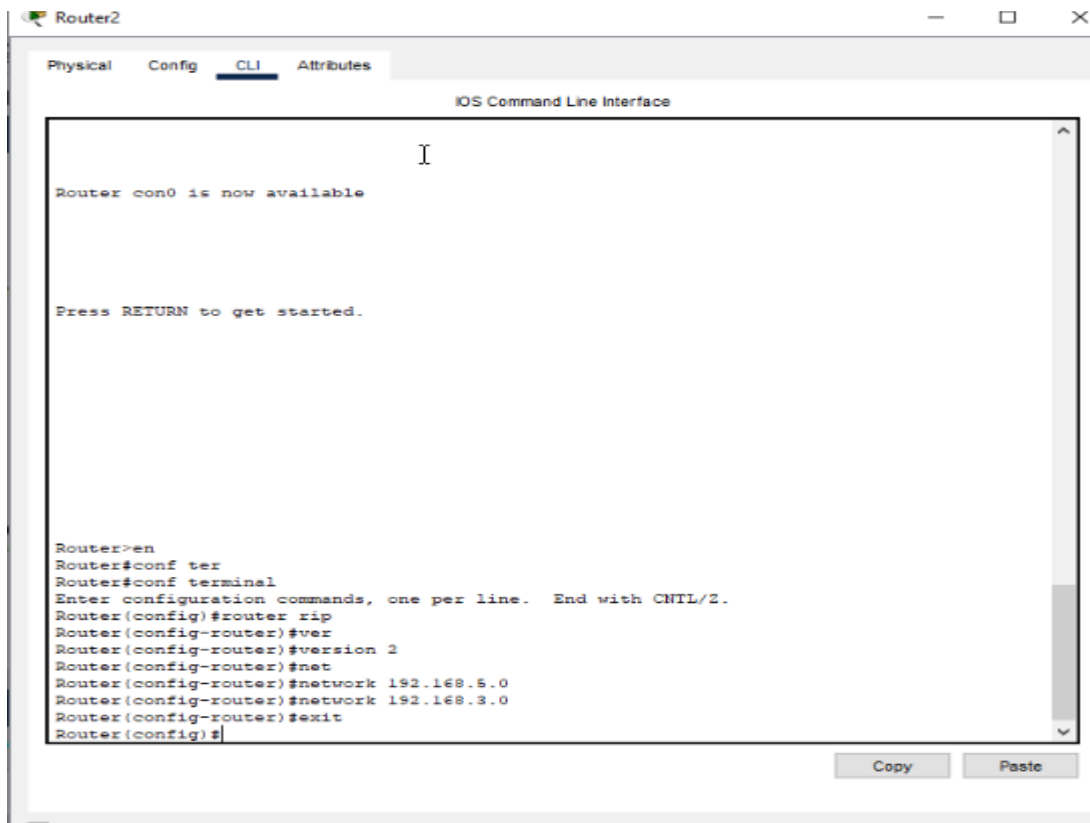
Doing RIP in router 1



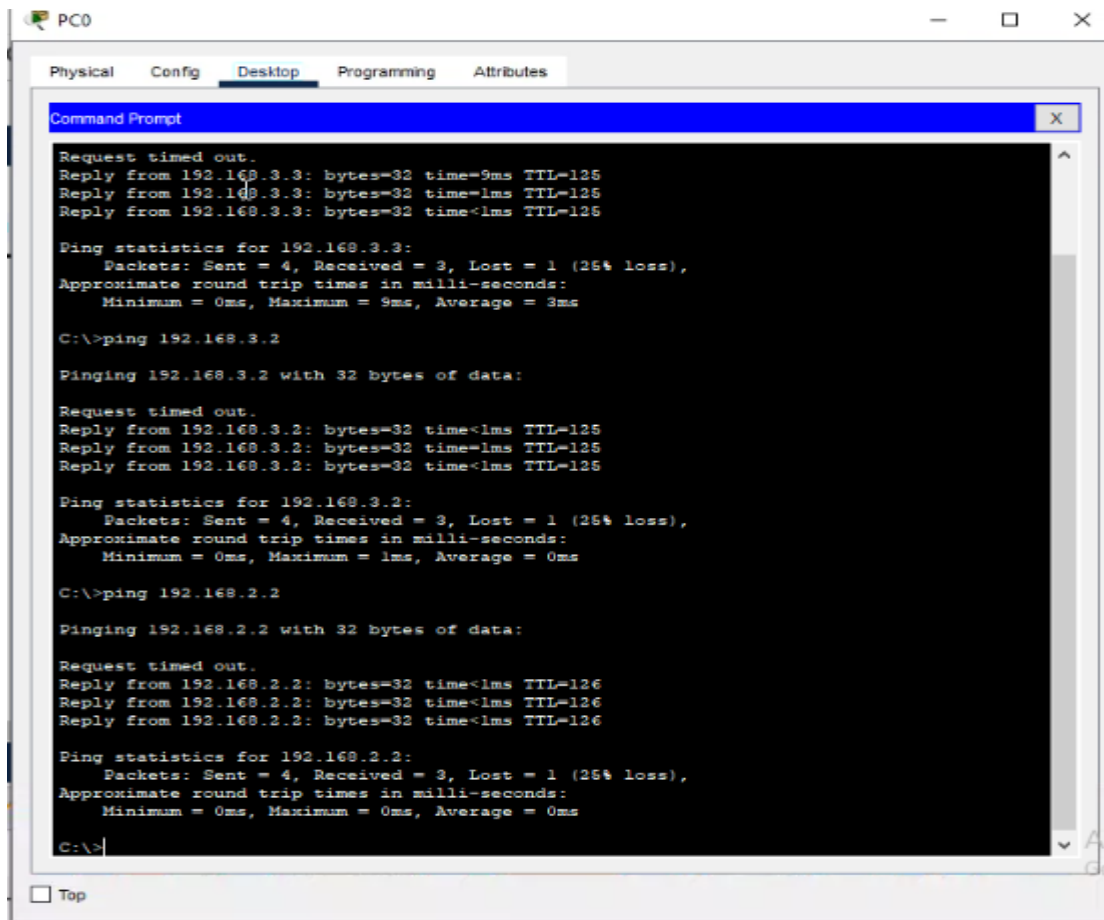
In router 2,



In router 3,



To check connection

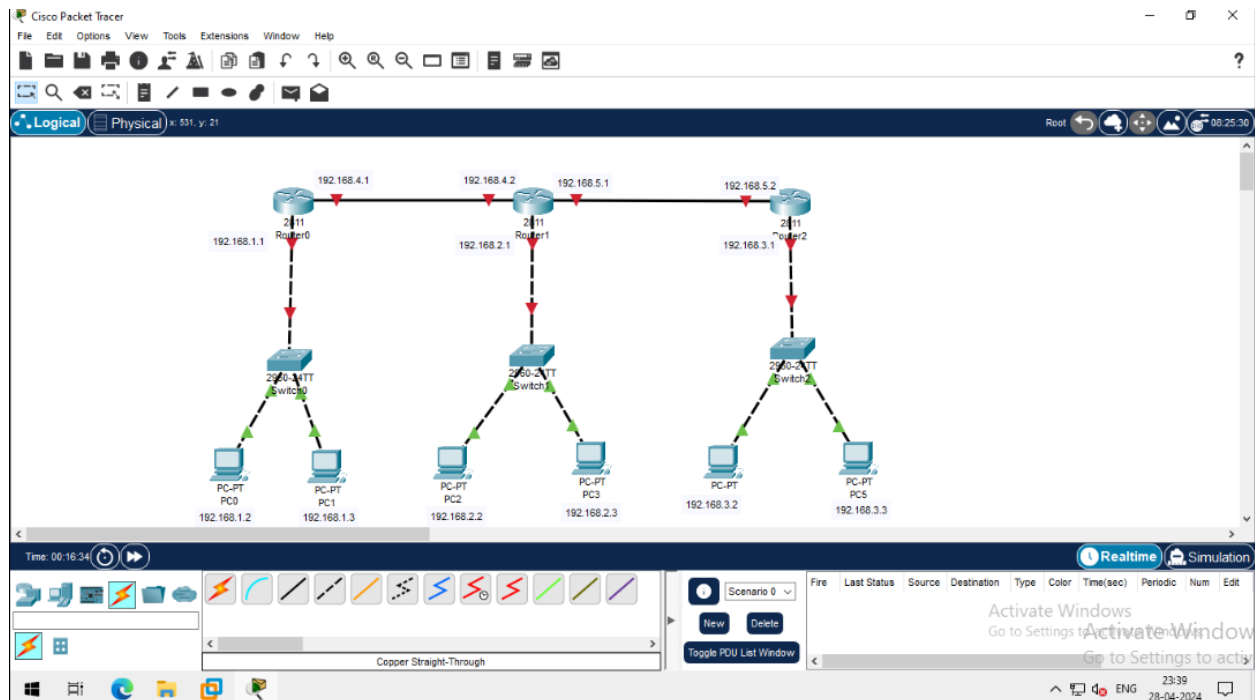


The screenshot shows a window titled "PC0" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of three ping commands: ping 192.168.3.3, ping 192.168.3.2, and ping 192.168.2.2. Each command shows a "Request timed out." message followed by three successful replies from the target IP address. The ping statistics for each command indicate that 4 packets were sent, 3 were received, and 1 was lost (25% loss). The approximate round trip times in milliseconds are also displayed.

```
Request timed out.  
Reply from 192.168.3.3: bytes=32 time=9ms TTL=126  
Reply from 192.168.3.3: bytes=32 time=1ms TTL=126  
Reply from 192.168.3.3: bytes=32 time<1ms TTL=126  
  
Ping statistics for 192.168.3.3:  
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 9ms, Average = 3ms  
  
C:\>ping 192.168.3.2  
  
Pinging 192.168.3.2 with 32 bytes of data:  
  
Request timed out.  
Reply from 192.168.3.2: bytes=32 time<1ms TTL=126  
Reply from 192.168.3.2: bytes=32 time=1ms TTL=126  
Reply from 192.168.3.2: bytes=32 time<1ms TTL=126  
  
Ping statistics for 192.168.3.2:  
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 1ms, Average = 0ms  
  
C:\>ping 192.168.2.2  
  
Pinging 192.168.2.2 with 32 bytes of data:  
  
Request timed out.  
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126  
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126  
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126  
  
Ping statistics for 192.168.2.2:  
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 0ms, Average = 0ms  
  
C:\>
```

Here we can see routing works!!!!

OSPF



After configured ip to all pc and ports of routers ,we can go to BGP routing

OSPF in Router 1

```
Router#conf ter
Router#conf terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 100
Router(config-router)#netw
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Router(config-router)#network 192.168.4.0 0.0.0.255 area 0
Router(config-router)#exit
Router(config)#
00:54:09: %OSPF-5-ADJCHG: Process 100, Nbr 192.168.5.1 on FastEthernet0/1 from LOADING to FULL, Loading
```

OSPF in Router 2

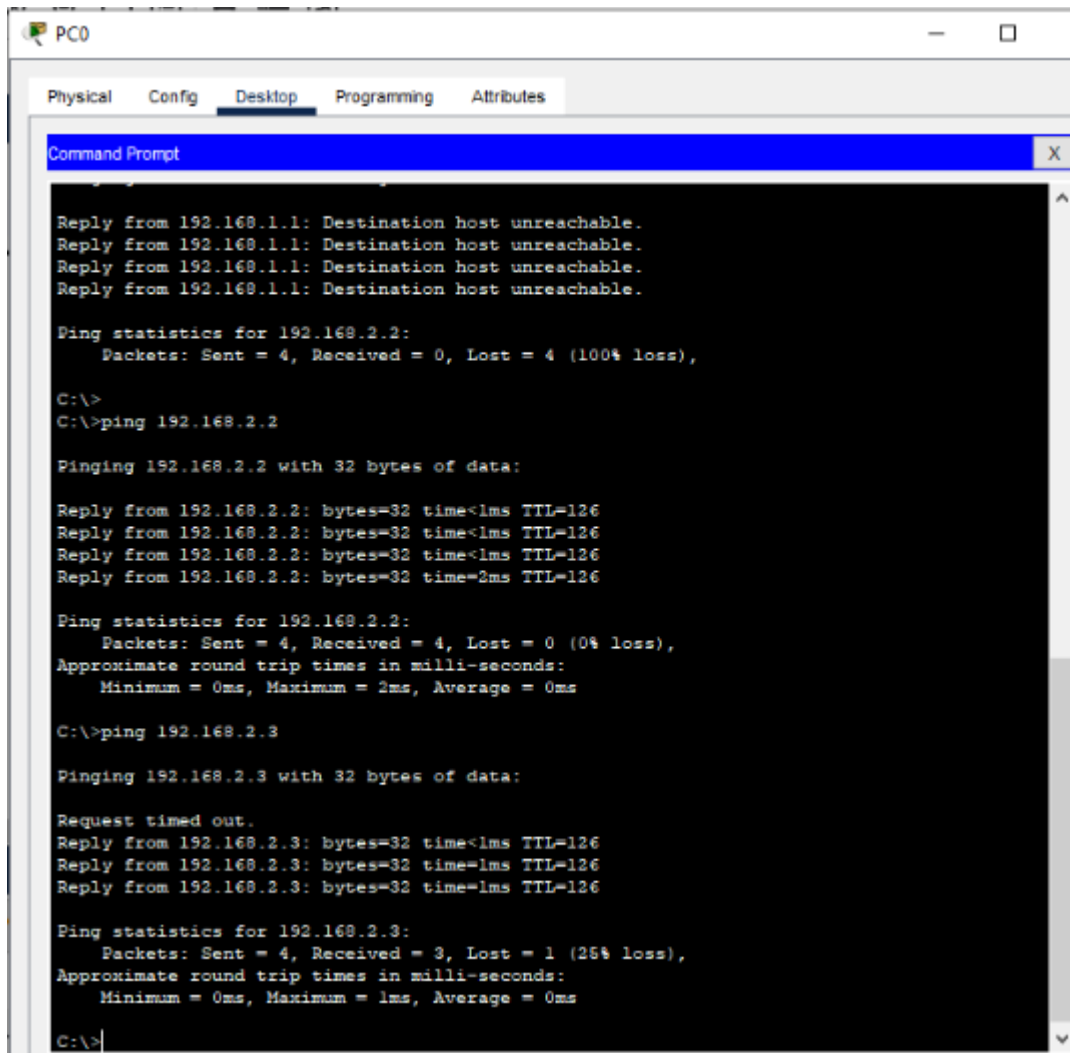
```
Router(config)#router ospf 100
Router(config-router)#net
Router(config-router)#network 192.168.4.0 0.0.0.255 area 0
^
% Invalid input detected at '^' marker.

Router(config-router)#network 192.168.4.0 0.0.0.255 area 0
Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#
01:09:14: %OSPF-5-ADJCHG: Process 100, Nbr 192.168.4.1 on Ethernet1/0 from LOADING to FULL, Loading Done
network 192.168.5.0 0.0.0.255 area 0
Router(config-router)#exit
Router(config)#
01:10:03: %OSPF-5-ADJCHG: Process 100, Nbr 192.168.5.2 on FastEthernet0/1 from LOADING to FULL, Loading Done
```

OSPF in Router 3

```
Router(config)#router ospf 100
Router(config-router)#net
Router(config-router)#network 192.168.5.0 0.0.0.255 area 0
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0
Router(config-router)#
01:11:41: %OSPF-5-ADJCHG: Process 100, Nbr 192.168.5.1 on FastEthernet0/1 from LOADING to FULL, Loading Done
exit
Router(config)#
```

Connection check



The screenshot shows a window titled "PC0" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of several ping commands. The first four pings to 192.168.1.1 all fail with the message "Destination host unreachable." The next ping to 192.168.2.2 succeeds, showing a 100% loss of packets. The final ping to 192.168.2.3 also succeeds, showing a 25% loss of packets.

```
PC0
Physical Config Desktop Programming Attributes
Command Prompt
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time=2ms TTL=126

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>ping 192.168.2.3

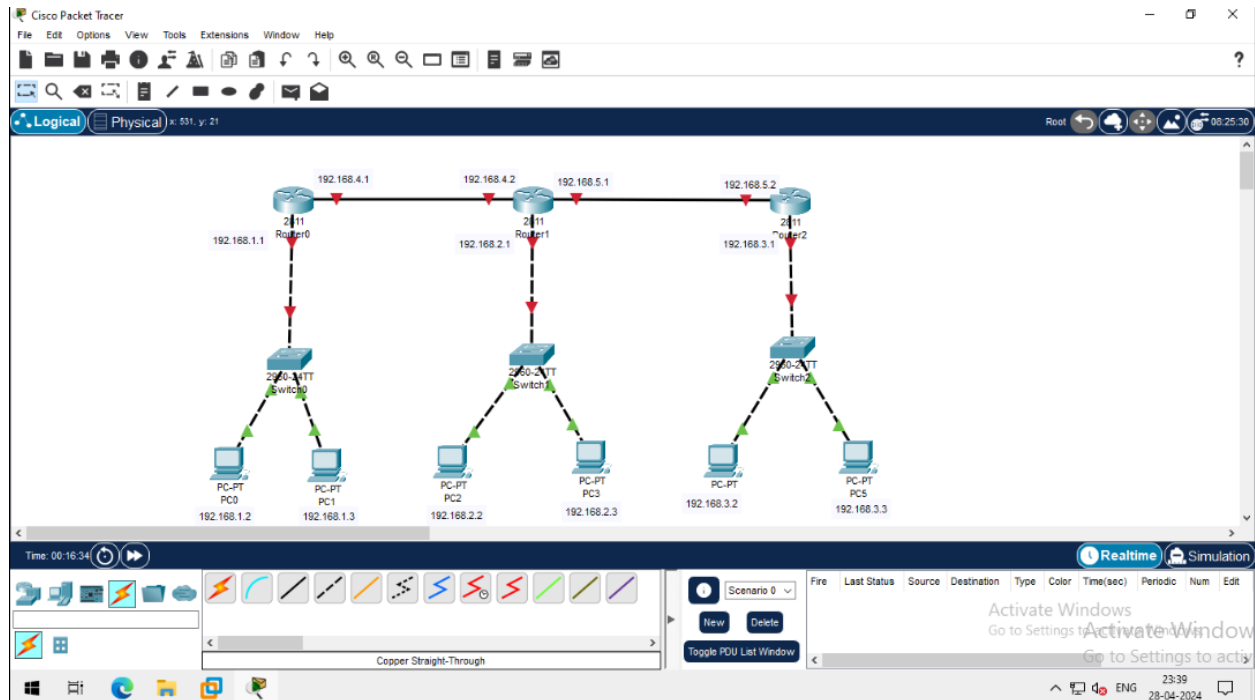
Pinging 192.168.2.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.3: bytes=32 time<1ms TTL=126
Reply from 192.168.2.3: bytes=32 time=1ms TTL=126
Reply from 192.168.2.3: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

BGP



After configured ip to all pc and ports of routers ,we can go to BGP routing

In router 1 ,

```
Router(config)#router bgp 54001
Router(config-router)#nei
Router(config-router)#neighbor 192.168.4.2 remo
Router(config-router)#neighbor 192.168.4.2 remote-as 54002
Router(config-router)#net
Router(config-router)#network 192.168.1.0 255.255.255.0
^
% Invalid input detected at '^' marker.

Router(config-router)#network 192.168.1.0 mas 255.255.255.0
Router(config-router)#network 192.168.1.0 mask 255.255.255.0
Router(config-router)#exit
Router(config)#router bgp 54001
Router(config-router)#network 192.168.4.0 mask 255.255.255.0
Router(config-router)#exit
Router(config)#%BGP-6-ADJCHANGE: neighbor 192.168.4.2 Up
```

In router 2 ,

```
Router(config)#
Router(config)#router bgp 54002
Router(config-router)#nei
Router(config-router)#neighbor remo
Router(config-router)#neighbor 192.168.5.2 remo
Router(config-router)#neighbor 192.168.5.2 remote-as 54003
Router(config-router)#net
Router(config-router)#network 192.168.2.0 mask 255.255.255.0
Router(config-router)#exit
Router(config)#router bgp 54002
Router(config-router)#network 192.168.4.0 mask 255.255.255.0
Router(config-router)#network 192.168.5.0 mask 255.255.255.0
Router(config-router)#exit
Router(config)%%BGP-5-ADJCHANGE: neighbor 192.168.5.2 Up
|
Router(config)#router bgp 54002
Router(config-router)#neighbor 192.168.4.1 remote-as 54001
Router(config-router)%%BGP-5-ADJCHANGE: neighbor 192.168.4.1 Up

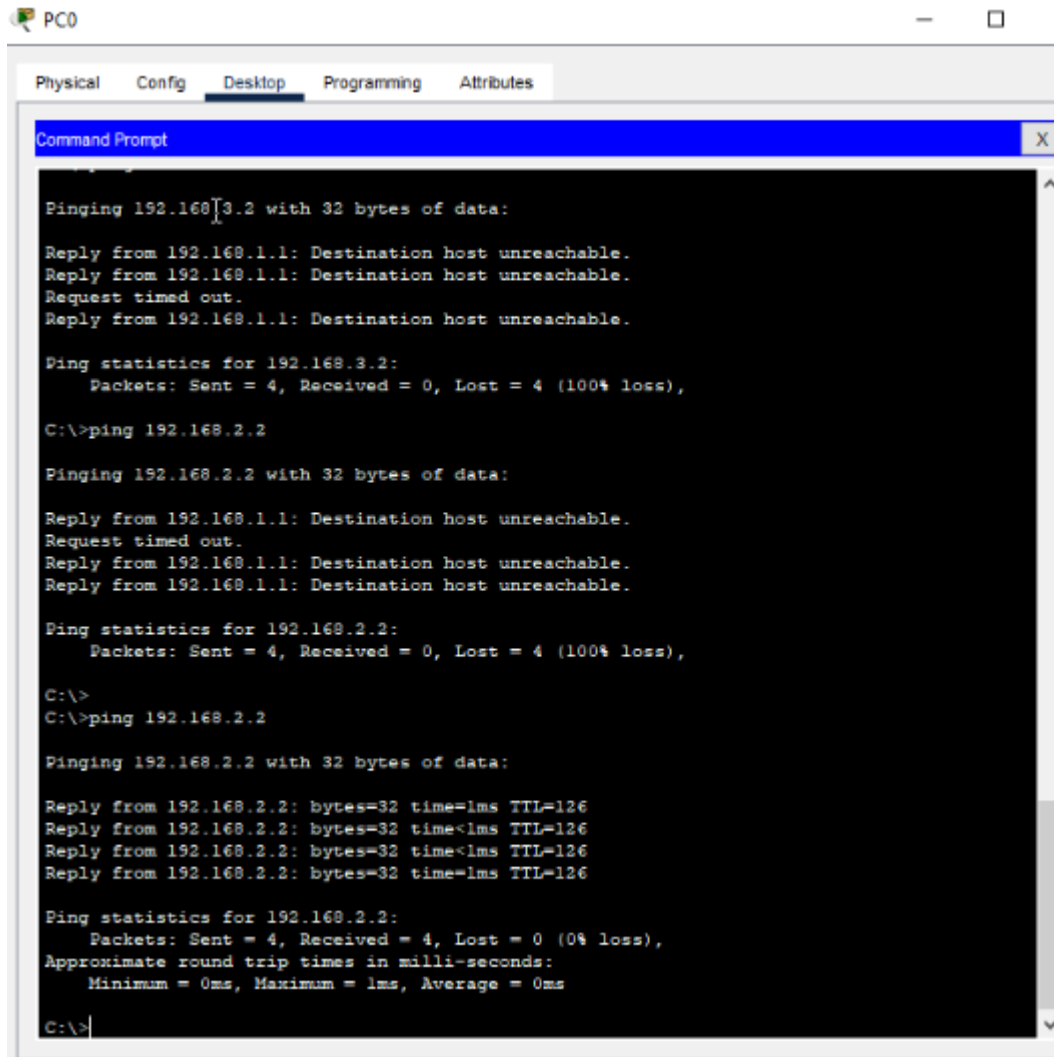
Router(config-router)#exit
```

In router 3 ,

```
Router(config)#router bgp 54003
Router(config-router)#neig
Router(config-router)#neighbor 192.168.5.1 rem
Router(config-router)#neighbor 192.168.5.1 remote-as 54002
Router(config-router)%%BGP-5-ADJCHANGE: neighbor 192.168.5.1 Up

Router(config-router)#net
Router(config-router)#network 192.168.5.0 mask 255.255.255.0
Router(config-router)#network 192.168.3.0 mask 255.255.255.0
Router(config-router)#exit
Router(config)#
```

To check connection ,



The screenshot shows a window titled "PC0" with a tabbed interface. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the execution of two ping commands. The first command is `ping 192.168.3.2`, which results in four "Destination host unreachable" replies and a 100% loss of packets. The second command is `ping 192.168.2.2`, which results in four successful replies with 0ms response times and 0% loss of packets.

```
Physical  Config  Desktop  Programming  Attributes
Command Prompt X

Pinging 192.168.3.2 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Request timed out.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.3.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Request timed out.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.2.2: bytes=32 time=1ms TTL=126
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

Done !!!