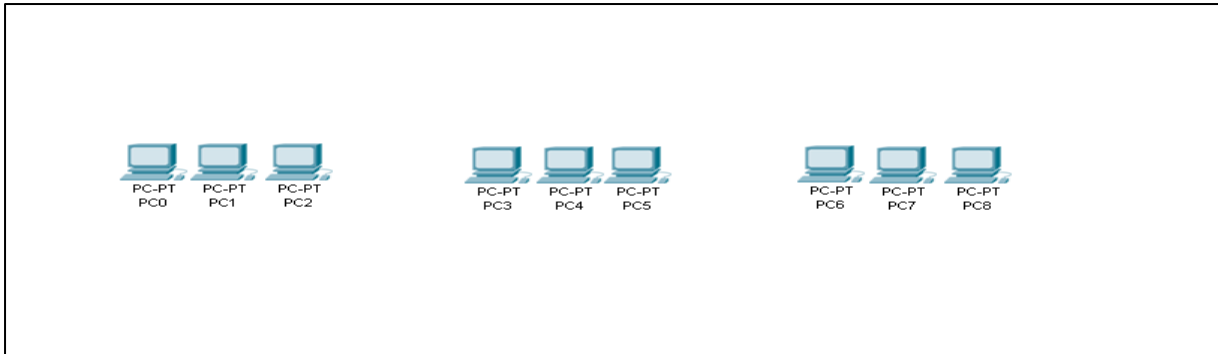


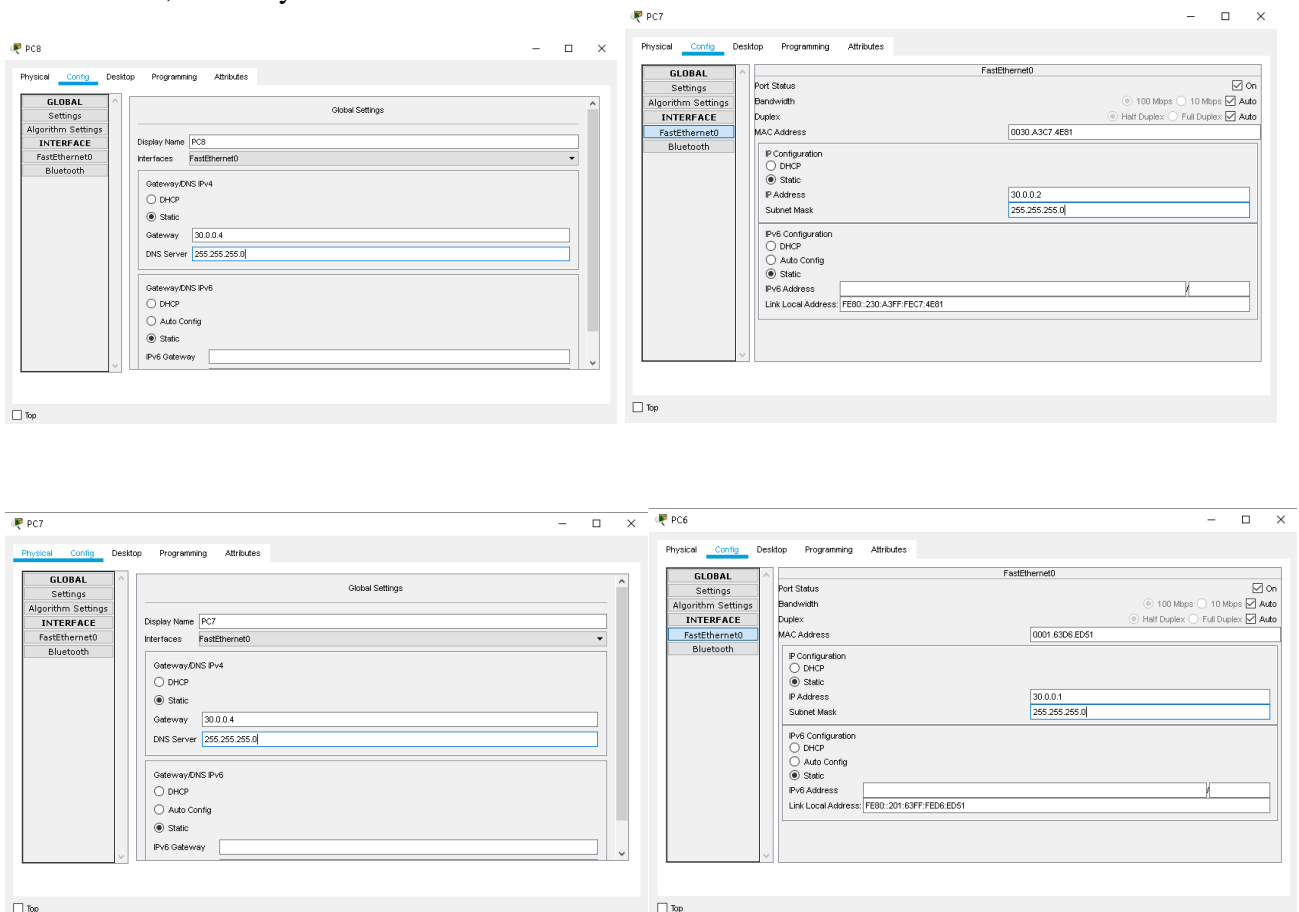
**PRACTICAL NO: 1**

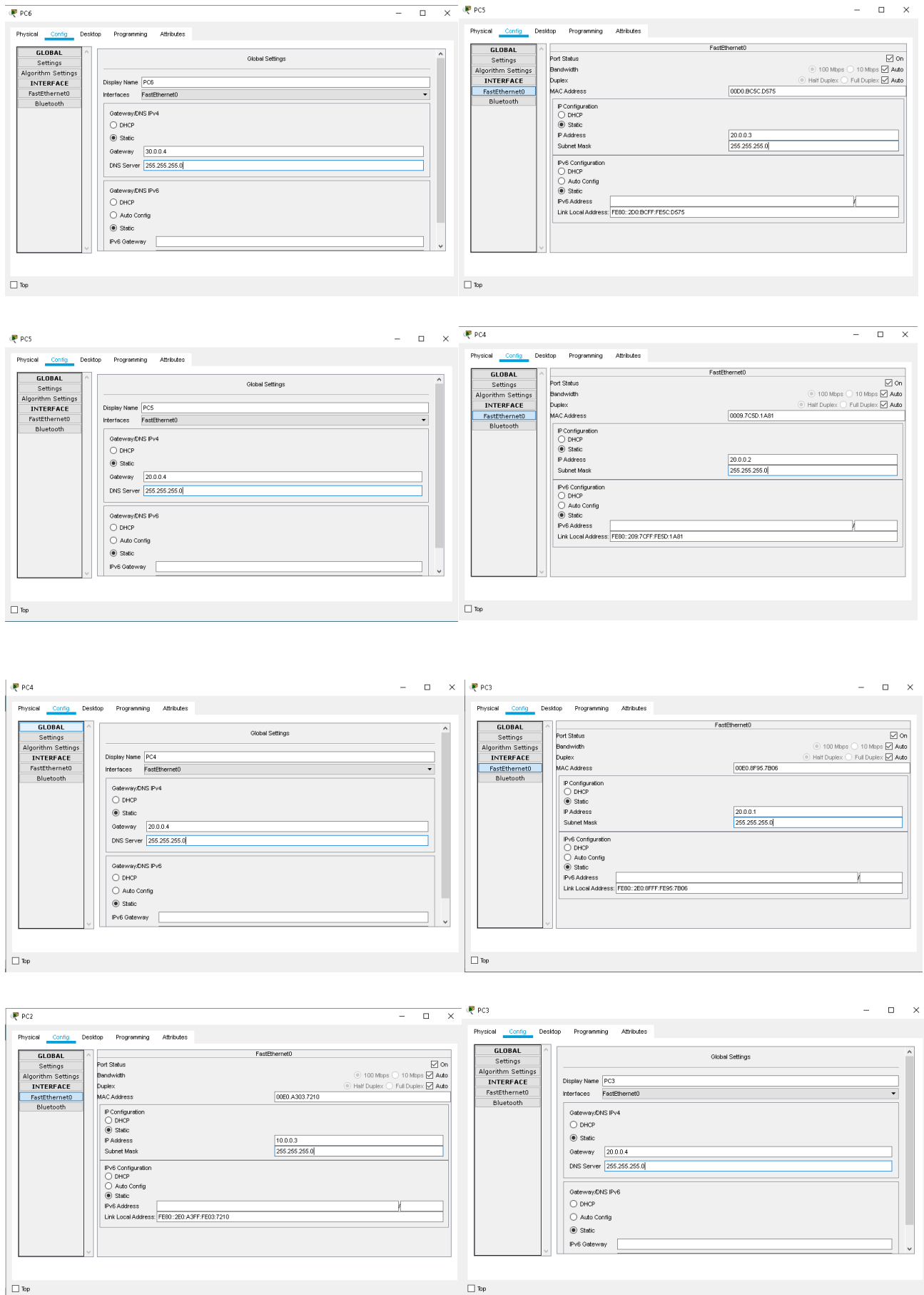
**Aim** - Create a network with three routers with RIPv2 and each router associated network will have minimum three PC. Show connectivity.

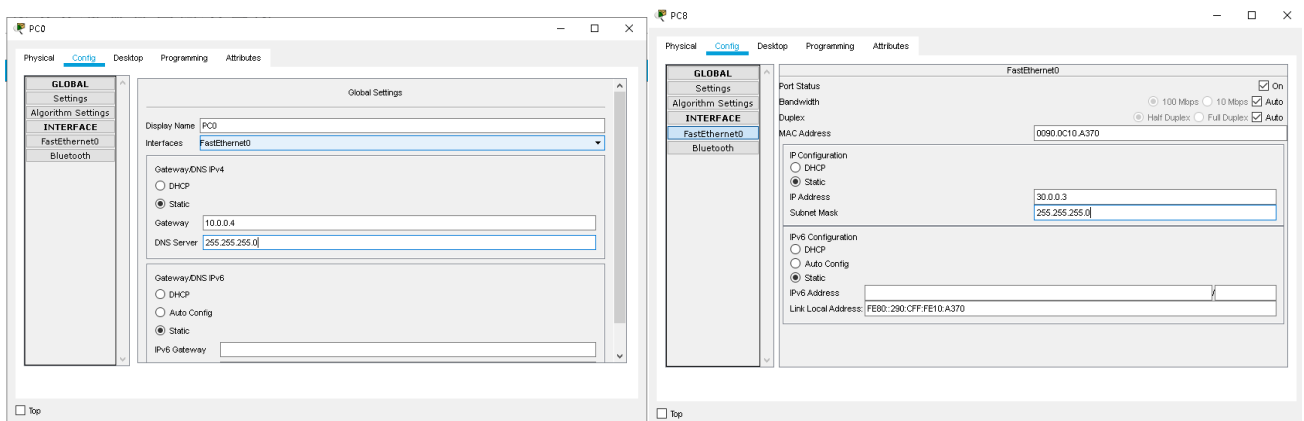
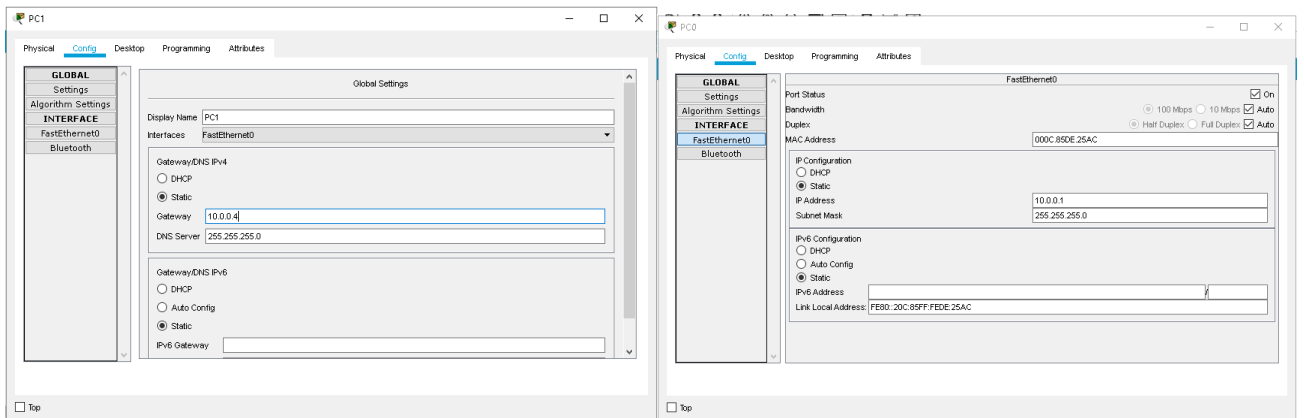
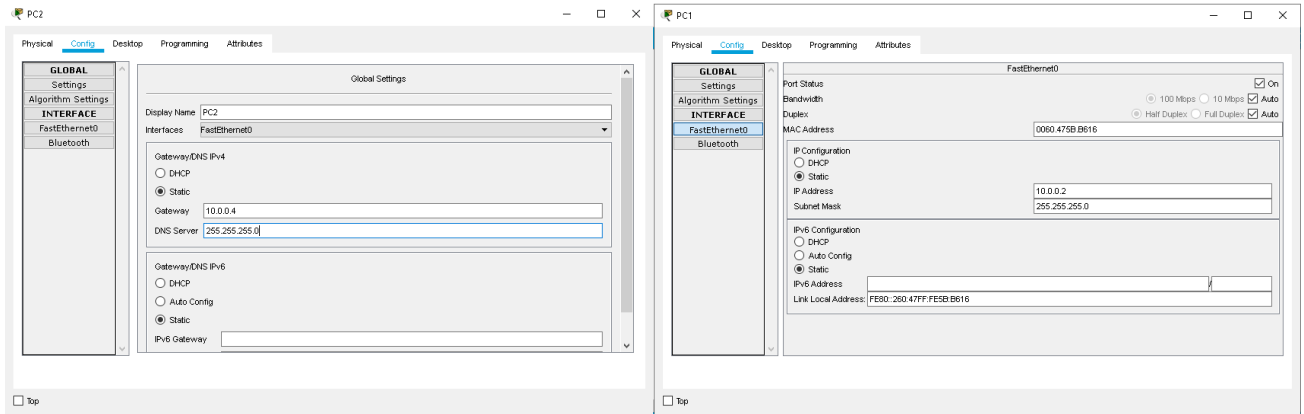
1. Align 9 end-devices as follows:



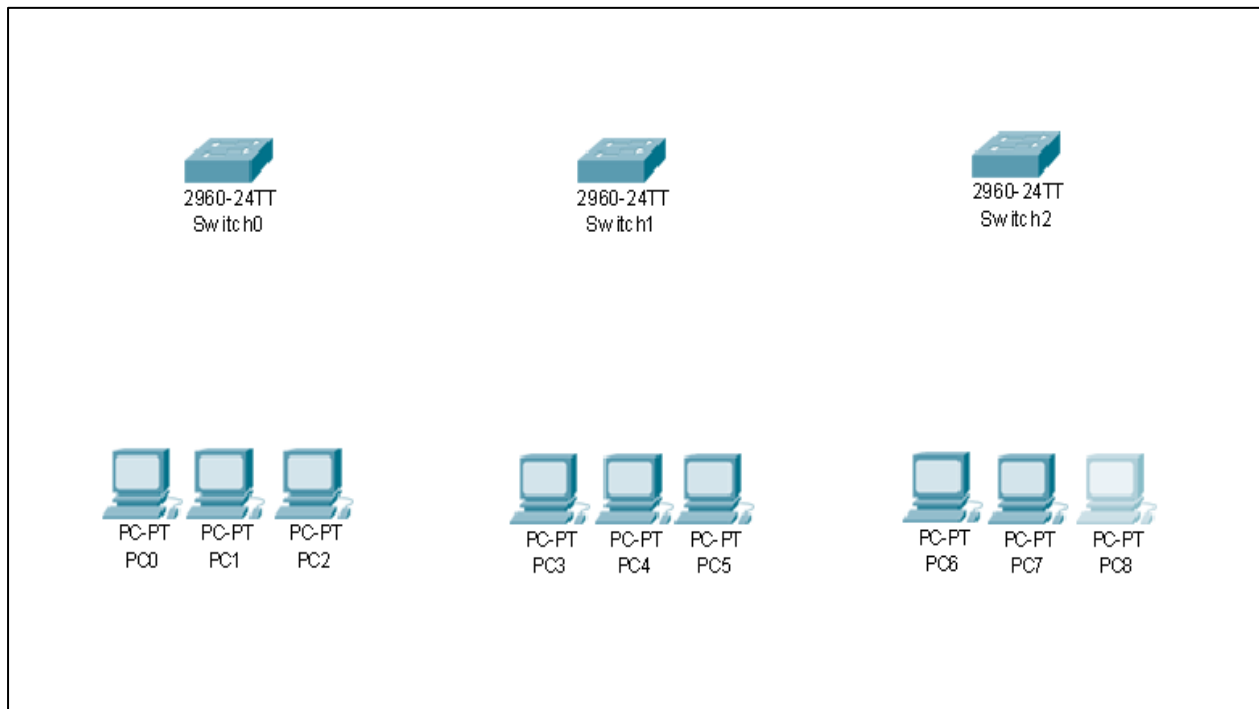
2. Set the DNS, Gateway and Fast Ethernet connections for all the PCs as follows



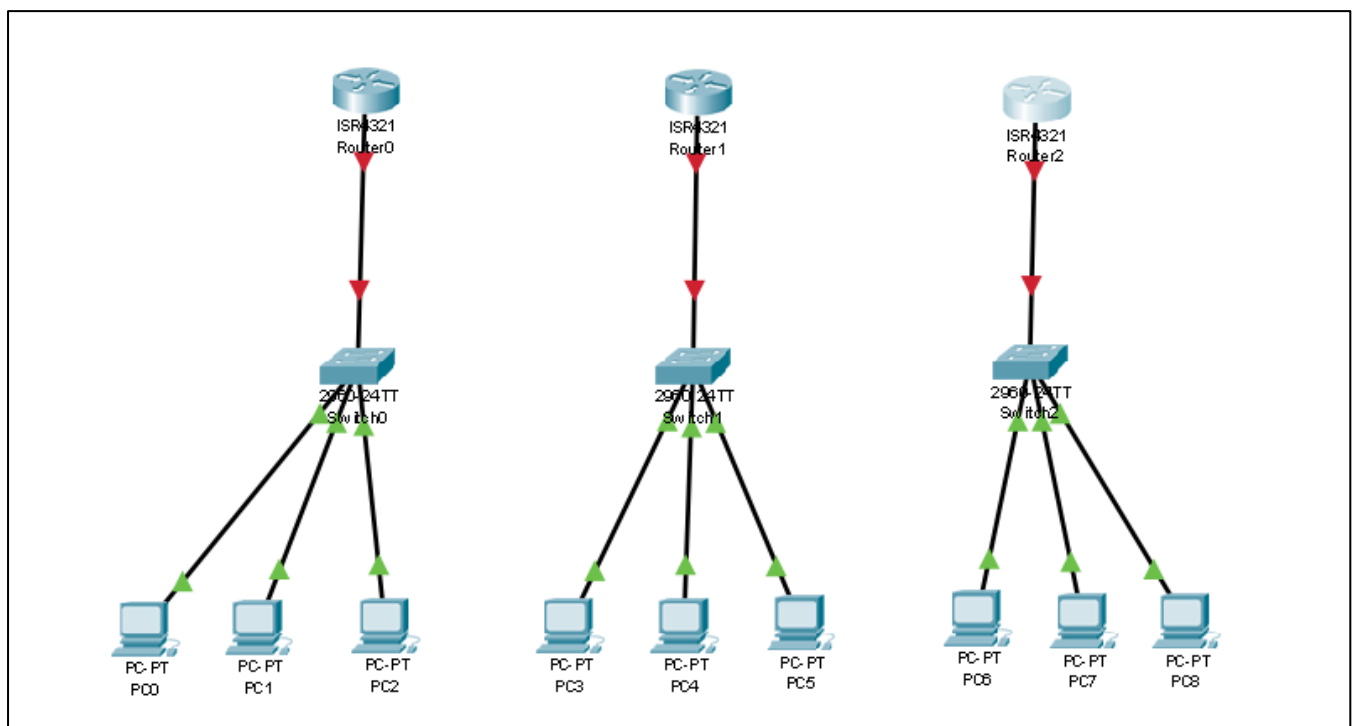




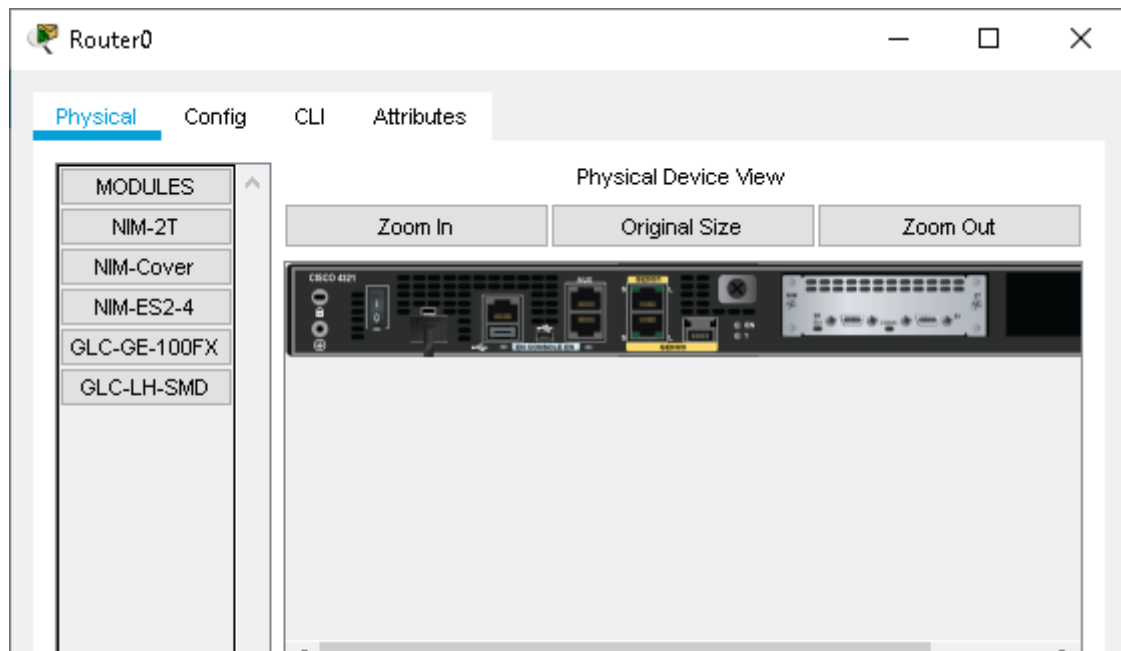
3. Add 3 Switches as follows:



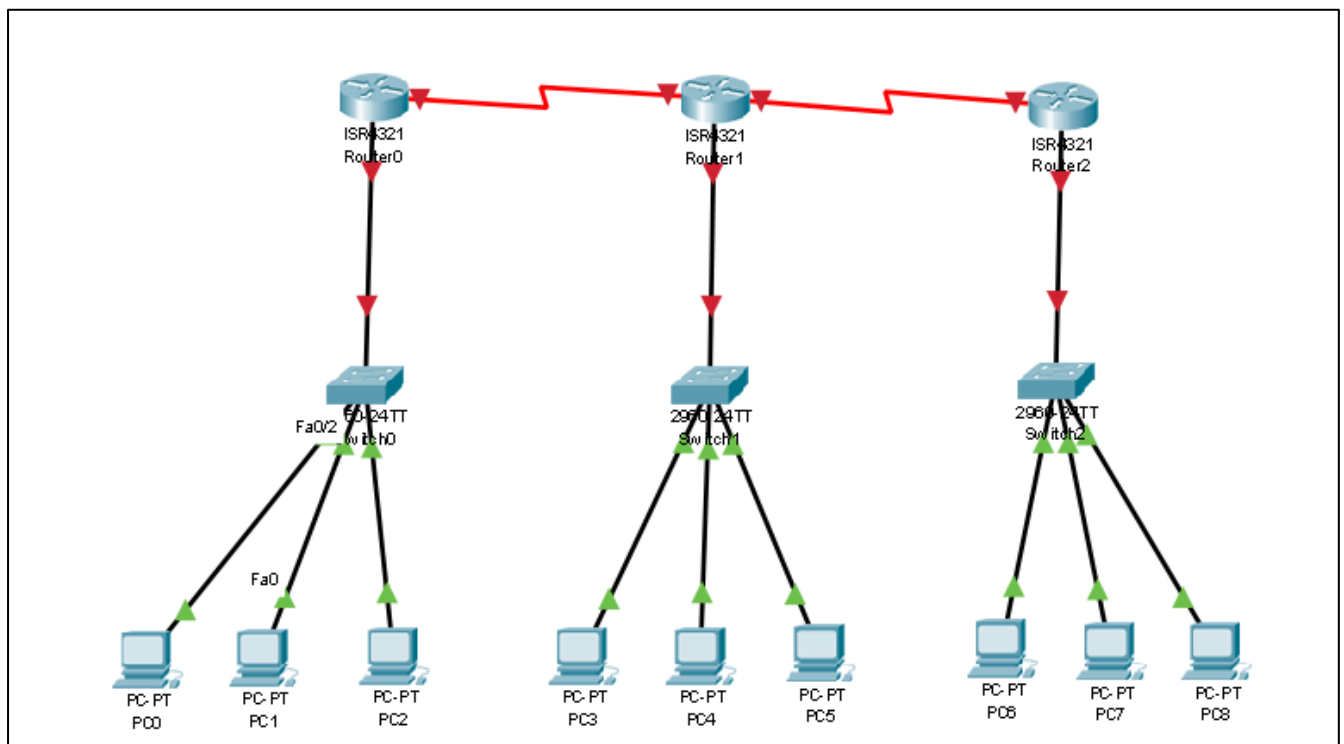
4. Add 3 Routers and connect all the components using Fast Ethernet connection as follows:



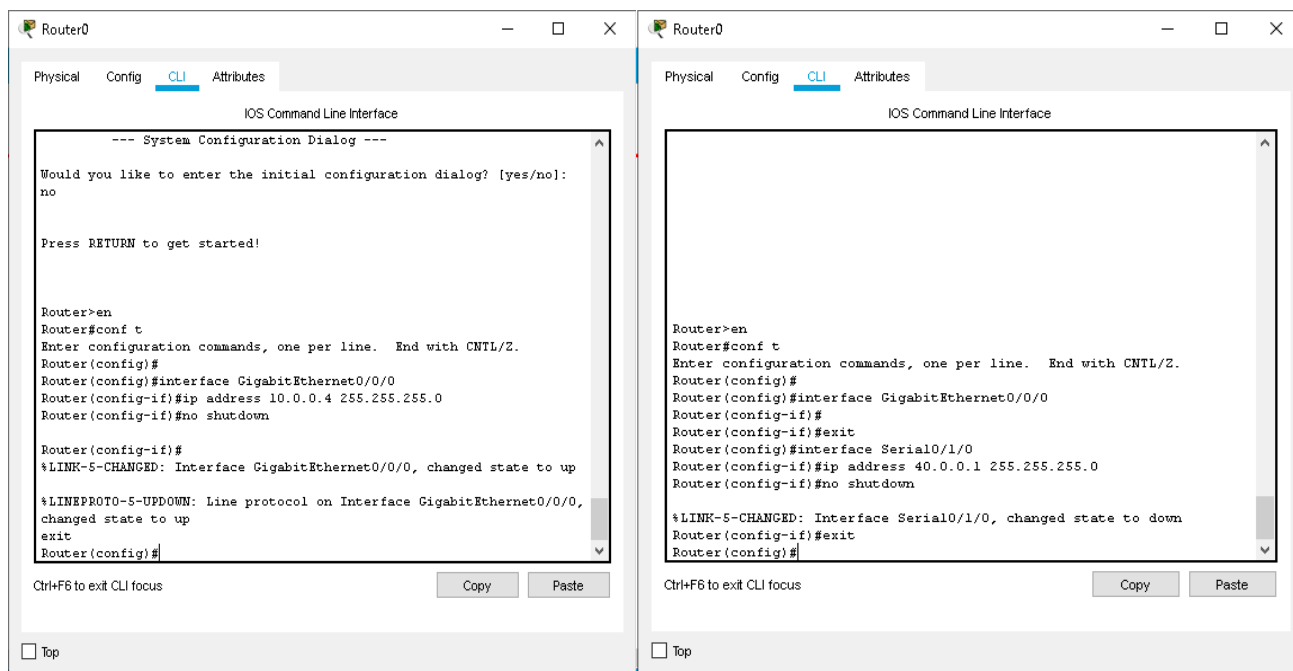
5. Power off each of the Routers and add the NIM-2T Module to all the Routers as follows:



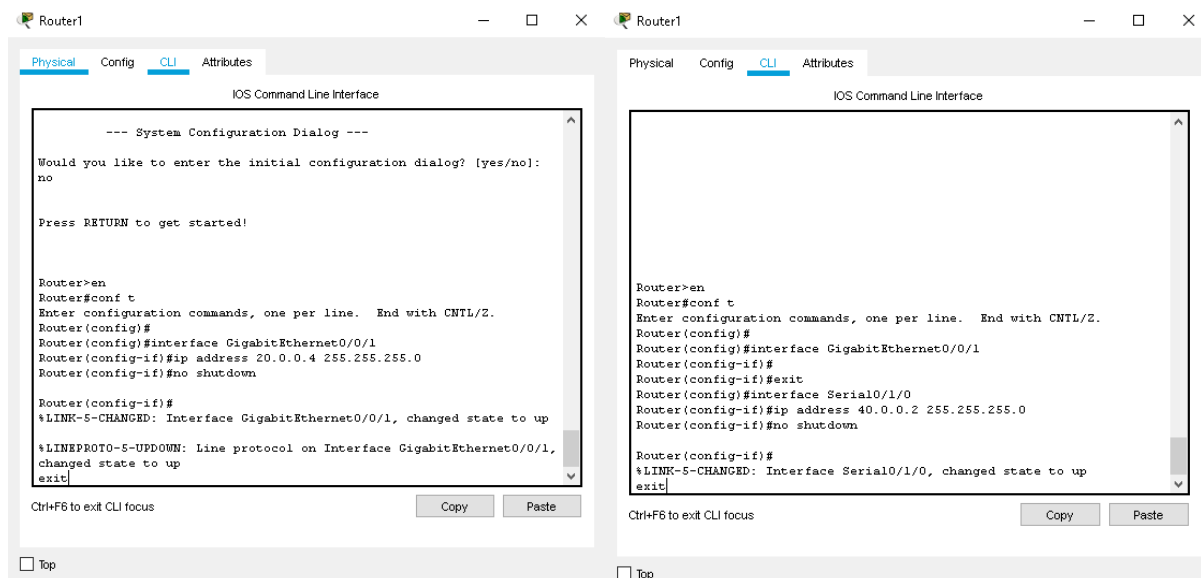
6. Connect the Routers using Serial DTE wires as shown:

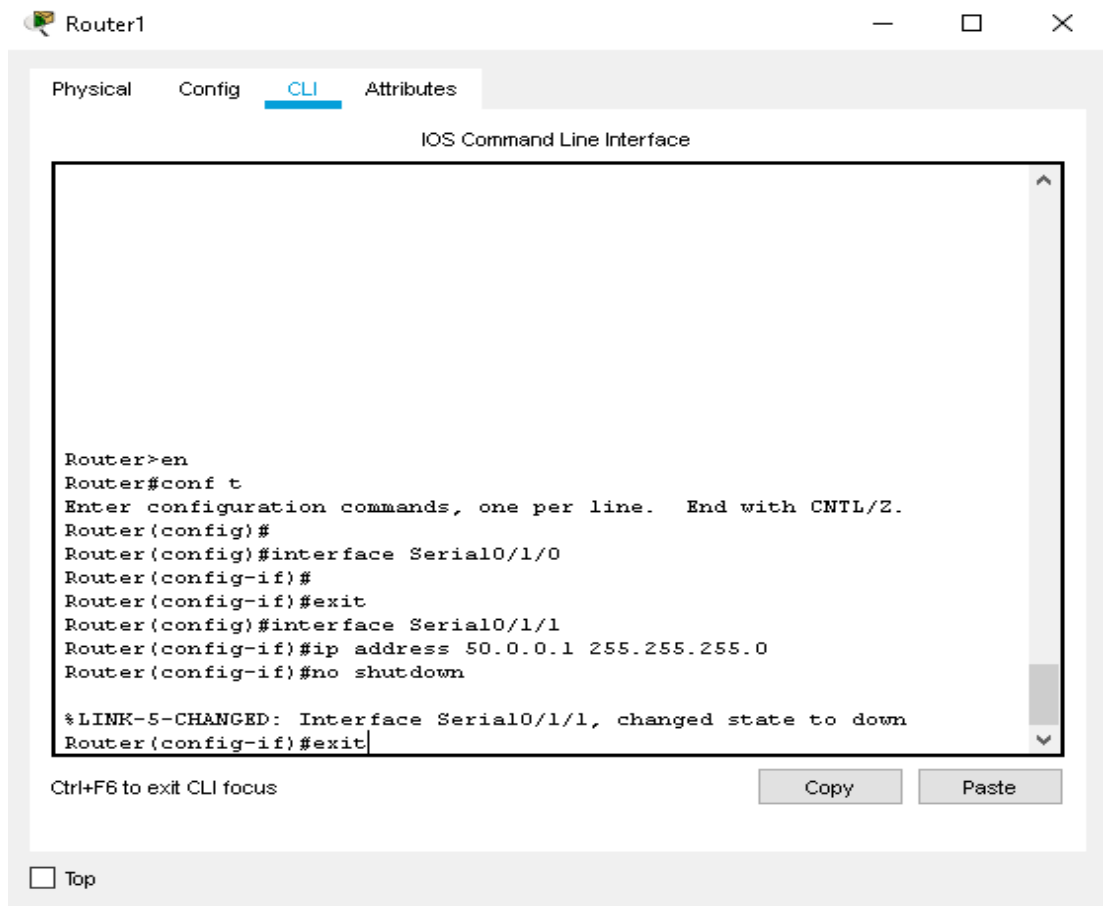


## 7. Configure Router 0 using the Command Line Interface as follows:

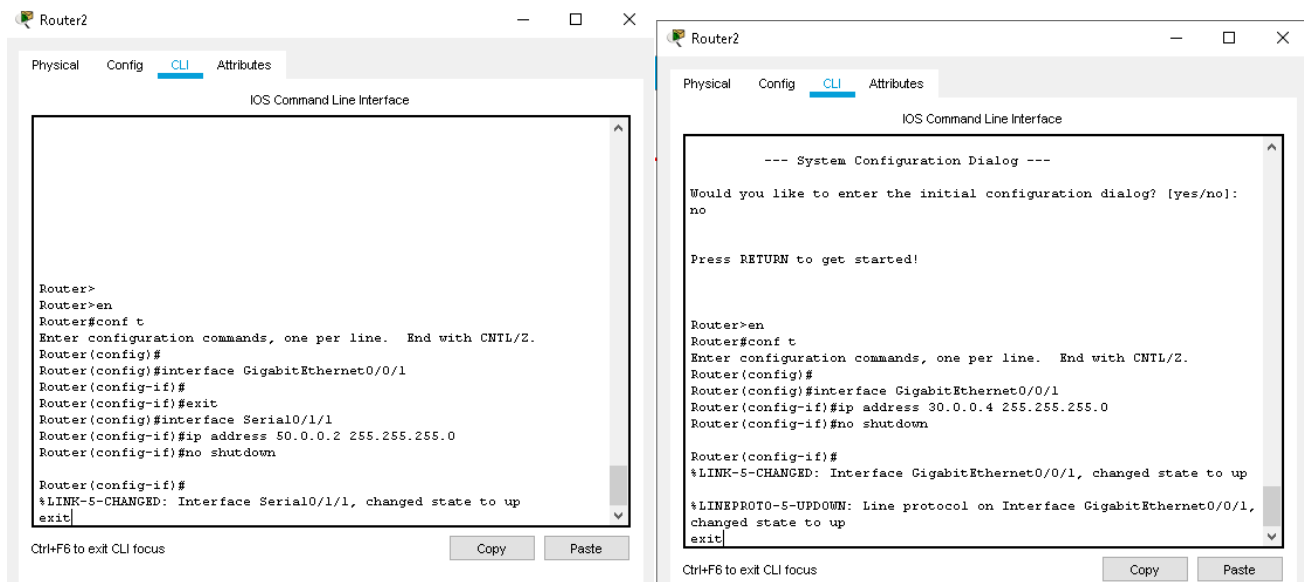


## 8. Configure Router 1 using the Command Line Interface as follows:

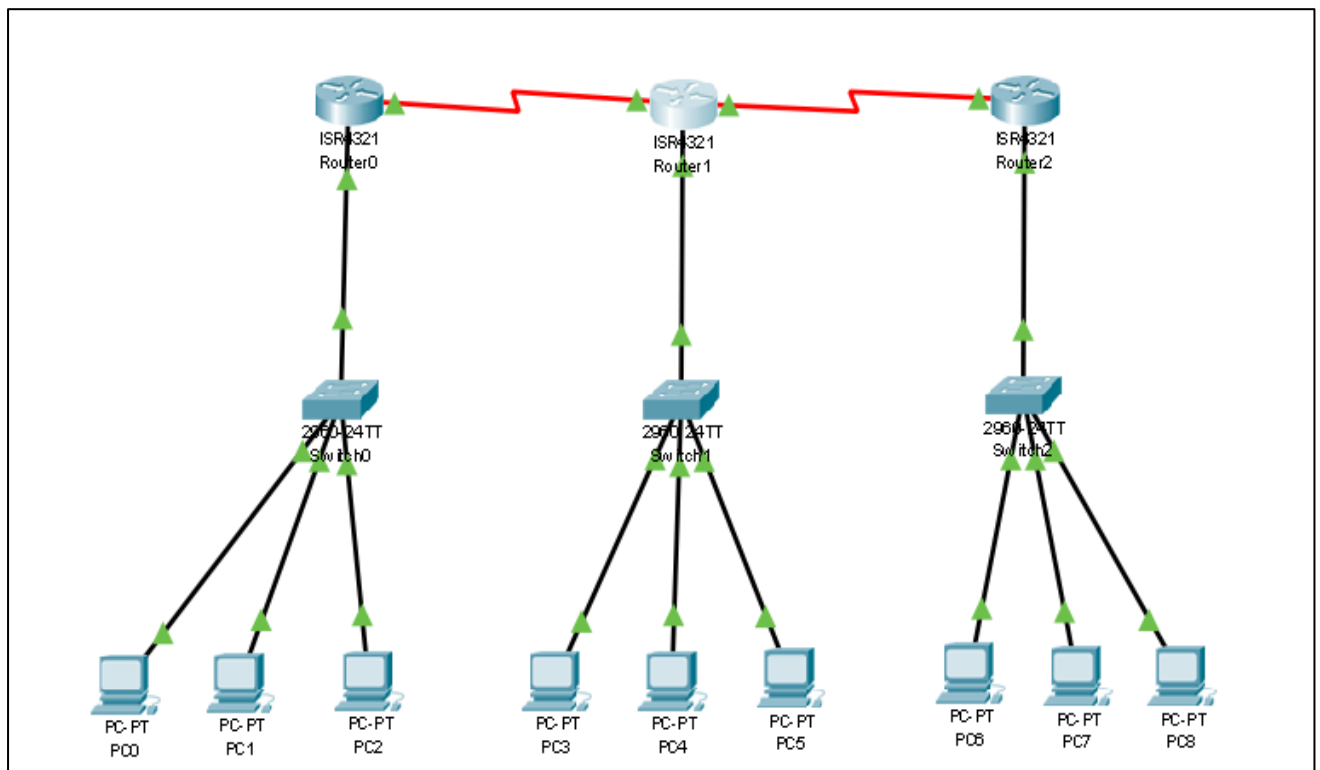




9. Configure Router 2 using the Command Line Interface as follows:



10. The Final connection will look as shown:



11. Note how intra-connection packet sending succeeds and inter-connection fails:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC0	PC1	ICMP	Dark Blue	0.000	N	0	(edit)
	Successful	PC3	PC4	ICMP	Blue	0.000	N	1	(edit)
	Successful	PC6	PC7	ICMP	Orange	0.000	N	2	(edit)

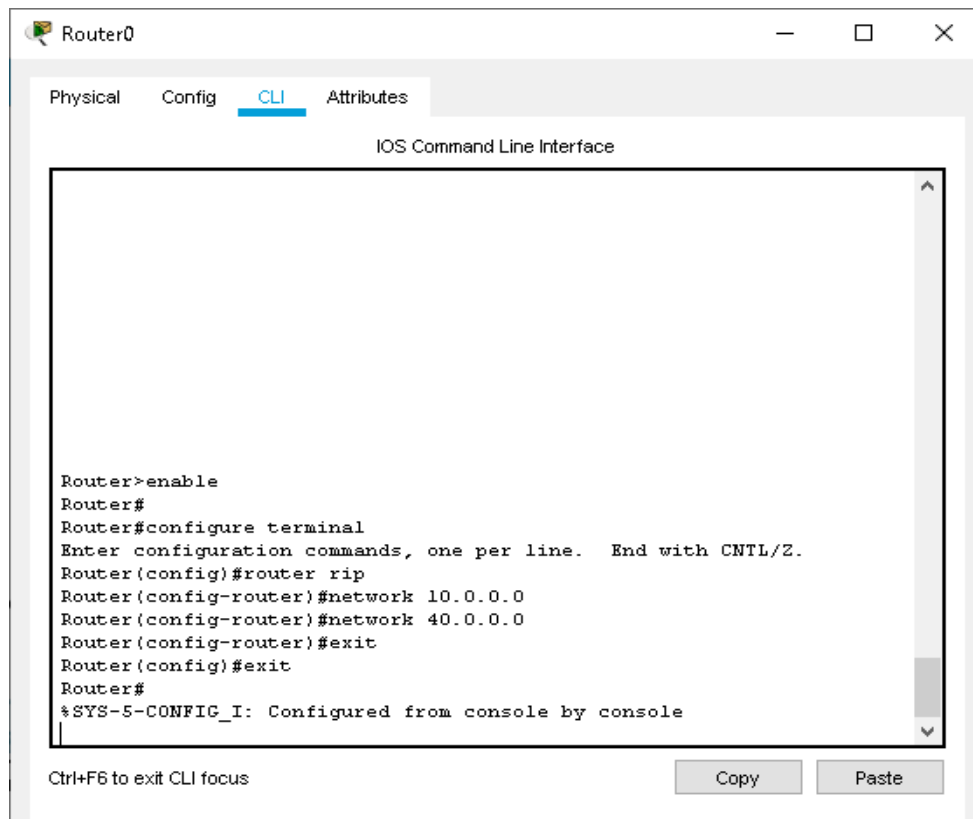
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	Router0	Router1	ICMP	Cyan	0.000	N	0	(edit)
	Successful	Router1	Router2	ICMP	Magenta	0.000	N	1	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Failed	PC0	PC3	ICMP	Blue	0.000	N	0	(edit)
	Failed	PC3	PC6	ICMP	Blue	0.000	N	1	(edit)
	Failed	PC8	PC2	ICMP	Magenta	0.000	N	2	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Failed	Router0	Router2	ICMP	Green	0.000	N	0	(edit)



12. Configure RIP Routing in Router 0 as follows:

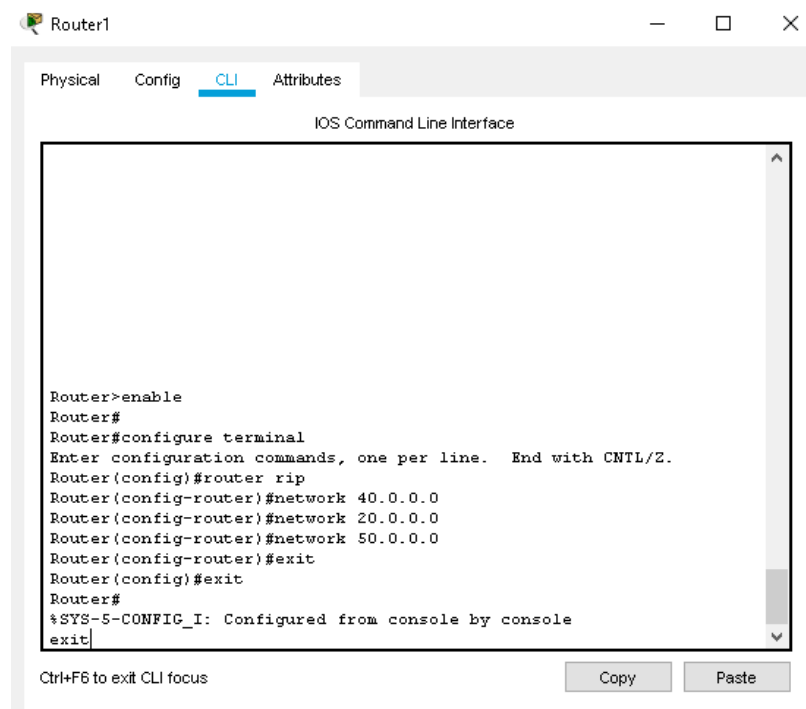


The screenshot shows a window titled 'Router0' with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the 'IOS Command Line Interface'. The terminal output shows the following commands and responses:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Below the terminal window, there is a text label 'Ctrl+F6 to exit CLI focus' and two buttons: 'Copy' and 'Paste'.

13. Configure RIP Routing in Router 1 as follows:

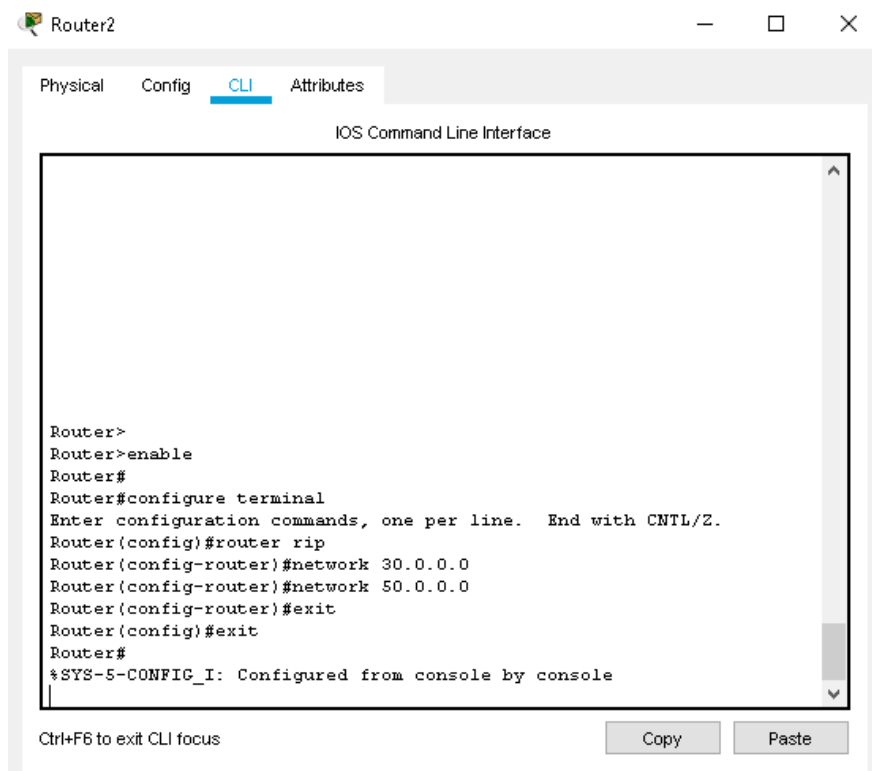


The screenshot shows a window titled 'Router1' with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the 'IOS Command Line Interface'. The terminal output shows the following commands and responses:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 40.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#network 50.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Below the terminal window, there is a text label 'Ctrl+F6 to exit CLI focus' and two buttons: 'Copy' and 'Paste'.

14. Configure RIP Routing in Router 2 as follows:



The screenshot shows the CLI of Router2 with the following commands entered:

```

Router>
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 30.0.0.0
Router(config-router)#network 50.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
  
```

At the bottom of the window, there are buttons for 'Copy' and 'Paste', and a note 'Ctrl+F6 to exit CLI focus'.

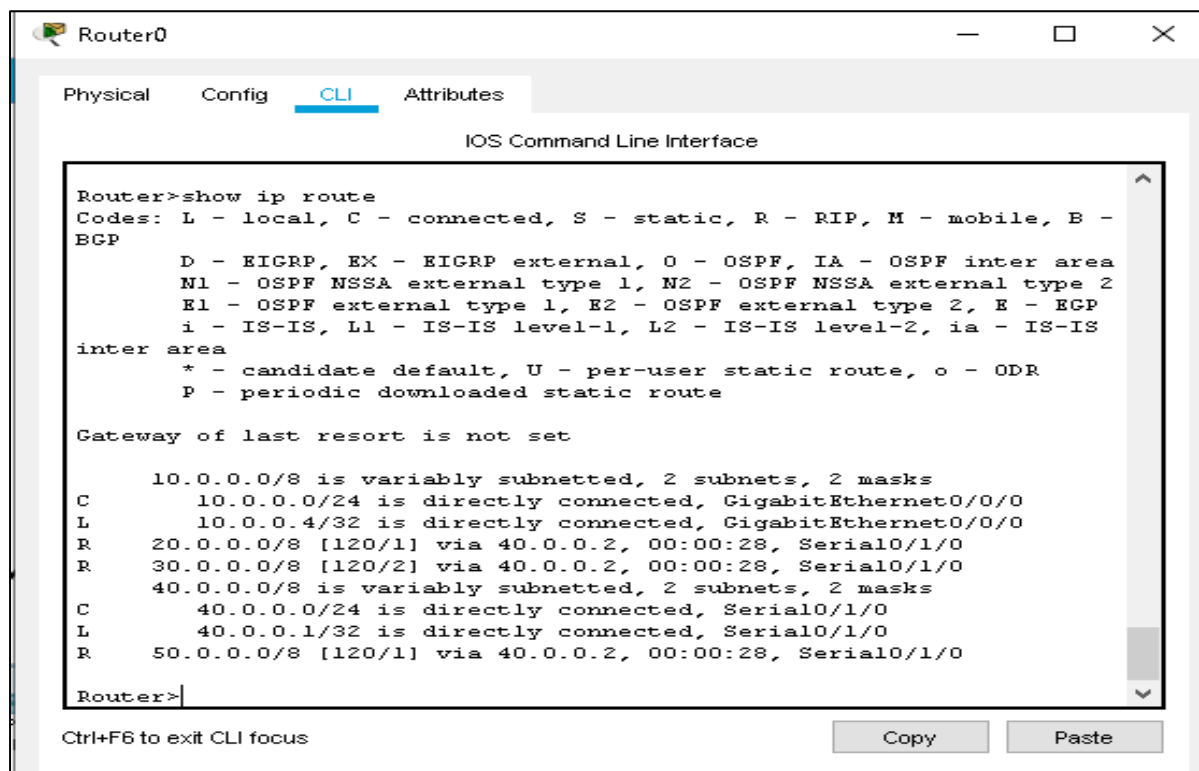
15. Sending packets after RIP routing gives the following result:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC0	PC3	ICMP		0.000	N	0	(edit)
	Failed	PC0	PC6	ICMP		0.000	N	1	(edit)
	Successful	PC0	PC6	ICMP		0.000	N	2	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	Router0	Router2	ICMP		0.000	N	0	(edit)
	Successful	Router1	Router0	ICMP		0.000	N	1	(edit)
	Successful	Router2	Router0	ICMP		0.000	N	2	(edit)

16. Finally, type 'show ip route' in the Router's CLI to obtain the IP route results:

#### ROUTER 0



The screenshot shows the Router0 CLI interface with the 'show ip route' command executed. The output displays the routing table for Router0, including local, connected, and static routes. The interface includes tabs for Physical, Config, CLI, and Attributes, and a status bar at the bottom with 'Ctrl+F6 to exit CLI focus', 'Copy', and 'Paste' buttons.

```
Router0
Physical Config CLI Attributes
IOS Command Line Interface

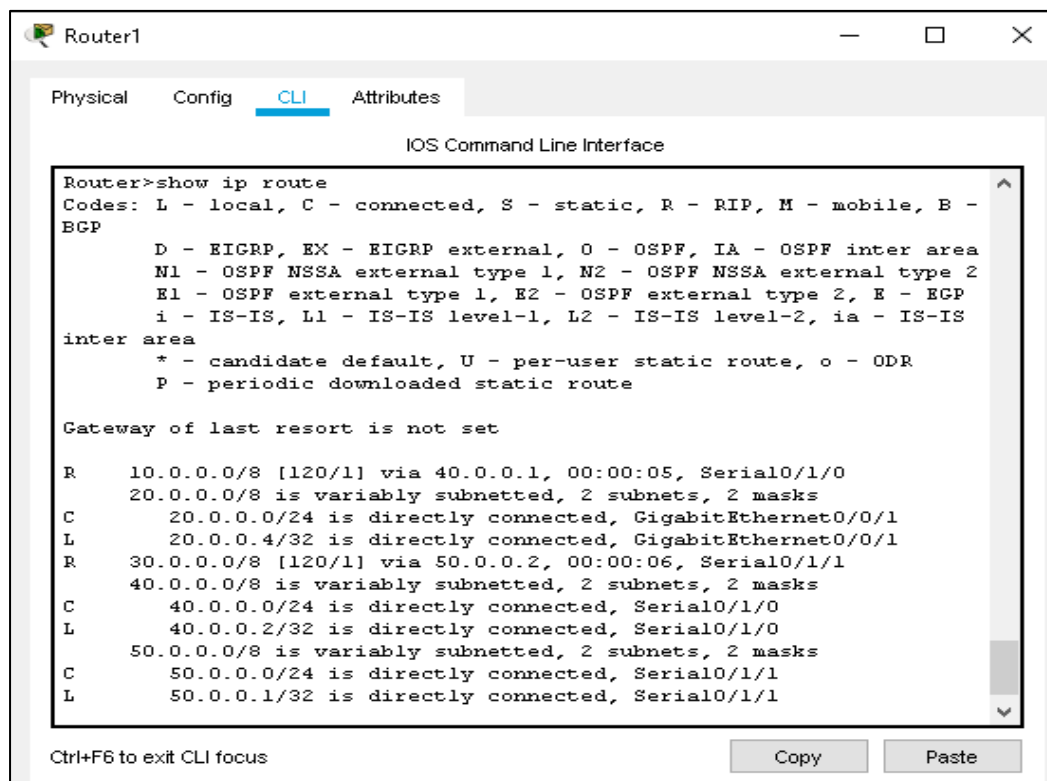
Router>show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B -
BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    10.0.0.0/24 is directly connected, GigabitEthernet0/0/0
L    10.0.0.4/32 is directly connected, GigabitEthernet0/0/0
R    20.0.0.0/8 [120/1] via 40.0.0.2, 00:00:28, Serial0/1/0
R    30.0.0.0/8 [120/2] via 40.0.0.2, 00:00:28, Serial0/1/0
40.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    40.0.0.0/24 is directly connected, Serial0/1/0
L    40.0.0.1/32 is directly connected, Serial0/1/0
R    50.0.0.0/8 [120/1] via 40.0.0.2, 00:00:28, Serial0/1/0

Router>
```

#### ROUTER 1



The screenshot shows the Router1 CLI interface with the 'show ip route' command executed. The output displays the routing table for Router1, including local, connected, and static routes. The interface includes tabs for Physical, Config, CLI, and Attributes, and a status bar at the bottom with 'Ctrl+F6 to exit CLI focus', 'Copy', and 'Paste' buttons.

```
Router1
Physical Config CLI Attributes
IOS Command Line Interface

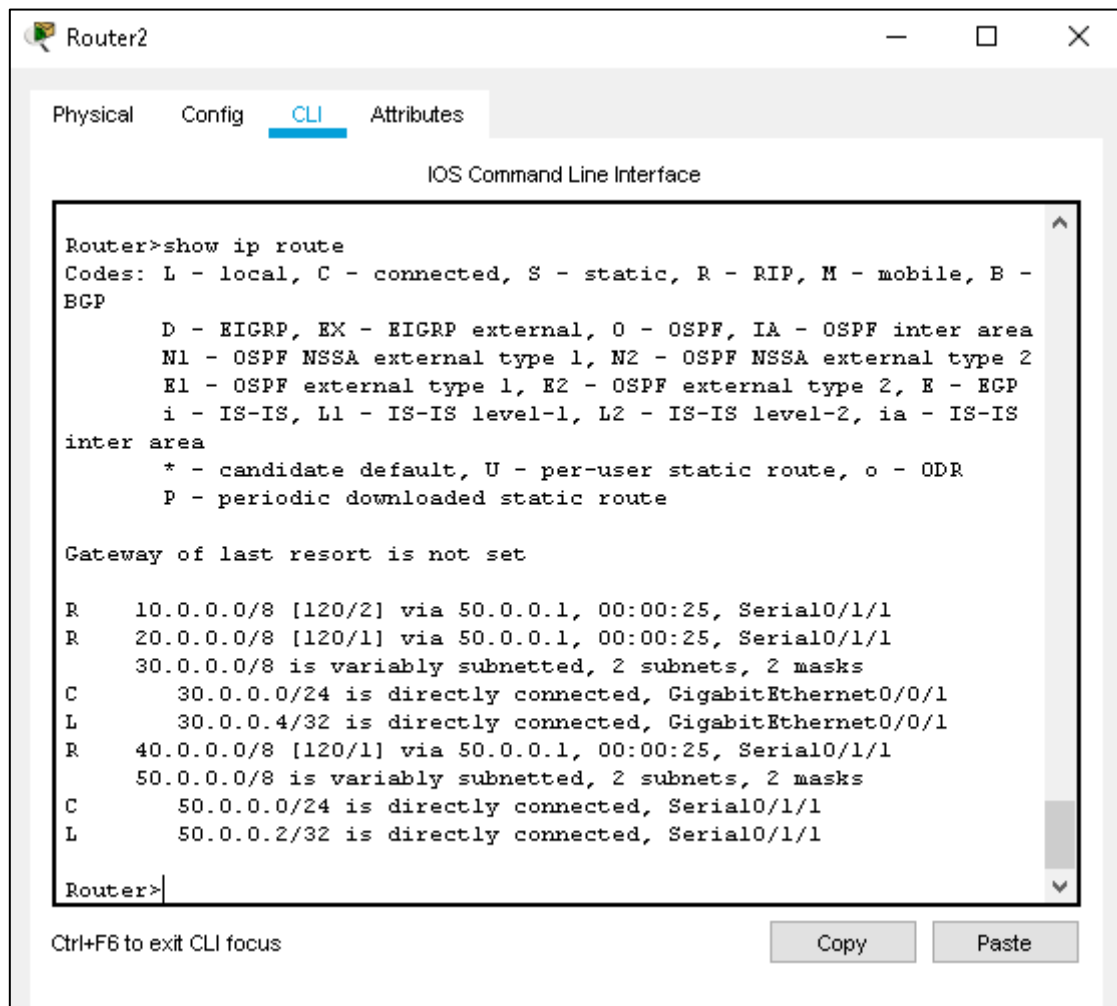
Router>show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B -
BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R    10.0.0.0/8 [120/1] via 40.0.0.1, 00:00:05, Serial0/1/0
20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    20.0.0.0/24 is directly connected, GigabitEthernet0/0/1
L    20.0.0.4/32 is directly connected, GigabitEthernet0/0/1
R    30.0.0.0/8 [120/1] via 50.0.0.2, 00:00:06, Serial0/1/1
40.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    40.0.0.0/24 is directly connected, Serial0/1/0
L    40.0.0.2/32 is directly connected, Serial0/1/0
50.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    50.0.0.0/24 is directly connected, Serial0/1/1
L    50.0.0.1/32 is directly connected, Serial0/1/1

Router>
```

## ROUTER 2



The screenshot shows a window titled 'Router2' with tabs for 'Physical', 'Config', 'CLI', and 'Attributes'. The 'CLI' tab is active, displaying the 'IOS Command Line Interface'. The command 'Router>show ip route' has been entered, and the output is displayed. The output includes a legend for route codes, a message about the gateway of last resort, and a list of routes for various networks.

```
Router>show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B -
BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R    10.0.0.0/8 [120/2] via 50.0.0.1, 00:00:25, Serial0/1/1
R    20.0.0.0/8 [120/1] via 50.0.0.1, 00:00:25, Serial0/1/1
     30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C     30.0.0.0/24 is directly connected, GigabitEthernet0/0/1
L     30.0.0.4/32 is directly connected, GigabitEthernet0/0/1
R    40.0.0.0/8 [120/1] via 50.0.0.1, 00:00:25, Serial0/1/1
     50.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C     50.0.0.0/24 is directly connected, Serial0/1/1
L     50.0.0.2/32 is directly connected, Serial0/1/1

Router>
```

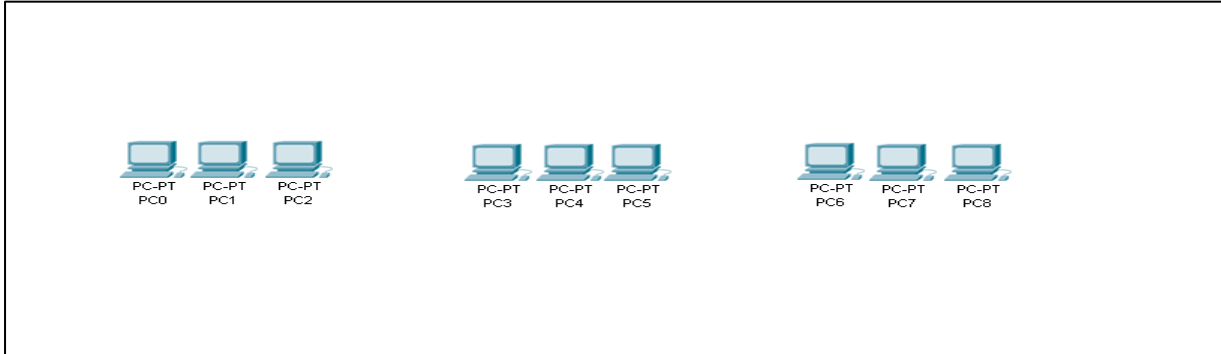
Below the CLI window, there is a status bar with the text 'Ctrl+F6 to exit CLI focus' and two buttons: 'Copy' and 'Paste'.

**CONCLUSION:** We have learnt to create a RIPv2 with three routers as shown above.

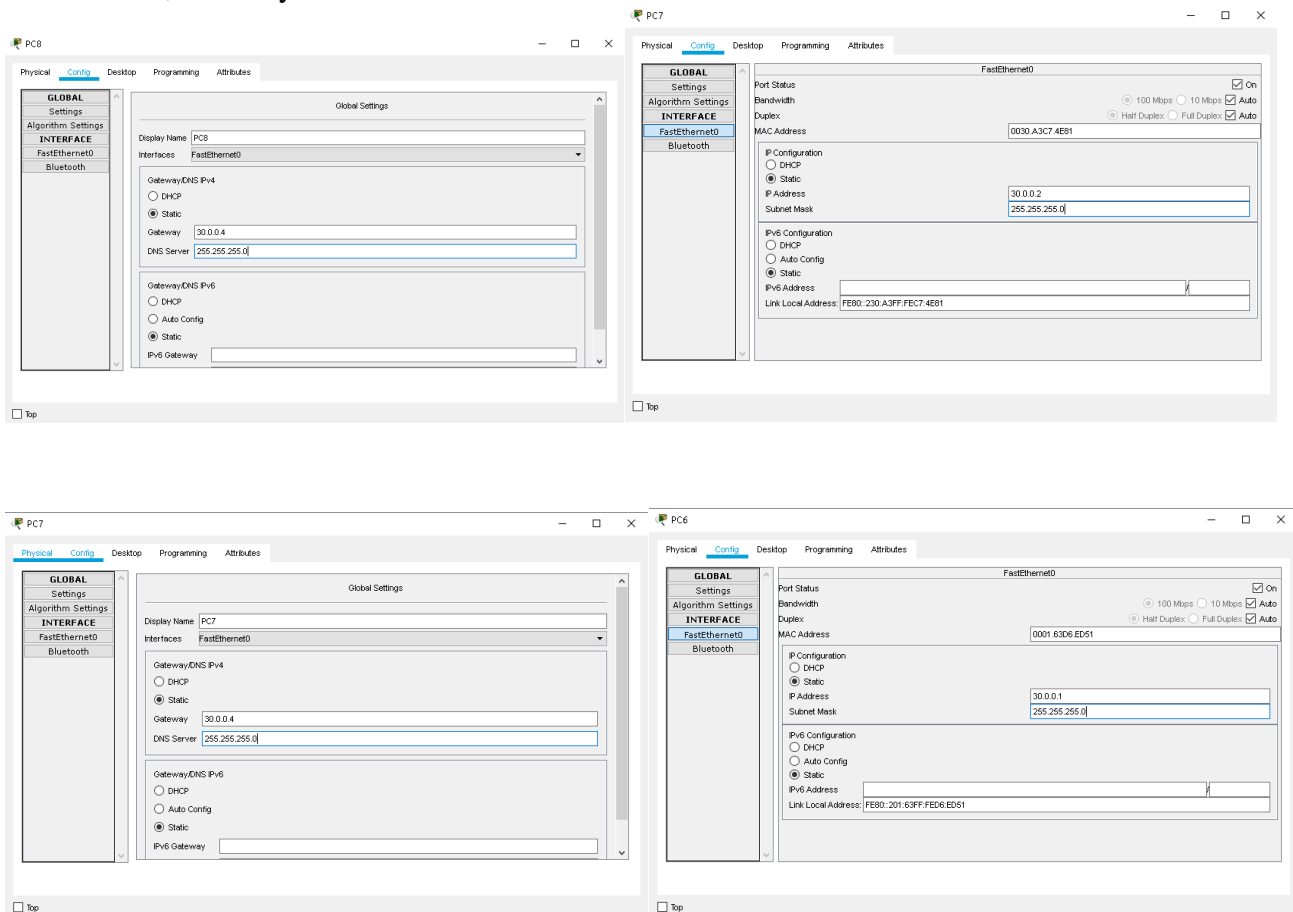
**PRACTICAL No: 2**

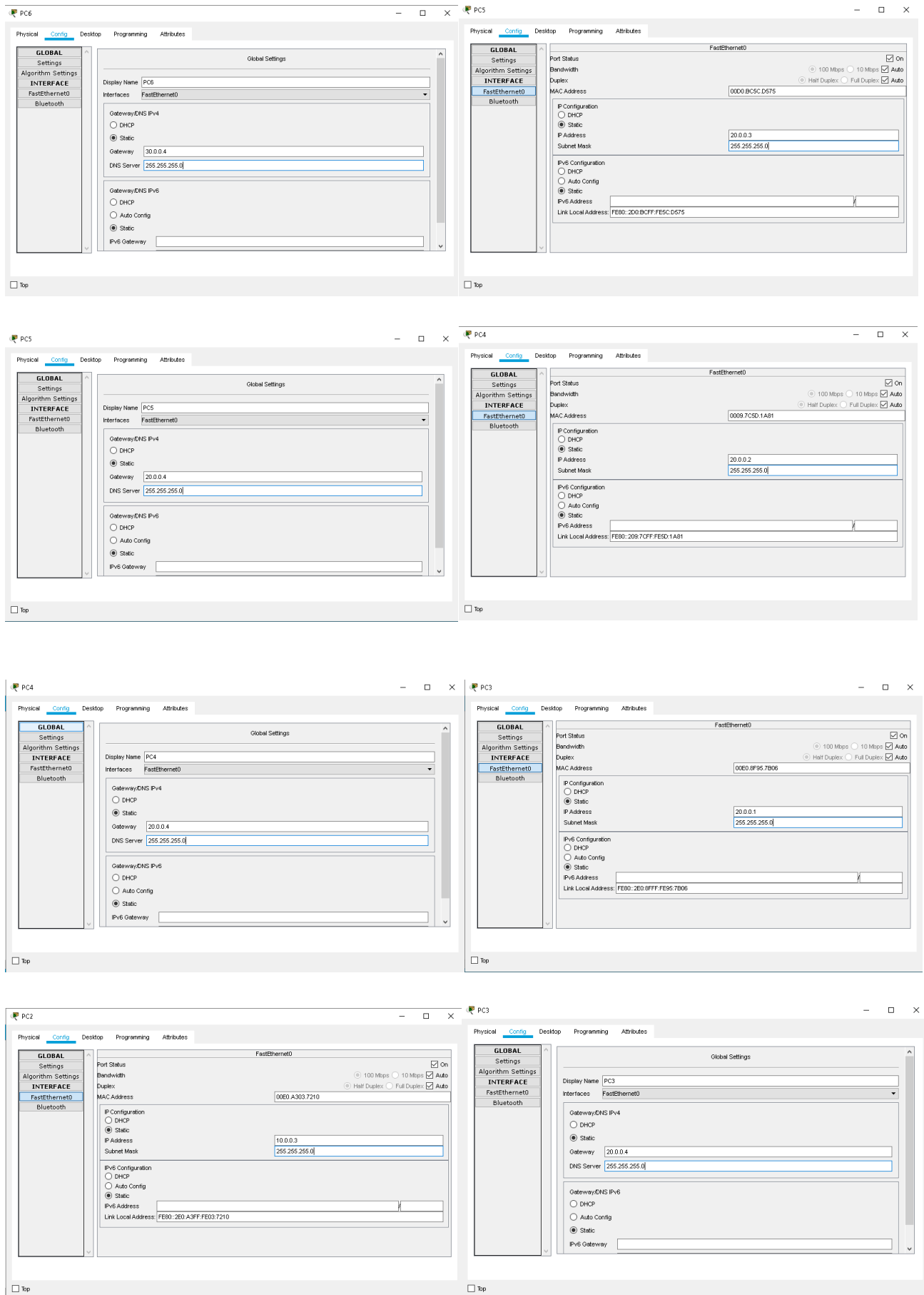
**Aim** - Create a network with three routers with OSPF and each router associated network will have minimum three PC. Show connectivity.

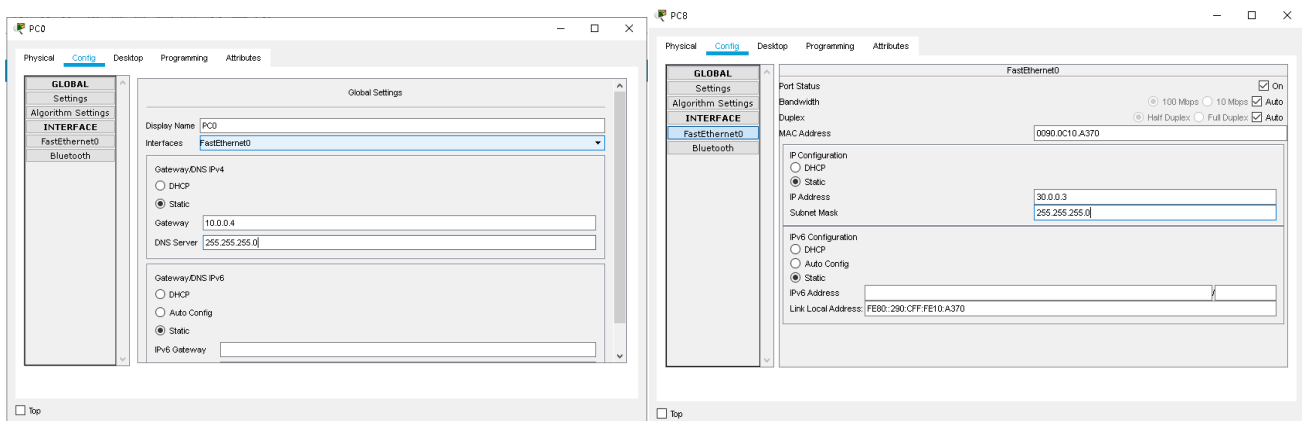
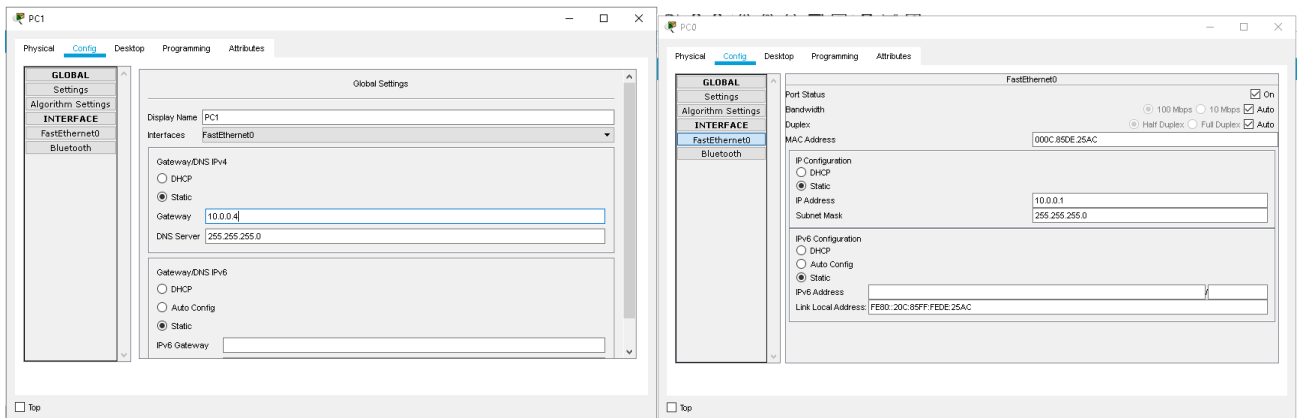
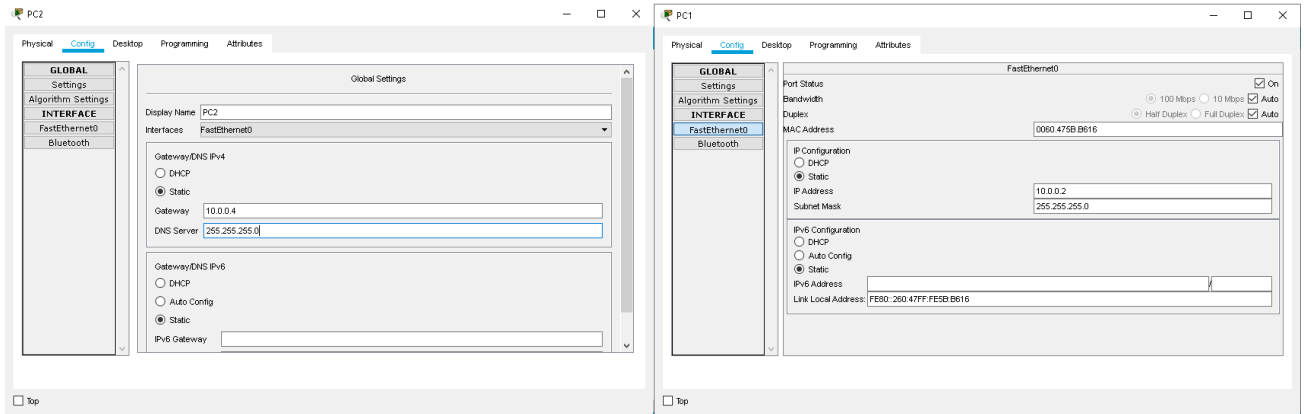
1. Align 9 end-devices as follows:



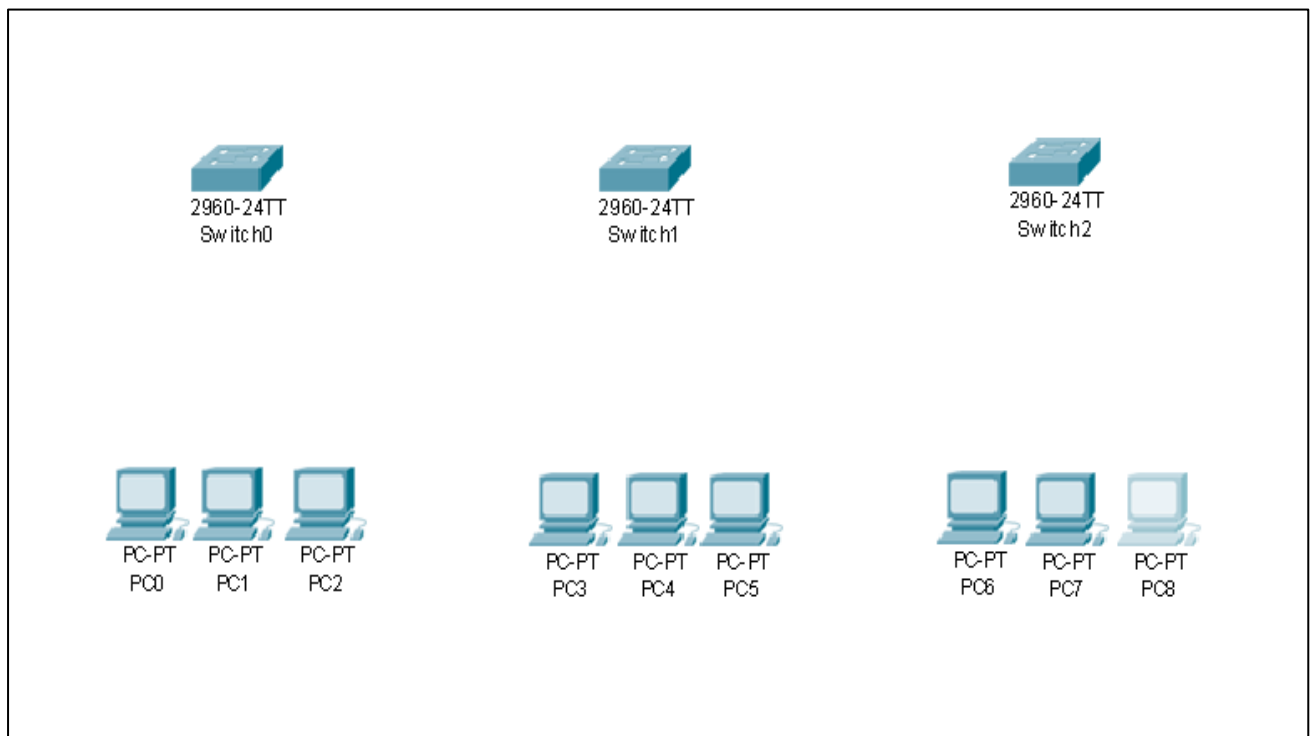
2. Set the DNS, Gateway and Fast Ethernet connections for all the PCs as follows:



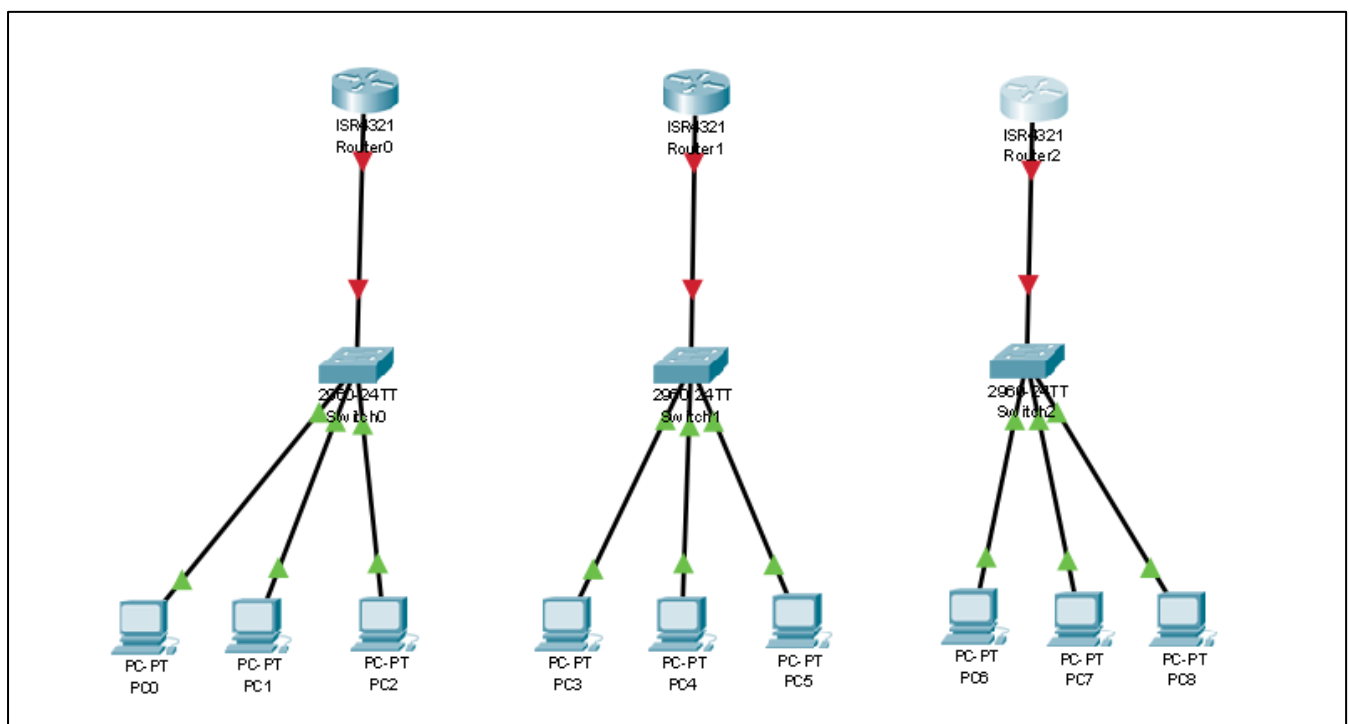




3. Add 3 Switches as follows:

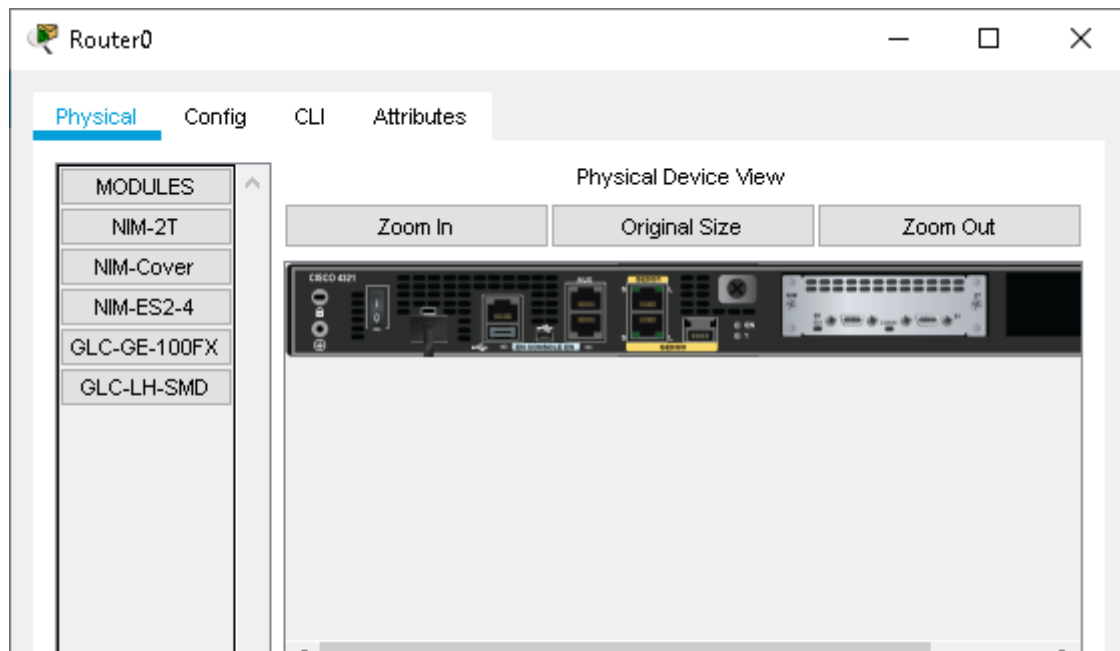


4. Add 3 Routers and connect all the components using Fast Ethernet connection as follows:

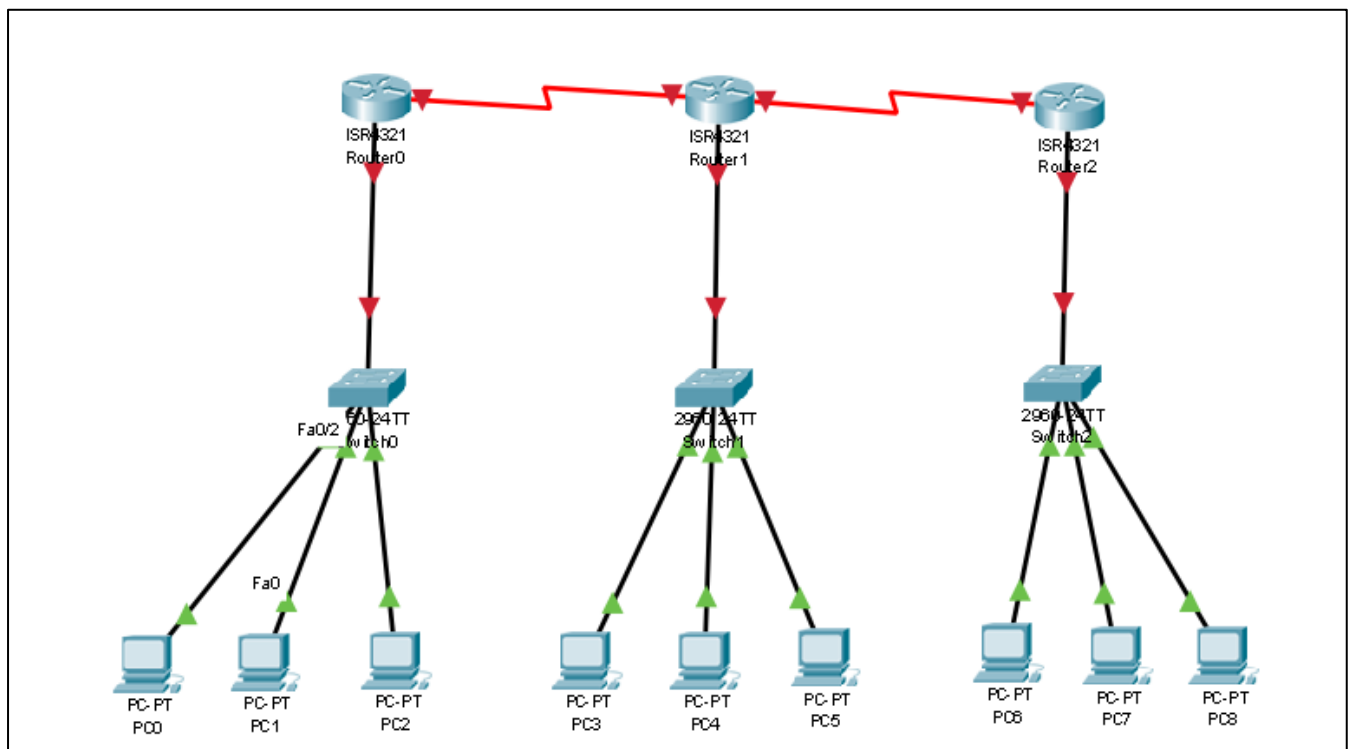




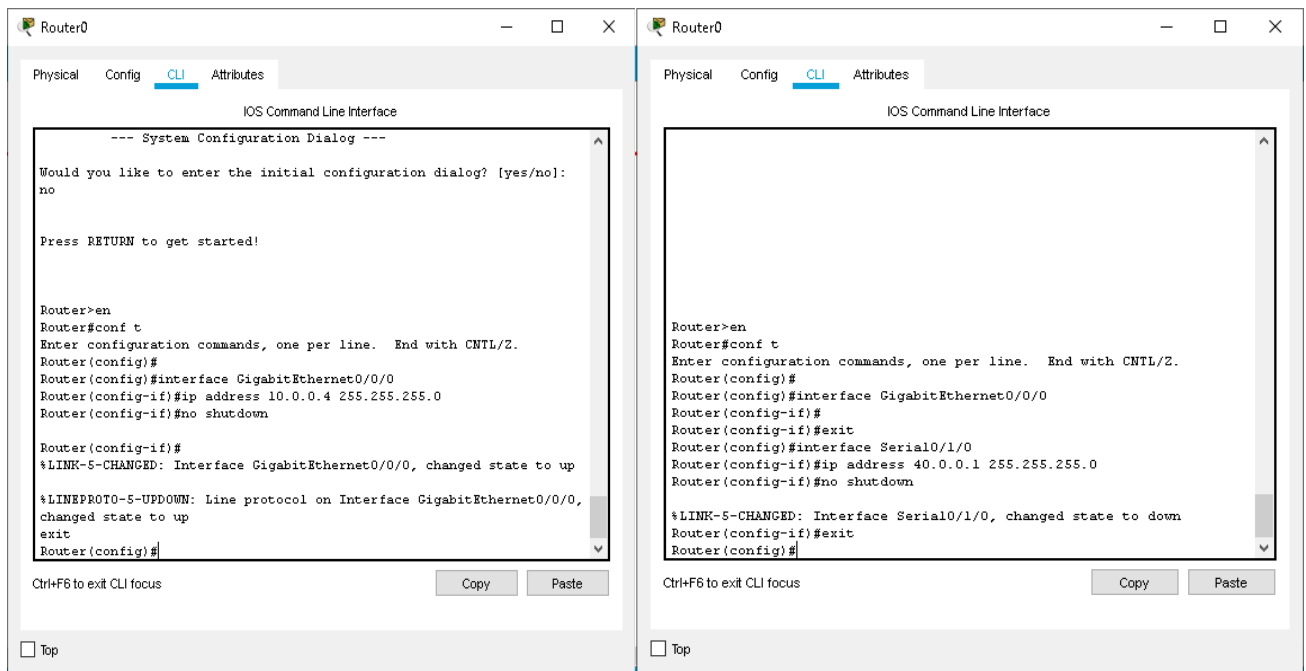
5. Power off each of the Routers and add the NIM-2T Module to all the Routers as follows:



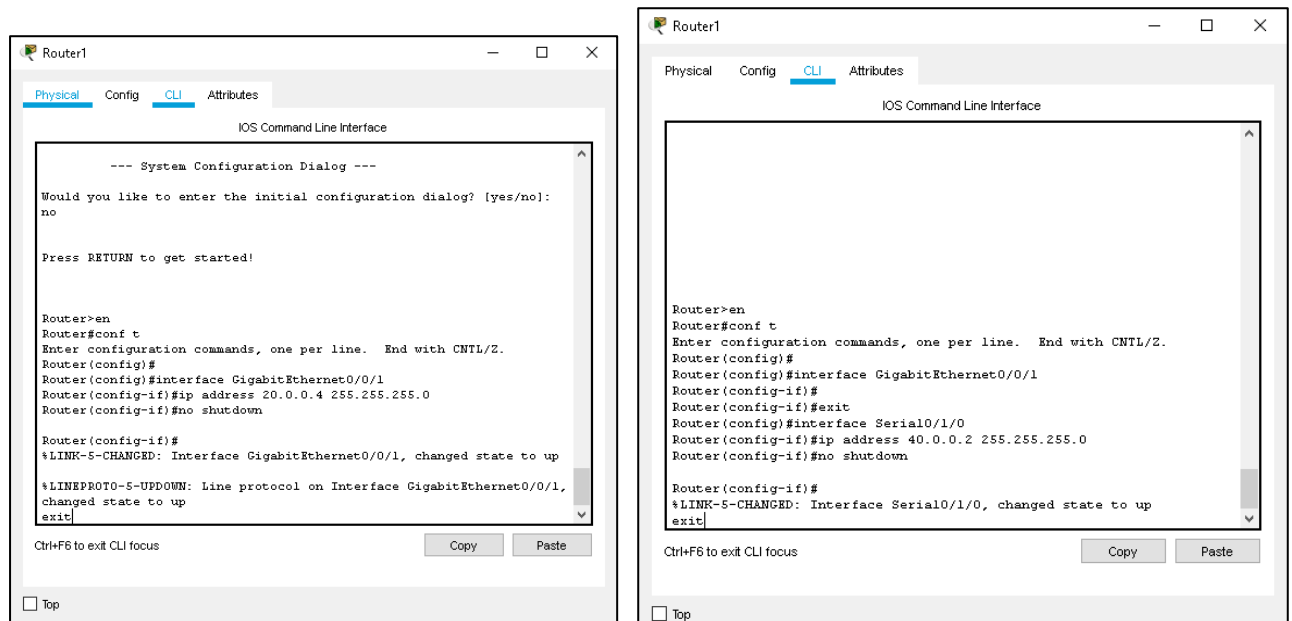
6. Connect the Routers using Serial DTE wires as shown:

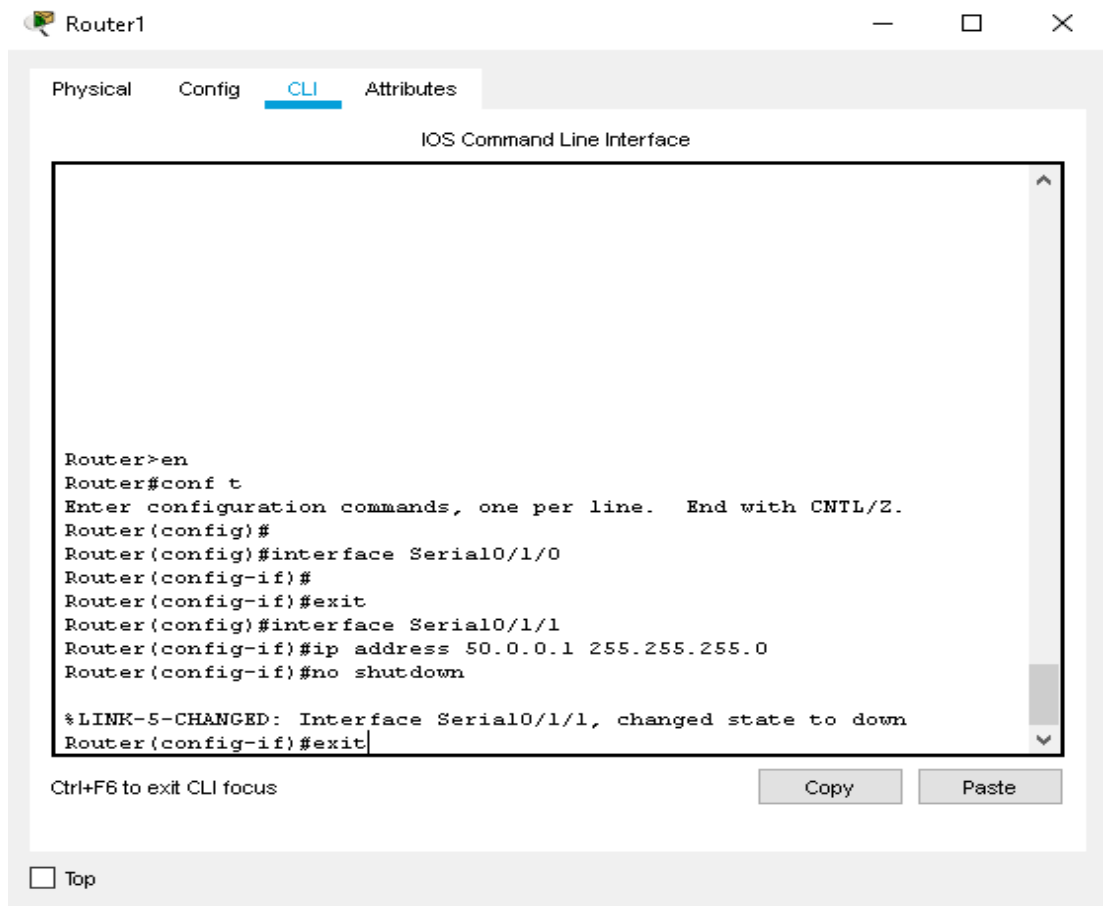


## 7. Configure Router 0 using the Command Line Interface as follows:

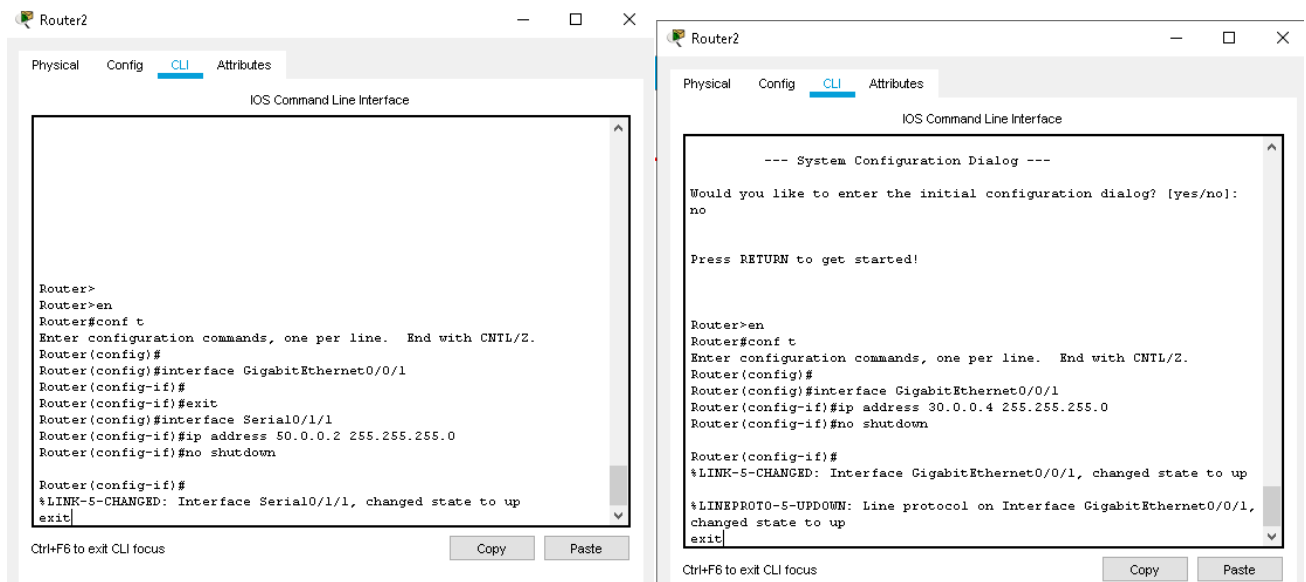


## 8. Configure Router 1 using the Command Line Interface as follows:

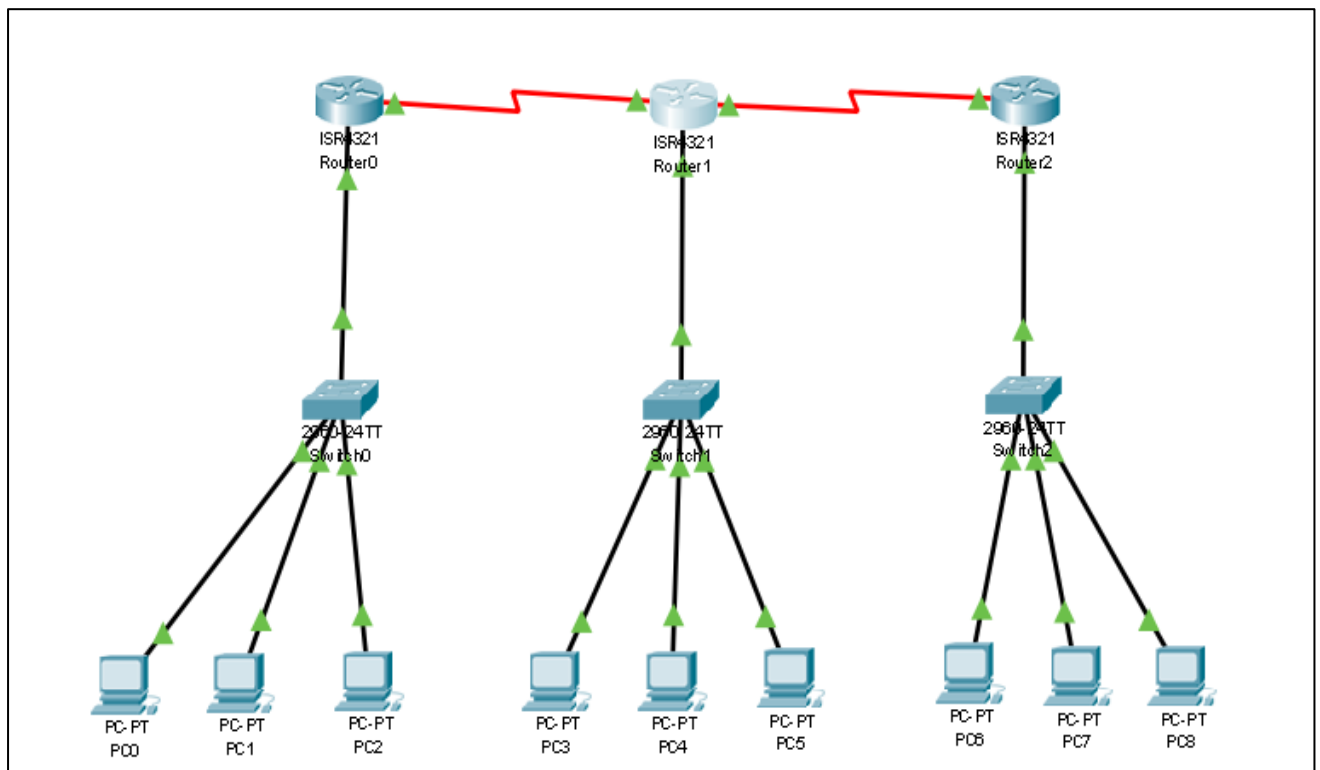




9. Configure Router 2 using the Command Line Interface as follows:



10. The Final connection will look as shown:



11. Note how intra-connection packet sending succeeds and inter-connection fails:

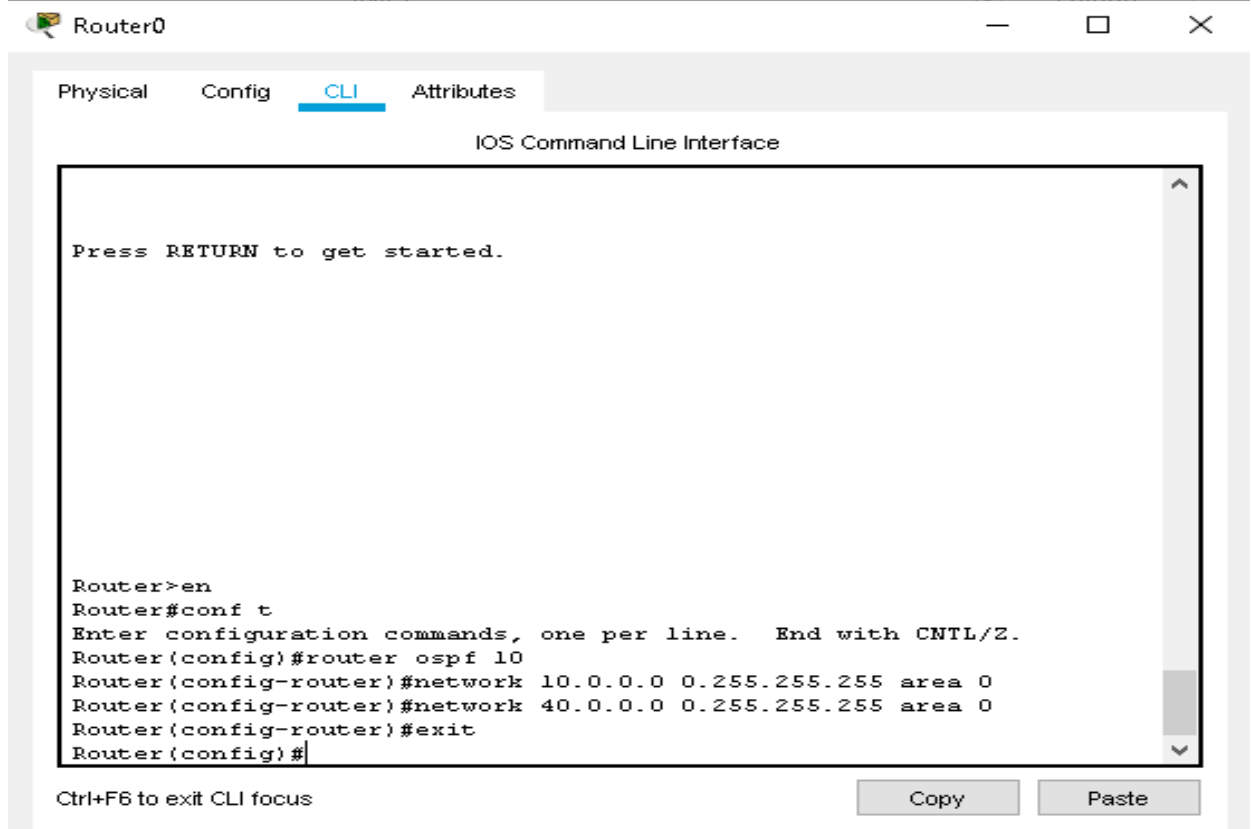
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC0	PC1	ICMP	Dark Blue	0.000	N	0	(edit)
	Successful	PC3	PC4	ICMP	Blue	0.000	N	1	(edit)
	Successful	PC6	PC7	ICMP	Orange	0.000	N	2	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	Router0	Router1	ICMP	Cyan	0.000	N	0	(edit)
	Successful	Router1	Router2	ICMP	Magenta	0.000	N	1	(edit)

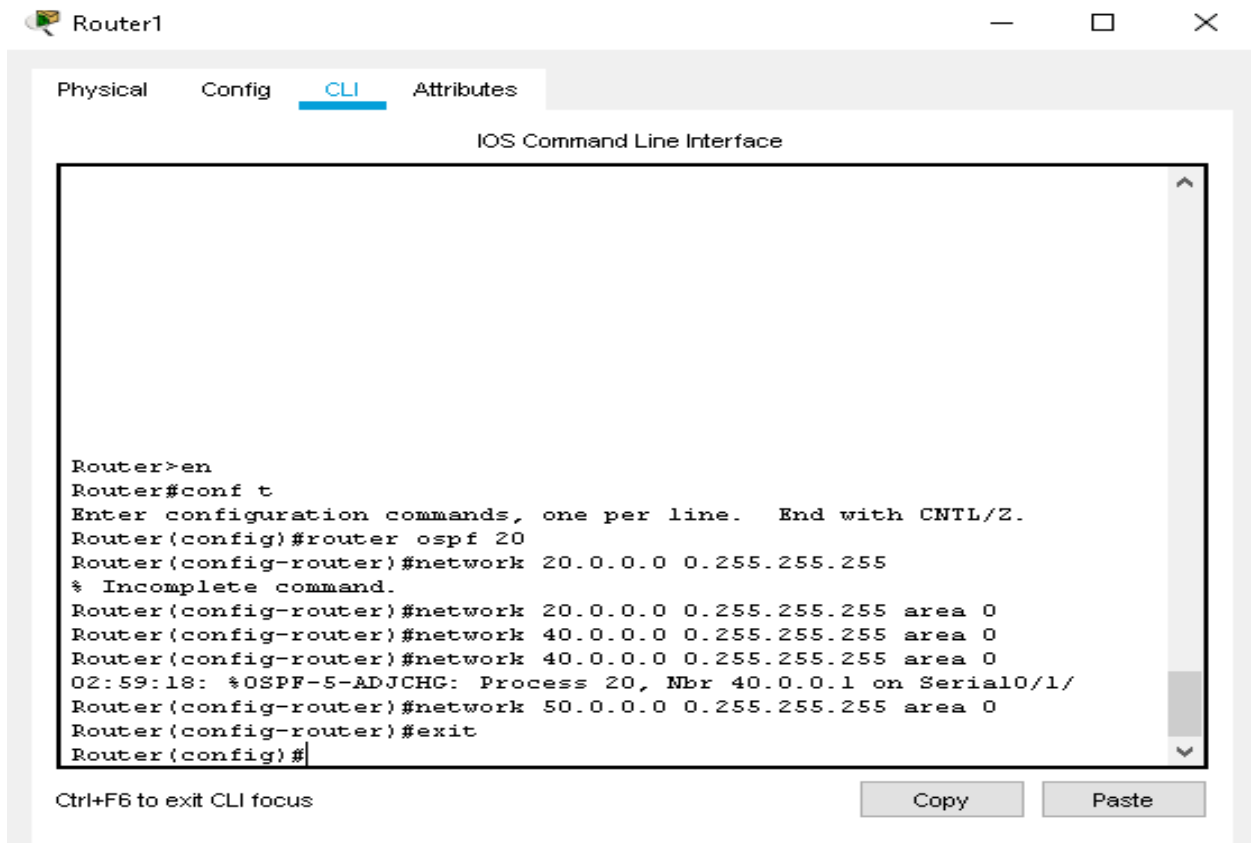
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Failed	PC0	PC3	ICMP	Blue	0.000	N	0	(edit)
	Failed	PC3	PC6	ICMP	Blue	0.000	N	1	(edit)
	Failed	PC8	PC2	ICMP	Magenta	0.000	N	2	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Failed	Router0	Router2	ICMP	Green	0.000	N	0	(edit)

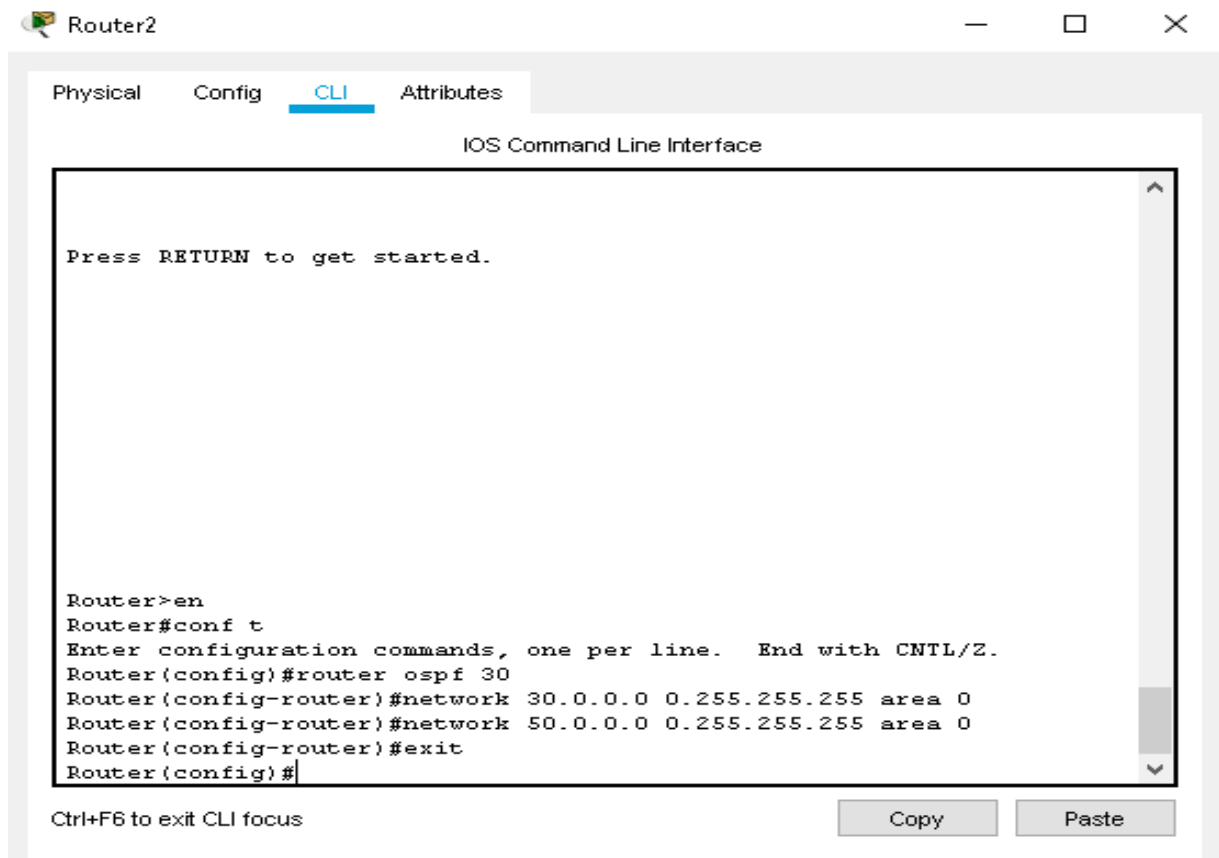
12. Configure OSPF Routing in Router 0 as follows:



13. Configure OSPF Routing in Router 1 as follows:



14. Configure OSPF Routing in Router 2 as follows;



15. After successful OSPF configuration, send packets over the inter-connected network :

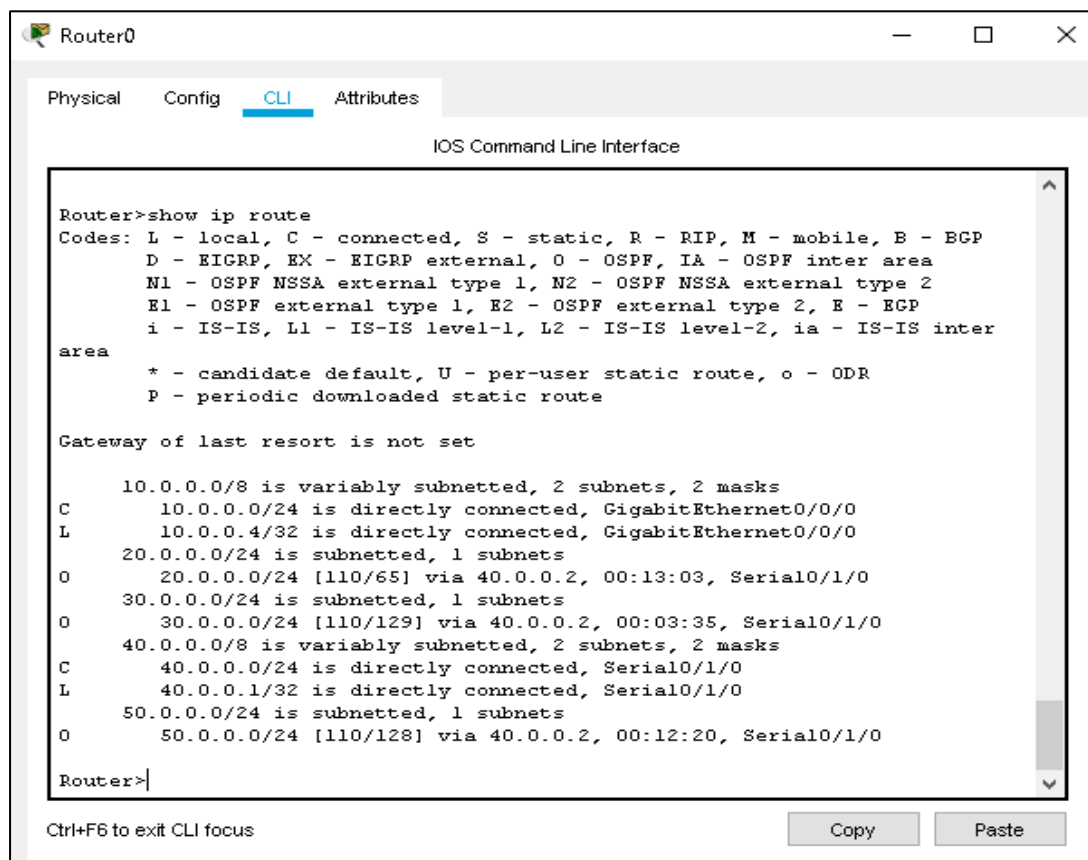
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC0	PC3	ICMP		0.000	N	0	(edit)
	Failed	PC0	PC6	ICMP		0.000	N	1	(edit)
	Successful	PC0	PC6	ICMP		0.000	N	2	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	Router0	Router2	ICMP		0.000	N	0	(edit)
	Successful	Router1	Router0	ICMP		0.000	N	1	(edit)
	Successful	Router2	Router0	ICMP		0.000	N	2	(edit)

16. Finally, in every Router's CLI, type 'show ip route' to get the connection details:

### ROUTER 0



The screenshot shows the Router0 CLI window with the 'CLI' tab selected. The output of the 'show ip route' command is displayed in the text area. The output includes a legend for route codes, a list of routes with their types and details, and a message about the gateway of last resort.

```

Router>show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
       area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

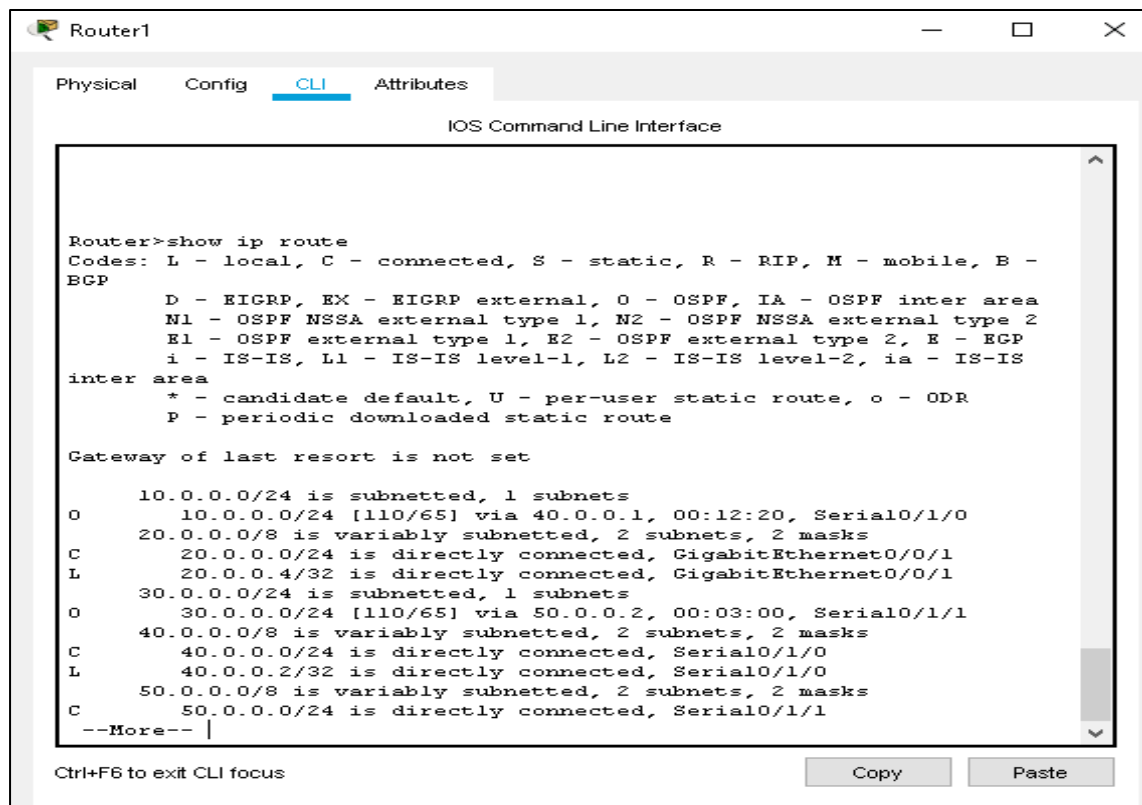
  10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.0.0.0/24 is directly connected, GigabitEthernet0/0/0
L       10.0.0.4/32 is directly connected, GigabitEthernet0/0/0
O       20.0.0.0/24 is subnetted, 1 subnets
O       20.0.0.0/24 [110/65] via 40.0.0.2, 00:13:03, Serial0/1/0
O       30.0.0.0/24 is subnetted, 1 subnets
O       30.0.0.0/24 [110/129] via 40.0.0.2, 00:03:35, Serial0/1/0
O       40.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       40.0.0.0/24 is directly connected, Serial0/1/0
L       40.0.0.1/32 is directly connected, Serial0/1/0
O       50.0.0.0/24 is subnetted, 1 subnets
O       50.0.0.0/24 [110/128] via 40.0.0.2, 00:12:20, Serial0/1/0

Router>
  
```

Ctrl+F6 to exit CLI focus

Copy Paste

### ROUTER 1



The screenshot shows the Router1 CLI window with the 'CLI' tab selected. The output of the 'show ip route' command is displayed in the text area. The output includes a legend for route codes, a list of routes with their types and details, and a message about the gateway of last resort.

```

Router>show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B -
BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
       inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

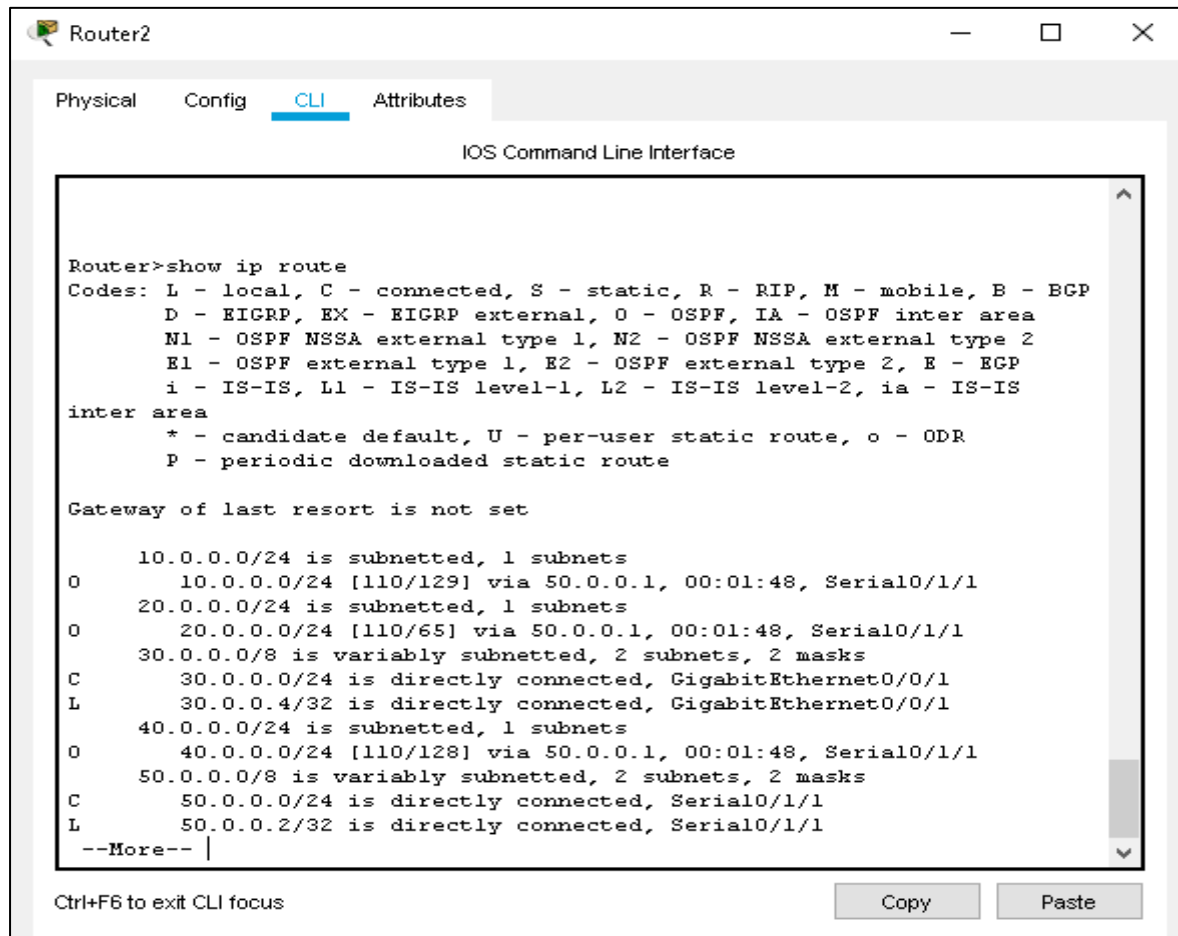
Gateway of last resort is not set

  10.0.0.0/24 is subnetted, 1 subnets
O       10.0.0.0/24 [110/65] via 40.0.0.1, 00:12:20, Serial0/1/0
C       20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
L       20.0.0.0/24 is directly connected, GigabitEthernet0/0/1
L       20.0.0.4/32 is directly connected, GigabitEthernet0/0/1
O       30.0.0.0/24 is subnetted, 1 subnets
O       30.0.0.0/24 [110/65] via 50.0.0.2, 00:03:00, Serial0/1/1
O       40.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       40.0.0.0/24 is directly connected, Serial0/1/0
L       40.0.0.2/32 is directly connected, Serial0/1/0
C       50.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       50.0.0.0/24 is directly connected, Serial0/1/1
--More--
  
```

Ctrl+F6 to exit CLI focus

Copy Paste

## ROUTER 2



The screenshot shows a window titled 'Router2' with tabs for 'Physical', 'Config', 'CLI', and 'Attributes'. The 'CLI' tab is active, displaying the 'IOS Command Line Interface'. The command 'Router>show ip route' has been entered, and the output is displayed. The output includes a legend for route codes, a message about the gateway of last resort, and a list of routes with their respective metrics and interfaces. A scroll bar is visible on the right side of the output area. At the bottom, there are buttons for 'Copy' and 'Paste', and a note 'Ctrl+F6 to exit CLI focus'.

```
Router>show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
       inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

  10.0.0.0/24 is subnetted, 1 subnets
O    10.0.0.0/24 [110/129] via 50.0.0.1, 00:01:48, Serial0/1/1
  20.0.0.0/24 is subnetted, 1 subnets
O    20.0.0.0/24 [110/65] via 50.0.0.1, 00:01:48, Serial0/1/1
  30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    30.0.0.0/24 is directly connected, GigabitEthernet0/0/1
L    30.0.0.4/32 is directly connected, GigabitEthernet0/0/1
  40.0.0.0/24 is subnetted, 1 subnets
O    40.0.0.0/24 [110/128] via 50.0.0.1, 00:01:48, Serial0/1/1
  50.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    50.0.0.0/24 is directly connected, Serial0/1/1
L    50.0.0.2/32 is directly connected, Serial0/1/1
--More-- |
```

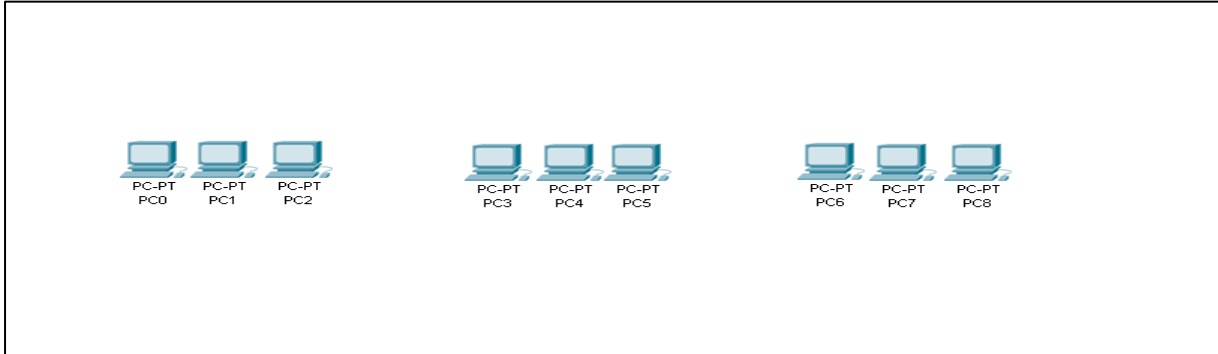
**CONCLUSION:** We have learnt to create a OSPF with three routers associated with three PC as shown above.



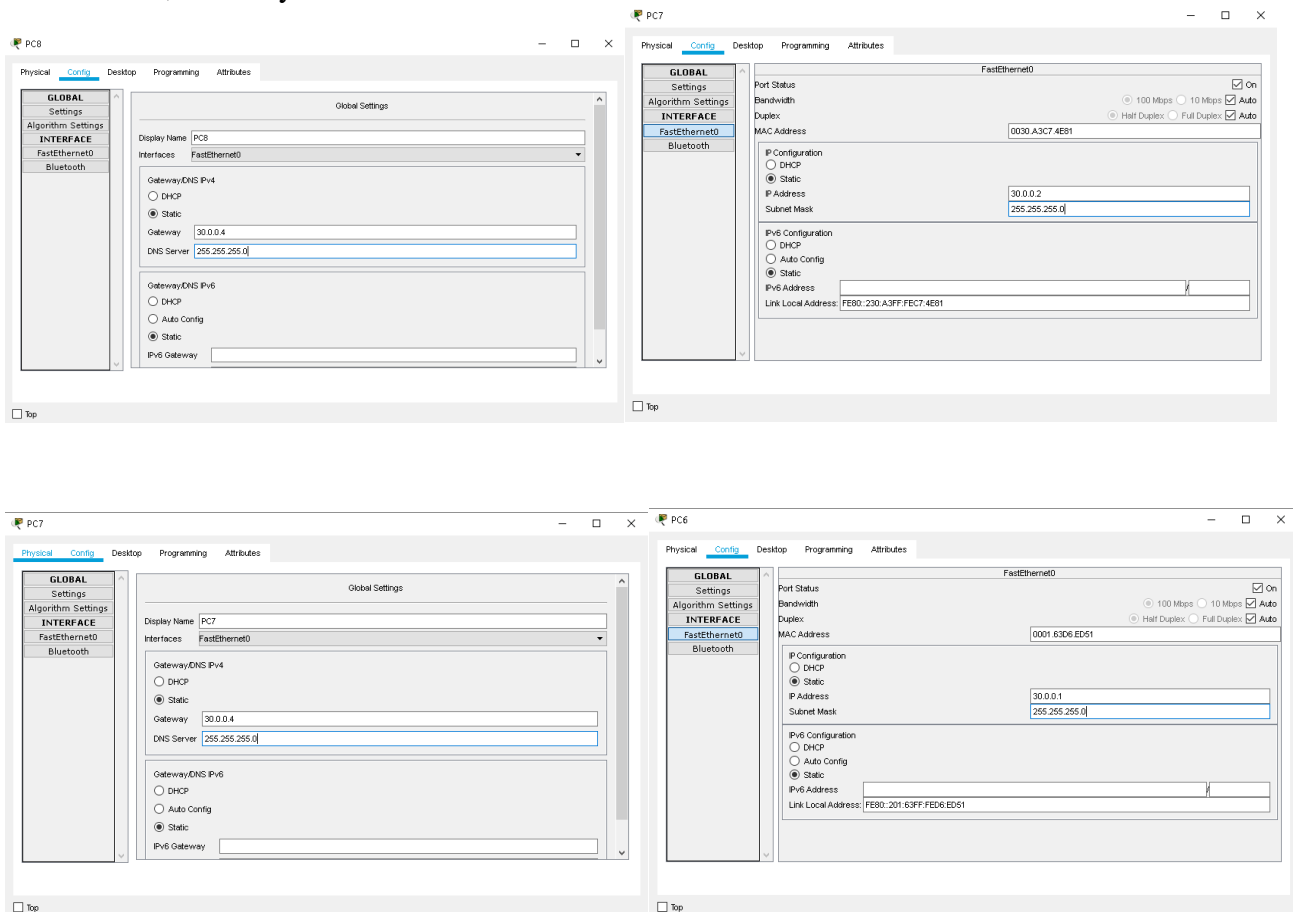
**PRACTICAL NO: 3**

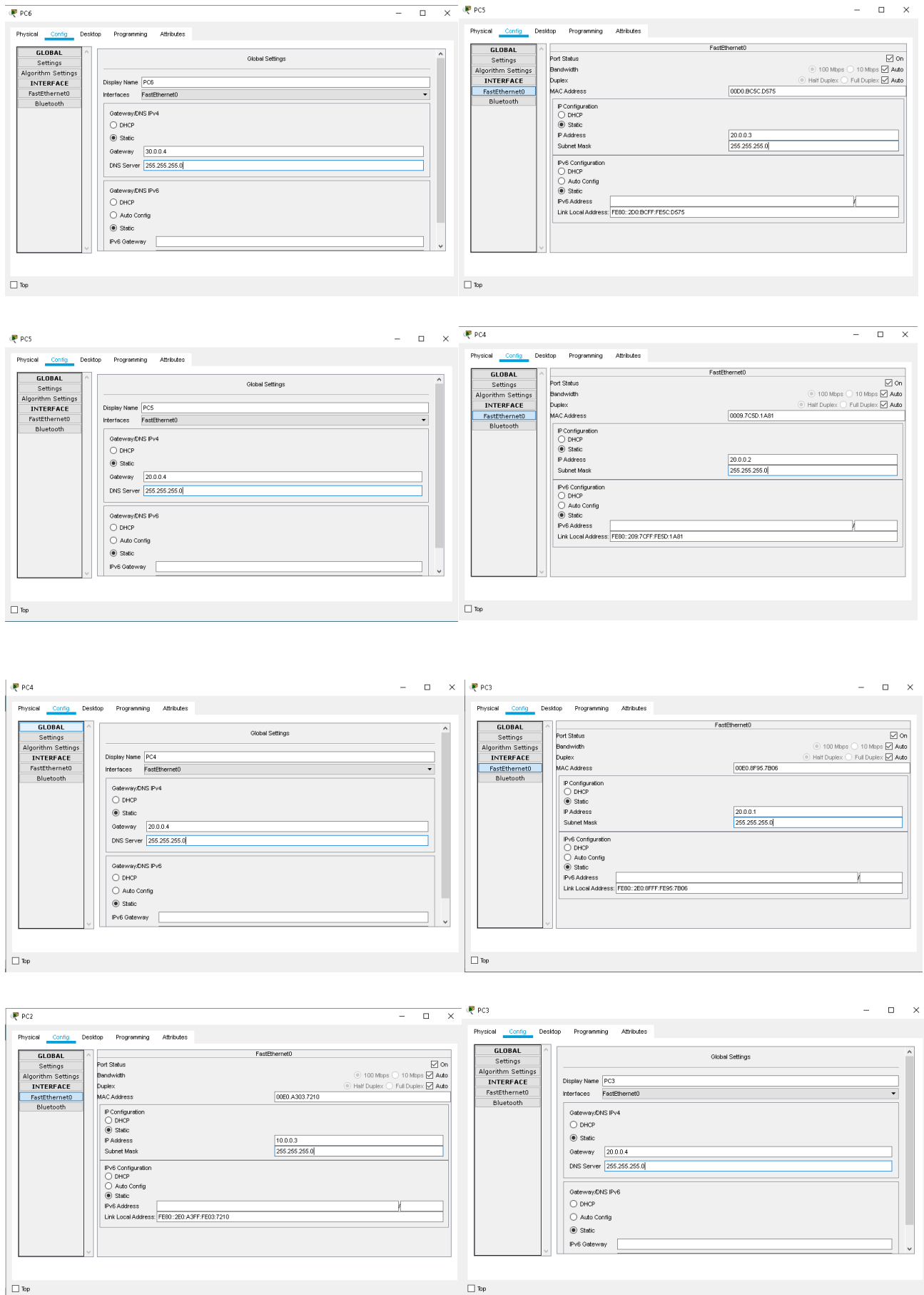
**Aim** - Create a network with three routers with BGP and each router associated network will have minimum three PC. Show connectivity.

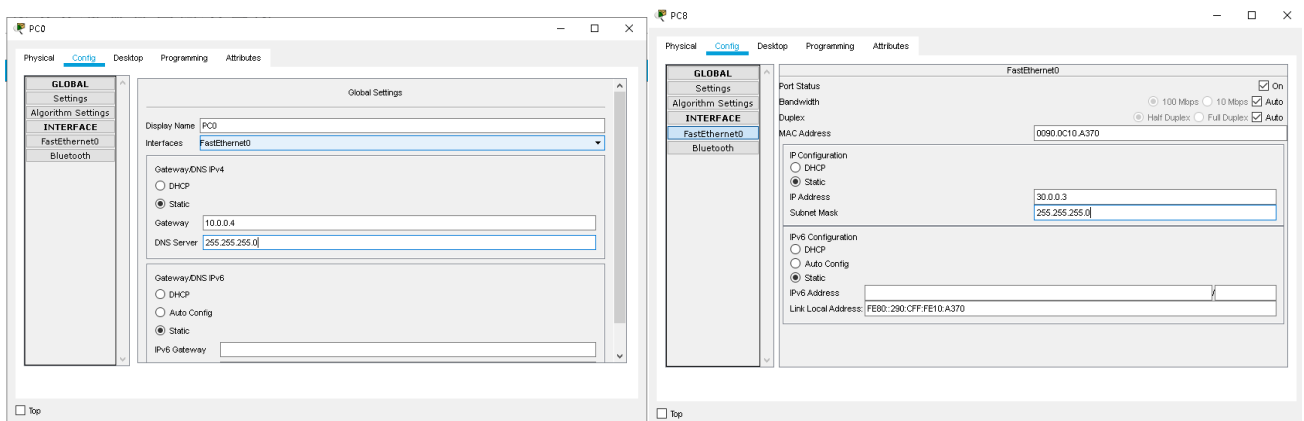
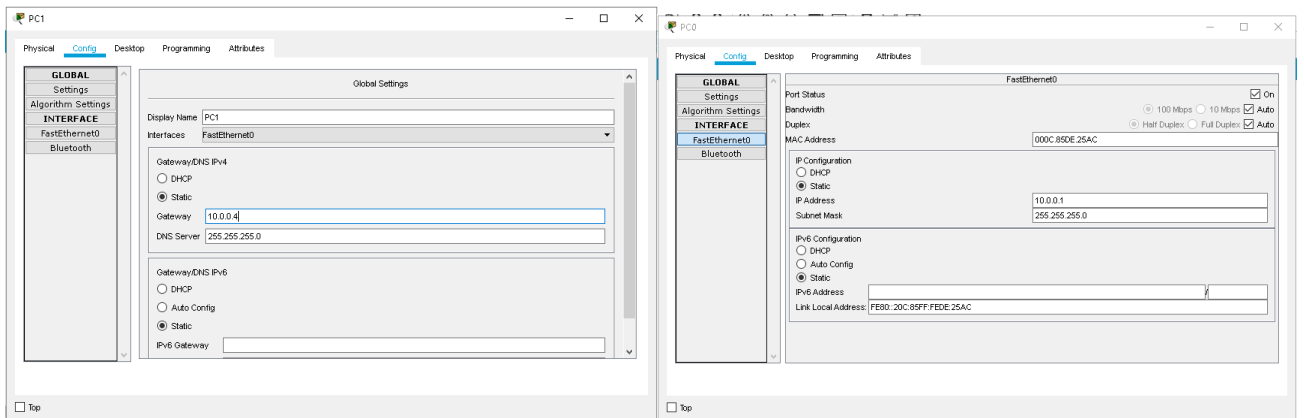
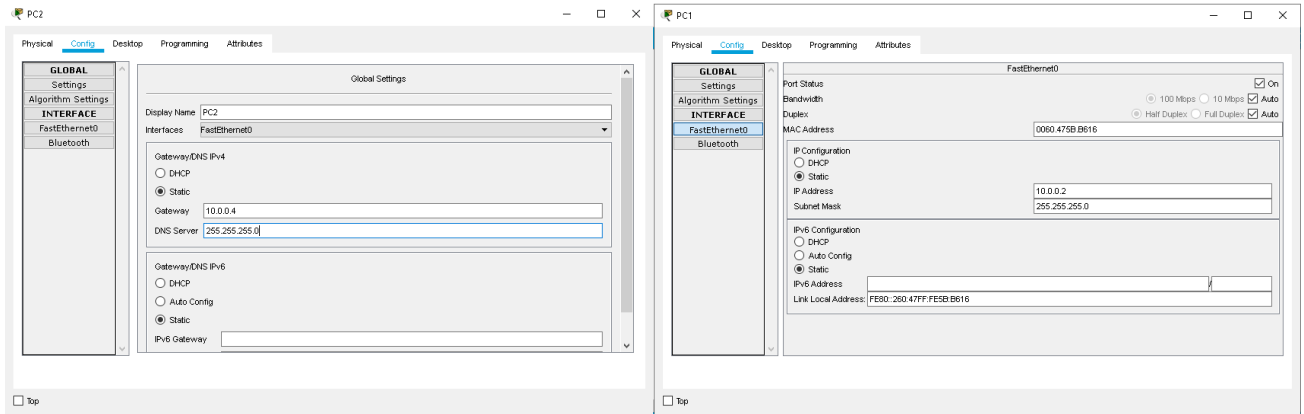
1. Align 9 end-devices as follows:



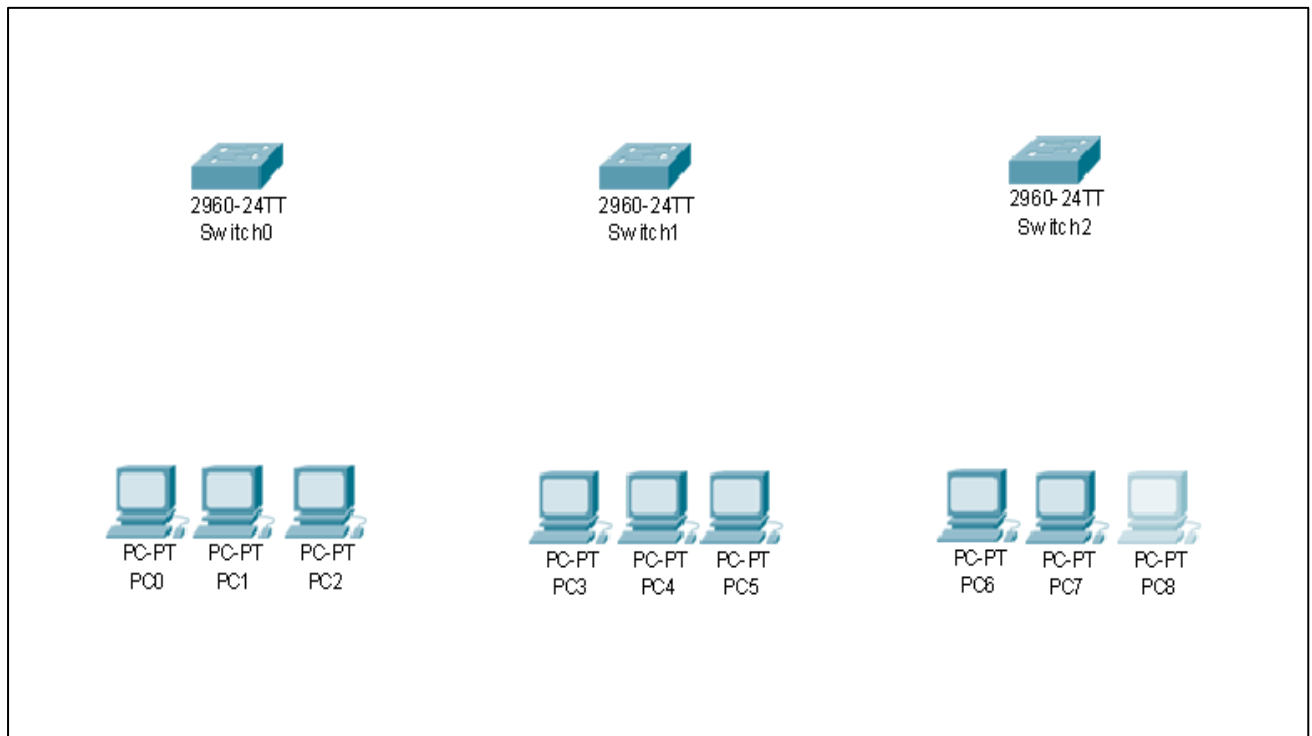
2. Set the DNS, Gateway and Fast Ethernet connections for all the PCs as follows:



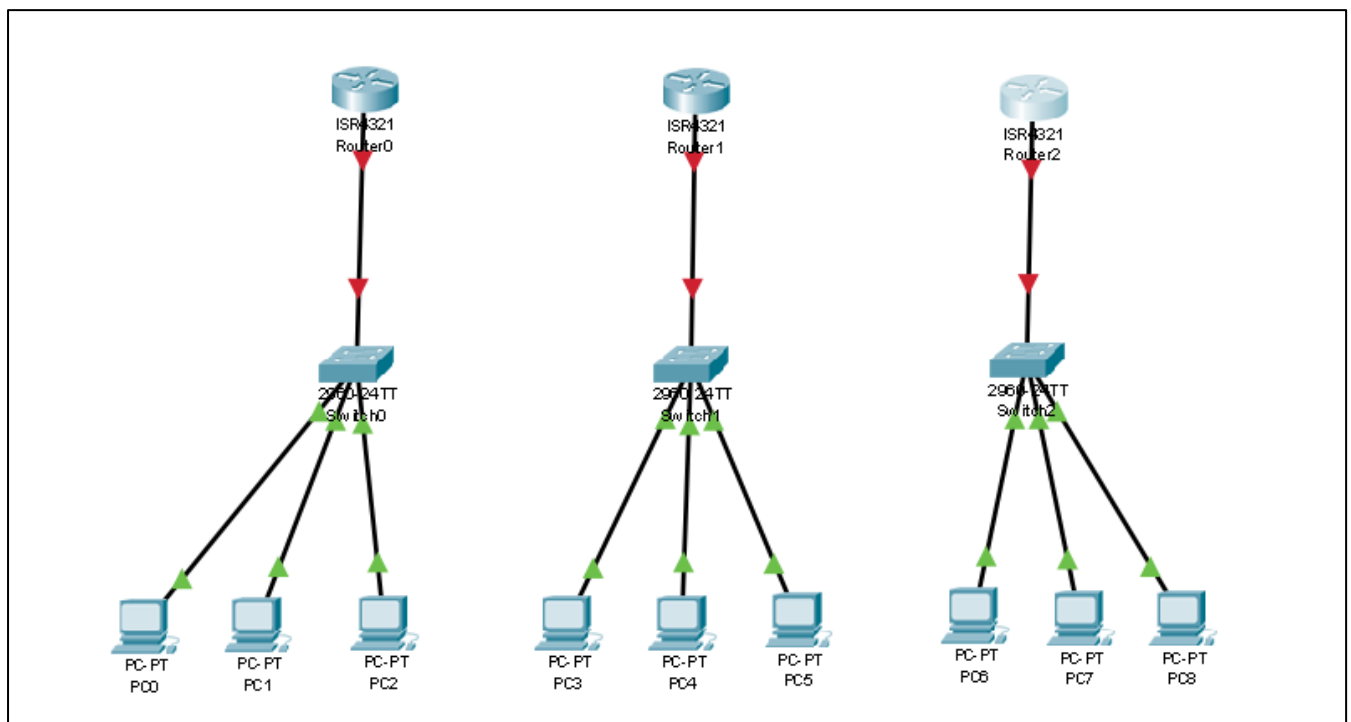




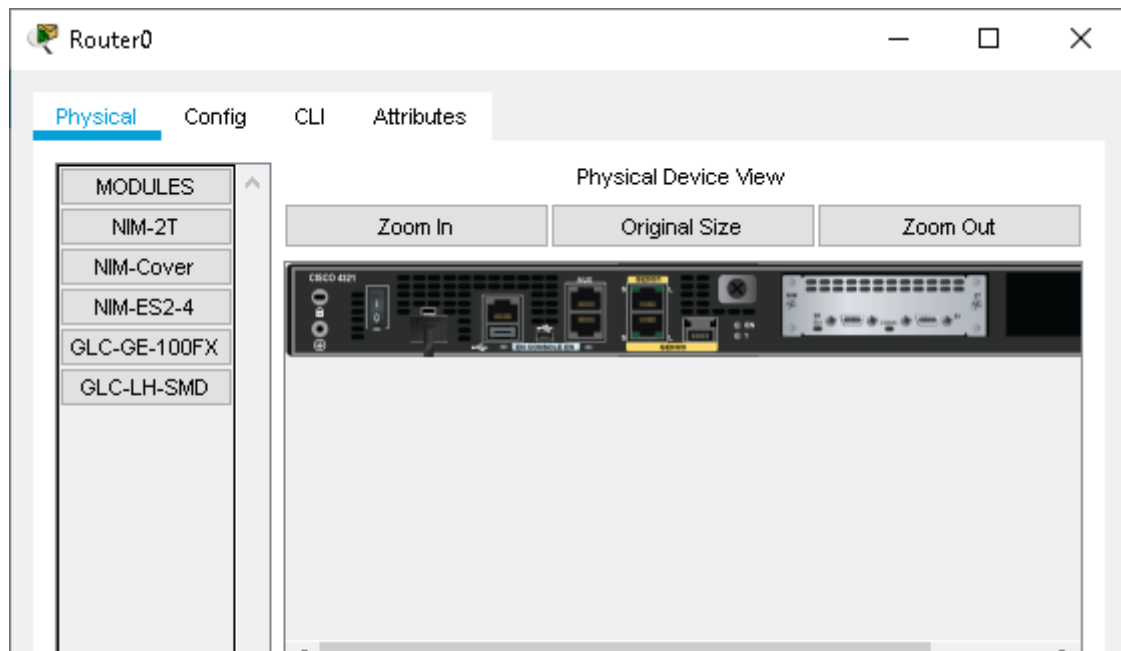
3. Add 3 Switches as follows:



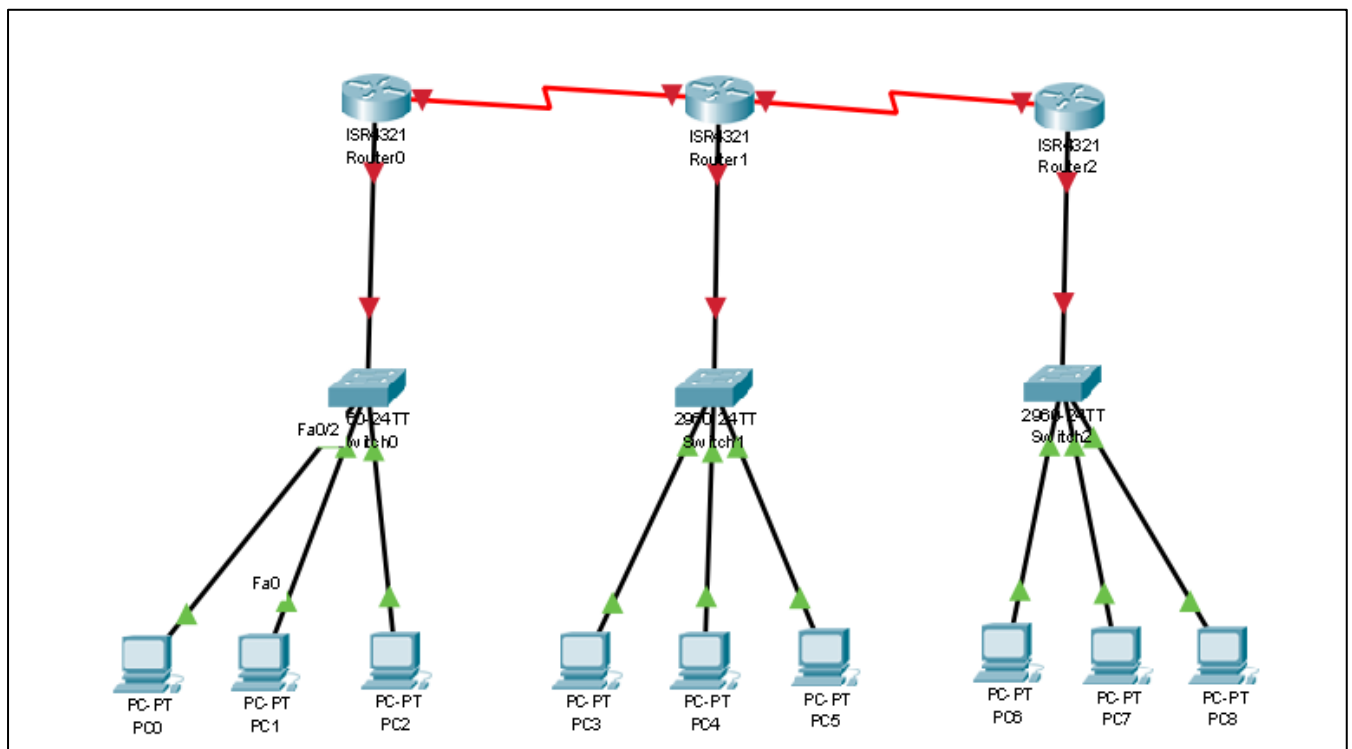
4. Add 3 Routers and connect all the components using Fast Ethernet connection as follows:



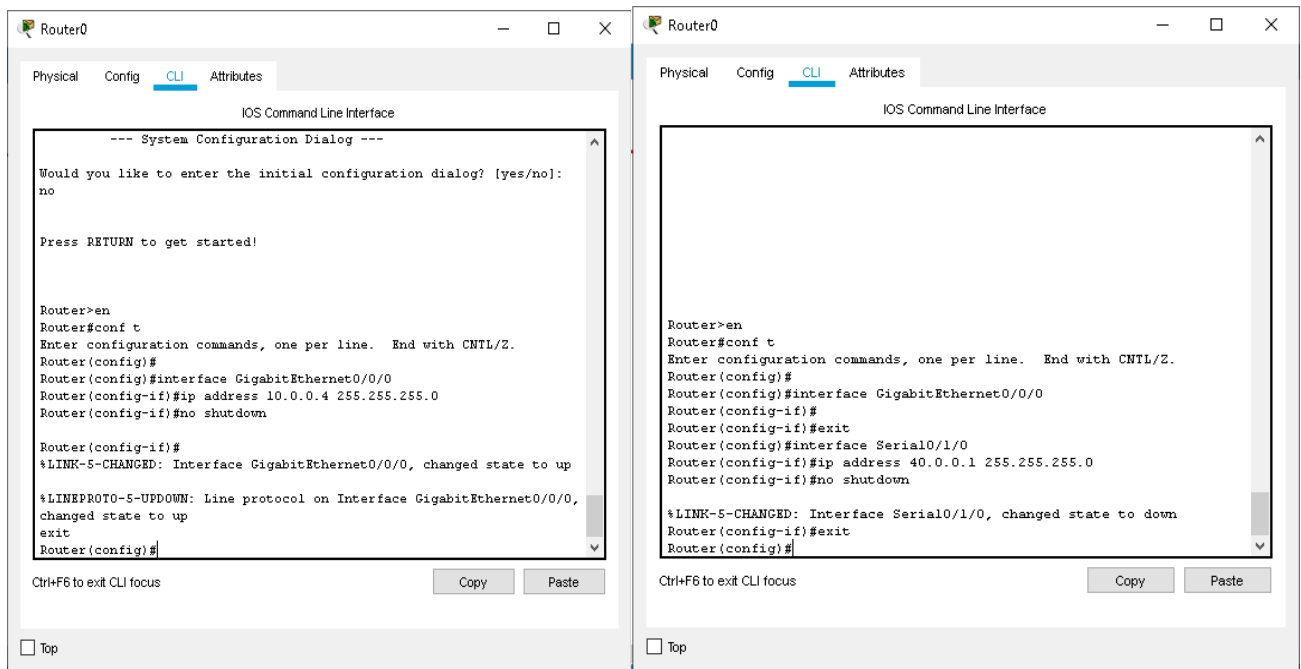
5. Power off each of the Routers and add the NIM-2T Module to all the Routers as follows:



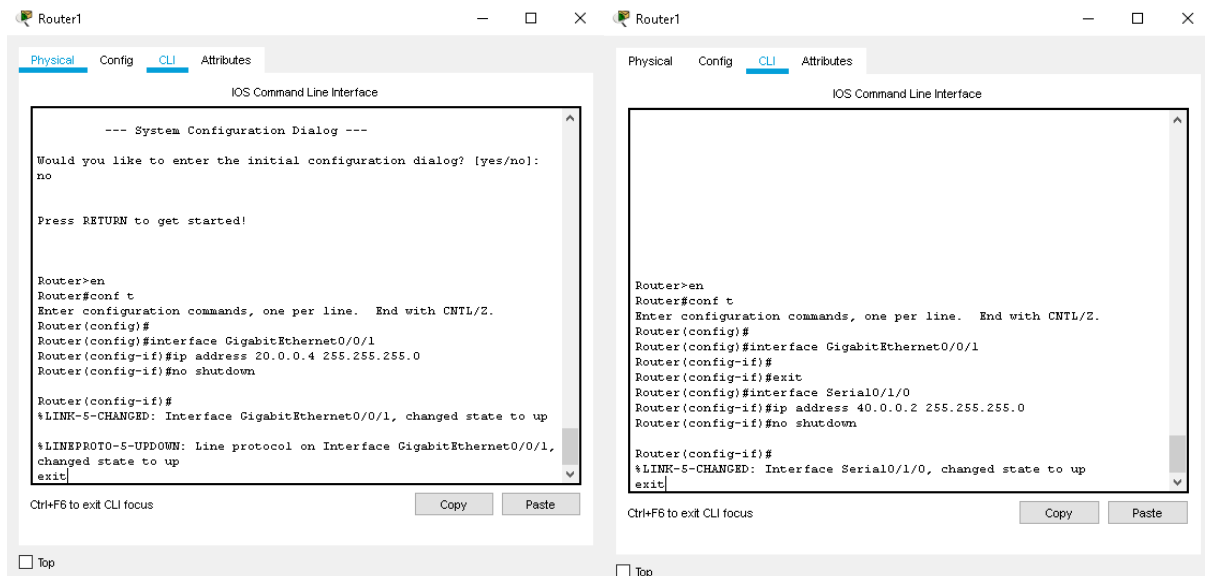
6. Connect the Routers using Serial DTE wires as shown:

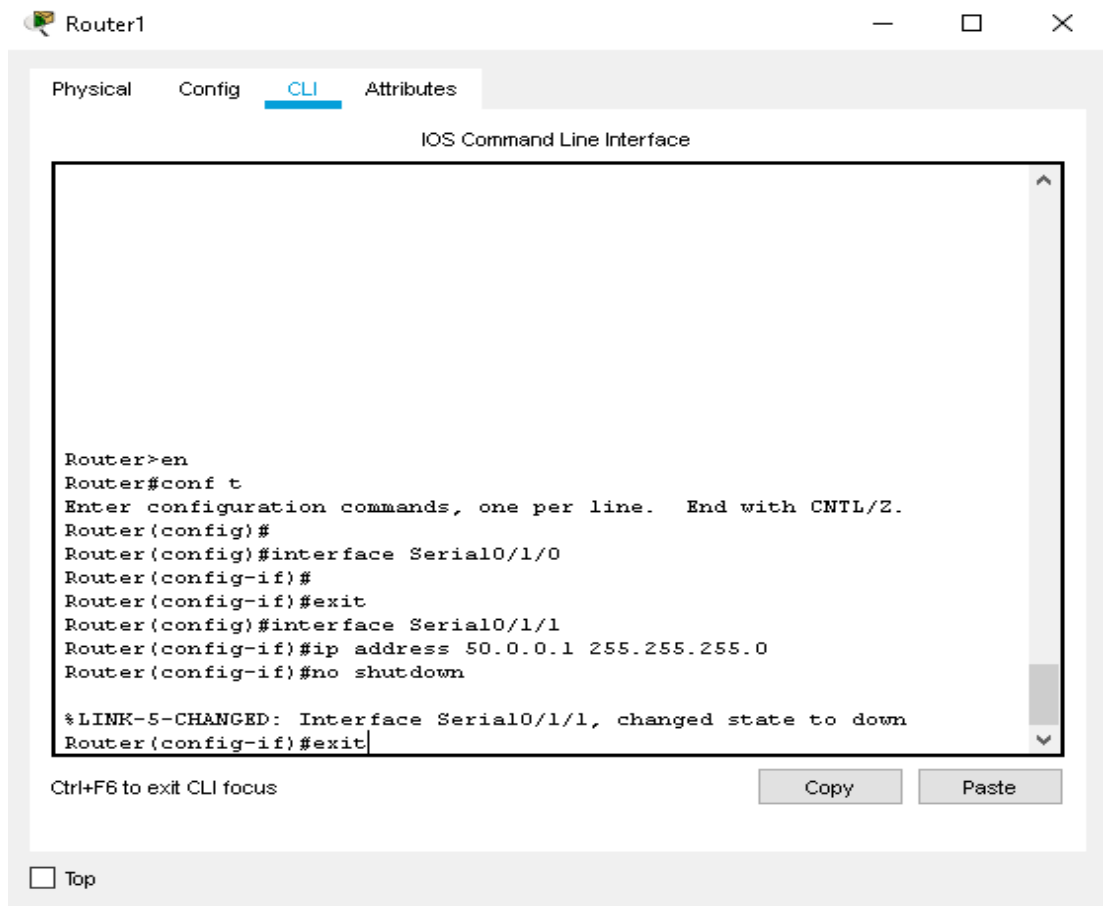


## 7. Configure Router 0 using the Command Line Interface as follows:

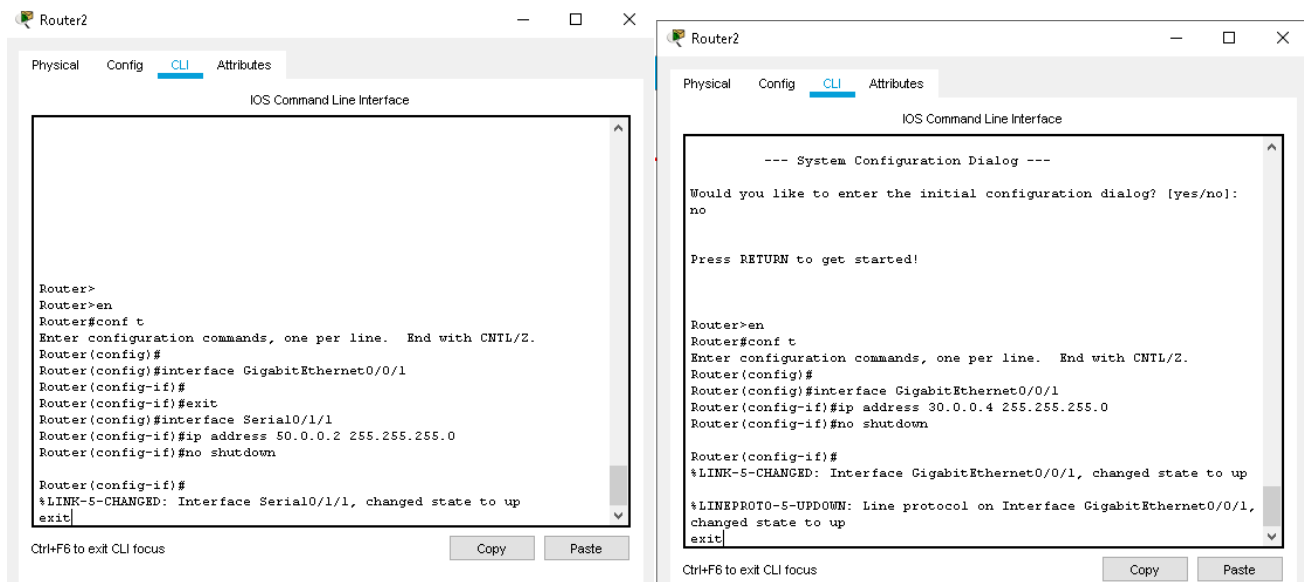


## 8. Configure Router 1 using the Command Line Interface as follows:

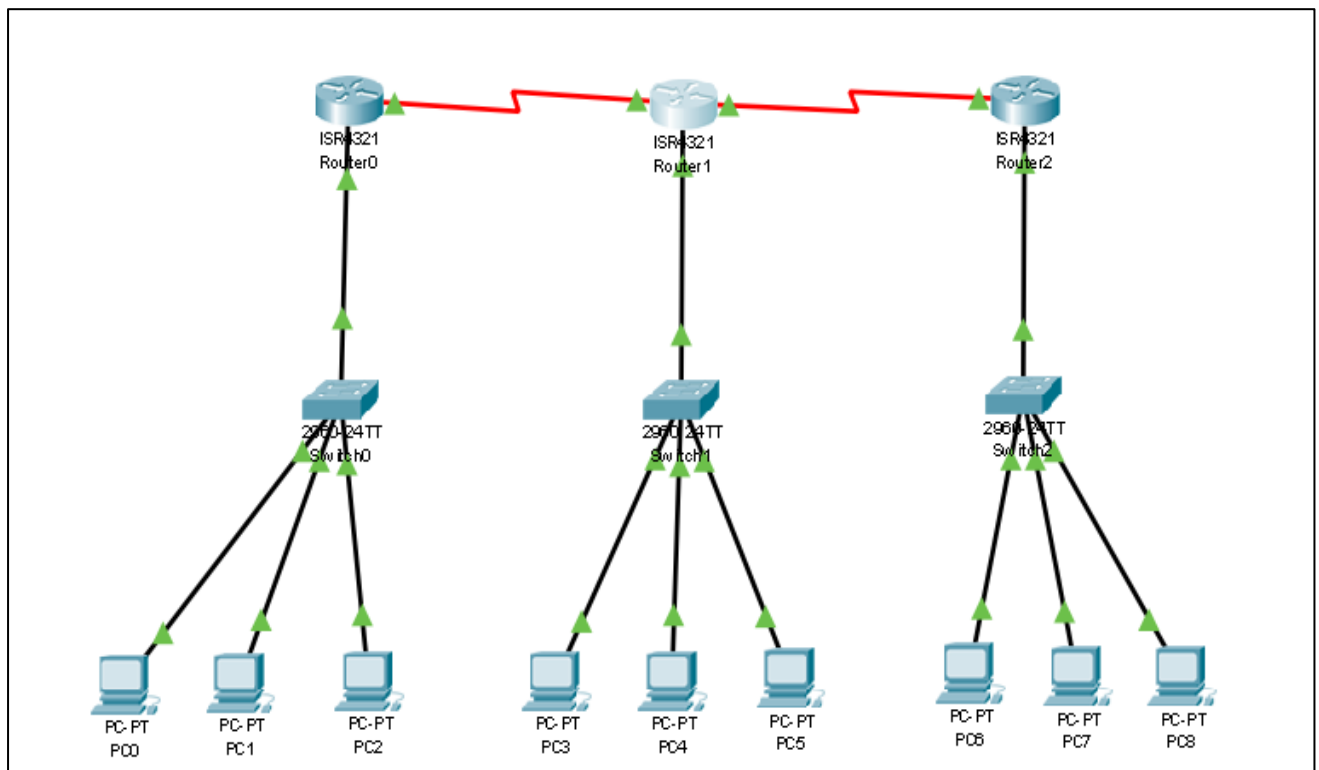




9. Configure Router 2 using the Command Line Interface as follows:



10. The Final connection will look as shown:



11. Note how intra-connection packet sending succeeds and inter-connection fails:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC0	PC1	ICMP	Dark Blue	0.000	N	0	(edit)
	Successful	PC3	PC4	ICMP	Blue	0.000	N	1	(edit)
	Successful	PC6	PC7	ICMP	Orange	0.000	N	2	(edit)

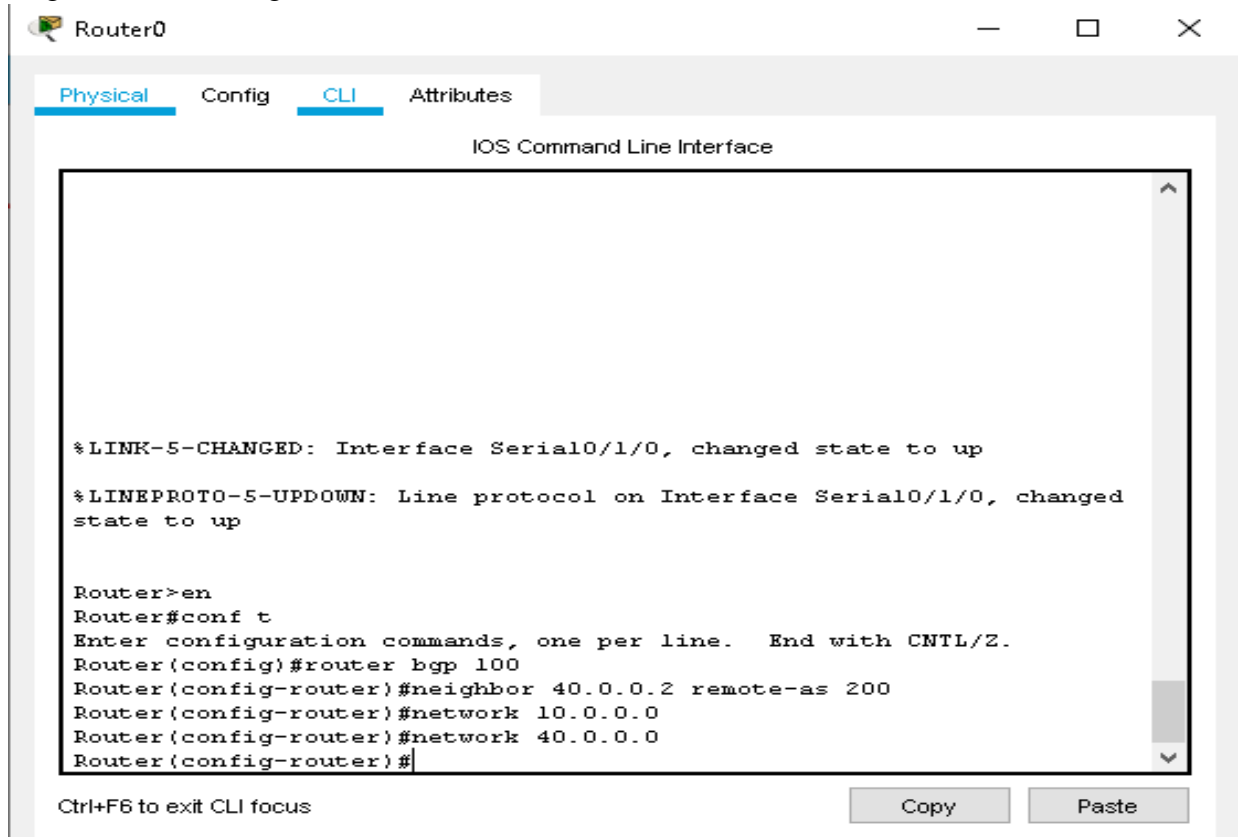
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	Router0	Router1	ICMP	Cyan	0.000	N	0	(edit)
	Successful	Router1	Router2	ICMP	Magenta	0.000	N	1	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Failed	PC0	PC3	ICMP	Blue	0.000	N	0	(edit)
	Failed	PC3	PC6	ICMP	Blue	0.000	N	1	(edit)
	Failed	PC8	PC2	ICMP	Magenta	0.000	N	2	(edit)

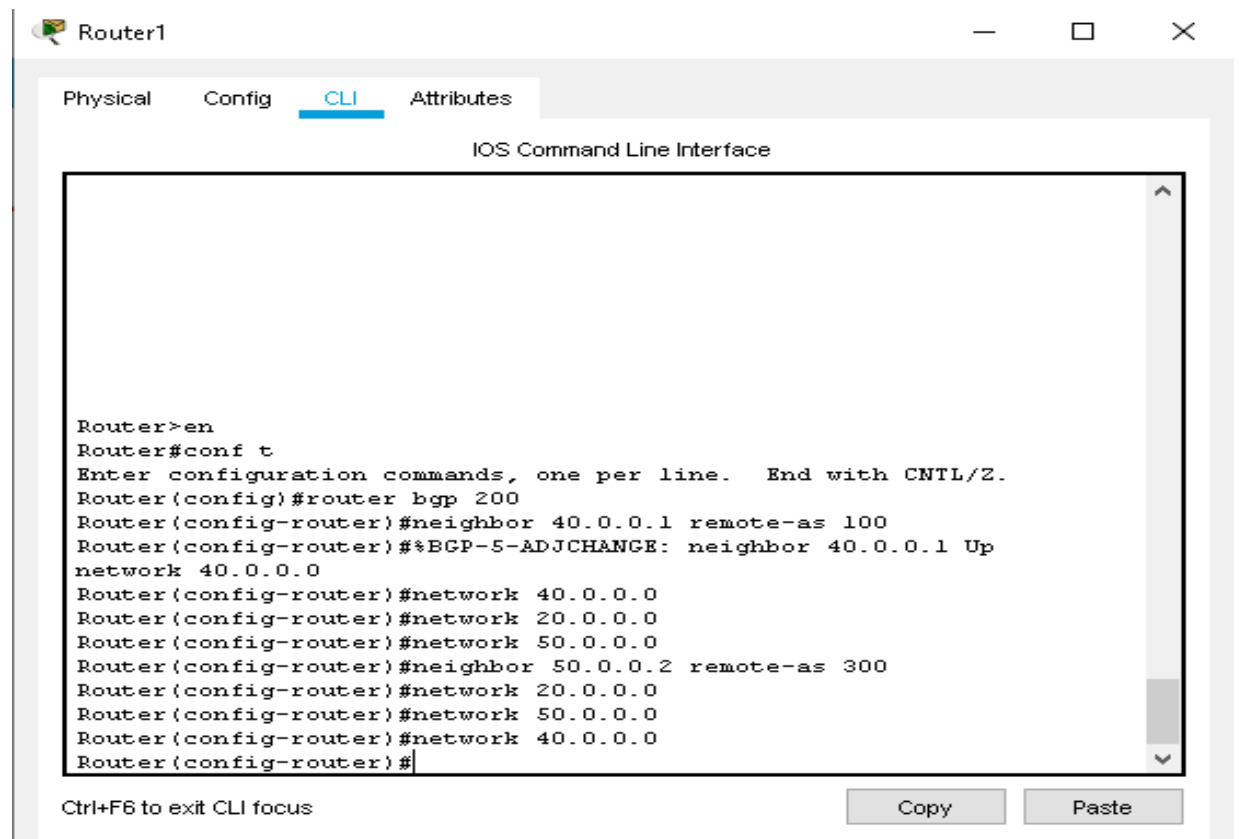
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Failed	Router0	Router2	ICMP	Green	0.000	N	0	(edit)



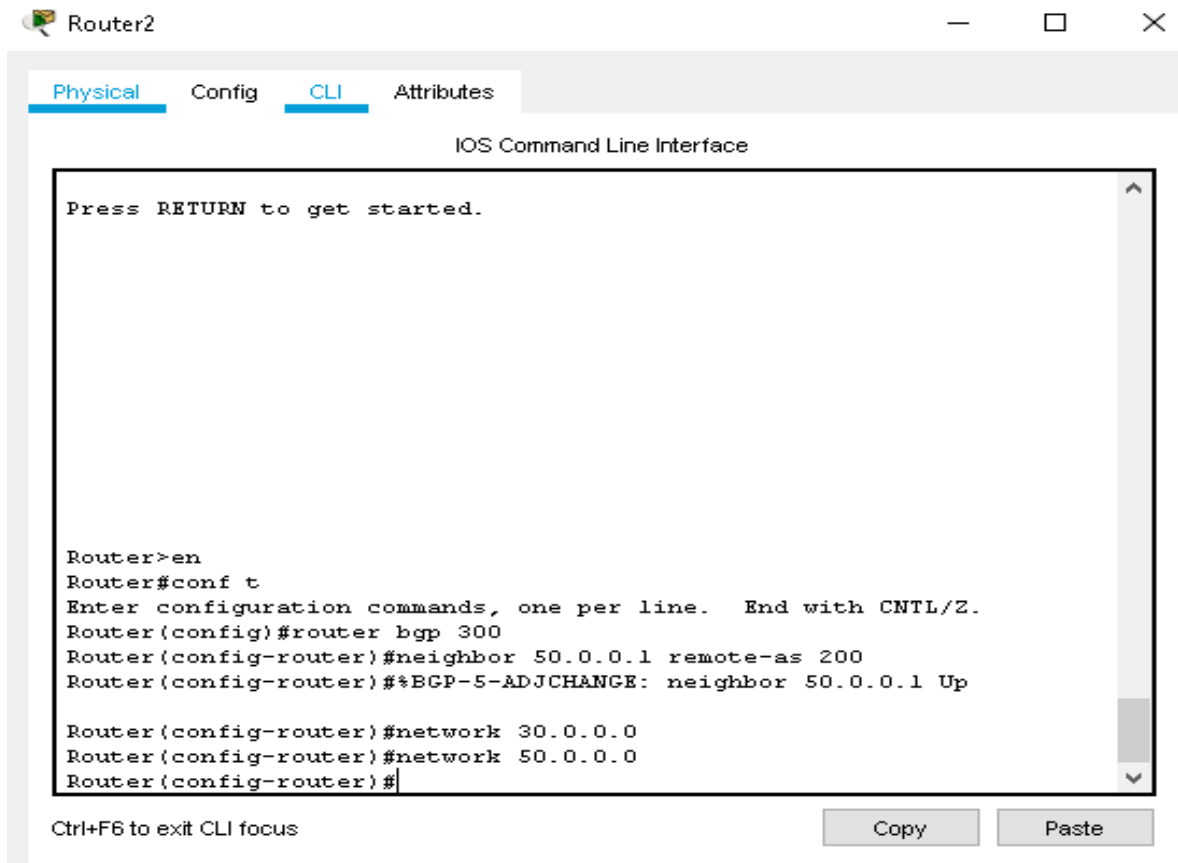
12. Configure BGP Routing in Router 0 as follows:



13. Configure BGP Routing in Router 1 as follows:



14. Configure BGP Routing in Router 2 as follows;









The screenshot shows the CLI of Router2 with the following configuration commands entered:

```







Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router bgp 300
Router(config-router)#neighbor 50.0.0.1 remote-as 200
Router(config-router)#*BGP-5-ADJCHANGE: neighbor 50.0.0.1 Up
Router(config-router)#network 30.0.0.0
Router(config-router)#network 50.0.0.0
Router(config-router)#
  
```

Below the CLI window, there are buttons for "Copy" and "Paste", and a note "Ctrl+F6 to exit CLI focus".

15. After successful BGP configuration, send packets over the inter-connected network :

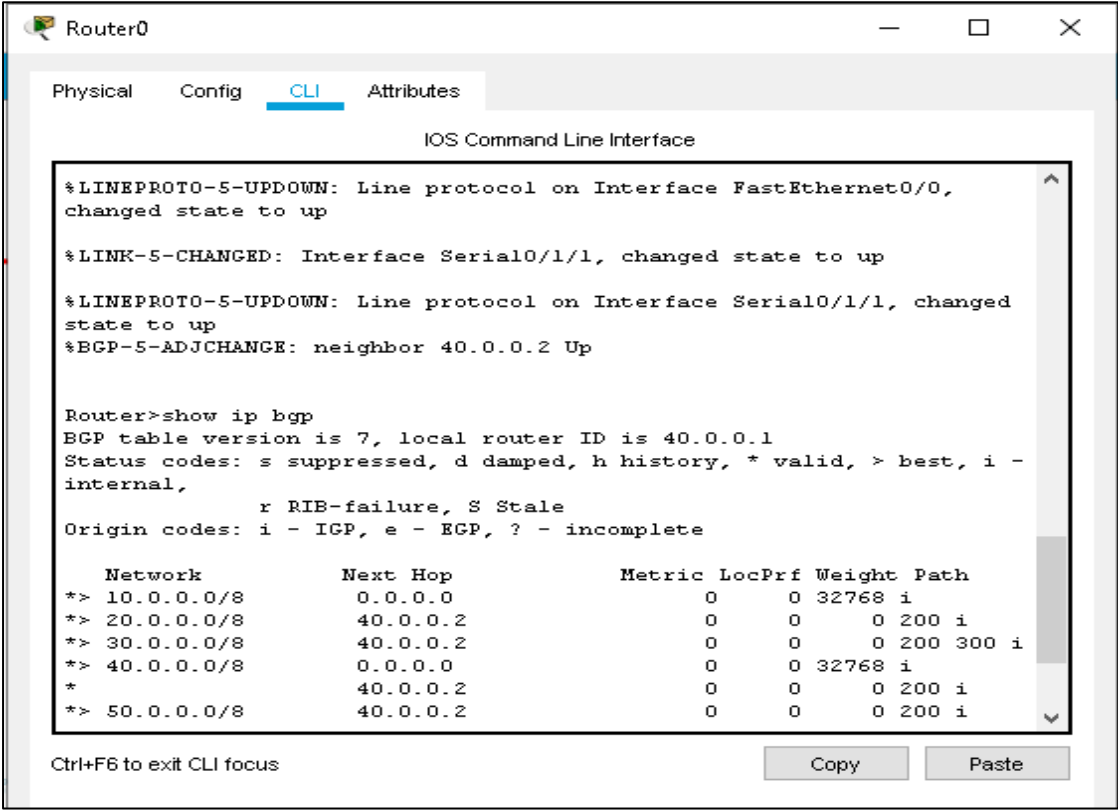
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC0	PC3	ICMP		0.000	N	0	(edit)
	Failed	PC0	PC6	ICMP		0.000	N	1	(edit)
	Successful	PC0	PC6	ICMP		0.000	N	2	(edit)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	Router0	Router2	ICMP		0.000	N	0	(edit)
	Successful	Router1	Router0	ICMP		0.000	N	1	(edit)
	Successful	Router2	Router0	ICMP		0.000	N	2	(edit)

16. Finally, in every Router's CLI, type 'show ip route' to get the connection details:

### ROUTER 0



Router0

Physical Config **CLI** Attributes

IOS Command Line Interface

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

%LINK-5-CHANGED: Interface Serial0/1/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/1, changed
state to up
%BGP-5-ADJCHANGE: neighbor 40.0.0.2 Up

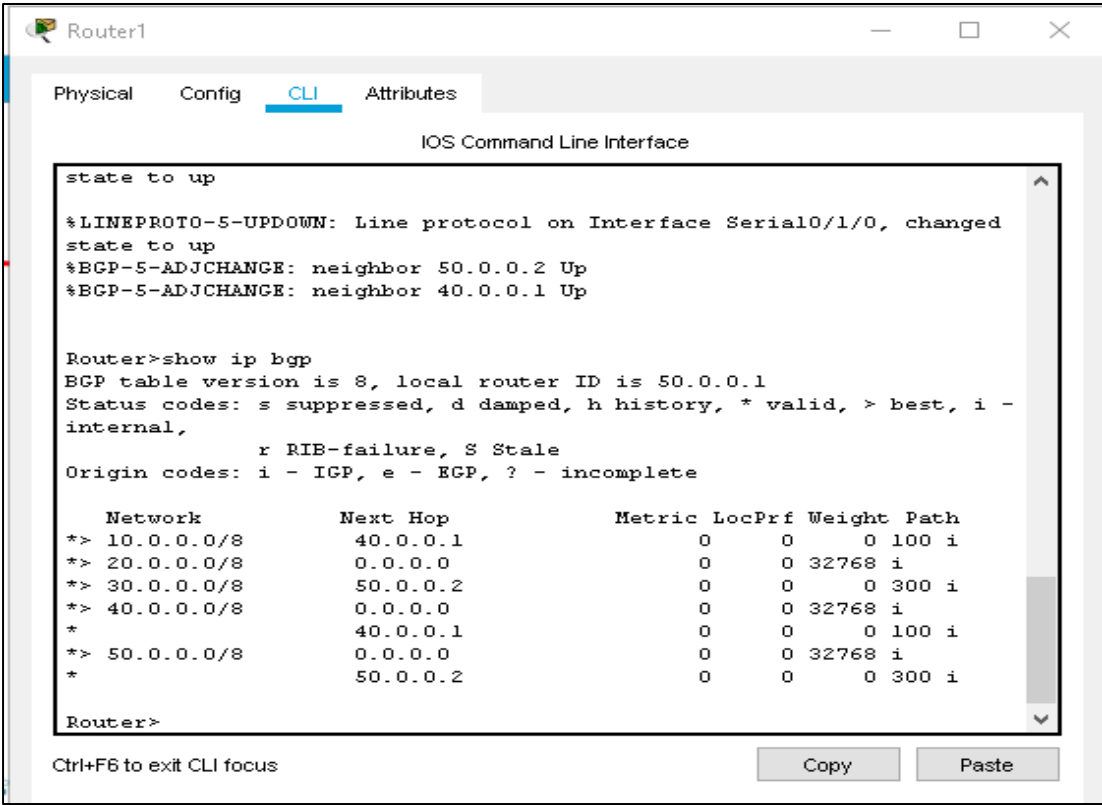
Router>show ip bgp
BGP table version is 7, local router ID is 40.0.0.1
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
               r RIB-failure, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network        Next Hop           Metric LocPrf Weight Path
*> 10.0.0.0/8      0.0.0.0                0      0 32768 i
*> 20.0.0.0/8      40.0.0.2                0      0    200 i
*> 30.0.0.0/8      40.0.0.2                0      0    200 300 i
*> 40.0.0.0/8      0.0.0.0                0      0 32768 i
*                  40.0.0.2                0      0    200 i
*> 50.0.0.0/8      40.0.0.2                0      0    200 i
```

Ctrl+F6 to exit CLI focus

Copy Paste

### ROUTER 1



Router1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed
state to up
%BGP-5-ADJCHANGE: neighbor 50.0.0.2 Up
%BGP-5-ADJCHANGE: neighbor 40.0.0.1 Up

Router>show ip bgp
BGP table version is 8, local router ID is 50.0.0.1
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
               r RIB-failure, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete

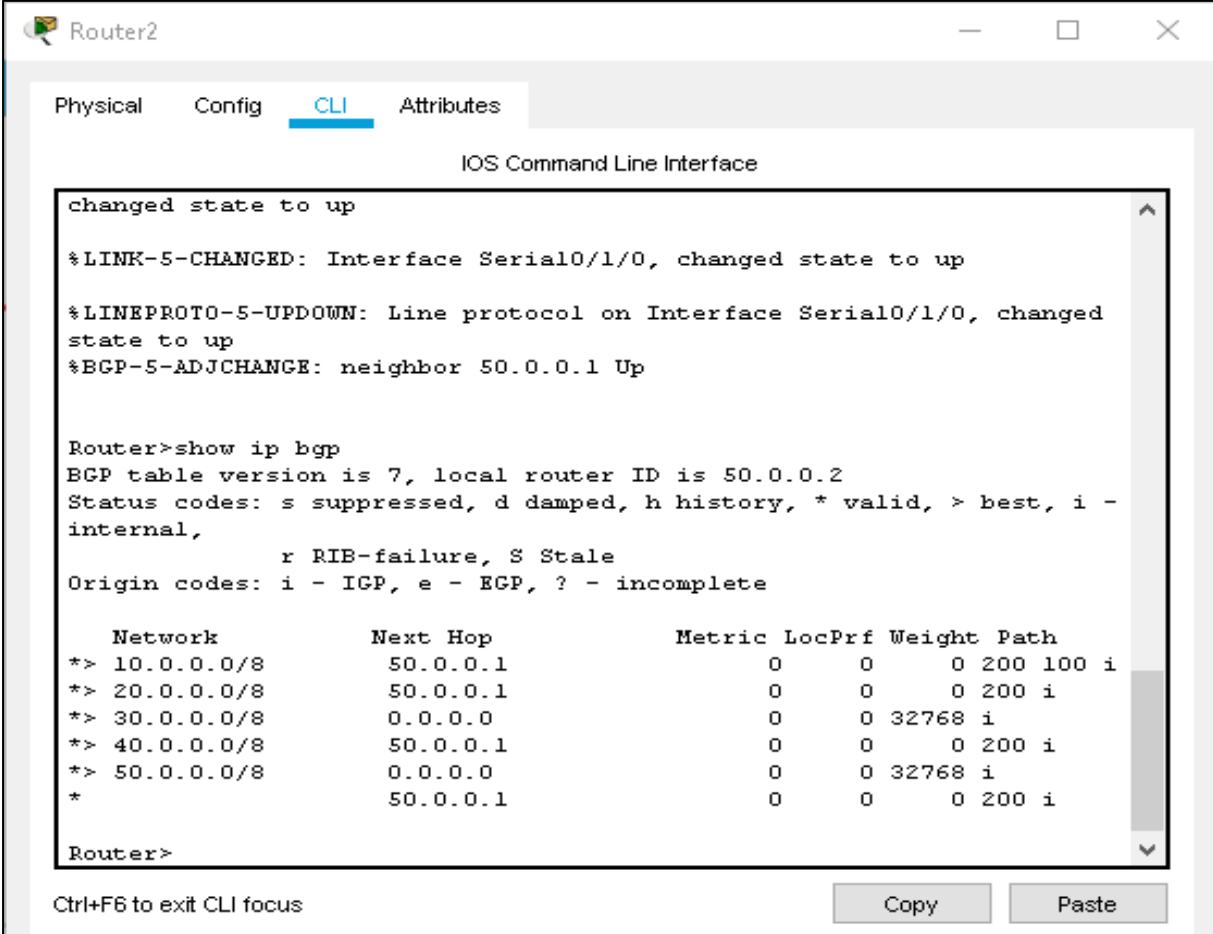
   Network        Next Hop           Metric LocPrf Weight Path
*> 10.0.0.0/8      40.0.0.1                0      0    100 i
*> 20.0.0.0/8      0.0.0.0                0      0 32768 i
*> 30.0.0.0/8      50.0.0.2                0      0    300 i
*> 40.0.0.0/8      0.0.0.0                0      0 32768 i
*                  40.0.0.1                0      0    100 i
*> 50.0.0.0/8      0.0.0.0                0      0 32768 i
*                  50.0.0.2                0      0    300 i

Router>
```

Ctrl+F6 to exit CLI focus

Copy Paste

## ROUTER 2



The screenshot shows the CLI of Router2. The 'CLI' tab is selected. The interface displays the following text:

```

changed state to up

%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
%BGP-5-ADJCHANGE: neighbor 50.0.0.1 Up

Router>show ip bgp
BGP table version is 7, local router ID is 50.0.0.2
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
               r RIB-failure, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network                Next Hop           Metric LocPrf Weight Path
*> 10.0.0.0/8             50.0.0.1              0      0      0 200 100 i
*> 20.0.0.0/8             50.0.0.1              0      0      0 200 i
*> 30.0.0.0/8             0.0.0.0               0      0 32768 i
*> 40.0.0.0/8             50.0.0.1              0      0      0 200 i
*> 50.0.0.0/8             0.0.0.0               0      0 32768 i
*                          50.0.0.1              0      0      0 200 i

Router>
  
```

At the bottom of the window, there is a status bar with the text "Ctrl+F6 to exit CLI focus" and two buttons: "Copy" and "Paste".

**CONCLUSION:** We have learnt to create a network with BGP with three routers as shown above.