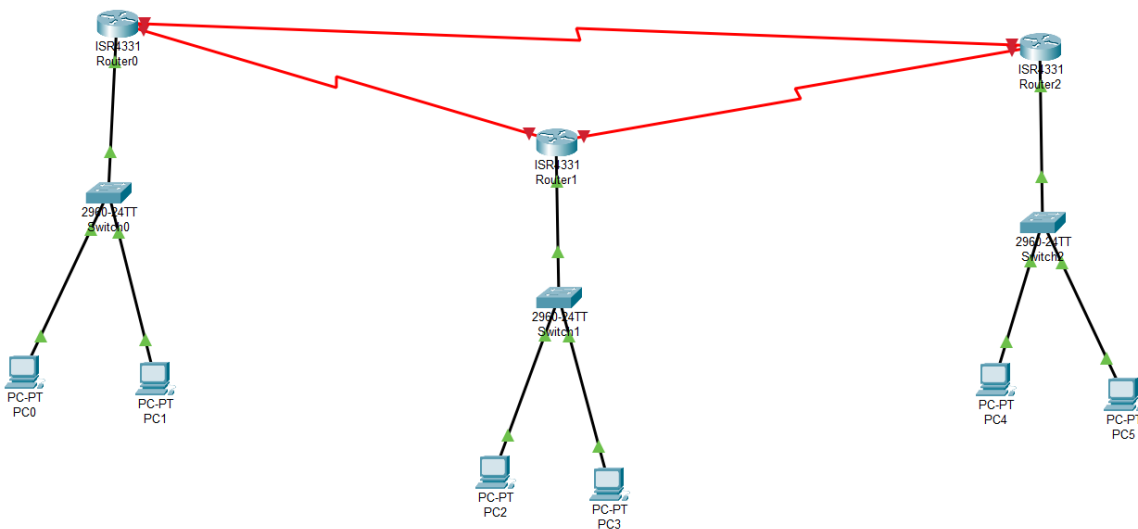
 <b>Marwadi University</b> Marwadi Chandarana Group	<b>Marwadi University</b> <b>Faculty of Engineering and Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject:</b> Computer Networks (01CT0503)	<b>Aim:</b> Perform dynamic routing protocol (RIP) and analyze the results.	
<b>Experiment No:</b> 6	<b>Date:</b>	<b>Enrolment No:</b> 92301733041

## Aim:

### Step 1: make physical connection of switch, and pc using straight copper cable



### Step 2: assign the ip and configure the router and assign the ip to ports of router

PC1

Physical Config **Desktop** Programming Attributes

**IP Configuration** [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 10.0.0.3

Subnet Mask: 255.0.0.0

Default Gateway: 10.0.0.1

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::203:E4FF:FE3C:E3EC

Default Gateway:

DNS Server:


802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

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```

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int g0/0/0
Router(config-if)#ip add 10.0.0.1
% Incomplete command.
Router(config-if)#ip add 10.0.0.1 255.0.0.0
Router(config-if)#int s0/1/0
Router(config-if)#ip add 20.0.0.1
% Incomplete command.
Router(config-if)#ip add 20.0.0.1 255.0.0.0
Router(config-if)#int s0/1/1
Router(config-if)#ip add 40.0.0.1 255.0.0.0
Router(config-if)#exit
Router(config)#int g0/0/0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

Router(config-if)#int s0/1/0
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to down
Router(config-if)#s0/1/1
^
% Invalid input detected at '^' marker.

Router(config-if)#no shut
Router(config-if)#int s0/1/1
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/1/1, changed state to down
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

```

**Step 3 : configure routing using RIP protocol (router info protocol) and inform the router about all those network which are directly connected**

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/1, changed state to up
```


```

Router(config-if)#
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#no log
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#

```

Using command router rip  
network "ip address"

**Step 4 : use command show ip route**

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```

Router>
Router>en
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    10.0.0.0/8 is directly connected, GigabitEthernet0/0/0
L    10.0.0.1/32 is directly connected, GigabitEthernet0/0/0
R    11.0.0.0/8 [120/1] via 20.0.0.2, 00:00:17, Serial0/1/0
R    12.0.0.0/8 [120/1] via 40.0.0.2, 00:00:27, Serial0/1/1
 20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    20.0.0.0/8 is directly connected, Serial0/1/0
L    20.0.0.1/32 is directly connected, Serial0/1/0
R    30.0.0.0/8 [120/1] via 20.0.0.2, 00:00:17, Serial0/1/0
      [120/1] via 40.0.0.2, 00:00:27, Serial0/1/1
 40.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    40.0.0.0/8 is directly connected, Serial0/1/1
--More--

```


Copy

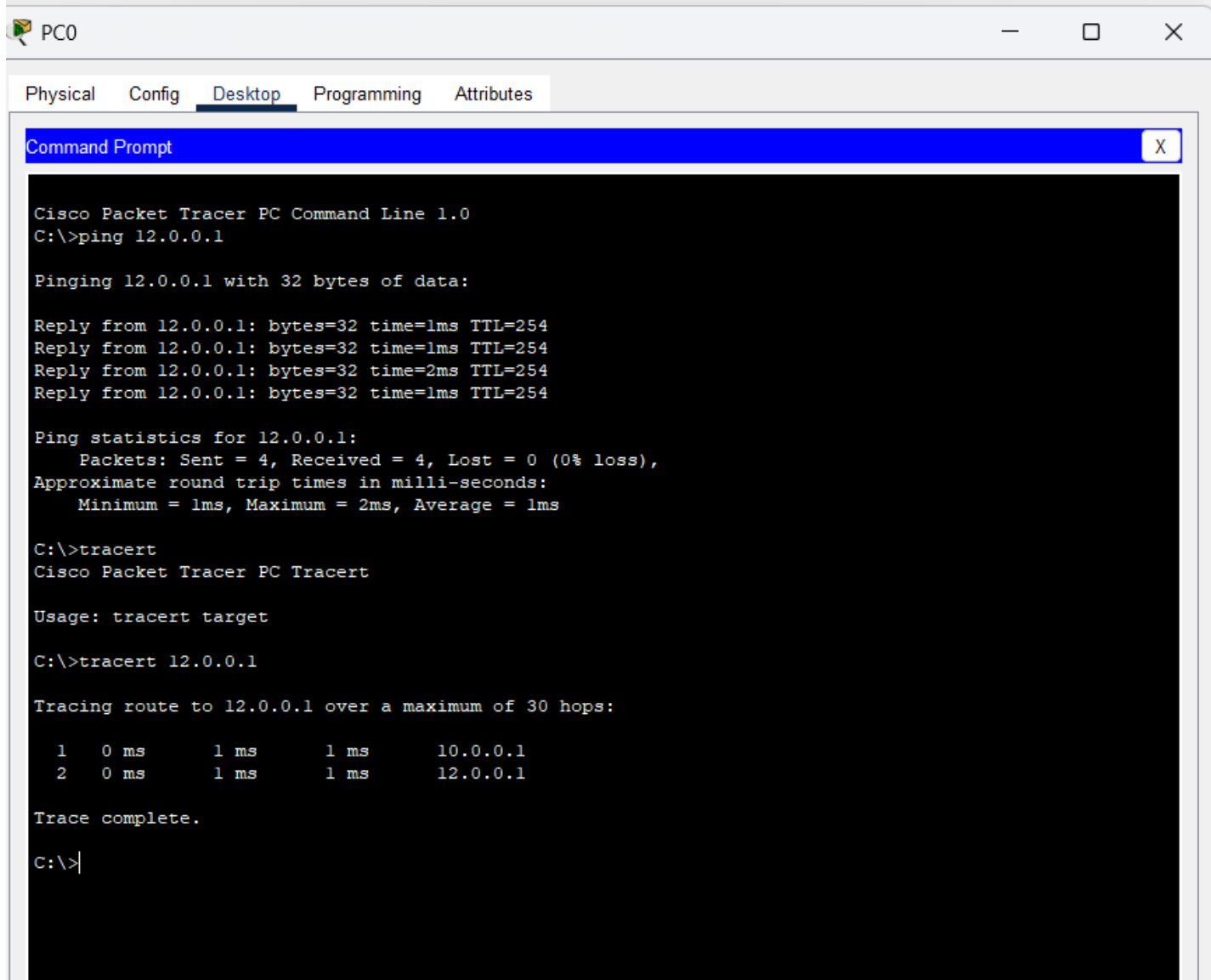
Paste

Here it will show the configuration how the ports are configured and how they are connected

#### Step 6 : check the connection between pcs

using ping command and tracet(shows the path which path it will take to reach to destination (shortest))

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The screenshot shows a PC 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 output of a ping and traceroute command in Cisco Packet Tracer.

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 12.0.0.1

Pinging 12.0.0.1 with 32 bytes of data:

Reply from 12.0.0.1: bytes=32 time=1ms TTL=254
Reply from 12.0.0.1: bytes=32 time=1ms TTL=254
Reply from 12.0.0.1: bytes=32 time=2ms TTL=254
Reply from 12.0.0.1: bytes=32 time=1ms TTL=254

Ping statistics for 12.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>tracert
Cisco Packet Tracer PC Tracert

Usage: tracert target

C:\>tracert 12.0.0.1


Tracing route to 12.0.0.1 over a maximum of 30 hops:

  0  0 ms    1 ms    1 ms    10.0.0.1
  1  0 ms    1 ms    1 ms    12.0.0.1

Trace complete.

C:\>
  
```

Step 7 : down one of the port and recheck the route

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```

C:\>ping 12.0.0.1

Pinging 12.0.0.1 with 32 bytes of data:

Reply from 12.0.0.1: bytes=32 time=31ms TTL=253
Reply from 12.0.0.1: bytes=32 time=2ms TTL=253
Reply from 12.0.0.1: bytes=32 time=31ms TTL=253
Reply from 12.0.0.1: bytes=32 time=2ms TTL=253

Ping statistics for 12.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 31ms, Average = 16ms

C:\>tracert 12.0.0.1

Tracing route to 12.0.0.1 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    10.0.0.1
  1  1 ms    1 ms    0 ms    20.0.0.2
  2  16 ms   1 ms    0 ms    12.0.0.1

Trace complete.

C:\>

```

So now it took another available shortest route .

**Conclusion:** In this experiment , I got to know about dynamic routing in which I learnt about RIP protocol (route information protocol ) here we have to make router informed about those all networks which are connected directly to that router using router rip and network “ip add” commands . and then “show ip route ” it shows routing connection and tracert uses to show the route which follows to take the package from receiver to destination .`