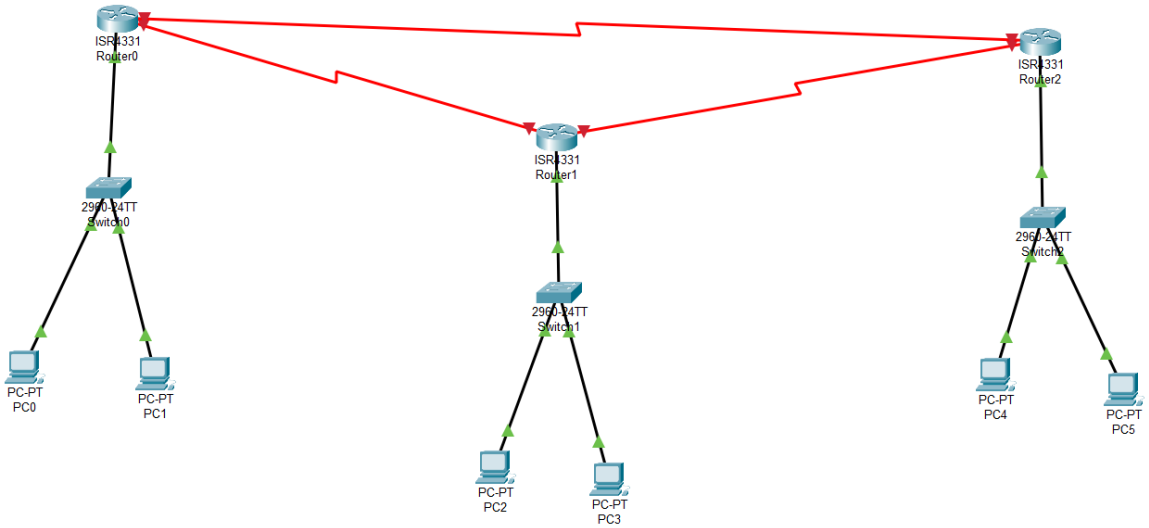
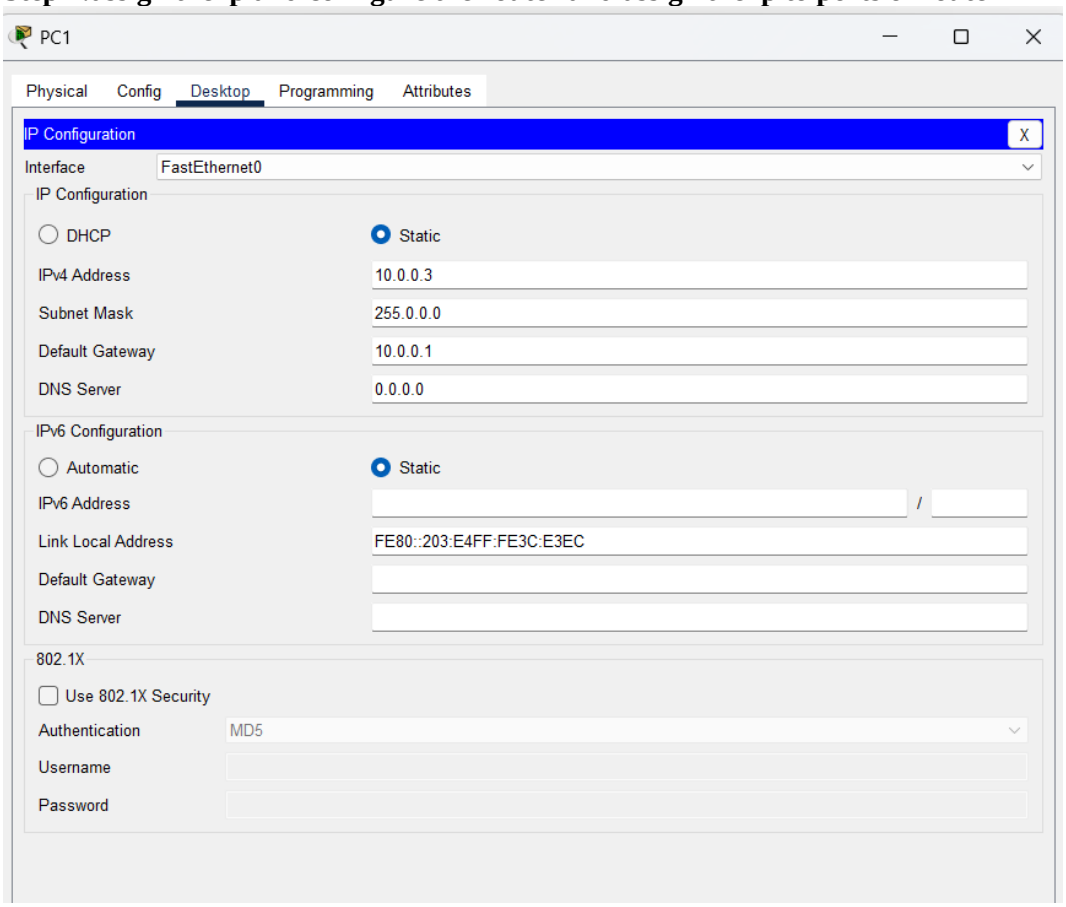
Marwadi University Marwadi Chandarana Group	**Marwadi University** **Faculty of Engineering and Technology** **Department of Information and Communication Technology**	
Subject: Computer Networks (01CT0503)	**Aim:** Perform dynamic routing protocol (RIP) and analyze the results.	
Experiment No: 6	**Date:**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



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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)#noter
Router(config-router)#ne
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 tracert(shows the path which path it will take to reach to destination (shortest))

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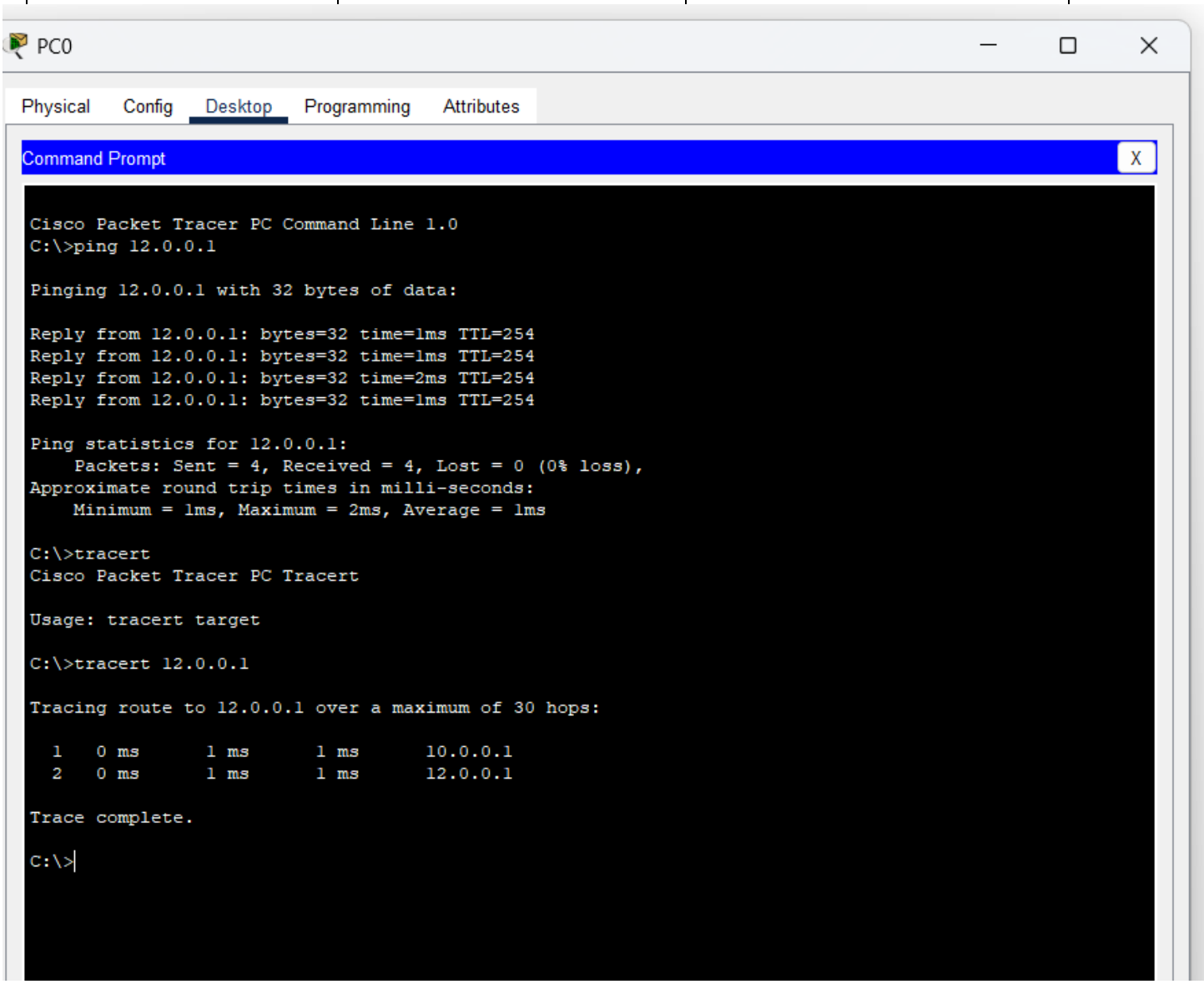

Step 7 : down one of the port and recheck the route

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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:

  1    0 ms      0 ms      0 ms      10.0.0.1
  2    1 ms      1 ms      0 ms      20.0.0.2
  3    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 .`