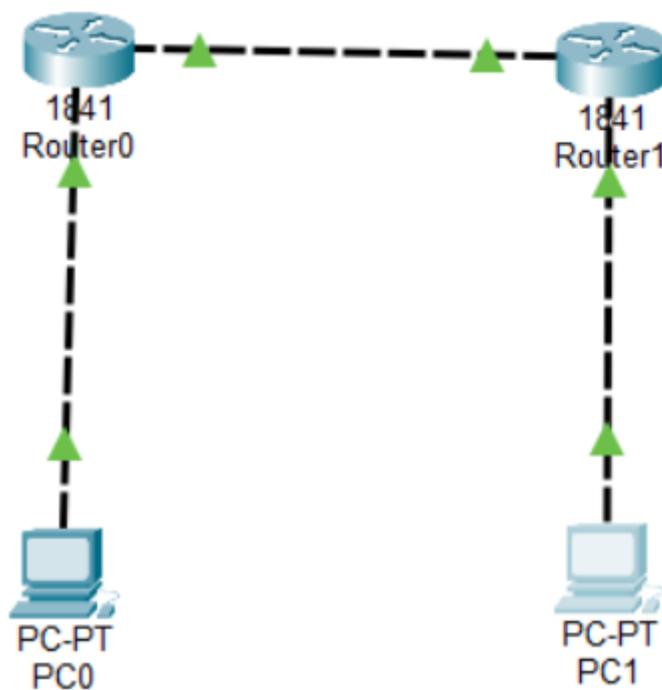Q. Demonstrate the RIP Routing in Packet Tracer.

Aim: To configure and demonstrate RIP dynamic routing protocol between two networks using two routers in Packet Tracer.

Steps:
1.In packet tracer place 2 PCs and 2 Routers.
2.Connect Router0 with PC0 via FastEthernet0/0 using cross-copper cord and Router1 with PC1 via FastEthernet0/0 using cross-copper cord.
3.Connect both routers via FastEthernet0/1 using cross-copper cord.
4.Set the IP address and default gateway of both the PCs in IP configuration of both PCs respectively.
5.Configure RIP version 2 routing protocol on both routers.

Topology :

1841
Router0

1841
Router1

PC-PT
PC0

PC-PT
PC1

Code:
Router0 Configuration:
Router>enable
Router#configure terminal
Router(config)#hostname Router0
Router0(config)#interface FastEthernet0/0
Router0(config-if)#ip address 192.168.10.1 255.255.255.0
Router0(config-if)#no shutdown

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Router0(config-if)#exit
Router0(config)#interface FastEthernet0/1
Router0(config-if)#ip address 10.10.10.1 255.255.255.0
Router0(config-if)#no shutdown
Router0(config-if)#exit
Router0(config)#router rip
Router0(config-router)#version 2
Router0(config-router)#network 192.168.10.0
Router0(config-router)#network 10.10.10.0
Router0(config-router)#no auto-summary
Router0(config-router)#exit
Router0(config)#exit
Router0#copy running-config startup-config

Router1 configuration:
Router>enable
Router#configure terminal
Router(config)#hostname Router1
Router1(config)#interface FastEthernet0/1
Router1(config-if)#ip address 10.10.10.2 255.255.255.0
Router1(config-if)#no shutdown
Router1(config-if)#exit
Router1(config)#interface FastEthernet0/0
Router1(config-if)#ip address 172.16.20.1 255.255.255.0
Router1(config-if)#no shutdown
Router1(config-if)#exit
Router1(config)#router rip
Router1(config-router)#version 2
Router1(config-router)#network 10.10.10.0
Router1(config-router)#network 172.16.20.0
Router1(config-router)#no auto-summary
Router1(config-router)#exit
Router1(config)#exit
Router1#copy running-config startup-config

PC0 Configuration:
IP Address: 192.168.10.2
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.10.1
PC1 Configuration:
IP Address: 172.16.20.2
Subnet Mask: 255.255.255.0
Default Gateway: 172.16.20.1

PCO Command Prompt :
C:\>ipconfig
C:\>ping 192.168.10.1
C:\>ping 10.10.10.1
C:\>ping 10.10.10.2
C:\>ping 172.16.20.1
C:\>ping 172.16.20.2

PCO Command Prompt :
C:\>ipconfig
C:\>ping 172.16.20.1
C:\>ping 10.10.10.2
C:\>ping 10.10.10.1
C:\>ping 192.168.10.1
C:\>ping 192.168.10.2

Router Verification Commands:
Router0#show ip route
Router0#show ip protocols
Router0#show ip rip database
Router1#show ip route
Router1#show ip protocols
OUTPUT :
PC0 OUTPUT :

```
C:\>ping 172.16.20.2

Pinging 172.16.20.2 with 32 bytes of data:

Reply from 172.16.20.2: bytes=32 time=1ms TTL=126
Reply from 172.16.20.2: bytes=32 time<1ms TTL=126
Reply from 172.16.20.2: bytes=32 time<1ms TTL=126
Reply from 172.16.20.2: bytes=32 time<1ms TTL=126

Ping statistics for 172.16.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

PC1 OUTPUT :

```
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.10.2: bytes=32 time=1ms TTL=126
Reply from 192.168.10.2: bytes=32 time<1ms TTL=126
Reply from 192.168.10.2: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

IP ROUTE OUTPUT :

```
router0#show ip route
Codes: C - connected, S - static, I - IGRP, 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
C       10.10.10.0 is directly connected, FastEthernet0/1
     172.16.0.0/24 is subnetted, 1 subnets
R       172.16.20.0 [120/1] via 10.10.10.2, 00:00:13, FastEthernet0/1
C    192.168.10.0/24 is directly connected, FastEthernet0/0
```

RIP PROTOCOL OUTPUT :

```
router0#show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 9 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface                 Send  Recv  Triggered RIP  Key-chain
  FastEthernet0/0           22
  FastEthernet0/1           22
Automatic network summarization is not in effect
Maximum path: 4
Routing for Networks:
        10.0.0.0
        192.168.10.0
Passive Interface(s):
Routing Information Sources:
        Gateway            Distance        Last Update
        10.10.10.2             120         00:00:02
Distance: (default is 120)
```

CONCLUSION : The above network topology has been executed successfully and RIP version 2 dynamic routing has been demonstrated.