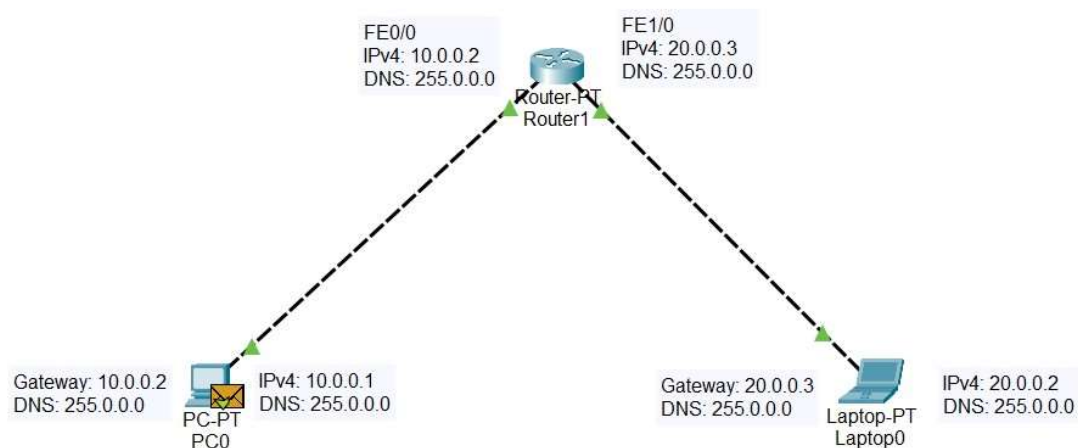# LABORATORY PROGRAM – 2

Configure IP address to routers in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

```
FE0/0                           FE1/0
IPv4: 10.0.0.2                  IPv4: 20.0.0.3
DNS: 255.0.0.0                  DNS: 255.0.0.0
                Router-PT
                Router1
```

```
Gateway: 10.0.0.2    IPv4: 10.0.0.1          Gateway: 20.0.0.3    IPv4: 20.0.0.2
DNS: 255.0.0.0       DNS: 255.0.0.0          DNS: 255.0.0.0       DNS: 255.0.0.0
            PC-PT                                       Laptop-PT
            PC0                                         Laptop0
```

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
●	Successful	PC0	Laptop0	ICMP		0.000	N	0	(edit)	
●	In Progress	PC0	Laptop0	ICMP		0.000	N	1	(edit)	
●	In Progress	PC0	Laptop0	ICMP		0.000	N	2	(edit)	

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Reply from 20.0.0.3: bytes=32 time<1ms TTL=255
Reply from 20.0.0.3: bytes=32 time<1ms TTL=255
Reply from 20.0.0.3: bytes=32 time<1ms TTL=255
Reply from 20.0.0.3: bytes=32 time<1ms TTL=255

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Hub	Switch
① Hub is operated on Physical layer of OSI model	Switch is operated on Data link layer of OSI model
② Hub is broadcast type transmission	Switch is a unicast, multicast and broadcast type transmission
③ Hub have 4/12 ports	Switch have 24 to 48 ports
④ There is only one collision domain	Different ports have their own collision domain
⑤ Hub cannot be used as a repeater	Switch can be used as a repeater

---

Configure IP address to routers in packet tracker & explore the following messages ping response, destination unreachable, request timed out, reply (Single Router)

Aim : To demonstrate the connection b/w two end devices in two different networks using two routers

Topology :


```
        10.0.0.1              20.0.0.1
        FA 0/0                FA 1/0
             Router-PT
             Router 0

   PC-PT                      PC-PT
   PC0                        PC1
   10.0.0.10                  20.0.0.10
   def gateway 10.0.0.1       def gateway 20.0.0.1
```

Procedure :

① Launch Cisco packet tracker
② Add end devices and the router
③ Connect the device using a copper crossover cable to connect each PC to the router
④ IP config → ip address
    PC0 : 10.0.0.10   255.0.0.0
    PC1 : 20.0.0.10   255.0.0.0
   def gateway :
    PC0 : 10.0.0.1
    PC1 : 20.0.0.1

---

⑤ Router config → CLI
   enable
   config terminal
   interface fastethernet 0/0
   ip address 10.0.0.1   255.0.0.0
   no shutdown
   exit

   repeat for second device with
   interface fastethernet 1/0
   ip address 20.0.0.1   255.0.0.0

⑥ device → Desktop → command prompt → ping 20.0.0.10

Observation :

We observe that initially when the ping request is sent we get a time out once but after sometimes we get 3 replies and the message that packets have been sent and received will display.

Routing has been observed as follows :

C   10.0.0.0/8 is directly connected, FastEthernet0/0
C   20.0.0.0/8 is directly connected, FastEthernet1/0

Configure IP address to routers in packet tracer (Two Routers)

Aim : To demonstrate the connection between 2 end devices using 2 different router.

Topology :


```
       30.0.0.1                      30.0.0.2
10.0.0.1          Serial 2/0   Serial 2/0        20.0.0.1
FA 0/0                                           FA 1/0
           Router-PT          Router-PT
           Router 0           Router 1

 PC-PT                        PC-PT
 PC0                          PC1
 10.0.0.10                    20.0.0.20
 def gateway 10.0.0.1         def gateway 20.0.0.1
```

Procedure :

① Launch Cisco packet tracker
② Add two end device and two router from left hand icon menu
③ Connect PC0 to Router1 and PC1 to Router 2 using copper cross over
④ Connect Router 1 and 2 using Serial DCE
⑤ IP config on device → ip address
    PC0 : 10.0.0.10   255.0.0.0
    PC1 : 20.0.0.10   255.0.0.0

   → gateway   PC0 : 10.0.0.1
                PC1 : 20.0.0.1