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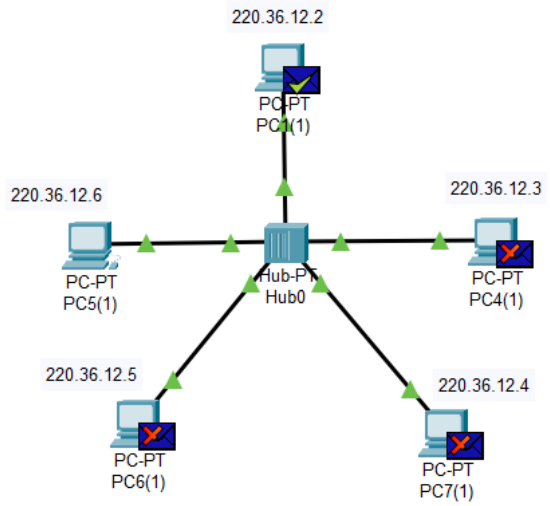
Assignment-1

Q1. Create all the topologies discussed in class in Cisco Packet Tracer (CPT).

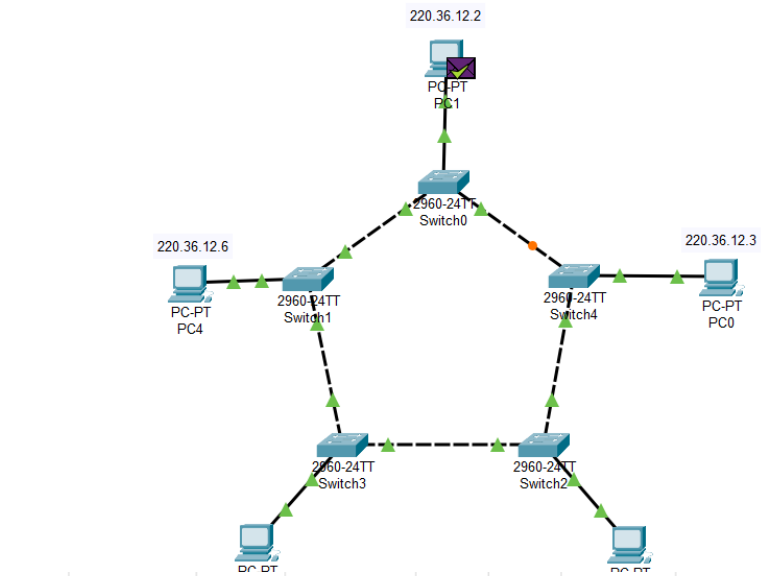
1. Star Topology



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC1(1)	PC5(1)	ICMP		0.000	N	0	(edit)	
	Successful	PC1(1)	PC6(1)	ICMP		0.037	N	1	(edit)	

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 220.36.12.6

Pinging 220.36.12.6 with 32 bytes of data:

Reply from 220.36.12.6: bytes=32 time=4ms TTL=128
Reply from 220.36.12.6: bytes=32 time=4ms TTL=128
Reply from 220.36.12.6: bytes=32 time=4ms TTL=128
Reply from 220.36.12.6: bytes=32 time=4ms TTL=128

Ping statistics for 220.36.12.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 4ms, Average = 4ms

C:\>ping 220.36.12.5

Pinging 220.36.12.5 with 32 bytes of data:

Reply from 220.36.12.5: bytes=32 time=4ms TTL=128
Reply from 220.36.12.5: bytes=32 time=4ms TTL=128
Reply from 220.36.12.5: bytes=32 time=4ms TTL=128
Reply from 220.36.12.5: bytes=32 time=4ms TTL=128

Ping statistics for 220.36.12.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 4ms, Average = 4ms
```

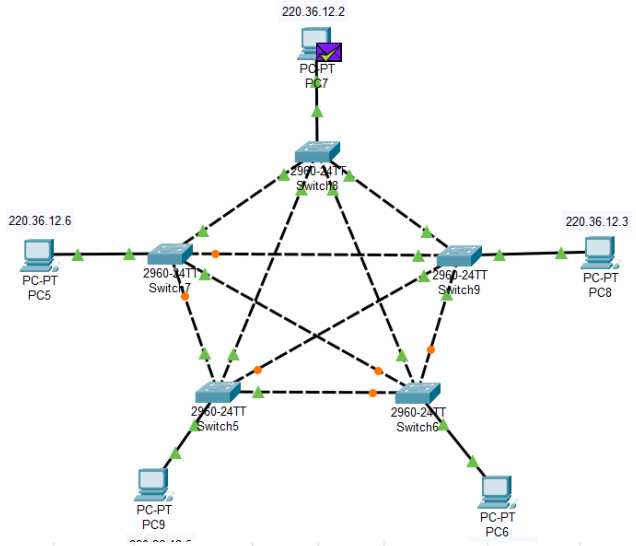
2. Ring Topology



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC1	PC4	ICMP		0.000	N	0	(edit)	
	Successful	PC1	PC3	ICMP		0.000	N	1	(edit)	

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 220.36.12.6

Pinging 220.36.12.6 with 32 bytes of data:

Reply from 220.36.12.6: bytes=32 time<1ms TTL=128
Reply from 220.36.12.6: bytes=32 time<1ms TTL=128
Reply from 220.36.12.6: bytes=32 time<1ms TTL=128
Reply from 220.36.12.6: bytes=32 time<1ms TTL=128

Ping statistics for 220.36.12.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 220.36.12.5

Pinging 220.36.12.5 with 32 bytes of data:

Reply from 220.36.12.5: bytes=32 time=8ms TTL=128
Reply from 220.36.12.5: bytes=32 time=8ms TTL=128
Reply from 220.36.12.5: bytes=32 time=8ms TTL=128
Reply from 220.36.12.5: bytes=32 time=8ms TTL=128

Ping statistics for 220.36.12.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 8ms, Maximum = 8ms, Average = 8ms
```

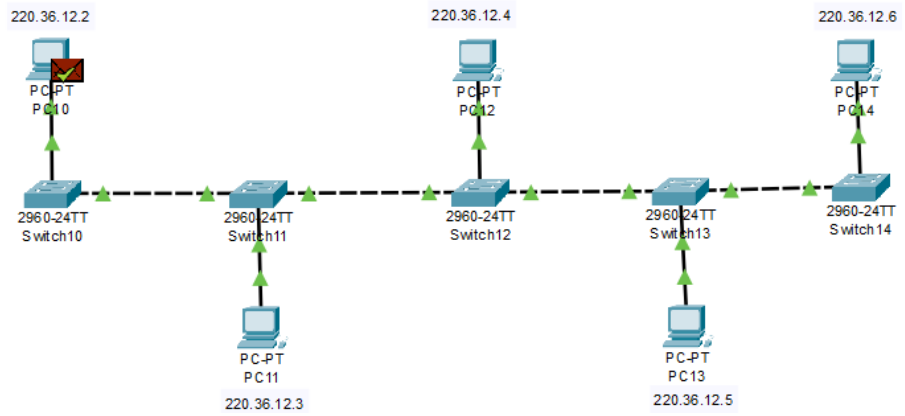
3. Mesh topology



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC7	PC5	ICMP		0.000	N	0	(edit)	
	Successful	PC7	PC9	ICMP		0.000	N	1	(edit)	

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 220.36.12.6

Pinging 220.36.12.6 with 32 bytes of data:

Reply from 220.36.12.6: bytes=32 time=6ms TTL=128
Reply from 220.36.12.6: bytes=32 time=6ms TTL=128
Reply from 220.36.12.6: bytes=32 time=6ms TTL=128
Reply from 220.36.12.6: bytes=32 time=6ms TTL=128

Ping statistics for 220.36.12.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 6ms, Average = 6ms

C:\>ping 220.36.12.5

Pinging 220.36.12.5 with 32 bytes of data:

Reply from 220.36.12.5: bytes=32 time=6ms TTL=128
Reply from 220.36.12.5: bytes=32 time=6ms TTL=128
Reply from 220.36.12.5: bytes=32 time=6ms TTL=128
Reply from 220.36.12.5: bytes=32 time=6ms TTL=128

Ping statistics for 220.36.12.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 6ms, Average = 6ms
```

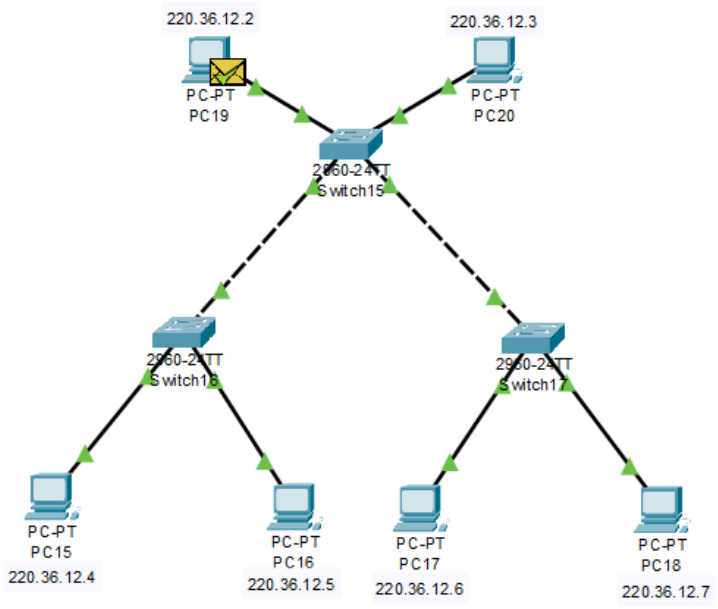
4. Bus Topology



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC10	PC14	ICMP		0.000	N	0	(edit)	
	Successful	PC10	PC13	ICMP		0.000	N	1	(edit)	

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 220.36.12.6

Pinging 220.36.12.6 with 32 bytes of data:

Reply from 220.36.12.6: bytes=32 time=12ms TTL=128
Reply from 220.36.12.6: bytes=32 time=12ms TTL=128
Reply from 220.36.12.6: bytes=32 time=12ms TTL=128
Reply from 220.36.12.6: bytes=32 time=12ms TTL=128

Ping statistics for 220.36.12.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 12ms, Average = 12ms

C:\>ping 220.36.12.5

Pinging 220.36.12.5 with 32 bytes of data:

Reply from 220.36.12.5: bytes=32 time<1ms TTL=128
Reply from 220.36.12.5: bytes=32 time=1ms TTL=128
Reply from 220.36.12.5: bytes=32 time<1ms TTL=128
Reply from 220.36.12.5: bytes=32 time<1ms TTL=128

Ping statistics for 220.36.12.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

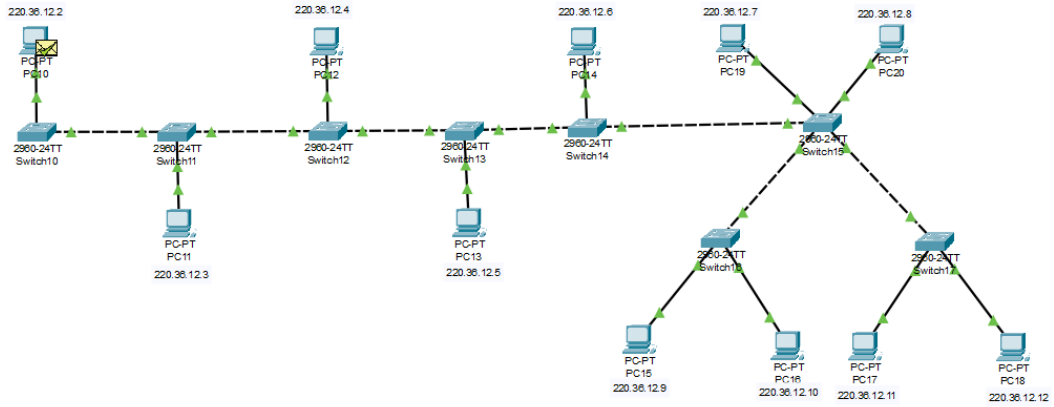
5. Tree Topology



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC19	PC18	ICMP		0.000	N	0	(edit)	
	Successful	PC19	PC16	ICMP		1.693	N	1	(edit)	

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 220.36.12.2

Pinging 220.36.12.2 with 32 bytes of data:

Reply from 220.36.12.2: bytes=32 time=4ms TTL=128
Reply from 220.36.12.2: bytes=32 time=4ms TTL=128
Reply from 220.36.12.2: bytes=32 time<1ms TTL=128
Reply from 220.36.12.2: bytes=32 time<1ms TTL=128

Ping statistics for 220.36.12.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 2ms

C:\>ping 220.36.12.5

Pinging 220.36.12.5 with 32 bytes of data:

Reply from 220.36.12.5: bytes=32 time=6ms TTL=128
Reply from 220.36.12.5: bytes=32 time=6ms TTL=128
Reply from 220.36.12.5: bytes=32 time=6ms TTL=128
Reply from 220.36.12.5: bytes=32 time=6ms TTL=128

Ping statistics for 220.36.12.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 6ms, Average = 6ms
```

6. Hybrid Topology



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC10	PC18	ICMP		0.000	N	0	(edit)	
	Successful	PC10	PC20	ICMP		0.900	N	1	(edit)	

```
C:\>ping 220.36.12.12

Pinging 220.36.12.12 with 32 bytes of data:

Reply from 220.36.12.12: bytes=32 time=16ms TTL=128
Reply from 220.36.12.12: bytes=32 time=16ms TTL=128
Reply from 220.36.12.12: bytes=32 time=16ms TTL=128
Reply from 220.36.12.12: bytes=32 time=16ms TTL=128

Ping statistics for 220.36.12.12:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 16ms, Maximum = 16ms, Average = 16ms

C:\>ping 220.36.12.8

Pinging 220.36.12.8 with 32 bytes of data:

Reply from 220.36.12.8: bytes=32 time=14ms TTL=128
Reply from 220.36.12.8: bytes=32 time=14ms TTL=128
Reply from 220.36.12.8: bytes=32 time=14ms TTL=128
Reply from 220.36.12.8: bytes=32 time=14ms TTL=128

Ping statistics for 220.36.12.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 14ms, Maximum = 14ms, Average = 14ms
```

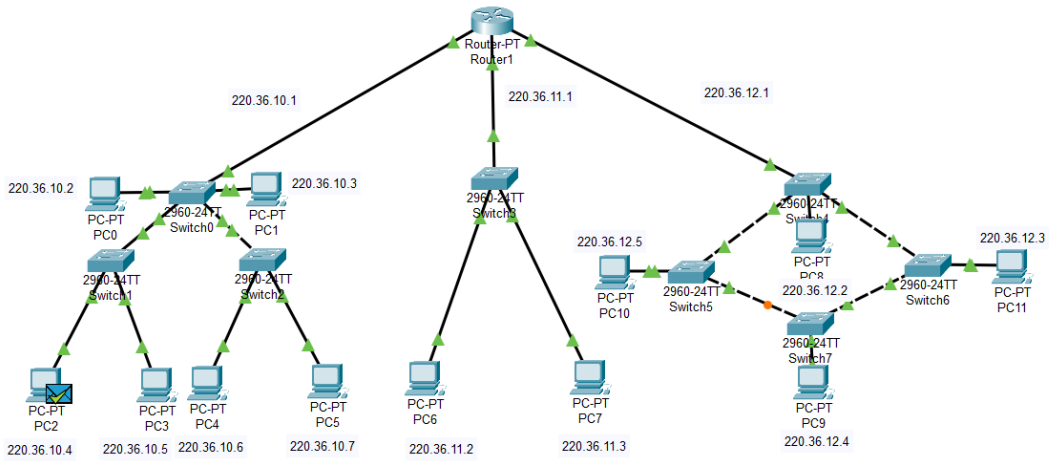
Q2: Create 3 LAN networks connected via a single Router (CPT). Choose appropriate router, connection and configure it. Each LAN network is configured via Tree, Star and Ring topologies respectively.

The IP addresses for the implementation of topologies should be chosen based on the 5 digits of your Roll No.

Ex: U4ECE220XX for A batch

U4ECE221XX for B batch

Ex IP address for Roll no 12 (for A and B batch) is:220.12.x.x for A batch and 221.12.x.x for B batch. You may take the subsequent IP addresses based on the mentioned roll number IP.

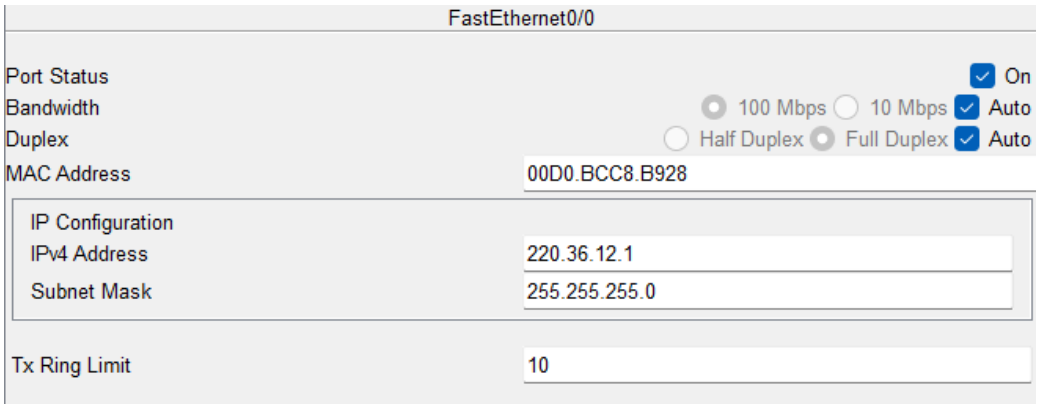


Ethernet6/0

Port Status	On
Bandwidth	10 Mbps Auto
Duplex	Half Duplex Full Duplex Auto
MAC Address	00D0.D3BA.0B95
IP Configuration	
IPv4 Address	220.36.10.1
Subnet Mask	255.255.255.0
Tx Ring Limit	10

FastEthernet1/0

Port Status	On
Bandwidth	100 Mbps 10 Mbps Auto
Duplex	Half Duplex Full Duplex Auto
MAC Address	0060.5CD7.4289
IP Configuration	
IPv4 Address	220.36.11.1
Subnet Mask	255.255.255.0
Tx Ring Limit	10



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC2	PC7	ICMP		0.000	N	0	(edit)	
	Successful	PC2	PC11	ICMP		0.000	N	1	(edit)	

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 220.36.11.3

Pinging 220.36.11.3 with 32 bytes of data:

Reply from 220.36.11.3: bytes=32 time=10ms TTL=127
Reply from 220.36.11.3: bytes=32 time=10ms TTL=127
Reply from 220.36.11.3: bytes=32 time=10ms TTL=127
Reply from 220.36.11.3: bytes=32 time=10ms TTL=127

Ping statistics for 220.36.11.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 10ms, Average = 10ms

C:\>ping 220.36.12.3

Pinging 220.36.12.3 with 32 bytes of data:

Reply from 220.36.12.3: bytes=32 time=12ms TTL=127
Reply from 220.36.12.3: bytes=32 time=12ms TTL=127
Reply from 220.36.12.3: bytes=32 time=12ms TTL=127
Reply from 220.36.12.3: bytes=32 time=12ms TTL=127

Ping statistics for 220.36.12.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 12ms, Average = 12ms
```