Computer Network
Assignment 4
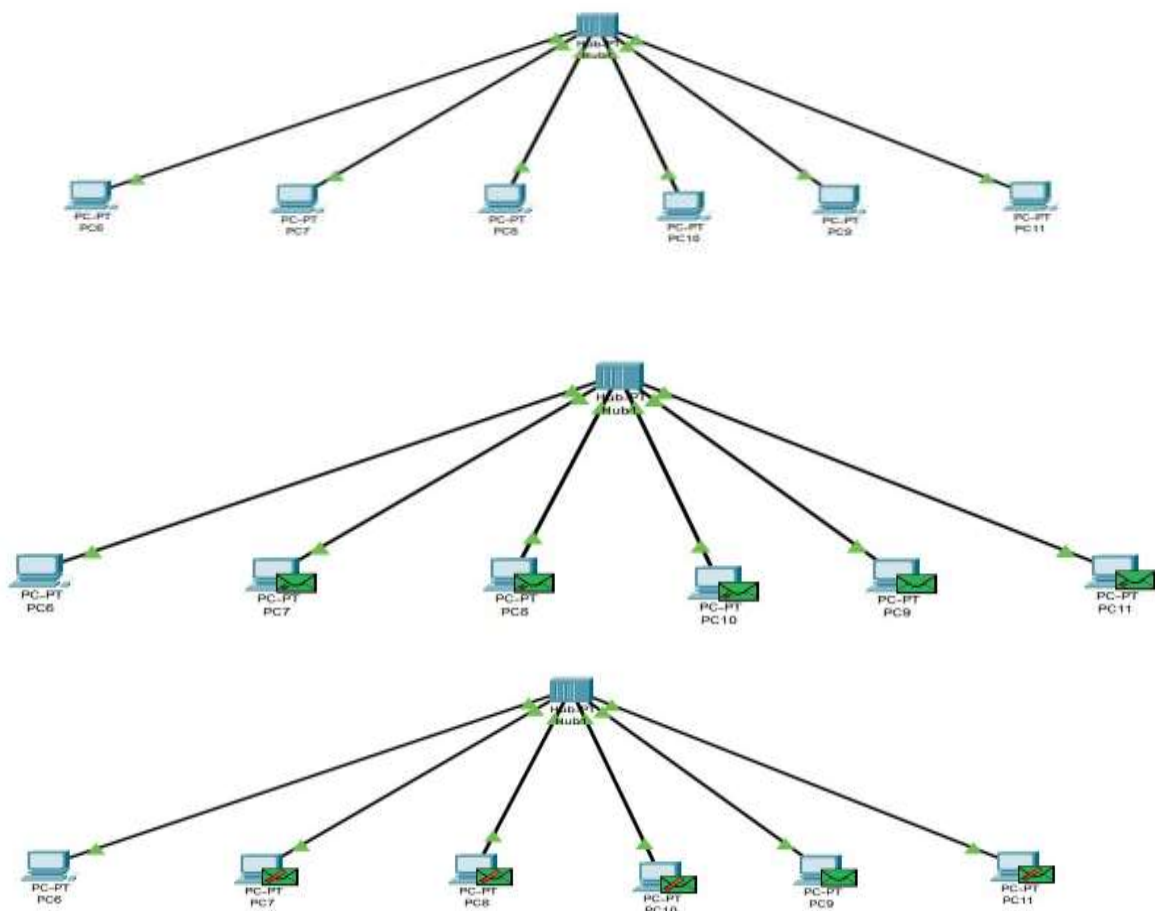
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ADMISSION NO::U19CS082

1. Star Topology
□ Hub

- It is layer 1 device
- It work in physical layer
- It always do broadcasting
- It is half duplex

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Link-local IPv6 Address.........: FE80::20C:CFFF:FEA9:93B3
   IP Address.......................: 9.9.9.1
   Subnet Mask......................: 255.0.0.0
   Default Gateway..................: 0.0.0.0

Bluetooth Connection:

   Link-local IPv6 Address.........: ::
   IP Address.......................: 0.0.0.0
   Subnet Mask......................: 0.0.0.0
   Default Gateway..................: 0.0.0.0

C:\>ping 09.09.09.04

Pinging 09.09.09.04 with 32 bytes of data:

Reply from 9.9.9.4: bytes=32 time=1ms TTL=128
Reply from 9.9.9.4: bytes=32 time=2ms TTL=128
Reply from 9.9.9.4: bytes=32 time=1ms TTL=128
Reply from 9.9.9.4: bytes=32 time=3ms TTL=128

Ping statistics for 9.9.9.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 3ms, Average = 1ms
```
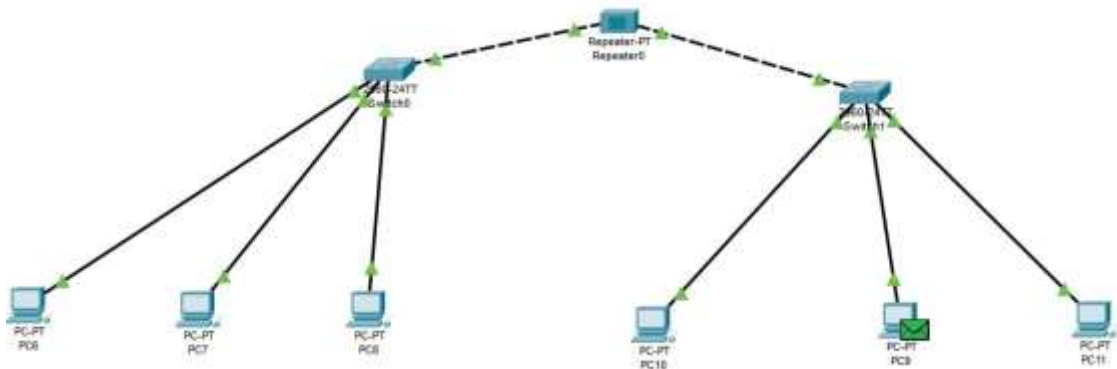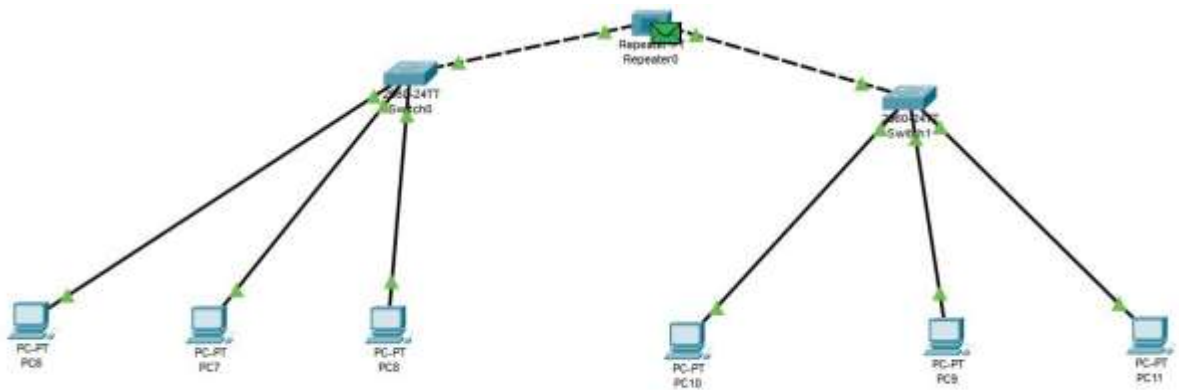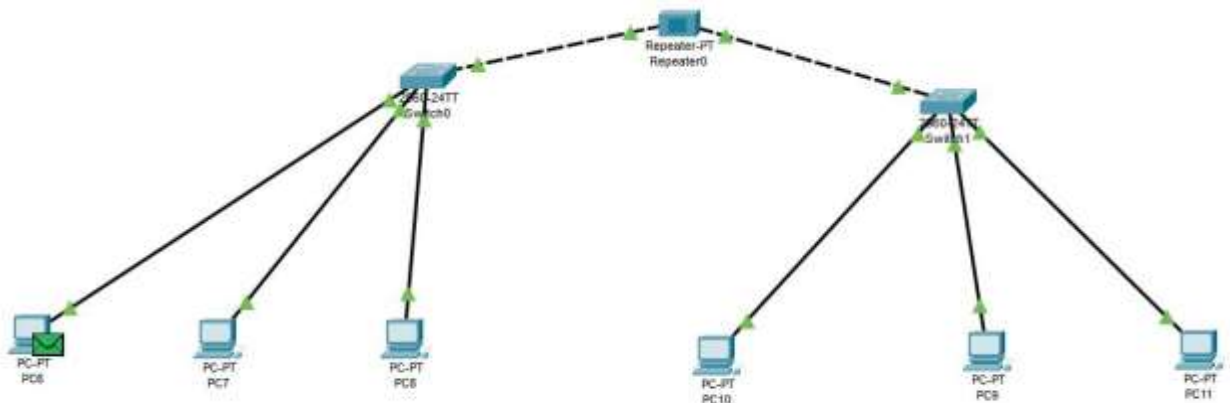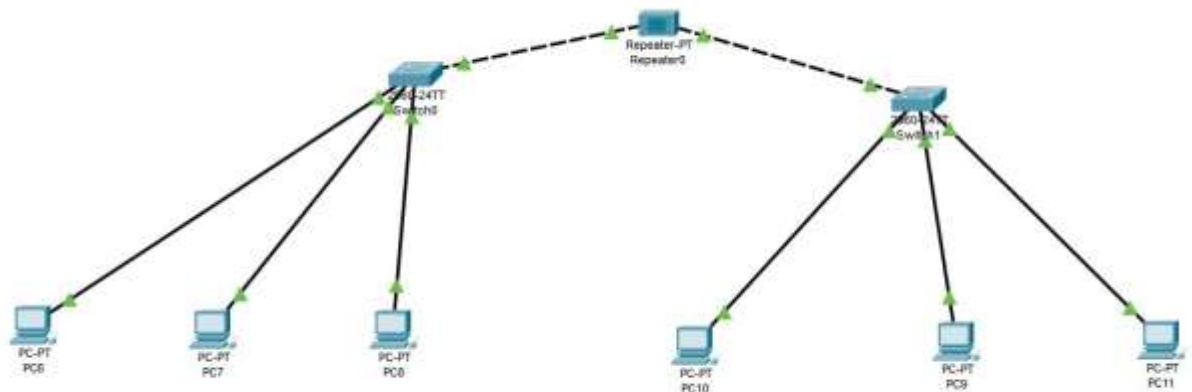
☐ **Repeater**

It is layer 1 device

It work in physical layer

It transfer the data at high range distance in one LAN

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Link-local IPv6 Address..........: FE80::20C:CFFF:FE48:37AD
   IP Address.......................: 9.9.9.2
   Subnet Mask......................: 255.0.0.0
   Default Gateway..................: 0.0.0.0

Bluetooth Connection:

   Link-local IPv6 Address..........: ::
   IP Address.......................: 0.0.0.0
   Subnet Mask......................: 0.0.0.0
   Default Gateway..................: 0.0.0.0

C:\>ping 09.09.09.05

Pinging 09.09.09.05 with 32 bytes of data:

Reply from 9.9.9.5: bytes=32 time=1ms TTL=128
Reply from 9.9.9.5: bytes=32 time=3ms TTL=128
Reply from 9.9.9.5: bytes=32 time=3ms TTL=128
Reply from 9.9.9.5: bytes=32 time=1ms TTL=128

Ping statistics for 9.9.9.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 3ms, Average = 2ms
```

☐ **Switch**

    It is layer 2 device.

    It works in data link layer.

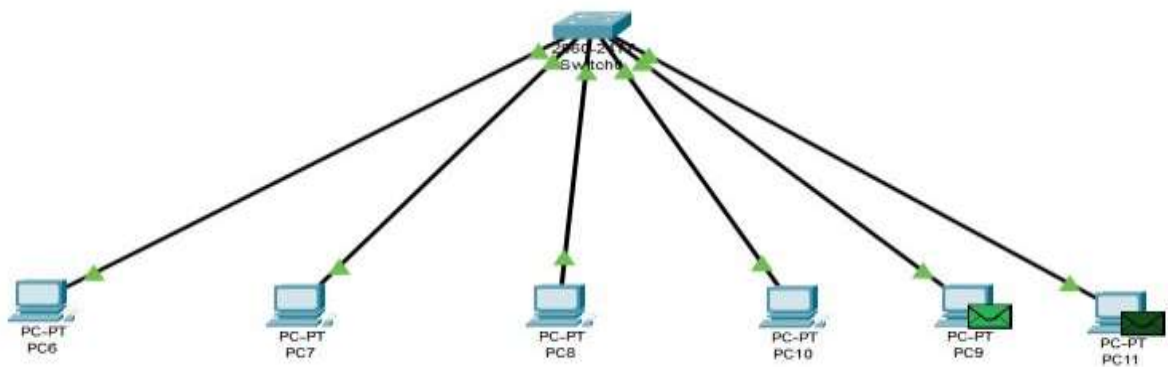   It is unidirectional, multi-directional and broadcast.

   It has memory which store MAC-Address table.
   It is full duplex.

```
Switch#show mac-address
          Mac Address Table
-------------------------------------------------

Vlan      Mac Address       Type           Ports
----      -----------       --------       -----

   1      0000.0cac.50a4    DYNAMIC        Fa0/6
   1      000c.cf48.37ad    DYNAMIC        Fa0/2
   1      000c.cfa9.93b3    DYNAMIC        Fa0/1
   1      00d0.bc81.5eca    DYNAMIC        Fa0/5
Switch#
```
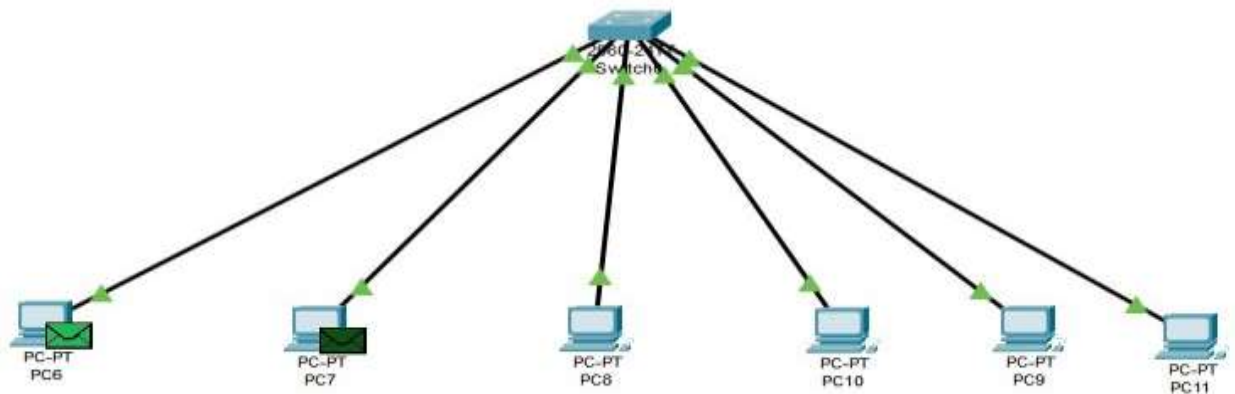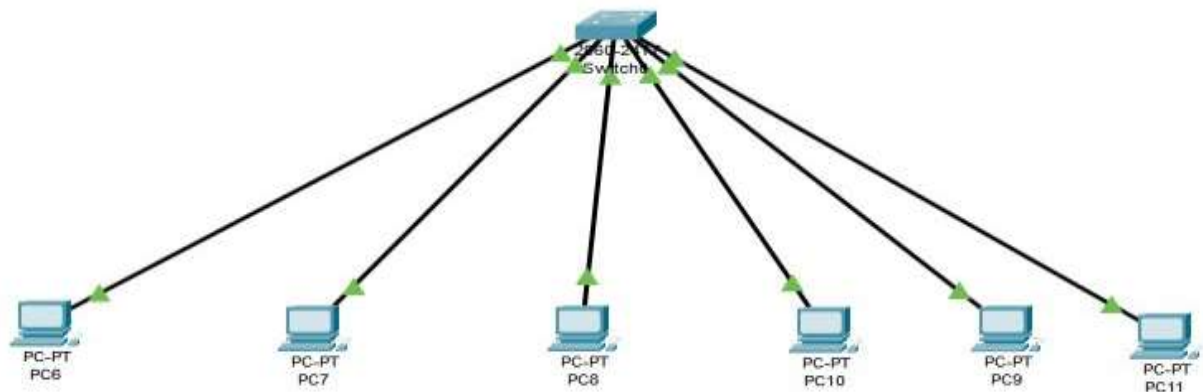
```
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Link-local IPv6 Address..........: FE80::20C:CFFF:FEA9:93B3
    IP Address.......................: 9.9.9.1
    Subnet Mask......................: 255.0.0.0
    Default Gateway..................: 0.0.0.0

Bluetooth Connection:

    Link-local IPv6 Address..........: ::
    IP Address.......................: 0.0.0.0
    Subnet Mask......................: 0.0.0.0
    Default Gateway..................: 0.0.0.0

C:\>ping 09.09.09.05

Pinging 09.09.09.05 with 32 bytes of data:

Reply from 9.9.9.5: bytes=32 time<1ms TTL=128
Reply from 9.9.9.5: bytes=32 time=9ms TTL=128
Reply from 9.9.9.5: bytes=32 time<1ms TTL=128
Reply from 9.9.9.5: bytes=32 time<1ms TTL=128

Ping statistics for 9.9.9.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 9ms, Average = 2ms
```

□ **Router**

It is layer 3 device.
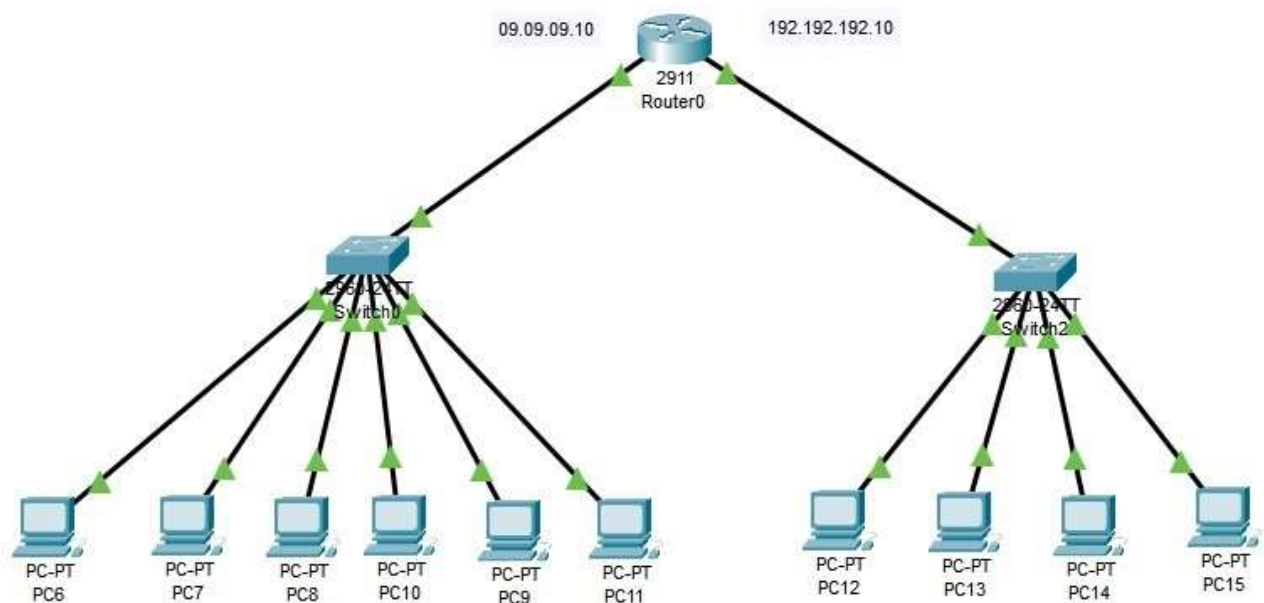
It works in Network layer.

It connects two different LAN.

It has memory which store IP-Address table i.e routing table.

It need gateway

09.09.09.10   192.192.192.10

2911
Router0

2960-24TT
Switch0

2960-24TT
Switch2

PC-PT   PC-PT   PC-PT   PC-PT   PC-PT   PC-PT
PC6   PC7   PC8   PC10   PC9   PC11

PC-PT   PC-PT   PC-PT   PC-PT
PC12   PC13   PC14   PC15

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Link-local IPv6 Address.........: FE80::20C:CFFF:FEA9:93B3
   IP Address......................: 9.9.9.1
   Subnet Mask.....................: 255.0.0.0
   Default Gateway.................: 9.9.9.10

Bluetooth Connection:

   Link-local IPv6 Address.........: ::
   IP Address......................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: 0.0.0.0

C:\>ping 192.192.192.02

Pinging 192.192.192.02 with 32 bytes of data:

Reply from 192.192.192.2: bytes=32 time<lms TTL=127
Reply from 192.192.192.2: bytes=32 time<lms TTL=127
Reply from 192.192.192.2: bytes=32 time<lms TTL=127
Reply from 192.192.192.2: bytes=32 time<lms TTL=127

Ping statistics for 192.192.192.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```