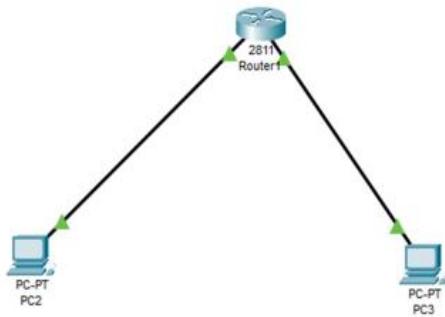


LAB ASSIGNMENT-1

1. Design the following Network's using Packet Tracer



Aim:

To design a network topology given in the above architecture using cisco packet tracer.

Observations:

In this network we used a router and 2 PCs. Computers are connected with router using copper straight through cable. After forming the network, To check network connectivity a simple PDU is transferred from PC0 to PC1. The network simulation status is successful. From this network we can observe that, router handles data transfers between multiple devices.

Procedure:

Step-1(Configuring Router1):

1. Select the router and Open CLI.
2. Press **ENTER** to start configuring Router1.
3. Type **enable** to activate privileged mode.
4. Type **config t** to access the configuration menu.
5. Configure interfaces of Router1:
 - Type **interface FastEthernet0/0** to access FastEthernet0/0 and Configure the FastEthernet0/0 interface with the IP address 192.168.10.1 and Subnet mask 255.255.255.0.
 - Type **interface FastEthernet0/1** to access GigabitEthernet0/0 and Configure the FastEthernet0/1 interface with IP address 192.168.20.1 and Subnet mask 255.255.255.0.
6. Type no shutdown to finish.

➤ Router1 Command Line Interface:

```
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
Router(config-if)#interface FastEthernet0/1
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#no shutdown
```

➤ Router Configuration Table:

Device Name	IP address FastEthernet0/0	Subnet Mask	IP Address FastEthernet0/1	Subnet Mask
Router1	192.168.10.1	255.255.255.0	192.168.20.1	255.255.255.0

Step-2(Configuring PCs):

1. Assign IP Address to every PC in the network.
2. Select the PC, Go to desktop and select IP Configuration and assign IP address, Default gateway, Subnet Mask
3. Assign the default gateway of PC0 as 192.168.10.1.
4. Assign the default gateway of PC1 as 192.168.20.1.

➤ PC Configuration Table:

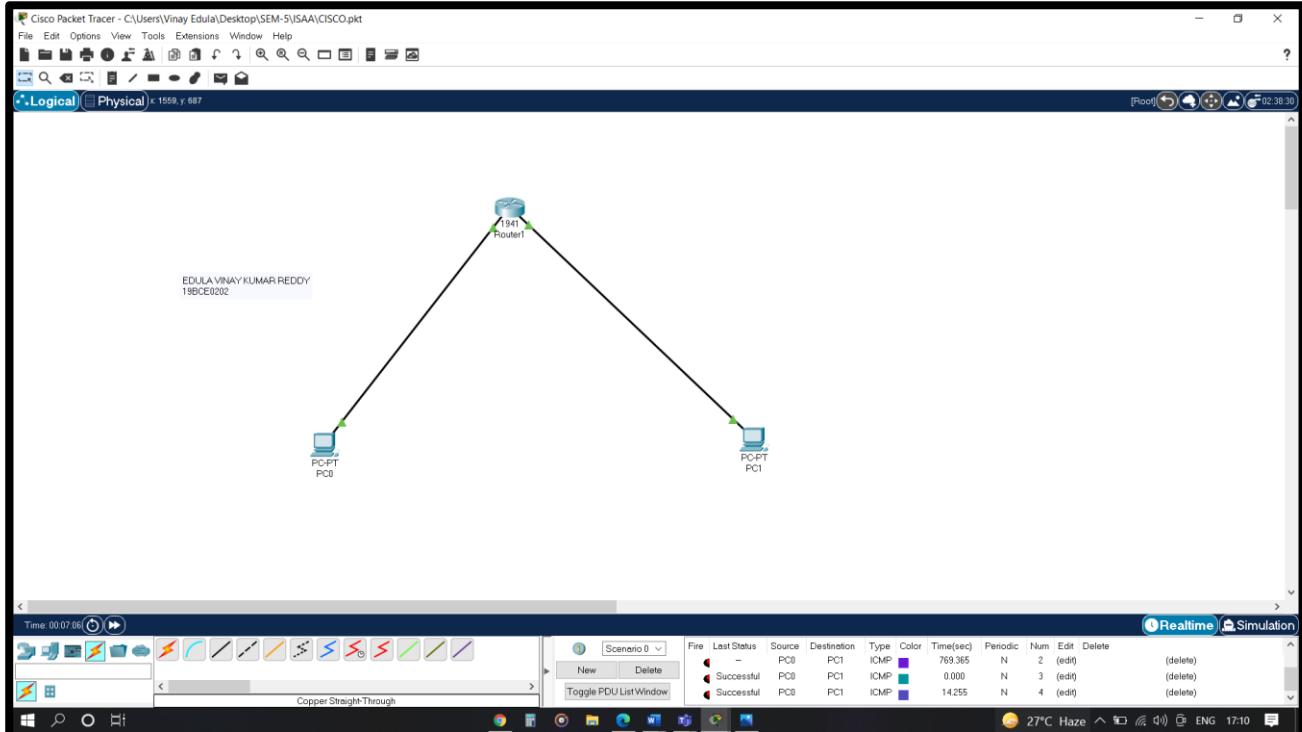
Device Name	IP address	Subnet Mask	Gateway
PC 0	192.168.10.2	255.255.255.0	192.168.10.1
PC 1	192.168.20.2	255.255.255.0	192.168.20.1

Step-3(Connecting PCs with Router):

1. Connect FastEthernet0 port of PC0 with FastEthernet0/0 port of Router1 using copper straight through cable.

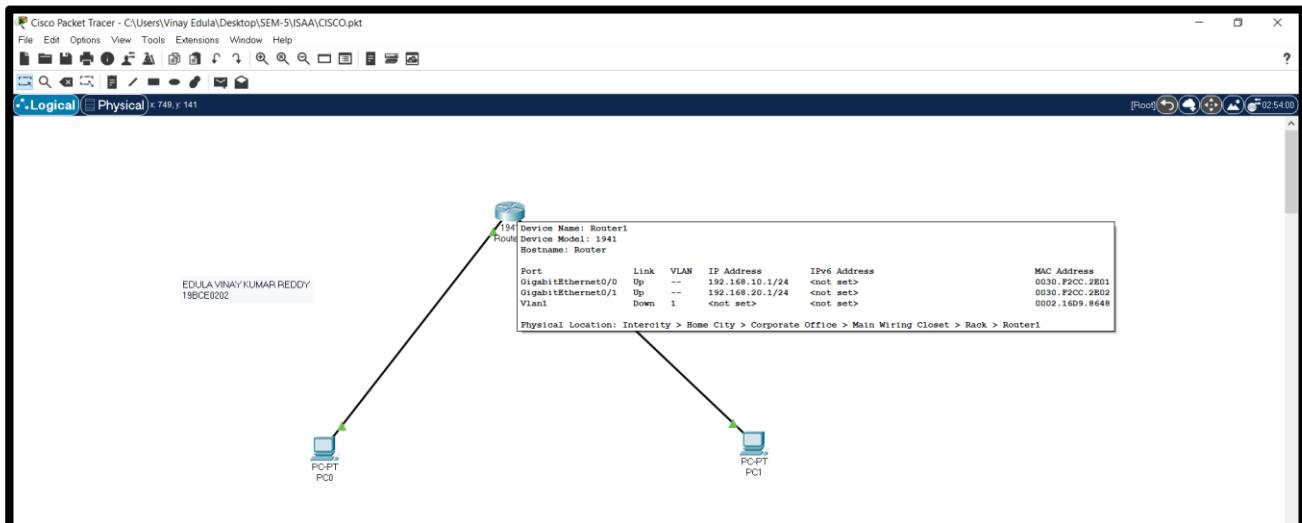
2. Connect FastEthernet0 port of PC1 with FastEthernet0/1 port of Router1 using copper straight through cable.

Designed Network topology

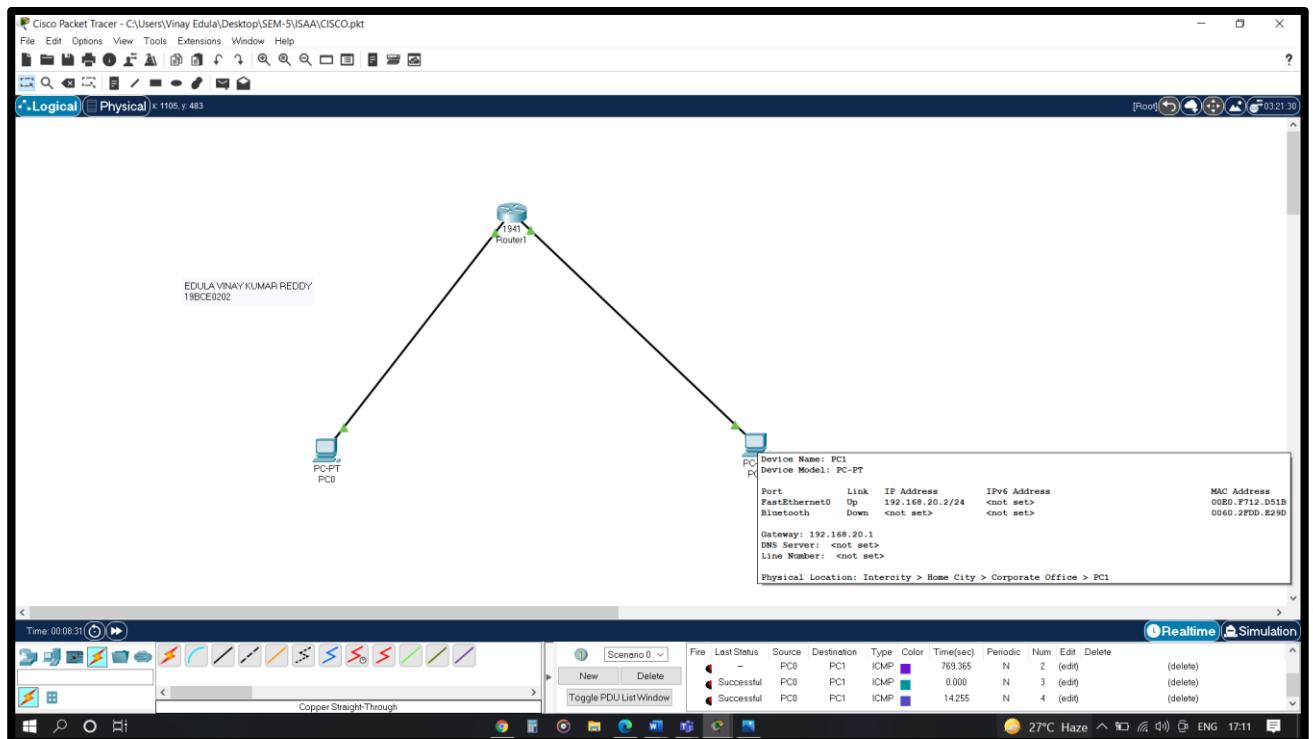
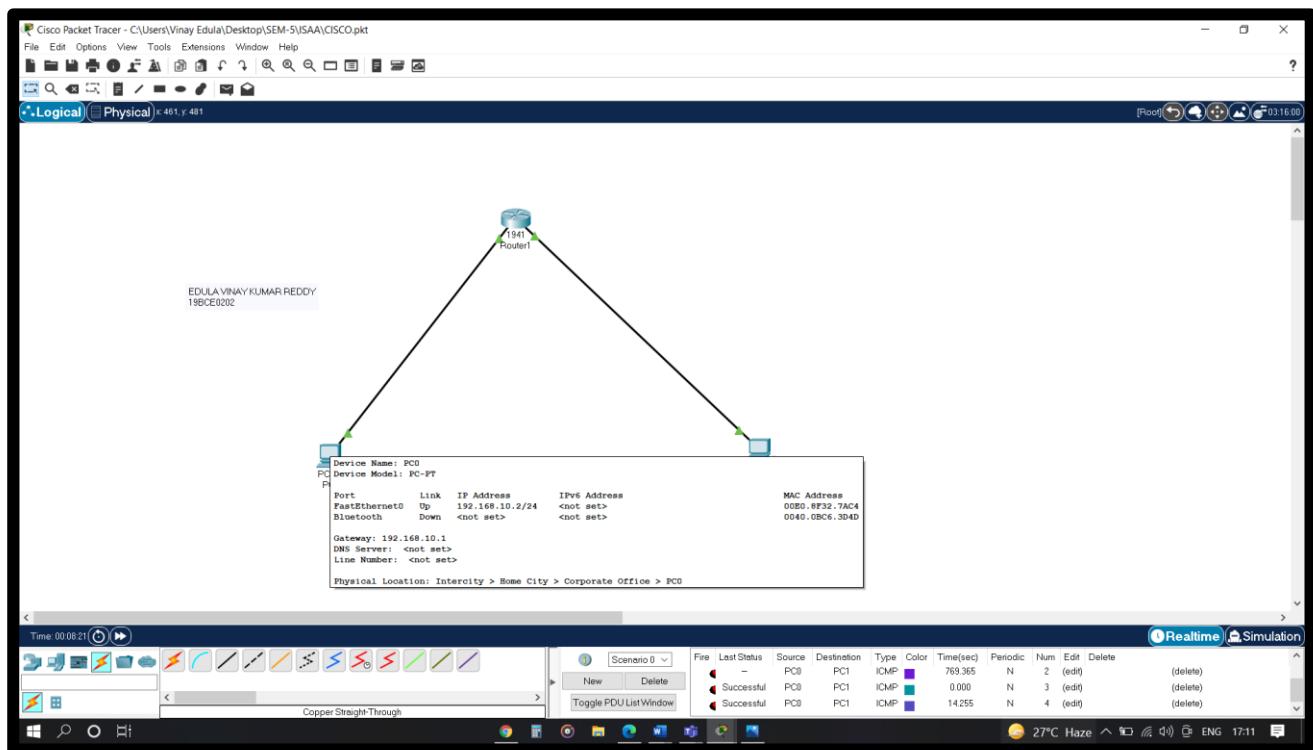


Packet tracer screenshots:

➤ Router Configurations:

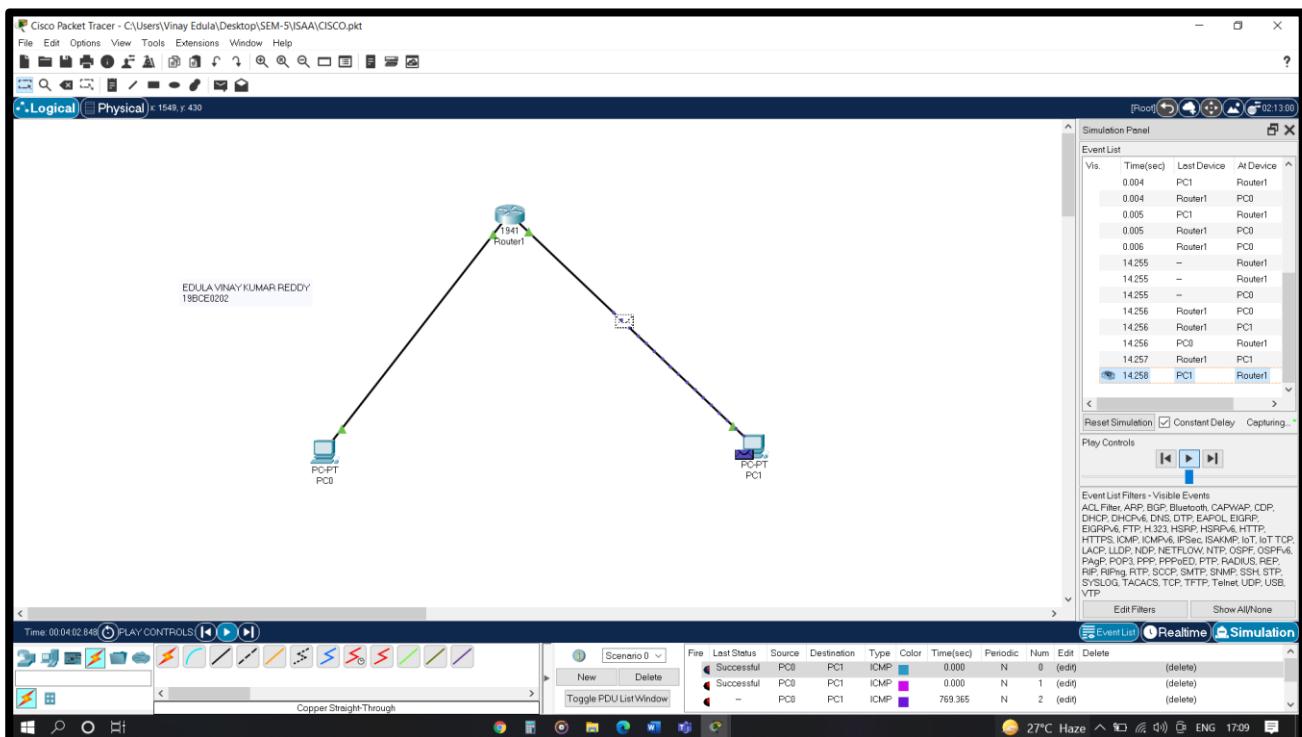
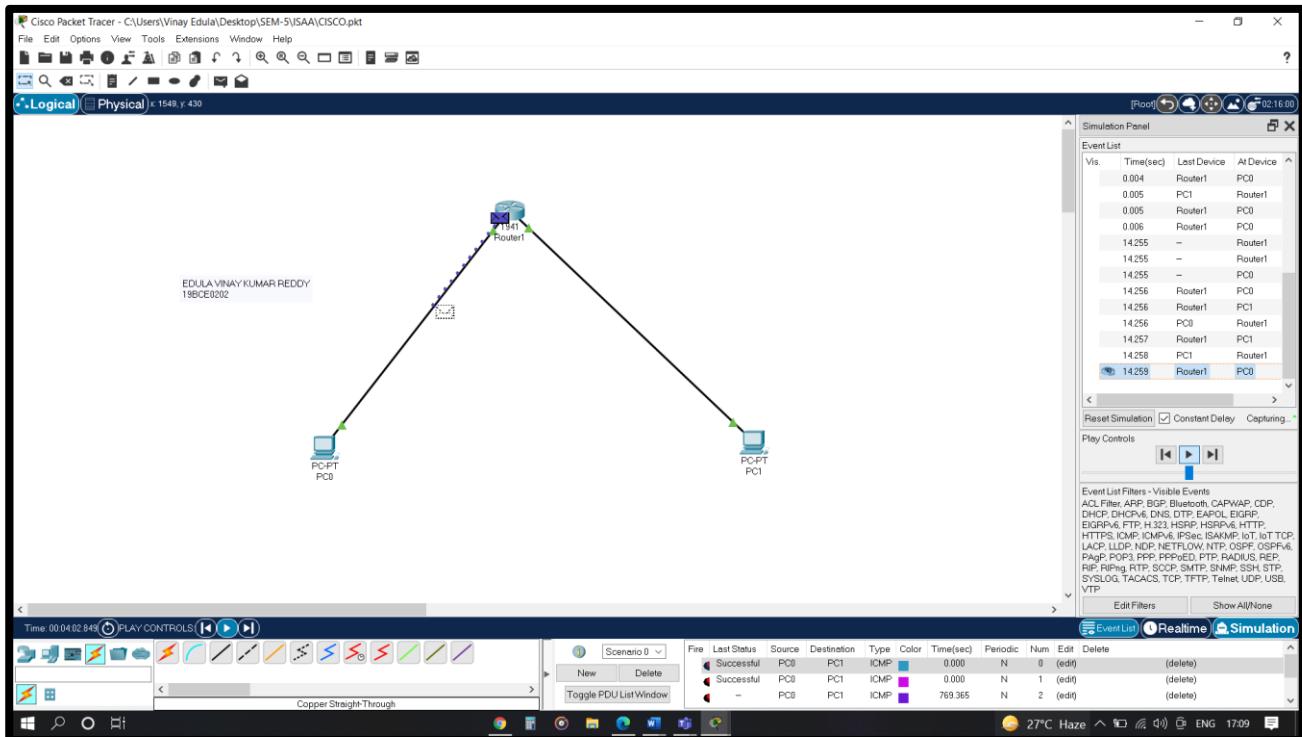


➤ PC Configurations:

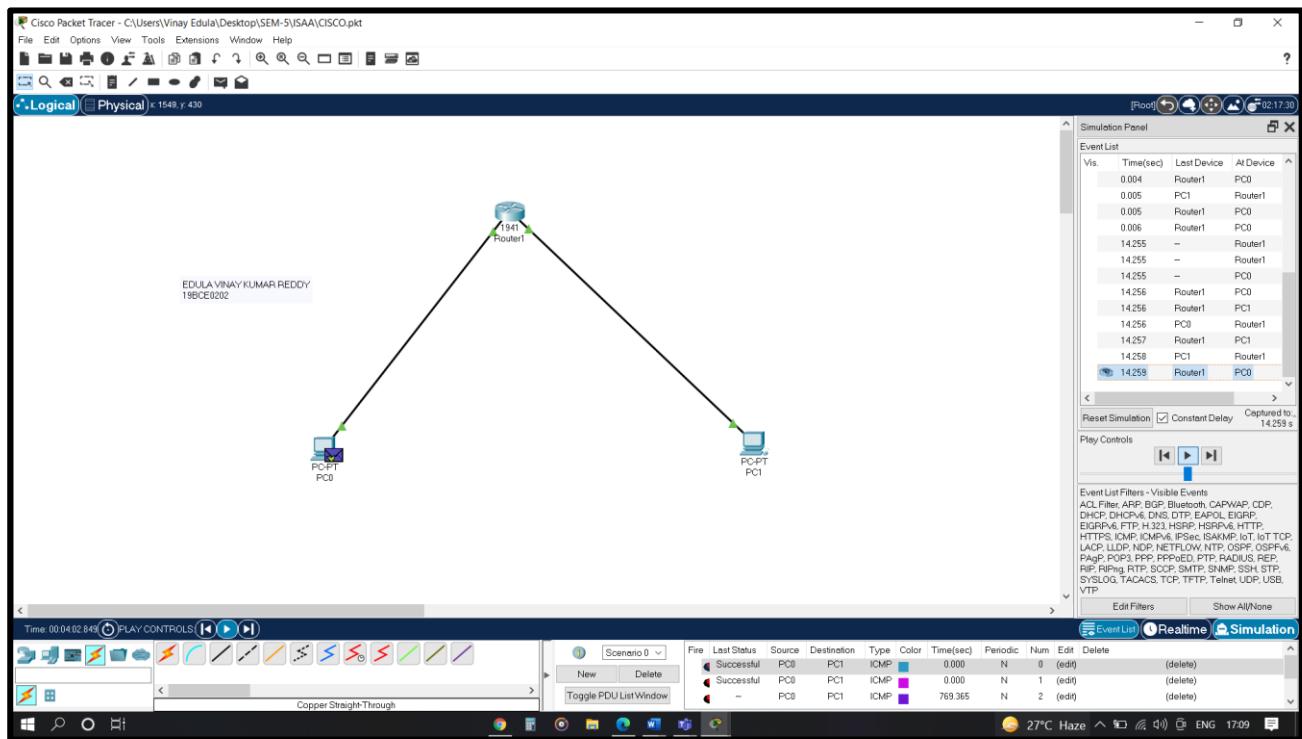
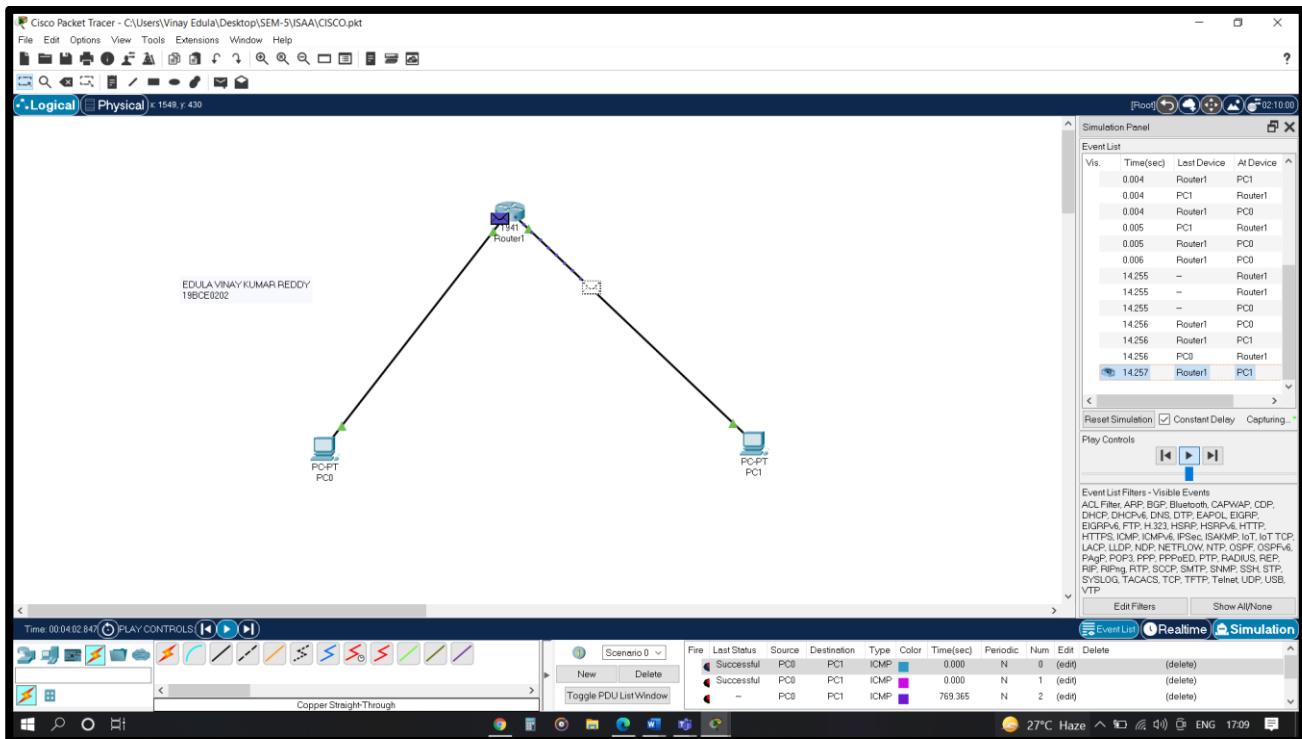


Simulation of Designed Network Topology:

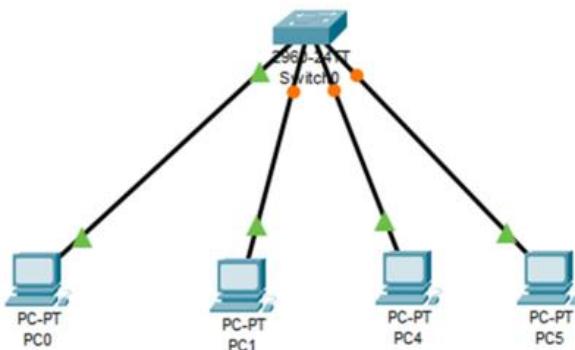
- Sending a PDU From PC0 to PC1.



➤ Acknowledgement From PC1 to PC0.



1. Design the following Network's using Packet Tracer



Aim:

To design a network topology given in the above architecture using cisco packet tracer.

Observations:

In this network we used a switch and 4 PCs. PCs are connected with switch using copper straight through cable. After forming the network, To check network connectivity a simple PDU is transferred from PC0 to PC4. The network simulation status is successful. From this network we can observe that switch helps us to connect multiple devices on the same network within a LAN.

Procedure:

Step-1(Configuring Switch0):

1. Select Switch0 and open CLI.
2. In CLI Press **ENTER** to start configuring Switch0.
3. Type **enable** to activate privileged mode.
4. Type **config t** to access the configuration menu.
5. Configure the hostname of the switch as Switch0.

Switch(config)#hostname Switch0

6. Configure the switch management interface on VLAN1 and Enter the interface configuration mode for VLAN 1.

Switch0(config)#interface vlan1

7. Type IP address 192.168.10.1 255.255.255.0 to assign an IP address and subnet mask to the interface.

Switch0(config-if)#ip address 192.168.10.1 255 .255 .255.0

8. Type no shutdown to finish

Switch0(config-if)#no shutdown

➤ **Switch0 Command Line Interface:**

```
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname Switch0
Switch0(config)#interface vlan1
Switch0(config-if)#IP address 192.168.10.1 255.255.255.0
Switch0(config-if)#no shutdown
Switch0(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
```

➤ **Switch Configuration Table:**

Device Name	Host Name	IP address Interface vlan1	Subnet Mask
Switch	Switch0	192.168.10.1	255.255.255.0

Step-2(Configuring PCs):

1. Assign IP Address to every PC.
2. Select the PC, Go to desktop and select IP Configuration and assign IP address, Subnet Mask.

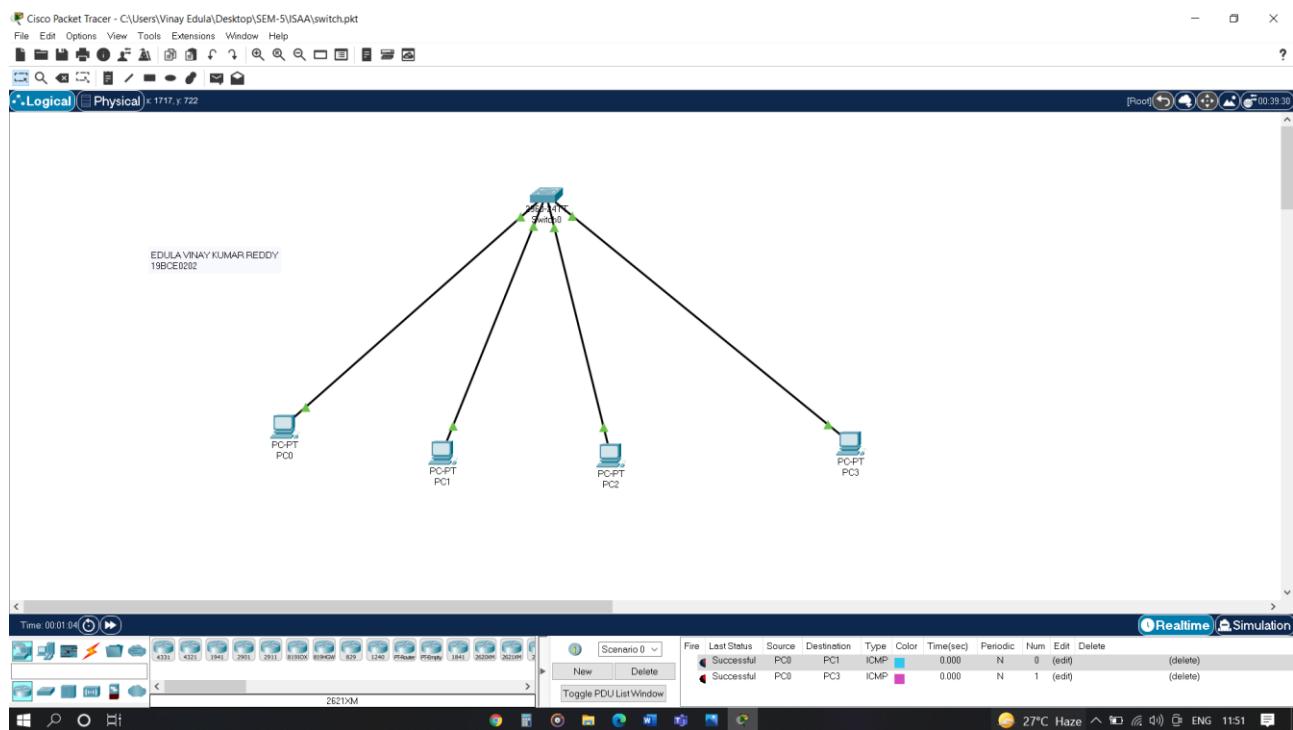
➤ **PC Configuration Table:**

Device Name	Device Type	IP address	Subnet Mask
PC 0	PC-PT	192.168.10.2	255.255.255.0
PC 1	PC-PT	192.168.10.3	255.255.255.0
PC 2	PC-PT	192.168.10.4	255.255.255.0
PC 3	PC-PT	192.168.10.5	255.255.255.0

Step-3(Connecting PCs with switch):

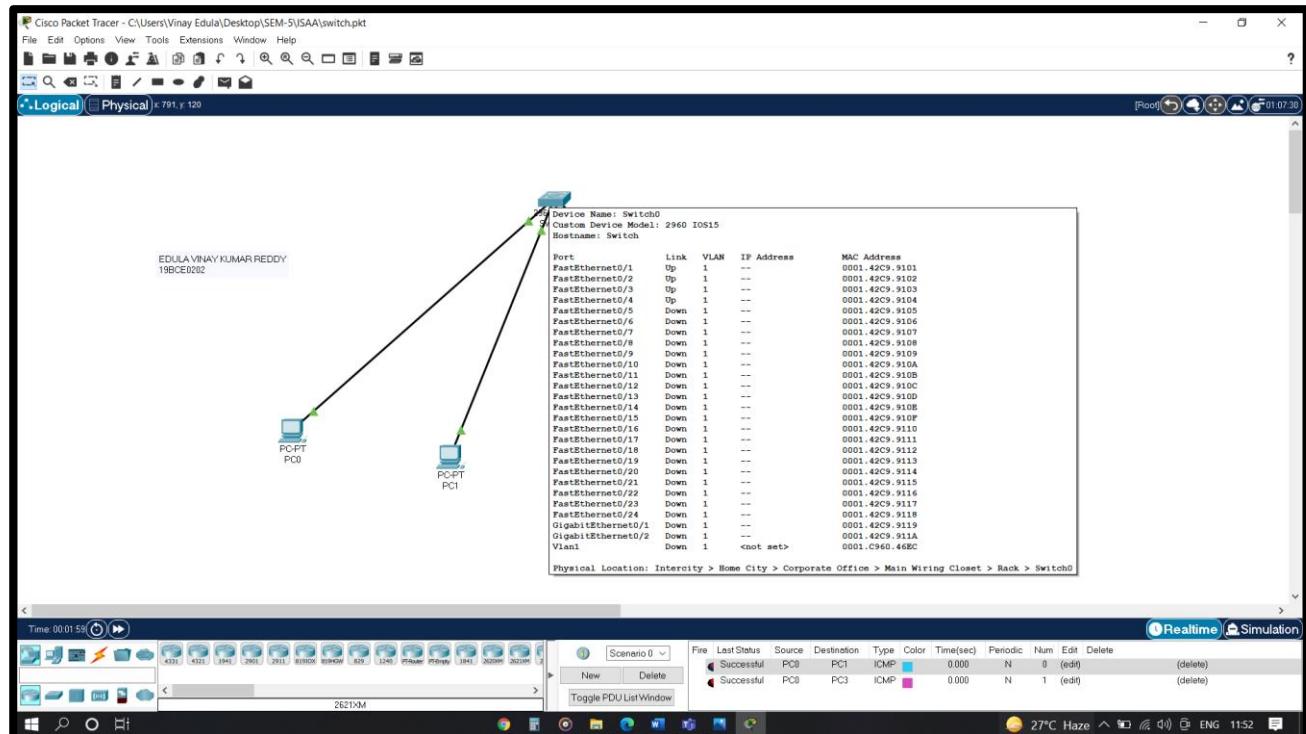
1. Connect FastEthernet0 port of PC0 with FastEthernet0/1 port of Switch0 using copper straight through cable.
2. Connect FastEthernet0 port of PC1 with FastEthernet0/2 port of Switch0 using copper straight through cable.
3. Connect FastEthernet0 port of PC2 with FastEthernet0/3 port of Switch0 using copper straight through cable.
4. Connect FastEthernet0 port of PC3 with FastEthernet0/4 port of Switch0 using copper straight through cable.

Designed Network topology:

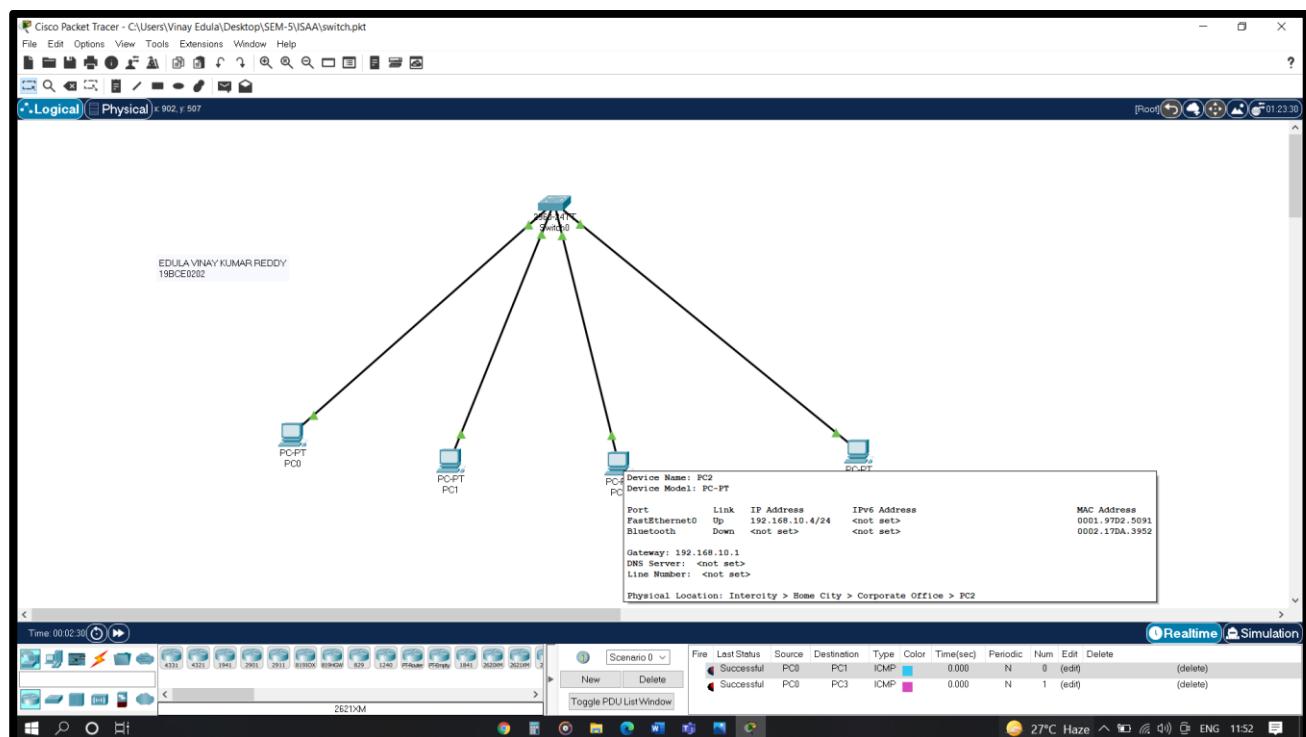


Packet tracer screenshots:

➤ Switch Configurations:

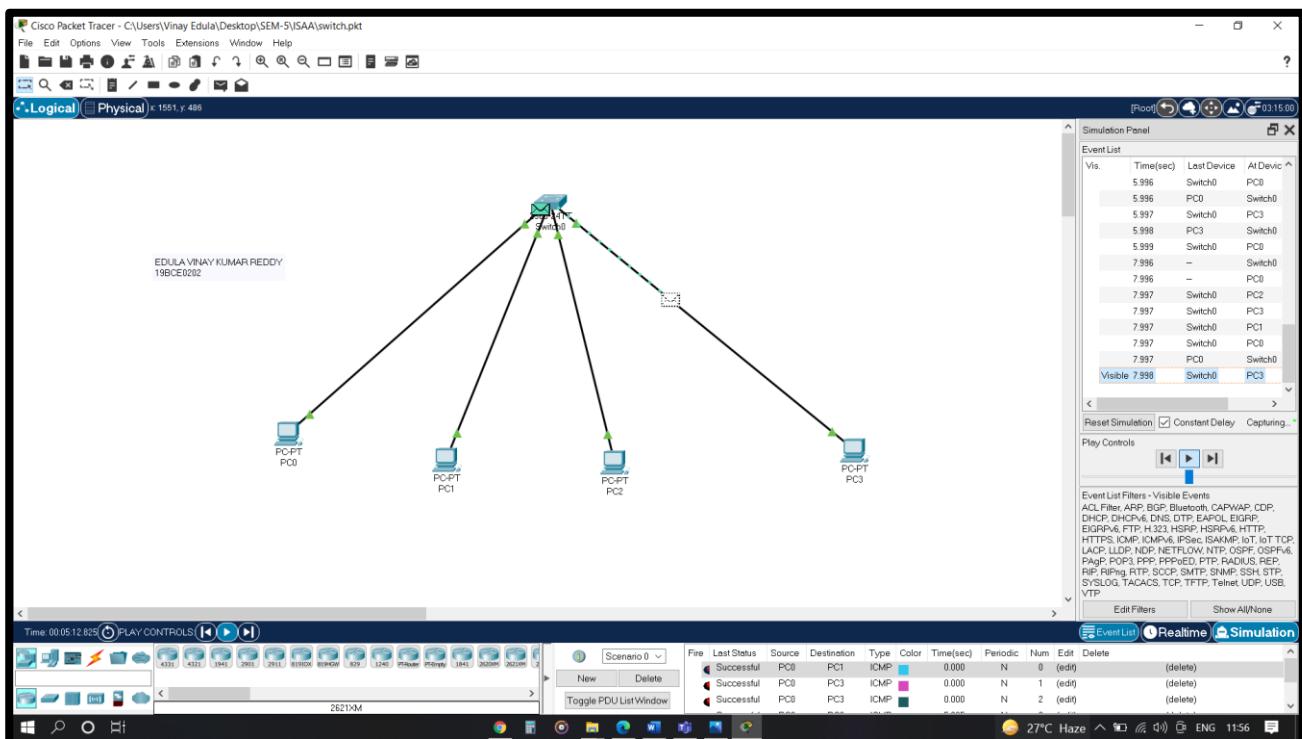
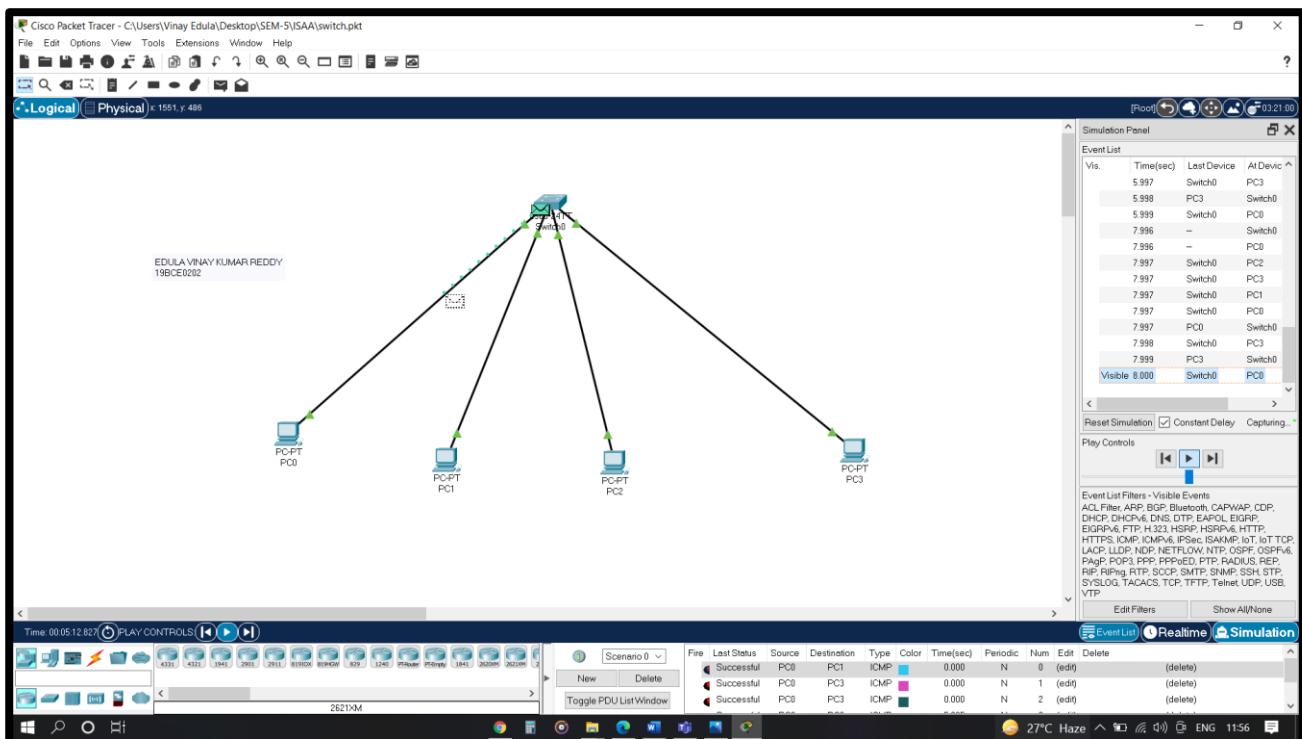


➤ PC Configurations:

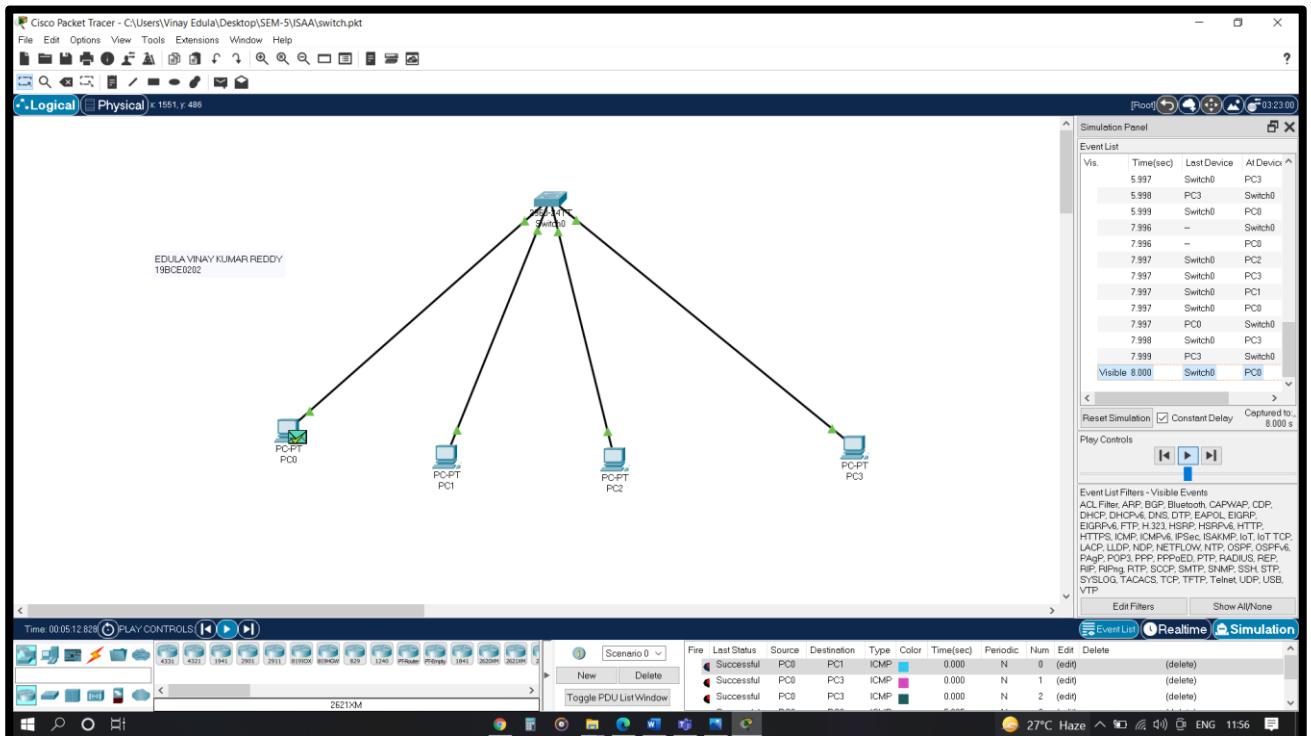
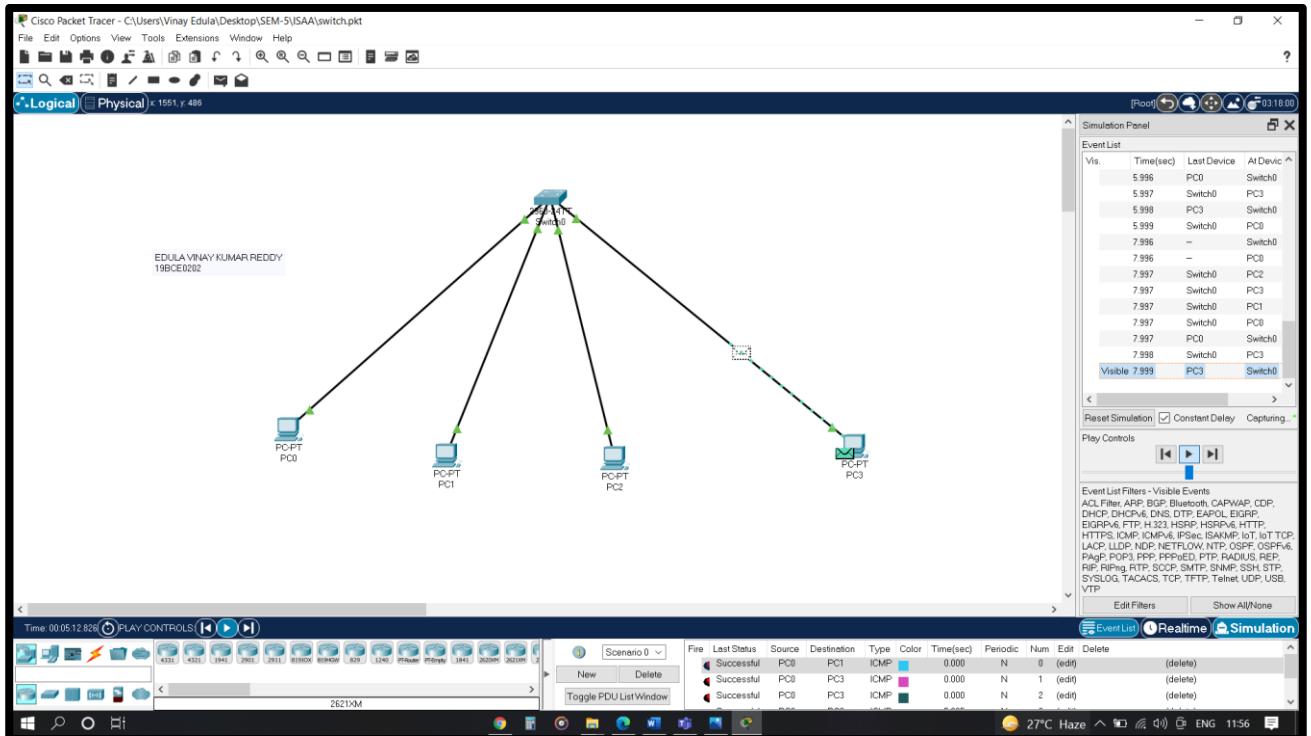


Simulation of Designed Network Topology:

- Sending a PDU From PC0 to PC4.



➤ Acknowledgement From PC4 to PC0.



2. Design a Network for connecting Two Different LAN's and checks the connecting using CLI and command prompt.

Aim:

To design and simulate a Network for connecting Two Different LAN's using cisco packet tracer.

Observations:

In this network we used 1 router, 2 switches and 6 PCs. Switches are connected to computers accordingly such a way that each switch along with PCs forms a Local Area Network. A Router is used to connect two Local area networks. All the Connections are made using copper straight through cables. After forming the network, to check network connectivity a simple PDU is transferred from PC0 in LAN1 to PC4 in LAN2. The network simulation status is successful.

Procedure:

Step-1(Configuring Router1):

1. Select the router and Open CLI.
2. Press **ENTER** to start configuring Router1.
3. Type **enable** to activate privileged mode.
4. Type **config t** to access the configuration menu.
5. Configure interfaces of Router1:
 - Type **interface GigabitEthernet0/0** to access GigabitEthernet0/0 and Configure the GigabitEthernet0/0 interface with the IP address 192.168.1.1 and Subnet mask 255.255.255.0.
 - Type **interface GigabitEthernet0/1** to access GigabitEthernet0/0 and Configure the GigabitEthernet0/1 interface with IP address 192.168.2.1 and Subnet mask 255.255.255.0.
6. Type no shutdown to finish

➤ Router1 Command Line Interface:

```
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
Router(config-if)#interface GigabitEthernet0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown
```

➤ Router Configuration Table:

Device Name	IP address GigabitEthernet0/0	Subnet Mask	IP Address GigabitEthernet 0/1	Subnet Mask
Router1	192.168.1.1	255.255.255.0	192.168.2.1	255.255.255.0

Step-2(Configuring Switch0):

1. Select Switch0 and open CLI.
2. In CLI Press **ENTER** to start configuring Switch0.
3. Type **enable** to activate privileged mode.
4. Type **config t** to access the configuration menu.
5. Configure the hostname of the switch as Switch0.

Switch(config)#hostname Switch0

6. Configure the switch management interface on VLAN1 and Enter the interface configuration mode for VLAN 1.

Switch0(config)#interface vlan1

7. Type IP address 192.168.1.2 255.255.255.0 to assign an IP address and subnet mask to the interface.

Switch0(config-if)#ip address 192.168.1.2 255 .255 .255.0

8. Assign default gateway for the management interface.

Switch0(config)#ip default-gateway 192.168.1.1

9. Type no shutdown to finish

Switch0(config-if)#no shutdown

➤ Switch0 Command Line Interface:

```
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname Switch0
Switch0(config)#interface VLAN1
Switch0(config-if)#ip address 192.168.1.2 255.255.255.0
Switch0(config-if)#ip default-gateway 192.168.1.1
```

Step-3(Configuring Switch1):

1. Select Switch1 and open CLI.
2. In CLI Press **ENTER** to start configuring Switch1.
3. Type **enable** to activate privileged mode.
4. Type **config t** to access the configuration menu.
5. Configure the hostname of the switch as Switch1.

Switch(config)#hostname Switch1

6. Configure the switch management interface on VLAN2 and Enter the interface configuration mode for VLAN2.

Switch1(config)#interface vlan2

7. Type IP address 192.168.2.2 255.255.255.0 to assign an IP address and subnet mask to the interface.
8. Assign default gateway for the management interface.

Switch1(config)#ip default-gateway 192.168.2.1

9. Type no shutdown to finish

Switch1(config-if)#no shutdown

➤ **Switch1 Command Line Interface:**

```
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname Switch1
Switch1(config)#interface VLAN2
Switch1(config-if)#ip address 192.168.2.2 255.255.255.0
Switch1(config-if)#ip default-gateway 192.168.2.1
```

➤ **Switch Configuration Table:**

Device Name	IP address Interface vlan1	Subnet Mask	IP Address Interface vlan2	Subnet Mask
Switch 0	192.168.1.2	255.255.255.0	-	-
Switch 1	-	-	192.168.2.2	255.255.255.0

Step-4(Configuring PCs):

1. Assign IP Address to every PC in both the VLAN's
2. Select the PC Go to desktop and select IP Configuration and assign IP address, Default gateway, Subnet Mask
3. Assign the default gateways of PC's in VLAN1 as 192.168.1.1
4. Assign the default gateways of PC's in VLAN2 as 192.168.2.1

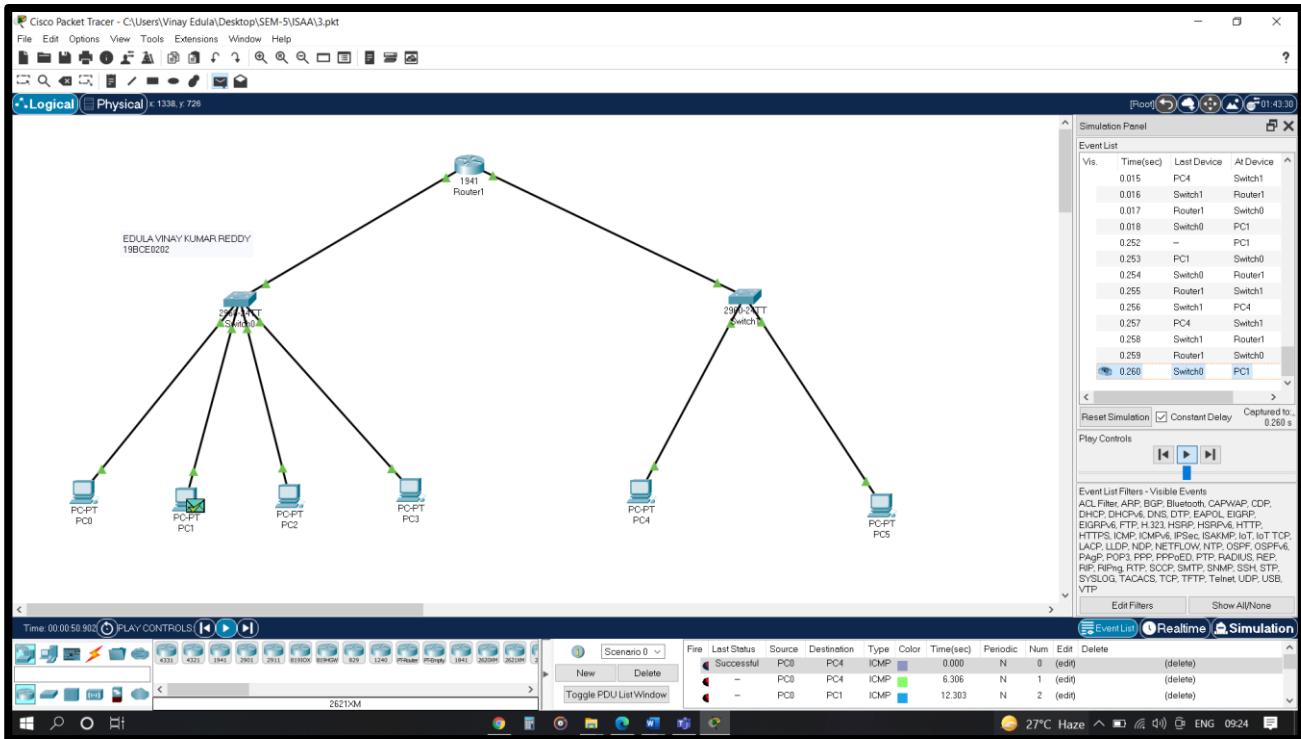
➤ PC Configuration Table:

Device Name	IP address	Subnet Mask	IP Address	Subnet Mask	Gateway
PC 0	192.168.1.3	255.255.255.0	-	-	192.168.1.1
PC 1	192.168.1.4	255.255.255.0	-	-	192.168.1.1
PC 2	192.168.1.5	255.255.255.0	-	-	192.168.1.1
PC 3	192.168.1.6	255.255.255.0	-	-	192.168.1.1
PC 4	-	-	192.168.2.3	255.255.255.0	192.168.2.1
PC 5	-	-	192.168.2.4	255.255.255.0	192.168.2.1

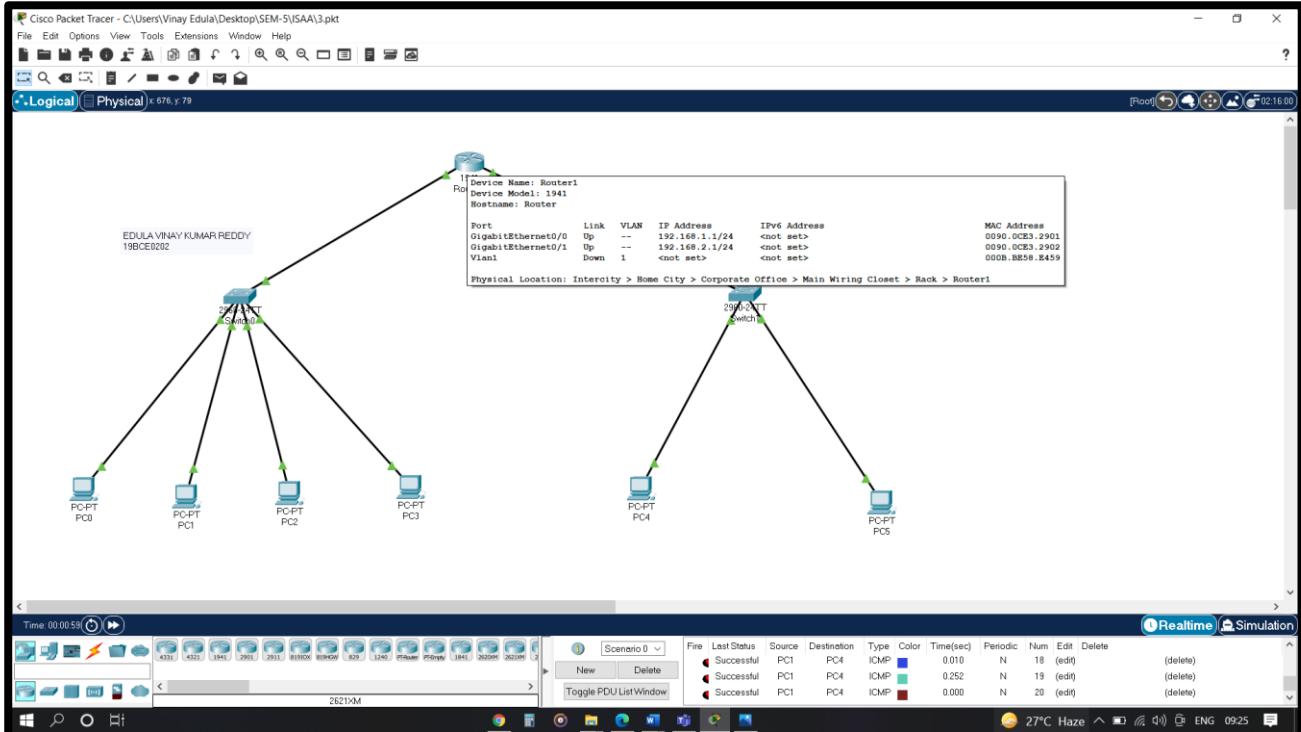
Step-5(Connecting Switches with router):

1. Connect GigabitEthernet0/1 port of switch 0 with GigabitEthernet0/0 port of Router0 using copper straight through cable.
2. Connect GigabitEthernet0/1 port of switch 1 with GigabitEthernet0/1 port of Router0 using copper straight through cable.

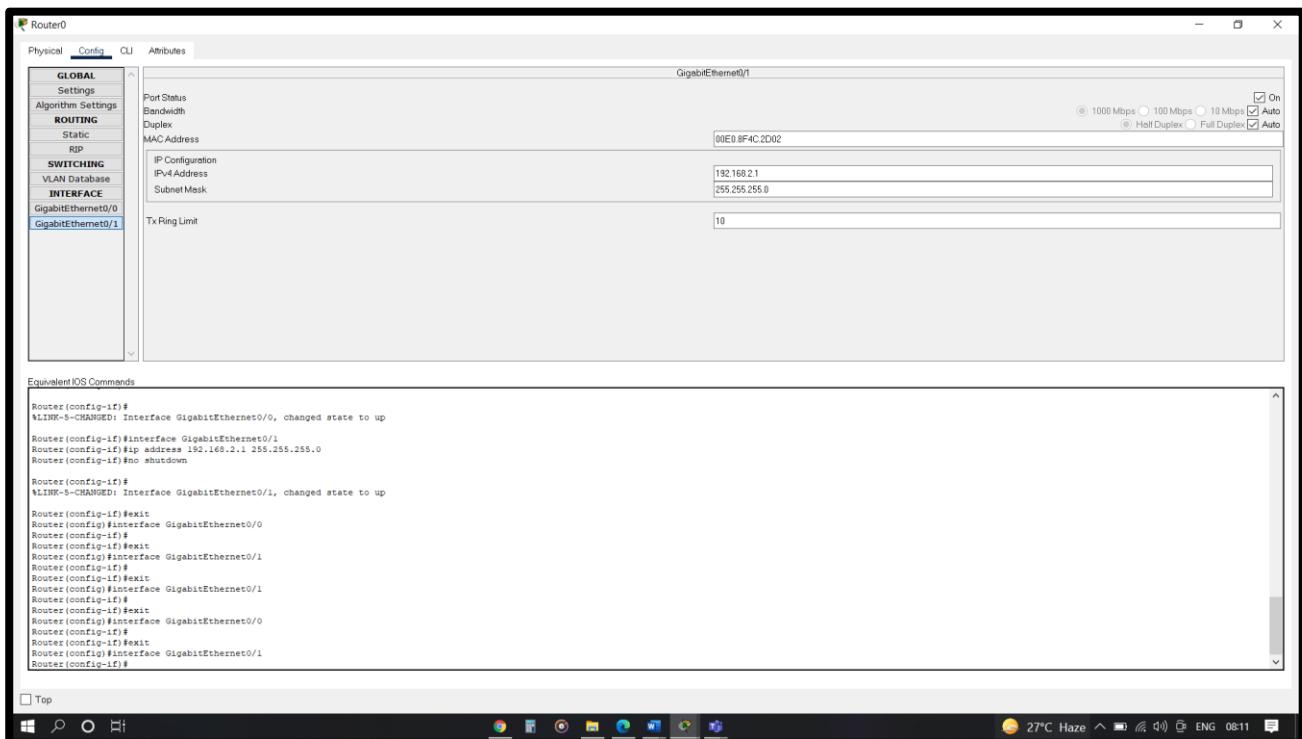
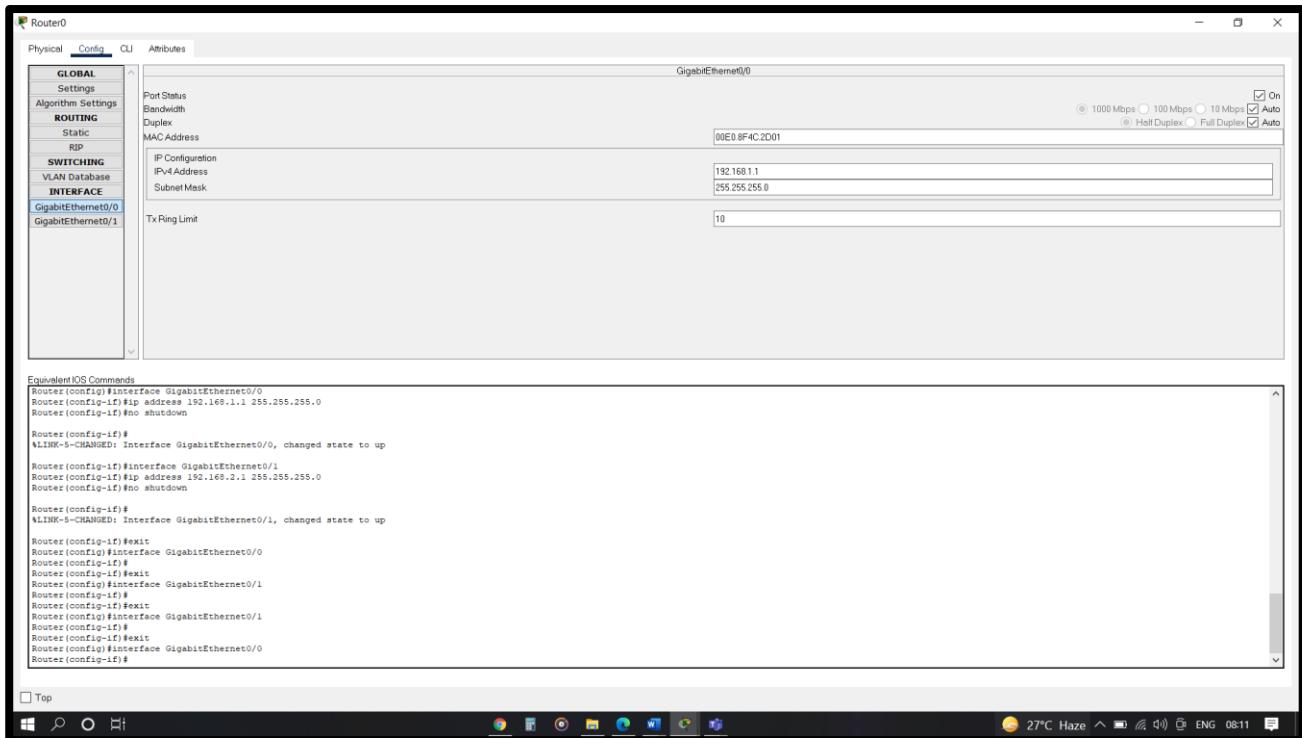
Designed Network Topology:



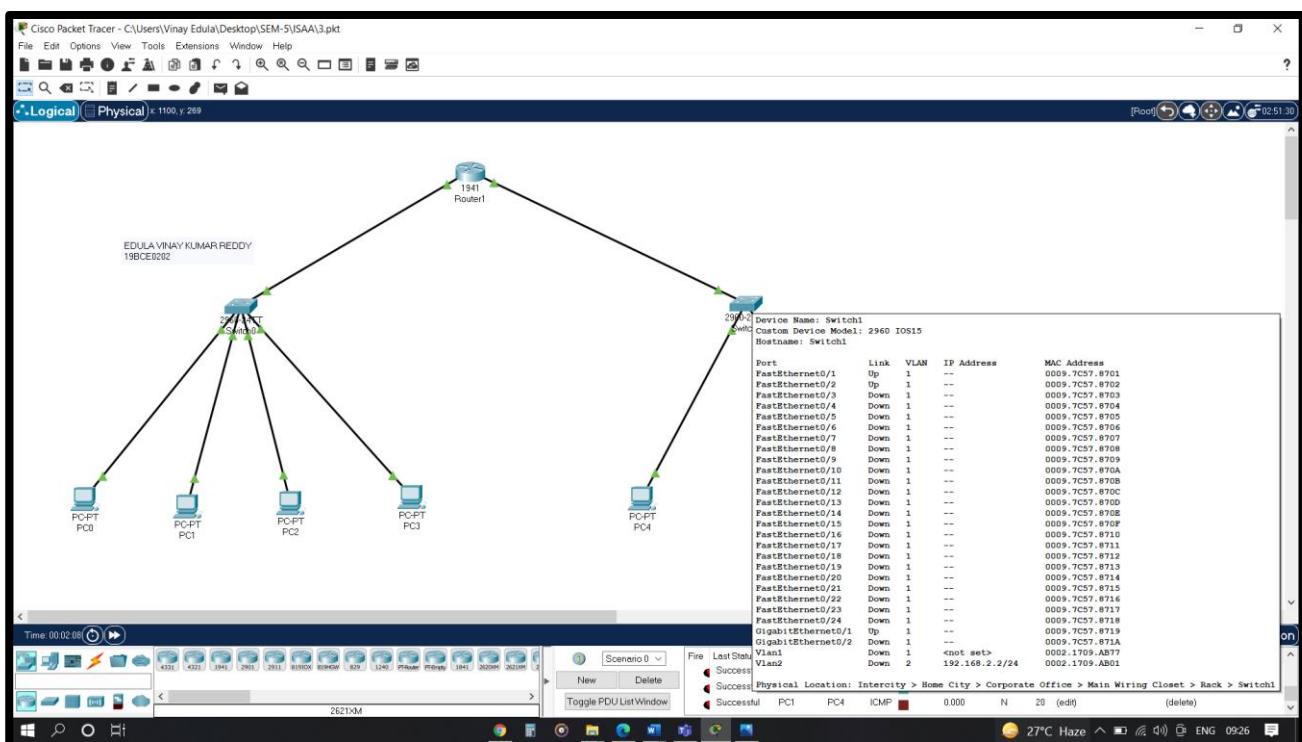
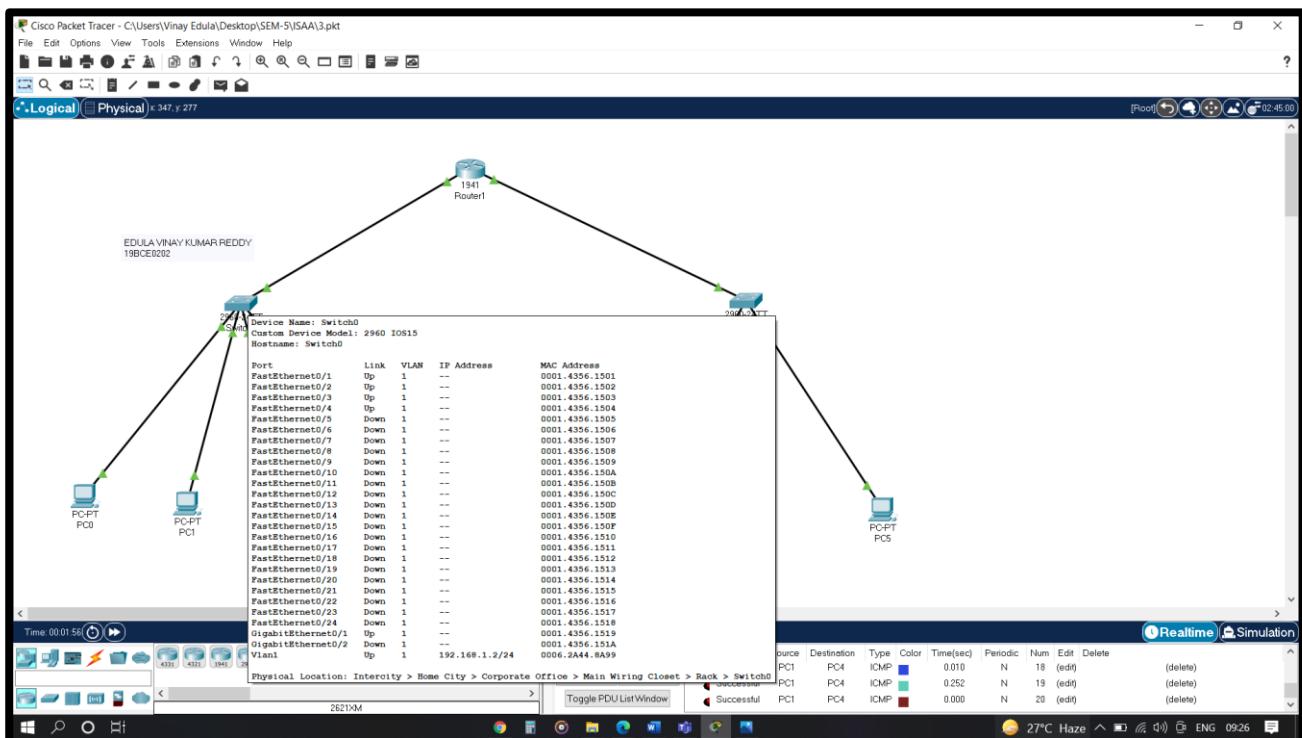
Packet tracer screenshots:



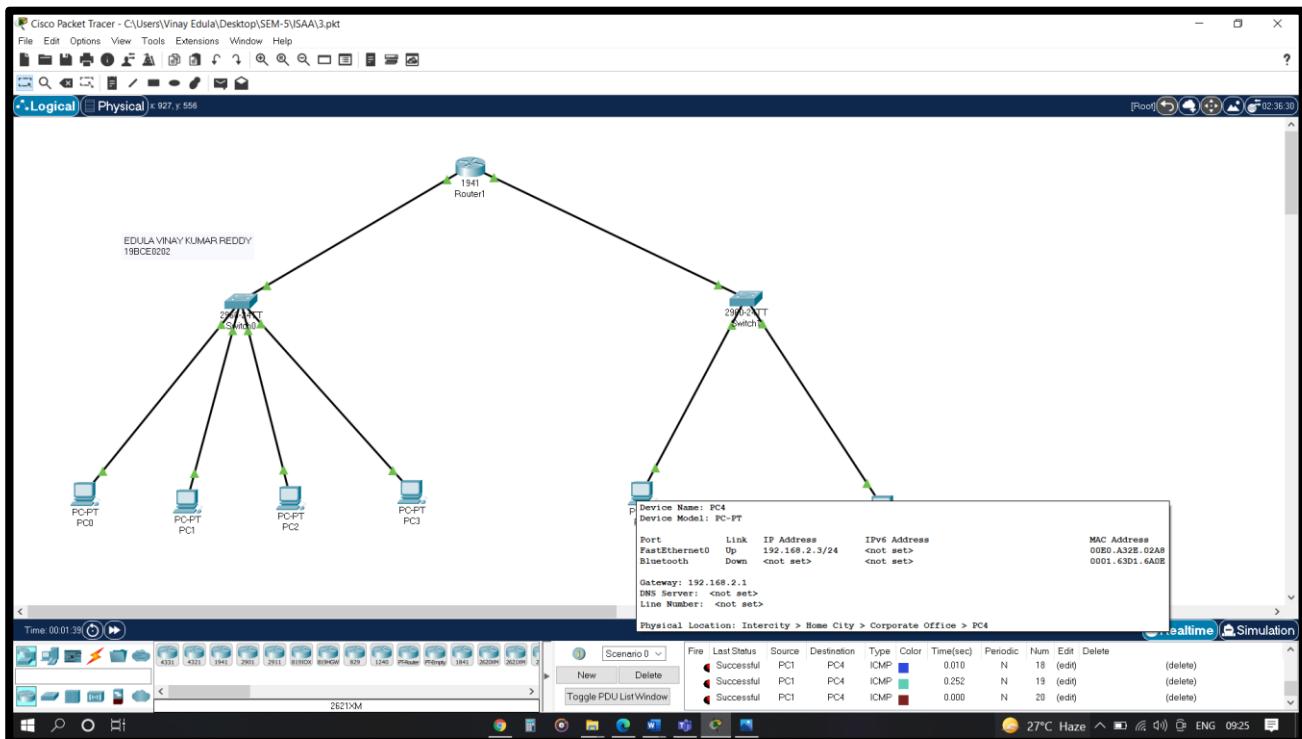
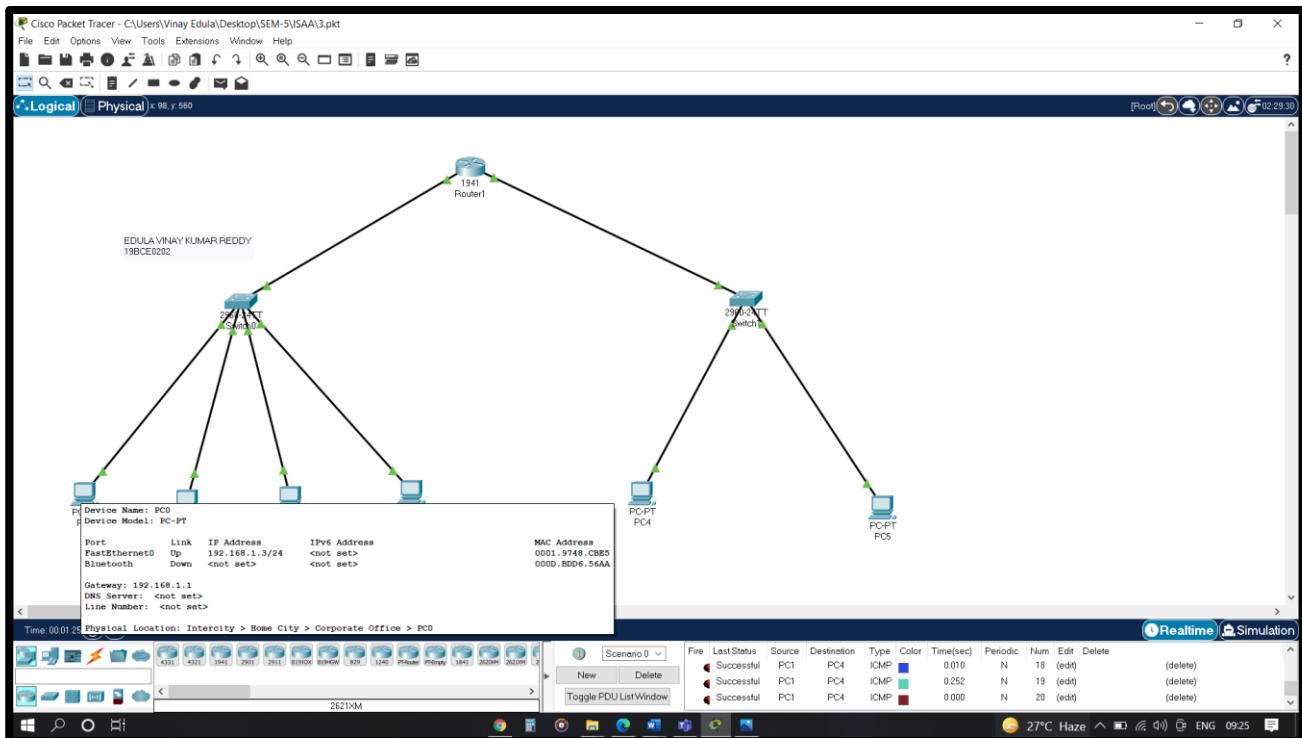
➤ Router Configurations:



➤ Switch Configurations:

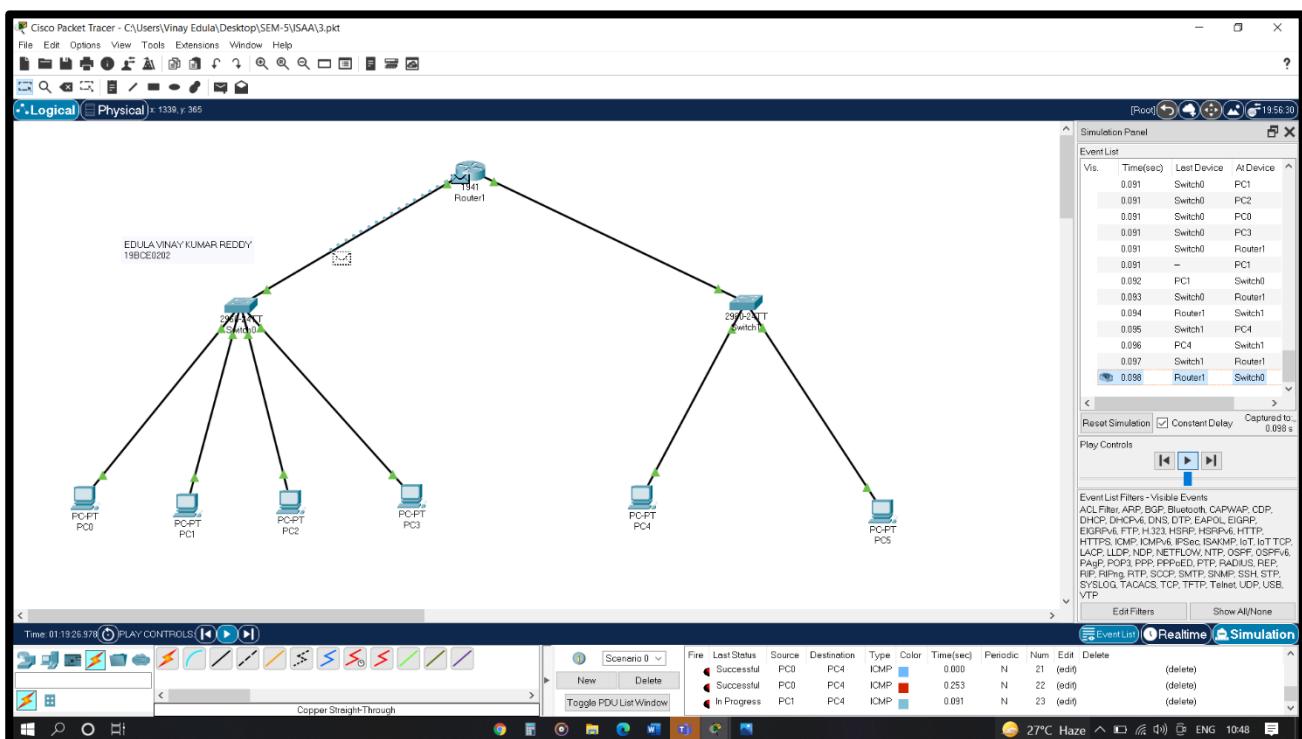
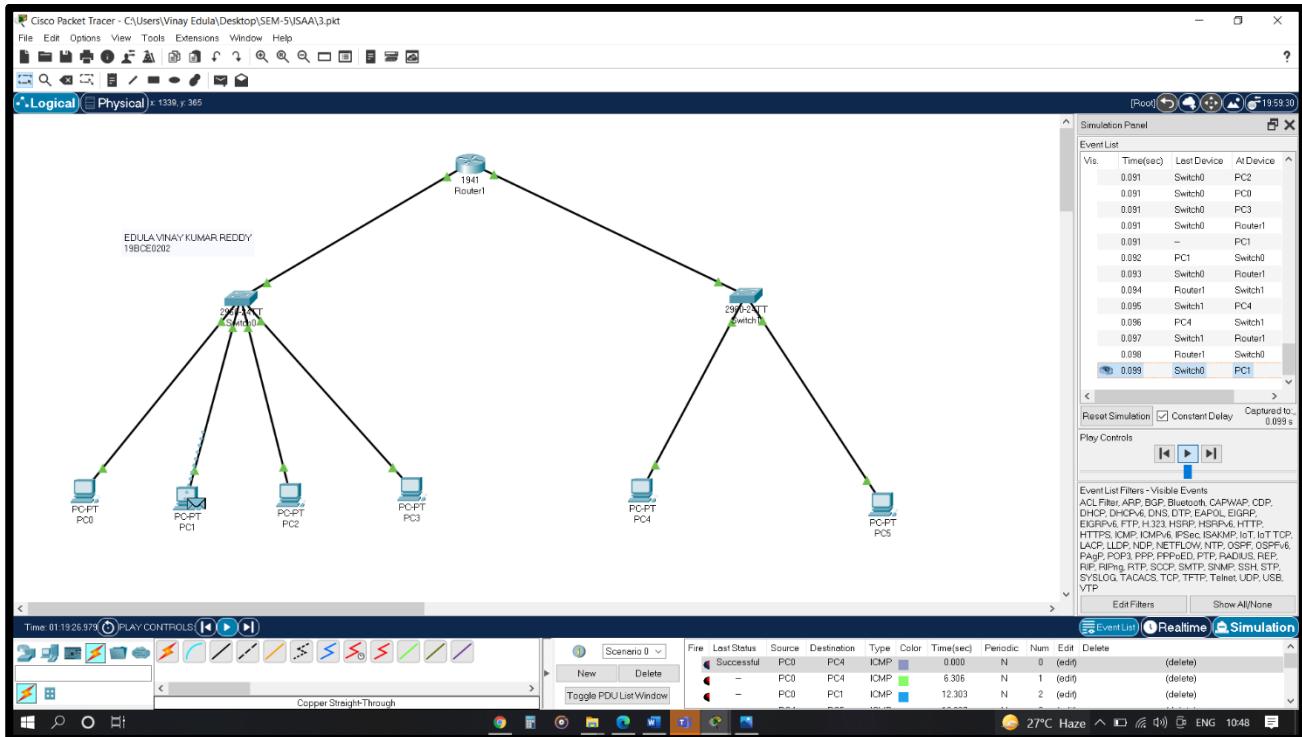


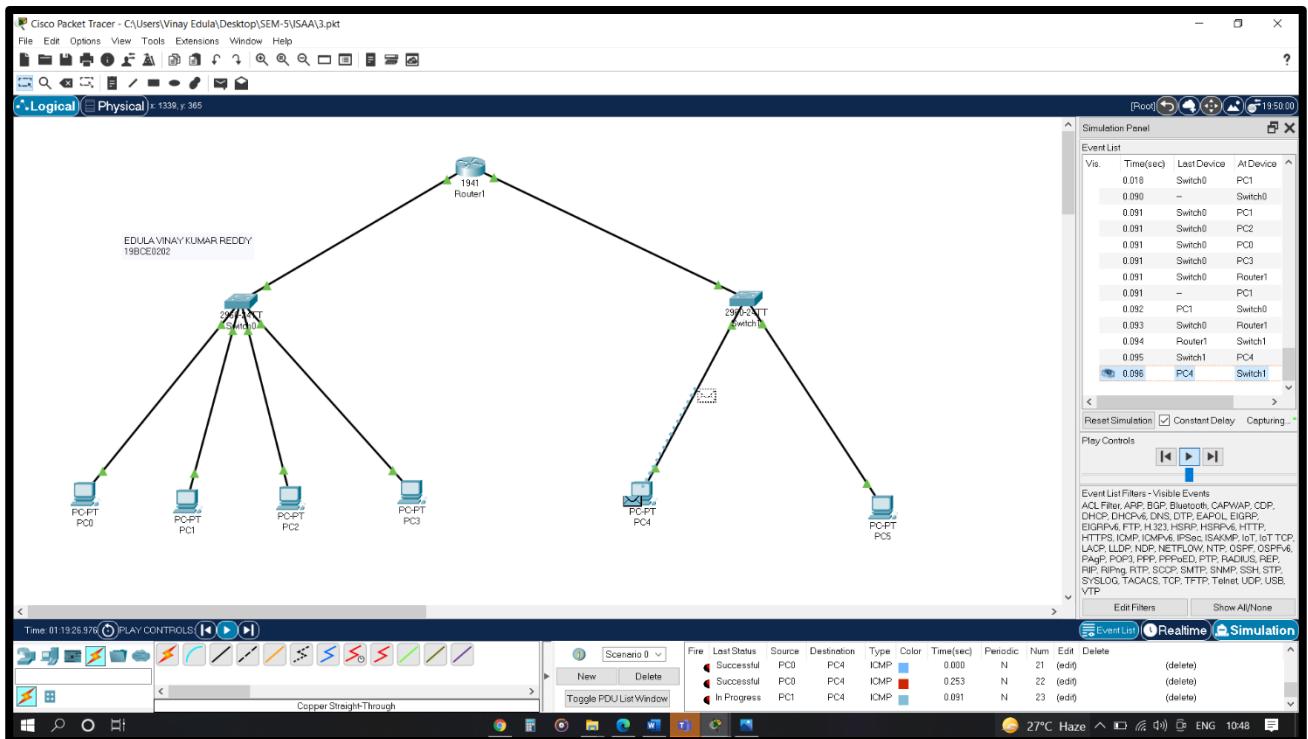
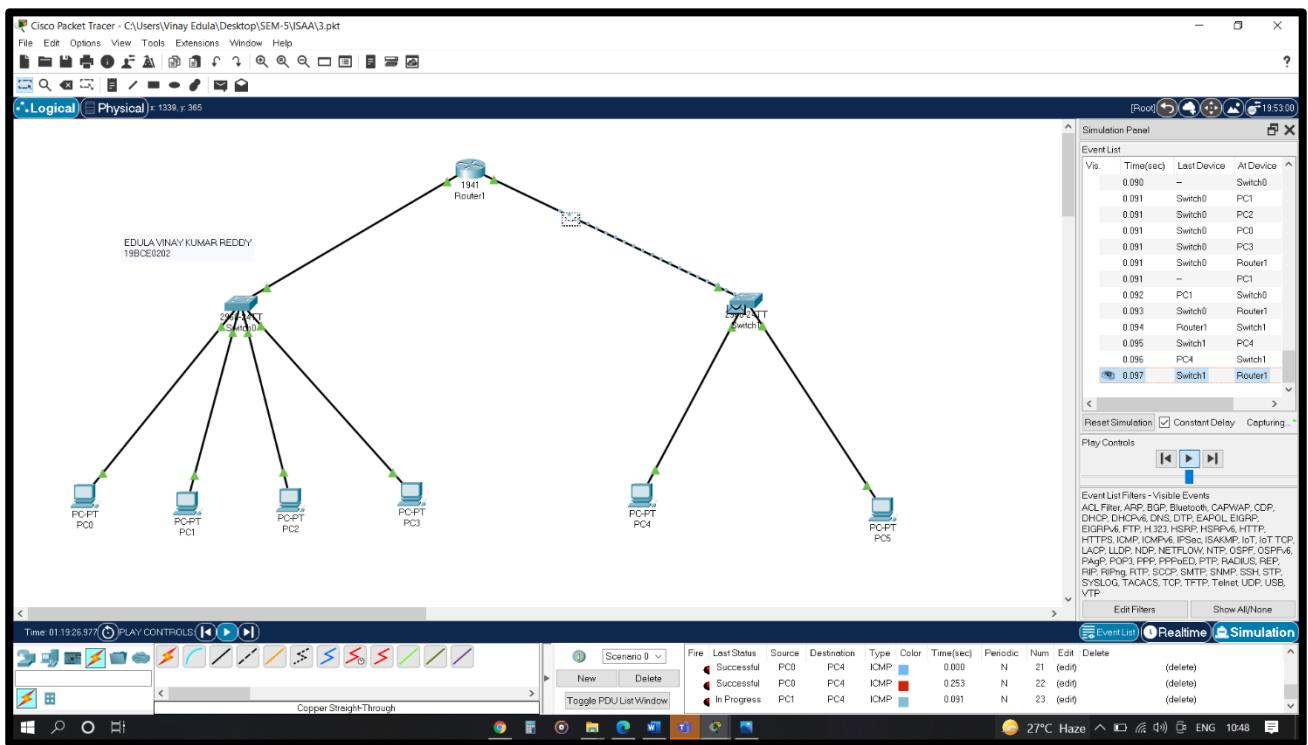
➤ PC Configurations:



Simulation of Designed Network Topology:

- Sending a PDU From PC1 to PC4.





➤ Acknowledgement From PC1 to PC4.

