# Experiment-3

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**Subject Name: Computer Networks** **Subject Code: 22CSH-312**

1. **Aim:** Implement different network topologies like Star, Bus, and Mesh Topology with the help of Packet Tracer.

2. **Objective:**

   To understand Star, Bus, and Mesh Topology.

3. **Tools Needed:**

   - Cisco Packet Tracer

4. **Procedure:**

• **Launch Cisco Packet Tracer:** Open the Packet Tracer application.

• **Select Devices:** Choose the required network devices (routers, switches, PCs, cables) from the device palette.

• **Create a Workspace:** Drag and drop the selected devices onto the workspace to create a basic network layout.

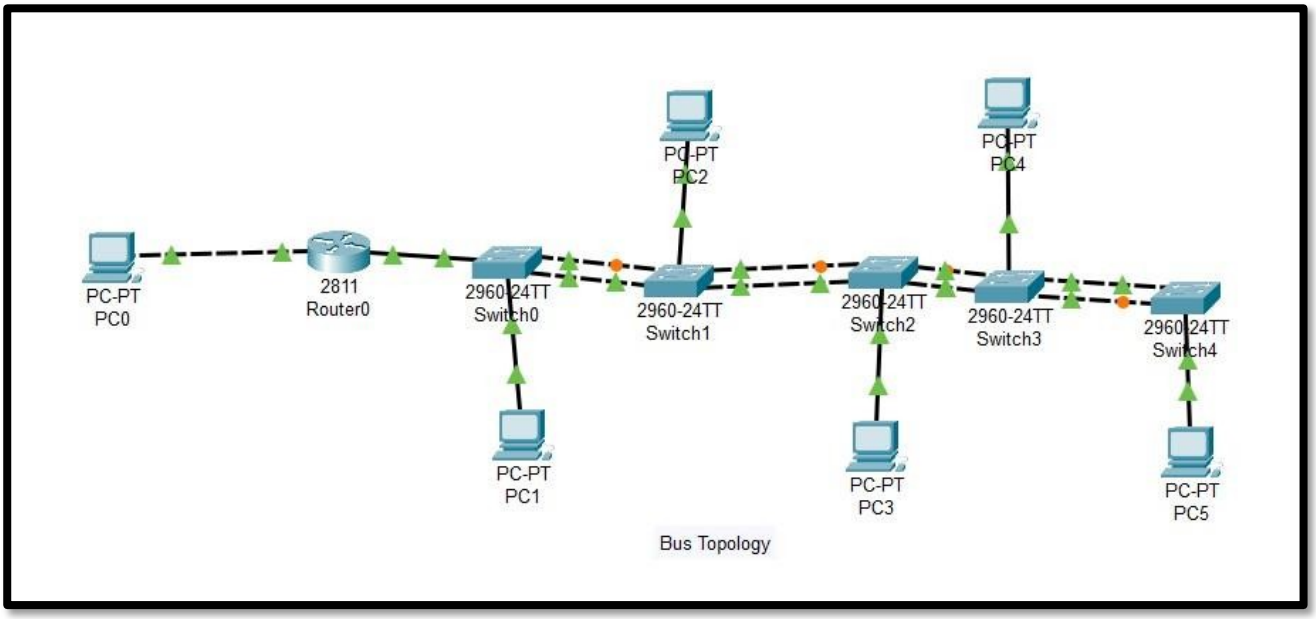
• **Connect Devices:** Use appropriate cables (copper straight-through, crossover, console) to connect devices based on the topology.

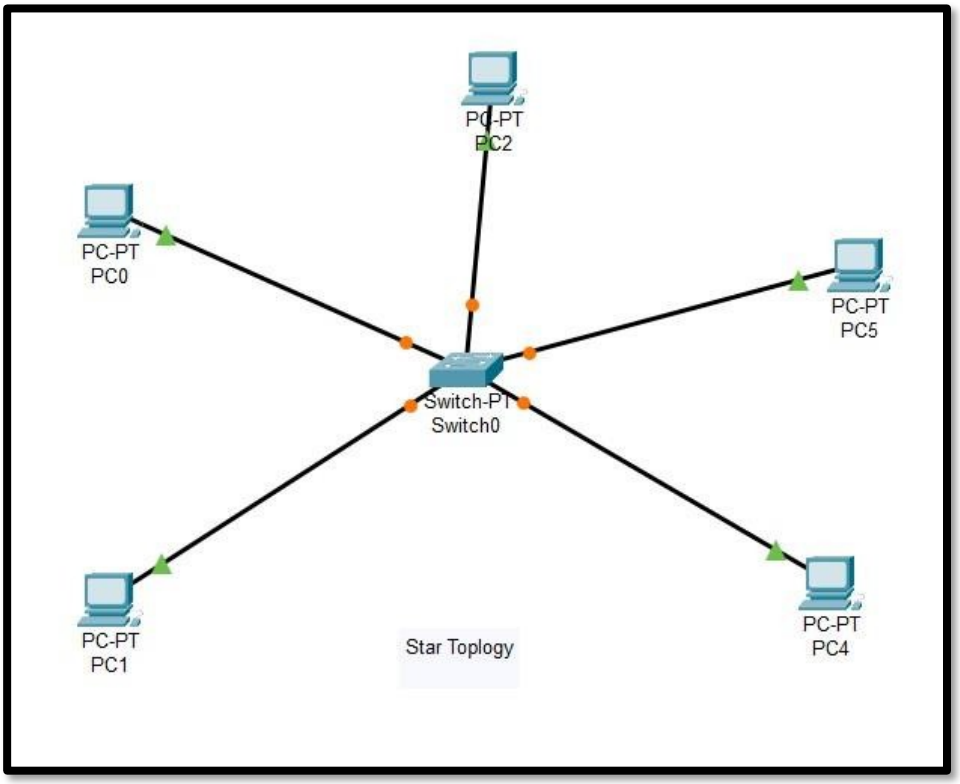
• **Configure Devices:**

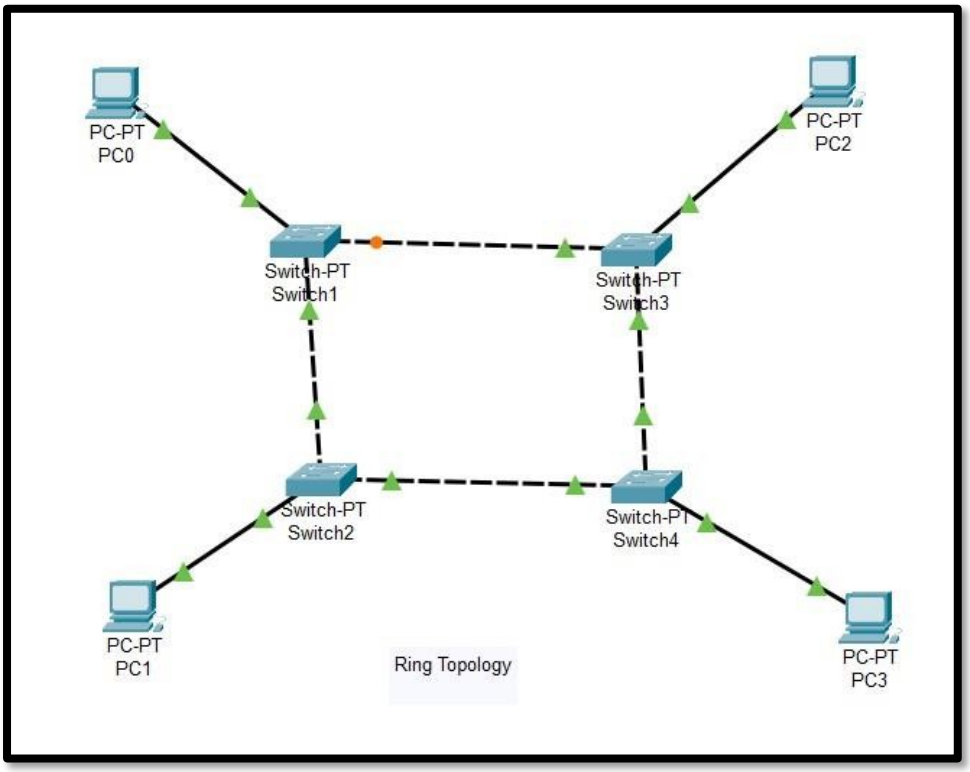
- **Routers:**
  - Enter global configuration mode: `enable`, `configure terminal`
  - Interface configuration: `interface FastEthernet 0/0`, `ip address <IP address> <subnet mask>`, `no shutdown`
  - Assign IP addresses to other interfaces as required.
- **PCs:**
  - Assign static IP addresses, subnet masks, and default gateways.

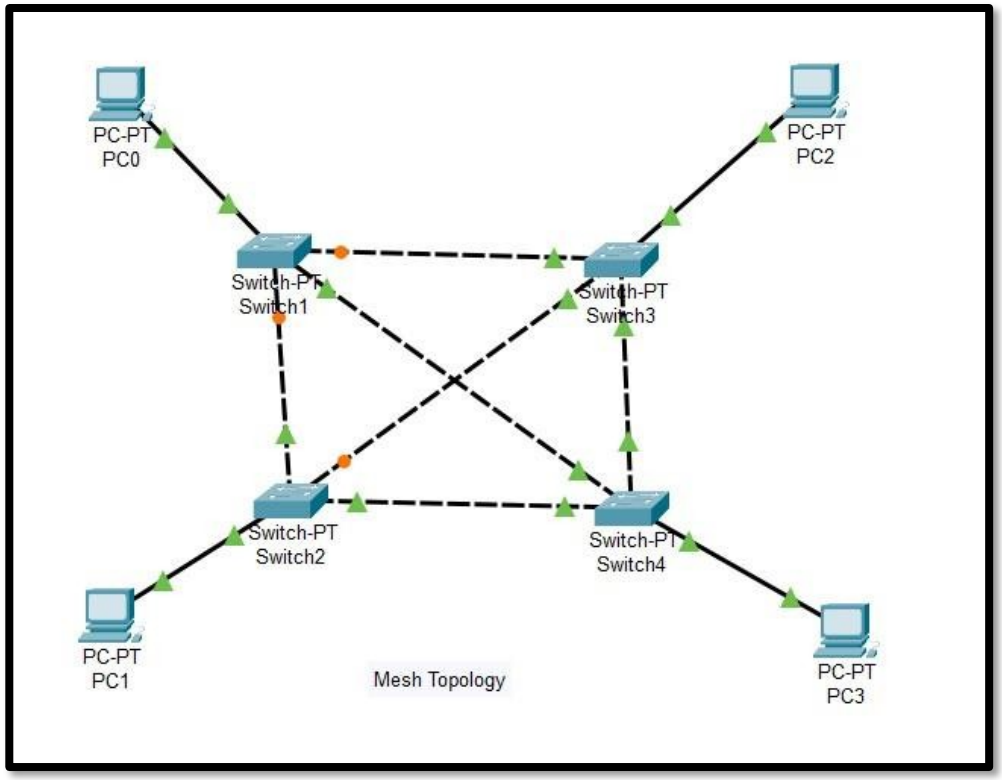
**Verify Connectivity:** Use the ping command to test communication between devices.

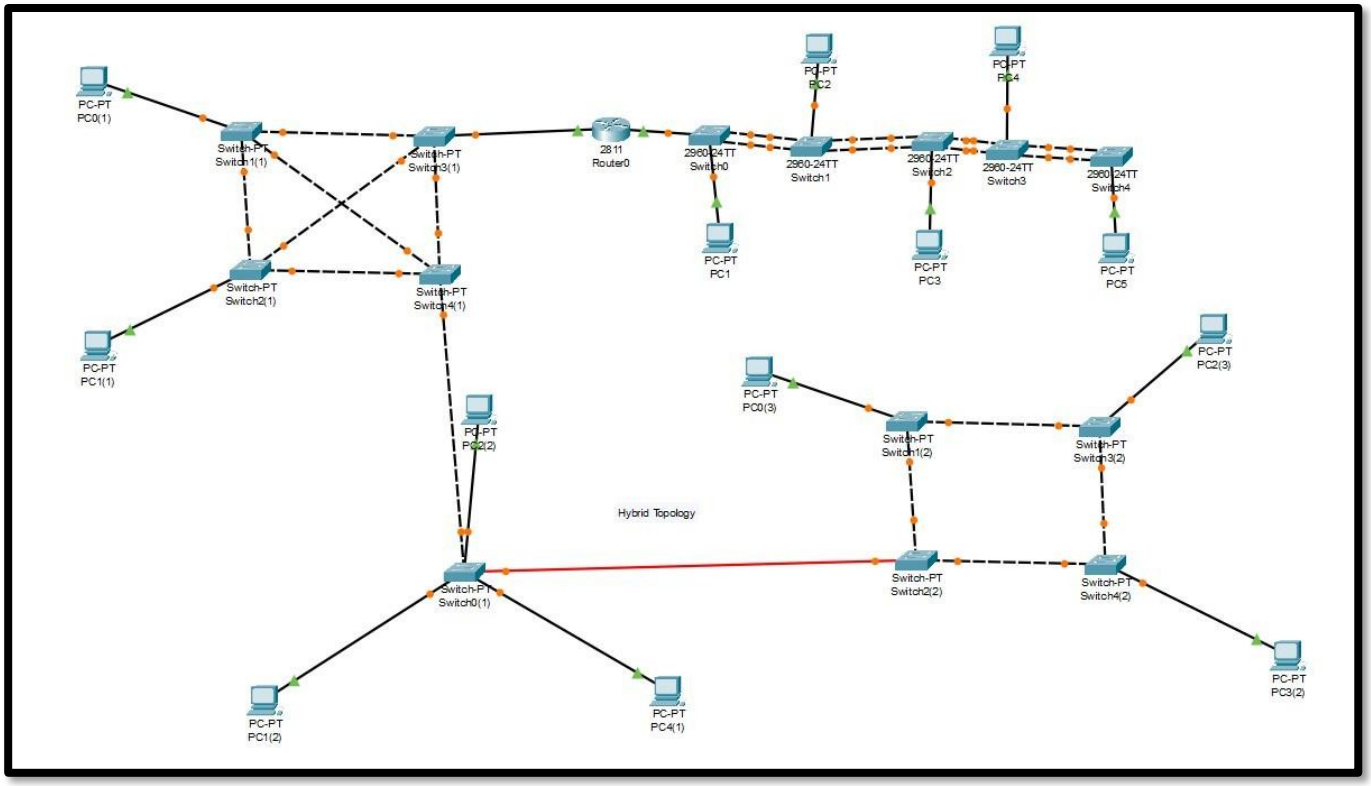
## 5. Output:




PC-PT
PC2
PC-PT
PC0
PC-PT
PC5
Switch-PT
Switch0
PC-PT
PC1
PC-PT
PC4
Star Toplogy


PC-PT
PC0
PC-PT
PC2
Switch-PT
Switch1
Switch-PT
Switch3
Switch-PT
Switch2
Switch-PT
Switch4
PC-PT
PC1
PC-PT
PC3
Ring Topology


PC-PT
PC0
PC-PT
PC2
Switch-PT
Switch1
Switch-PT
Switch3
Switch-PT
Switch2
Switch-PT
Switch4
PC-PT
PC1
PC-PT
PC3
Mesh Topology


PC-PT
PC0(1)
Switch-PT
Switch1(1)
Switch-PT
Switch3(1)
2811
Router0
2960-24TT
Switch0
2960-24TT
Switch1
2960-24TT
Switch2
2960-24TT
Switch3
2960-24TT
Switch4
PC-PT
PC2
PC-PT
PC4
PC-PT
PC1
PC-PT
PC3
PC-PT
PC5
Switch-PT
Switch2(1)
Switch-PT
Switch4(1)
PC-PT
PC1(1)
PC-PT
PC2(2)
PC-PT
PC0(3)
PC-PT
PC2(3)
Switch-PT
Switch1(2)
Switch-PT
Switch3(2)
Hybrid Topology
Switch-PT
Switch0(1)
Switch-PT
Switch2(2)
Switch-PT
Switch4(2)
PC-PT
PC1(2)
PC-PT
PC4(1)
PC-PT
PC3(2)

## 6. Learning Outcome:

a. Understand the setup and configuration of Bus, Ring, Mesh, Star and Hybrid network topologies.

b. Learn to use Cisco Packet Tracer to simulate different network designs.

c. Gain practical skills in configuring network devices and analyzing their connectivity.