EXPT: 10 DESIGN A SIMPLE TOPOLOGY AND CONFIGURE WITH ONE ROUTER, TWO SWITCHES AND PCS USING CISCO PACKET TRACER
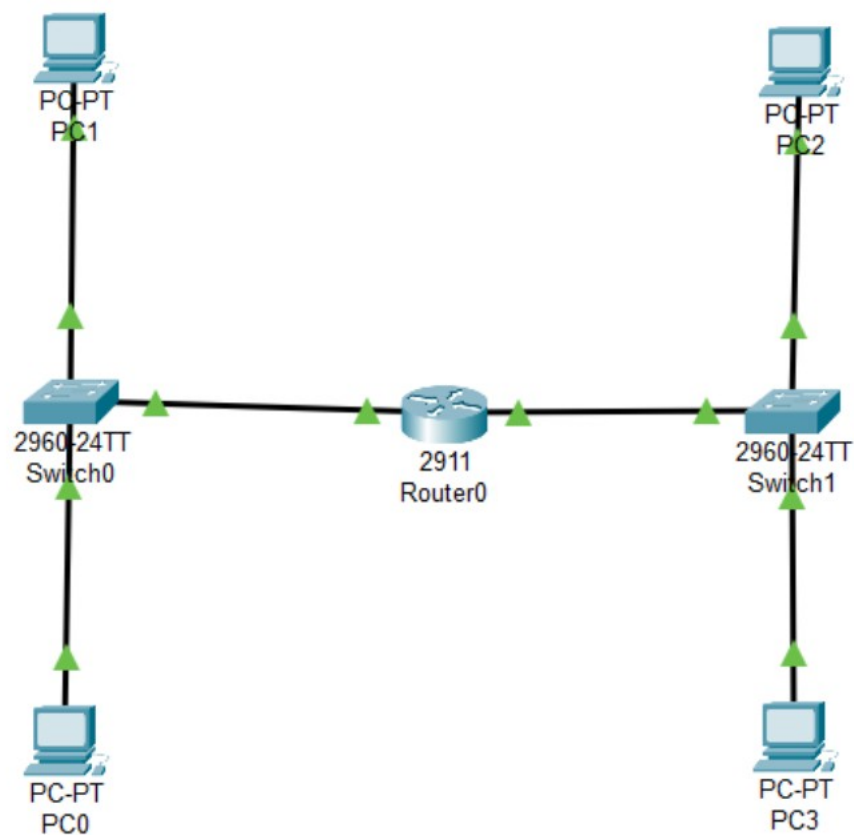
 Aim :

To design and configure a simple network topology using **one router, two switches, and PCs** in Cisco Packet Tracer and verify successful communication between networks.

 Algorithm :

- Start **Cisco Packet Tracer.**
- Select **and place devices:**
- 1 Router (e.g., Cisco 2911)
- 2 Switches (e.g., 2960)
- 4 PCs
- Connect **the devices using Copper Straight-Through cables:**
- PC0 → Switch0 (F0/1)
- PC1 → Switch0 (F0/2)
- PC2 → Switch1 (F0/1)
- PC3 → Switch1 (F0/2)
- Switch0 → Router (G0/0)
- Switch1 → Router (G0/1)
- Assign **IP** addresses **to PCs:**
- LAN1 → 192.168.1.0/24 (PC0, PC1)
- LAN2 → 192.168.2.0/24 (PC2, PC3)
- Configure router **interfaces:**
- Interface G0/0 → 192.168.1.1 255.255.255.0
- Interface G0/1 → 192.168.2.1 255.255.255.0
- Use no shutdown command to activate interfaces.
- Set **Default Gateway** on **each PC:**
- For PCs in LAN1 → 192.168.1.1
- For PCs in LAN2 → 192.168.2.1
- Verify **connections:**

- Use the ping command from one PC in LAN1 to a PC in LAN2.

- Check for successful replies.

- Stop.

- If packets are successfully received, the topology is working correctly.

Network Topology

 Output :

```
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=4ms TTL=255
Reply from 192.168.2.1: bytes=32 time=4ms TTL=255
Reply from 192.168.2.1: bytes=32 time=4ms TTL=255
Reply from 192.168.2.1: bytes=32 time=4ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 4ms, Average = 4ms
```

 Result :

A simple network topology using **one router, two switches, and multiple PCs** was designed and configured successfully in Cisco Packet Tracer. Communication between both networks was verified using the **ping** command.