

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

EXPT.NO: 10

DATE:

INTRODUCTION:

In networking, routers are used to connect multiple networks.

Switches connect devices within a single LAN.

In this experiment, two LANs (connected by switches) are linked using a router.

Each LAN will have its own IP network, and the router will route packets between them.

AIM:

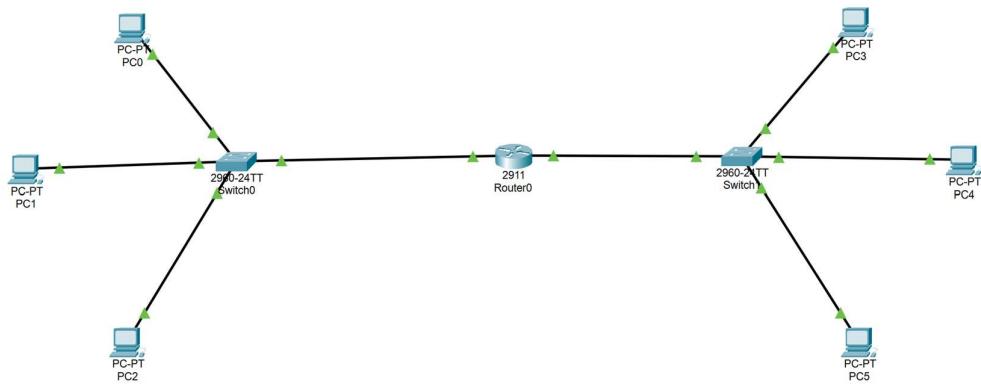
To design and configure a simple network topology using **one router, two switches, and PCs** in Cisco Packet Tracer and verify successful communication between networks.

ALGORITHM:

- Start **Cisco Packet Tracer**.
- Select **and place devices**:
 - 1 Router (e.g., Cisco 2911)
 - 2 Switches (e.g., 2960)
 - 6 PCs
- Connect the devices using **Copper Straight-Through cables**:
 - PC0 → Switch0 (F0/1)
 - PC1 → Switch0 (F0/2)
 - PC2 → Switch0 (F0/3)
 - PC3 → Switch1 (F0/1)
 - PC4 → Switch1 (F0/2)

- PC5 → Switch1 (F0/3)
- Switch0 → Router (G0/0)
- Switch1 → Router (G0/1)
- Assign **IP** addresses **to PCs**:
 - LAN1 → 192.168.1.1 (PC0, PC1, PC2)
 - LAN2 → 192.168.2.1 (PC3, PC4, PC5)
- 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:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time<1ms TTL=127
Reply from 192.168.2.3: bytes=32 time<1ms TTL=127
Reply from 192.168.2.3: bytes=32 time=11ms TTL=127
Reply from 192.168.2.3: bytes=32 time=11ms TTL=127

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 5ms
```

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.