Submitted By: M. Talha Atif F2021266573

Lab Report 8: Communication through 3 routers

# Objectives:

* Understand the setup of an organizational network using multiple routers.
* Learn how to configure routers for communication across different LAN networks.

# Learning:

## Setting Up the Network:

Place three routers, multiple switches, and several devices (e.g., PCs, laptops) in the Cisco Packet Tracer workspace. Connect the routers to each other using serial cables: Router 1: Enable Ethernet and Serial 2/0 ports. Router 2: Enable Serial 2/0, Serial 3/0, and Fast Ethernet ports. Router 3: Enable Ethernet and Serial 3/0 ports. Connect the devices to the switches using straight-through cables.

## Assign IP addresses:

Assign IP addresses within the same subnet for internal communication and configure router interfaces. Example: Router 1: Ethernet: 192.168.1.254, Serial 2/0: 10.0.0.1 Router 2: Fast Ethernet: 192.168.2.254, Serial 2/0: 10.0.0.2, Serial 3/0: 20.0.0.1 Router 3: Ethernet: 192.168.3.254, Serial 3/0: 20.0.0.2

## Router Configuration:

Using command line like:

Router(config)# interface ethernet 0/0

Router(config-if)# ip address 192.168.1.254 255.255.255.0

Router(config-if)# no shutdown

Router(config)# interface serial 2/0

Use the ping command to test connectivity between devices within the same switch and across different switches to ensure network communication.