International Islamic University Chittagong

CSE

LAB REPORT 1

Experiment Name: Introduction to Cisco Packet Tracer and basic PC to PC connectivity

Course Tittle: Computer Networks Lab

Course: CSE-3634

Submitted by,

Name: Abdullah Mahmud Showqi

ID: C223189 **Section**: 7EM **Semester:** 7th

Submitted to,

Submission Date: 29/10/25

Objectives

- To learn to use Cisco Packet Tracer for network simulation.
- To understand basic PC-to-PC connectivity and communication.
- To explore how devices exchange data in a simple network.

Introduction

Cisco Packet Tracer is a network simulation tool developed by Cisco Systems that allows users to create, configure, and test virtual networks. It is widely used in networking education to simulate device configuration and packet flow without requiring physical hardware.

A computer network connects multiple devices to share data and resources. The smallest network can be formed by connecting two PCs directly. In such a setup, each PC is assigned a unique IP address within the same network, and communication occurs using the ping command to test connectivity.

IP Addressing allows each device to be uniquely identified.

Example:

- PC1 → IP: 192.168.1.1
- PC2 → IP: 192.168.1.2

Both belong to the same subnet mask 255.255.255.0.

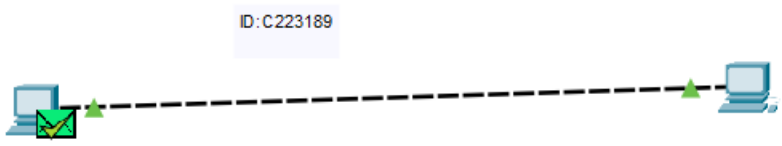
Through Cisco Packet Tracer, users can visualize how packets travel between devices in both real-time and simulation modes, understanding practical networking behavior.

Equipment and Tools

- **Simulator:** Cisco Packet Tracer
- **Devices:** 2 PCs (End Devices)
- **Cable Used:** Copper Cross-Over Cable
- **Commands Used:**
    - ipconfig → to verify IP configuration
    - ping → to check connectivity between PCs

Experimental Setup

1. Open Cisco Packet Tracer and place two PCs on the workspace.
2. Connect both PCs using a Copper Cross-Over Cable.
3. Assign IP addresses:
    - PC0 → IP: 192.168.1.1
    - PC1 → IP: 192.168.1.2
4. Test connectivity by using the ping command from one PC to another.
5. Observe the packet flow in both Real-Time and Simulation modes.



6. **Result and Analysis**

The ping command successfully sent packets from PC0 to PC1 and received replies, confirming that both PCs were properly connected. In

Real-Time mode, packets were transmitted instantly, while in Simulation mode, the packet flow was displayed step by step, showing how data was encapsulated and de-encapsulated during transmission.

Discussion

This experiment demonstrated basic PC-to-PC communication using Cisco Packet Tracer, highlighting the importance of correct IP configuration and cable selection. The main challenge was ensuring both PCs were on the same subnet, as mismatched IPs caused the ping to fail.