

**Computer Networks Lab one Report**

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B. TECH COMPUTER SCIENCE AND ENGINEERING (SEC-C 3rd YEAR, 5TH SEMESTER) (FROM SRM INSTITUTE OF SCIENCE AND TECHNOLOGY – TRICHY)

## **Introduction to Packet Tracer**

### **Cisco Packet Tracer Overview**

Cisco Packet Tracer is a network simulation tool that allows users to design, configure, and troubleshoot network topologies virtually. This software is widely used for educational purposes to gain hands-on experience in network design and management.

* **Installation**: Ensure Cisco Packet Tracer is installed on your computer. If not, download it from the Cisco Networking Academy website.
* **User Interface**: Upon opening Packet Tracer, familiarize yourself with the various tools and components available. The main components include the workspace, device selection panel, and simulation mode options.

## **Peer-to-Peer Communication Setup**

### **Network Configuration**

1. **Creating a New Network**:
   * Open Packet Tracer and create a new workspace.
2. **Adding Devices**:
   * Drag and drop two PCs from the device selection panel into the workspace.
3. **Connecting Devices**:
   * Use a copper straight-through cable to connect the FastEthernet0 port of PC0 to the FastEthernet0 port of PC1.
4. **Configuring IP Addresses**:
   * **PC0**:
     + IP Address: 192.168.1.1
     + Subnet Mask: 255.255.255.0
   * **PC1**:
     + IP Address: 192.168.1.2
     + Subnet Mask: 255.255.255.0
5. **Testing Connectivity**:
   * Open the command prompt on PC0.
   * Use the command ping 192.168.1.2 to test connectivity to PC1.

## **Study of Network Cables and Color Codes**

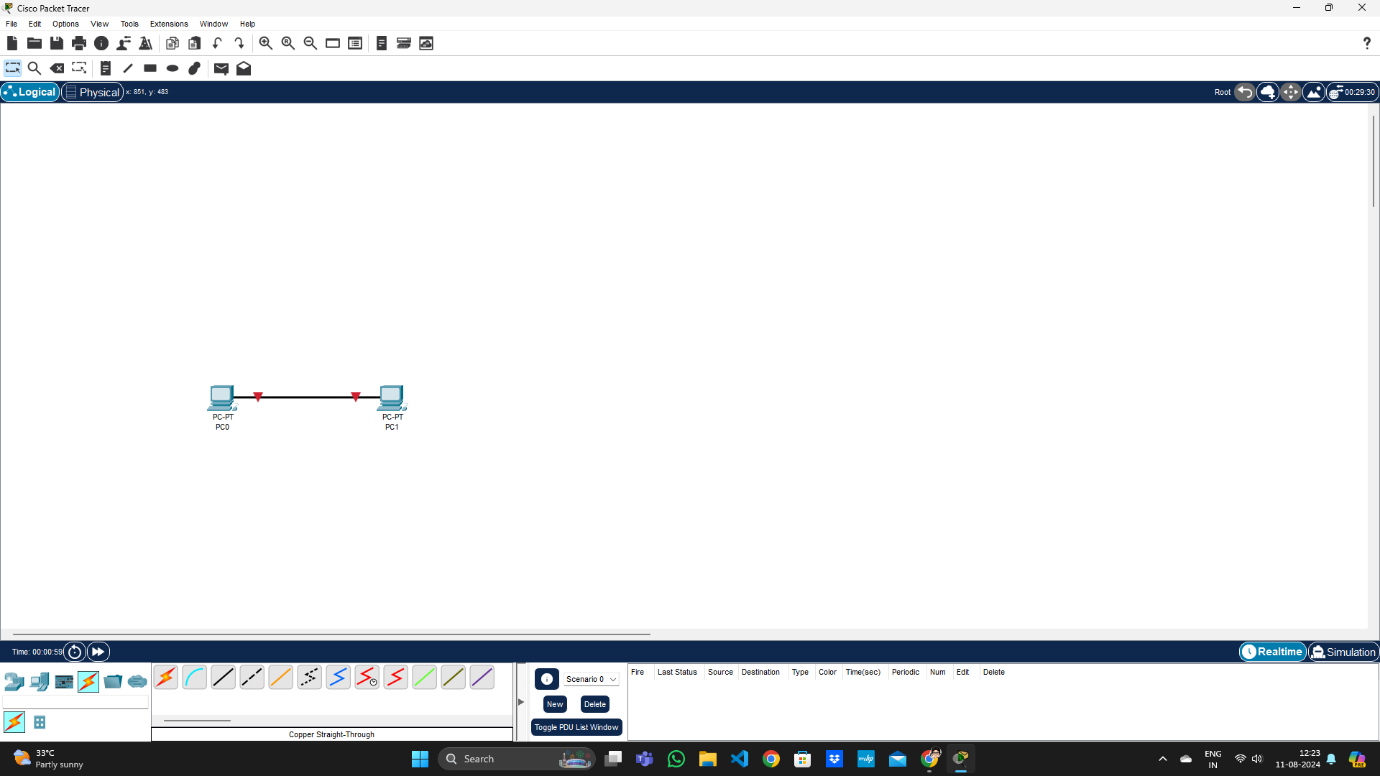
### **Types of Network Cables**

1. **Copper Straight-Through Cables**:
   * **Purpose**: Used to connect devices to network switches or routers.
   * **Color Code**:
     + **T568A**:
       - Pin 1: White/Green
       - Pin 2: Green
       - Pin 3: White/Orange
       - Pin 4: Blue
       - Pin 5: White/Blue
       - Pin 6: Orange
       - Pin 7: White/Brown
       - Pin 8: Brown
     + **T568B**:
       - Pin 1: White/Orange
       - Pin 2: Orange
       - Pin 3: White/Green
       - Pin 4: Blue
       - Pin 5: White/Blue
       - Pin 6: Green
       - Pin 7: White/Brown
       - Pin 8: Brown
2. **Copper Crossover Cables**:
   * **Purpose**: Used to connect two similar devices directly (e.g., PC to PC).
   * **Color Code**:
     + **T568A** on one end and **T568B** on the other end.
3. **Fiber Optic Cables**:
   * **Purpose**: Used for high-speed and long-distance communication.
   * **Types**: Single-mode and Multi-mode, distinguished by their core size and the type of light they carry.

### **Purpose and Use**

* **Straight-Through Cables**: Connect devices like PCs to network devices like switches or routers.
* **Crossover Cables**: Directly connect similar devices such as two PCs or two switches without an intermediary device.
* **Fiber Optic Cables**: Provide high-speed, long-distance connections between network devices.

### **Screenshots**



A computer screen shot of a computer

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A screenshot of a computer

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A computer screen shot of a computer screen

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