# INTRODUCTION

This Campus Area Network is about designing a topology of a network that is a LAN (Local Area Network) for a College in which various computers of different departments are set up so that they can interact and communicate with each other by interchanging data.

To design a networking scenario for a college which connect various departments to each other's, it puts forward communication among different departments.

CAN is used to design a systematic and well planned topology, satisfying all the necessities of the college (i.e. client).

CAN come up with a network with good performance. CAN is also providing security and authentication to forbid unauthorized logins.

# Problem Statement

1. This job with respect to the Campus Area Network is to provide a systematic, secure, valid, dependable communication among different departments.

2. The work is done keeping in mind the complexity and cost factor.

3. Various departments can simply divide the required data without any problem and can exchange their data without going to them physically.

4. For example like a phone call, thus conserving energy and time.

# Requirement Analysis

## Recommended H/w:

1. CPU: Intel Pentium III 1.0 GHz
2. Display resolution: 1024 x 768
3. Storage: 300 MB free disk space
4. RAM: > 512 MB

## Software Interfaces

The requirements required in the CAN are as follows:

Operating System: -

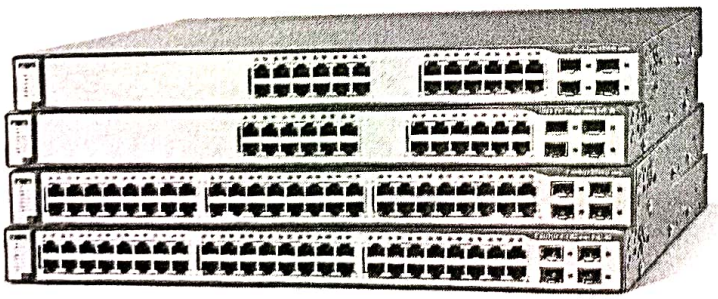
1. Microsoft Windows 7.
2. Cisco Packet Tracer.

## Communication Interfaces

- The execution of the system will be in the existing network.
- The system is mainly based on a client-server application Where the server providing data to access all the services .

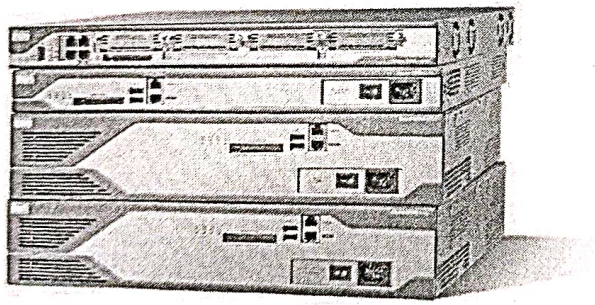
# Switch

- A network switch is a computer networking device that connects devices together on a computer network, by using packet switching to receive, process and forward data to the destination device. Unlike less advanced network hubs, a network switch forwards data only to one or multiple devices that need to receive it, rather than broadcasting the same data out of each of its ports
- A network switch is a multiport network bridge that uses hardware addresses to process and forward data at the data link layer (layer 2) of the OSI model. Switches can also process data at the network layer (layer 3) by additionally incorporating routing functionality that most commonly uses IP addresses to perform packet forwarding; such switches are commonly known as layer-3 switches or multilayer switches.



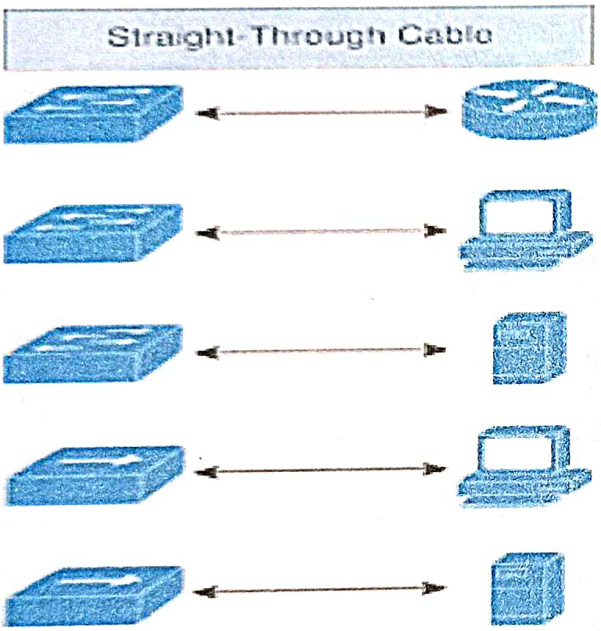
# Router

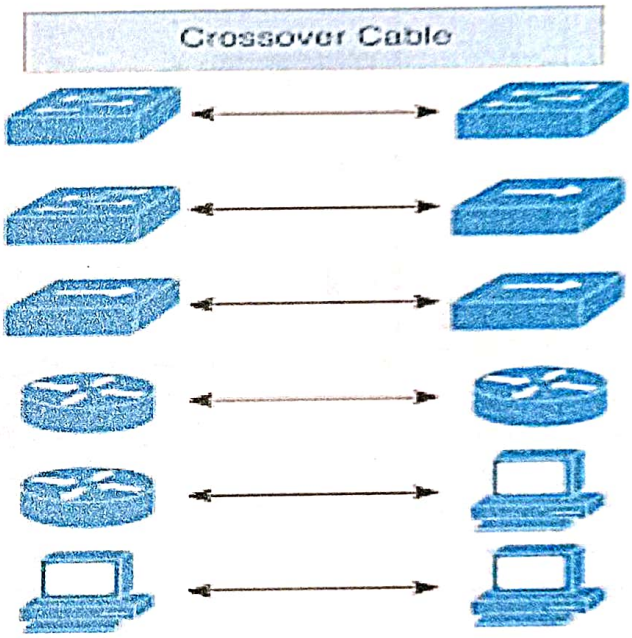
- A router is a device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP's network. Routers are located at gateways, the places where two or more networks connect.
- Routers use headers and forwarding tables to determine the best path for forwarding the packets, and they use protocols such as ICMP to communicate with each other and configure the best route between any two hosts.



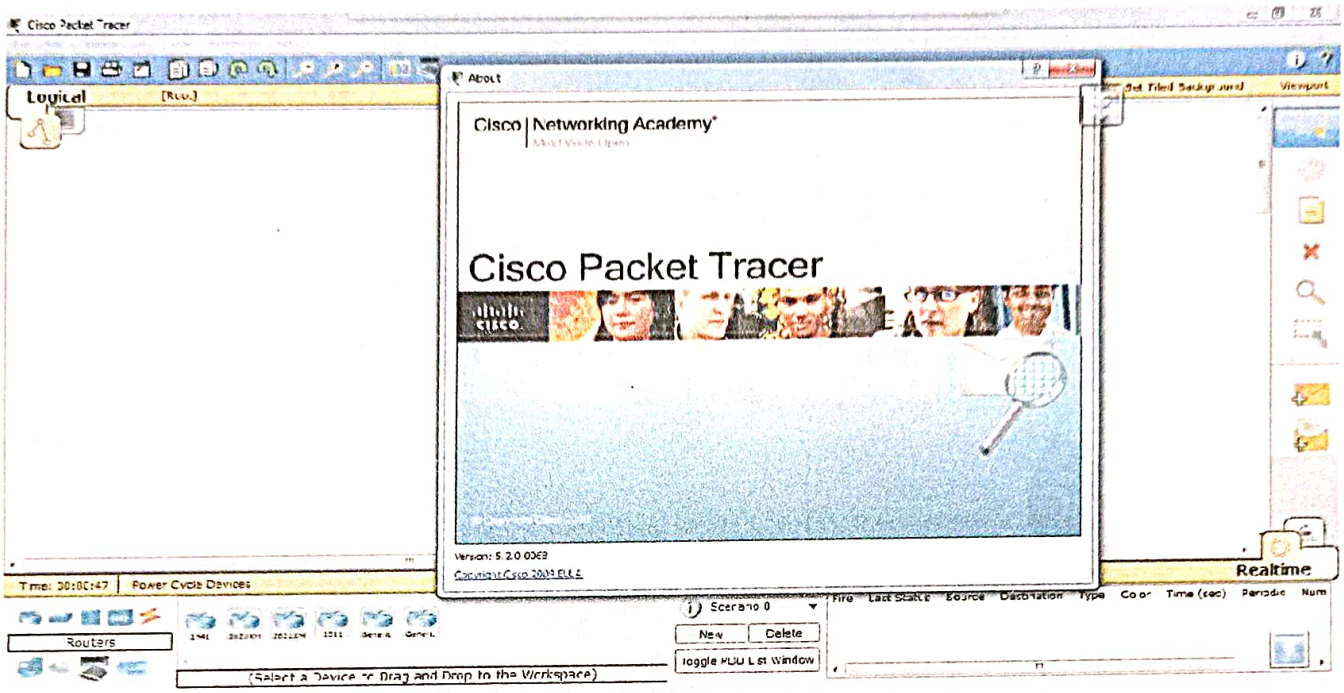
# Types Of Cables

- CROSS OVER CABLE
- COPPER STRIAGHT THROUGH CABLE

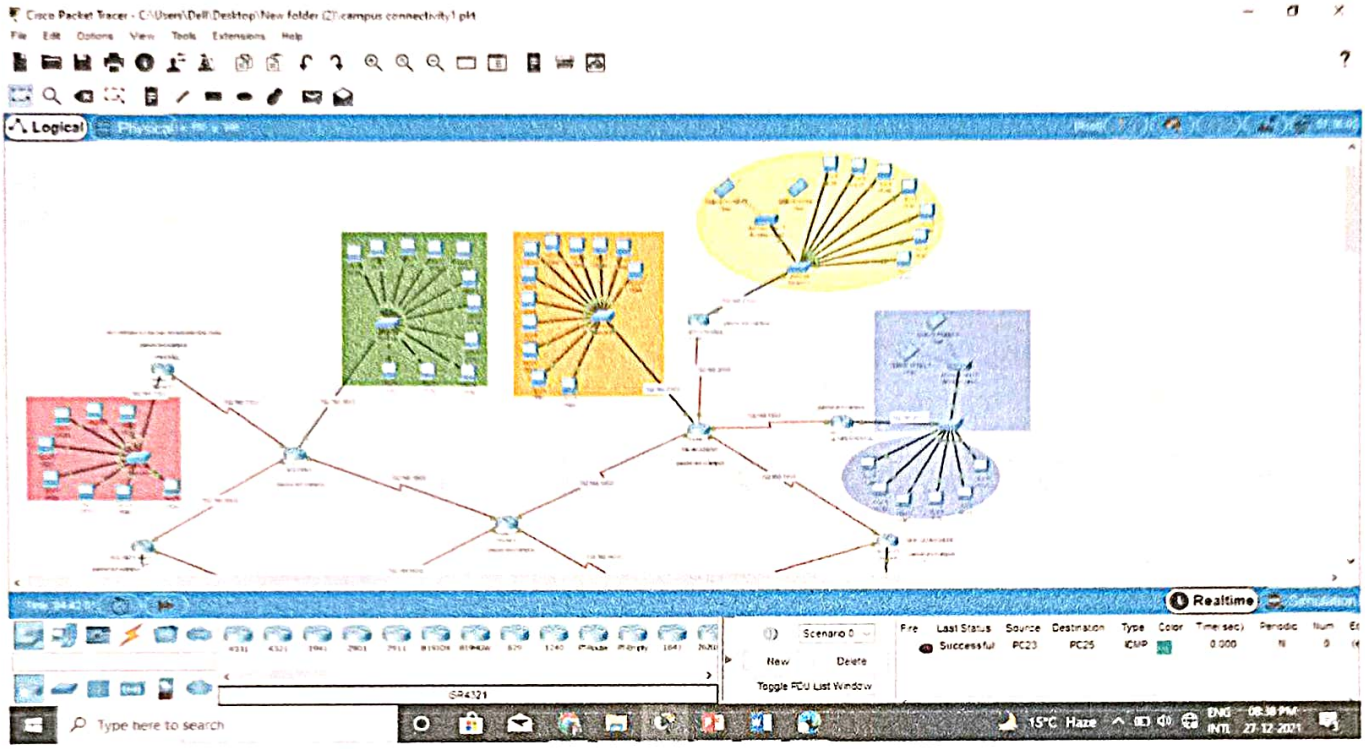


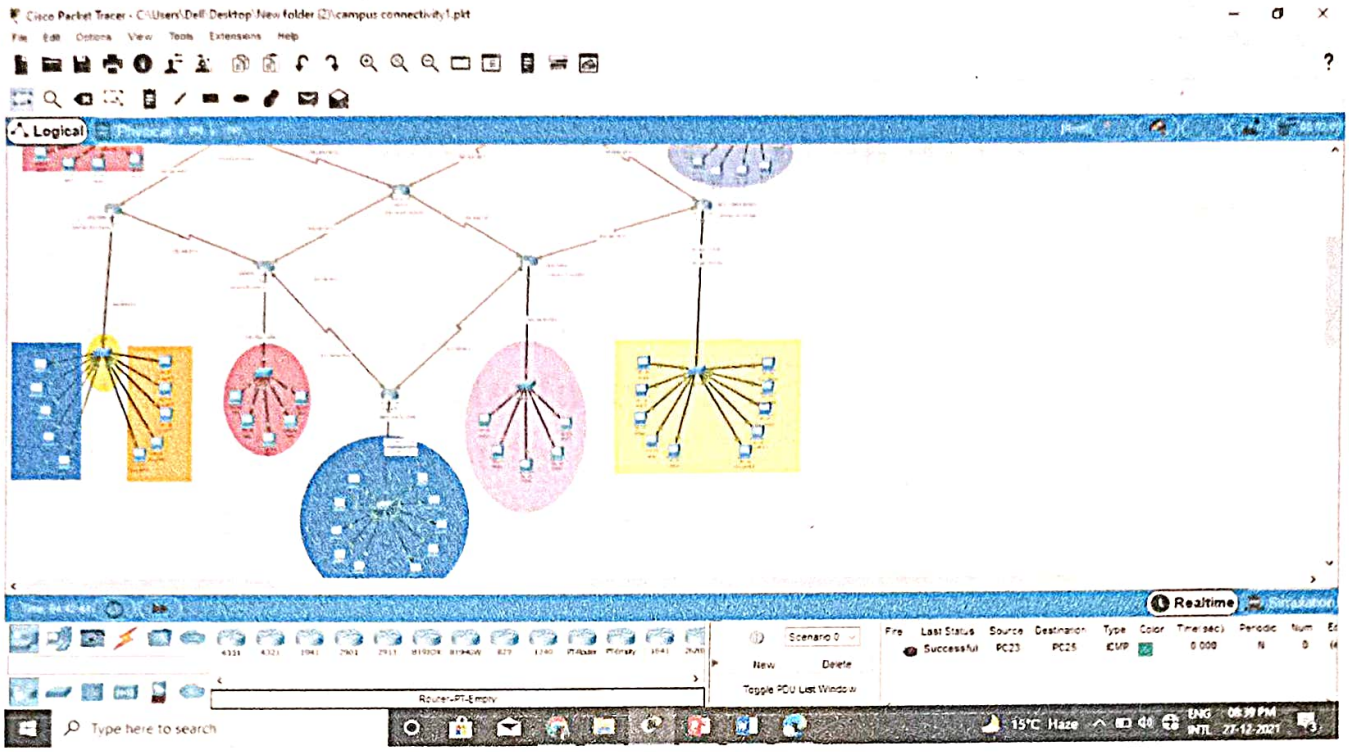



# Software


Cisco Packet Tracer
Logical
About
Cisco | Networking Academy
Cisco Packet Tracer
Version: 5.2.0.0069
Realtime
Routers
Scenario 0
New
Delete
Toggle PDU List Window
(Select a Device or Drag and Drop to the Workspace)

# Project Design

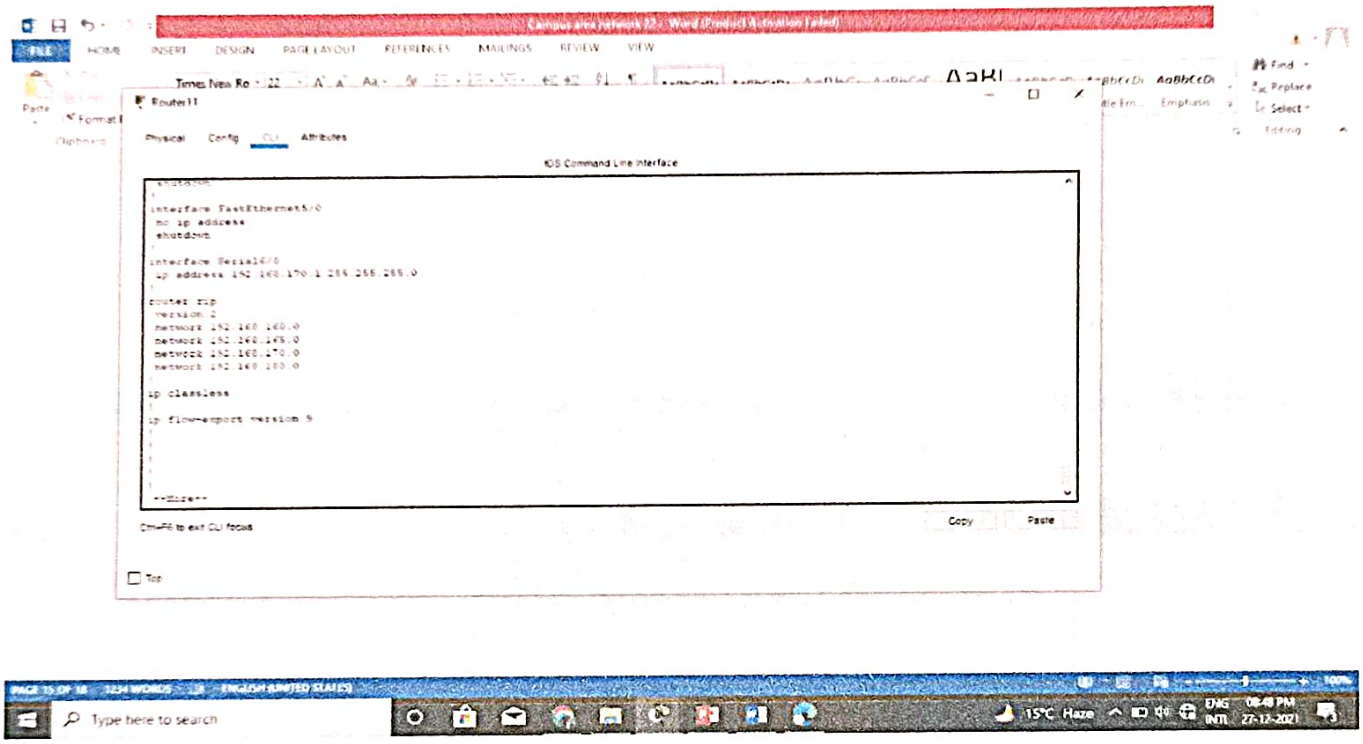



Cisco Packet Tracer - C:\Users\Dell\Desktop\New folder (2)\campus connectivity1.pkt
File Edit Options View Tools Extensions Help
Logical
Realtime
Scenario 0
New
Delete
Toggle PDU List Window
Router-PT-Empty
Type here to search
15°C Haze
ENG
INTL

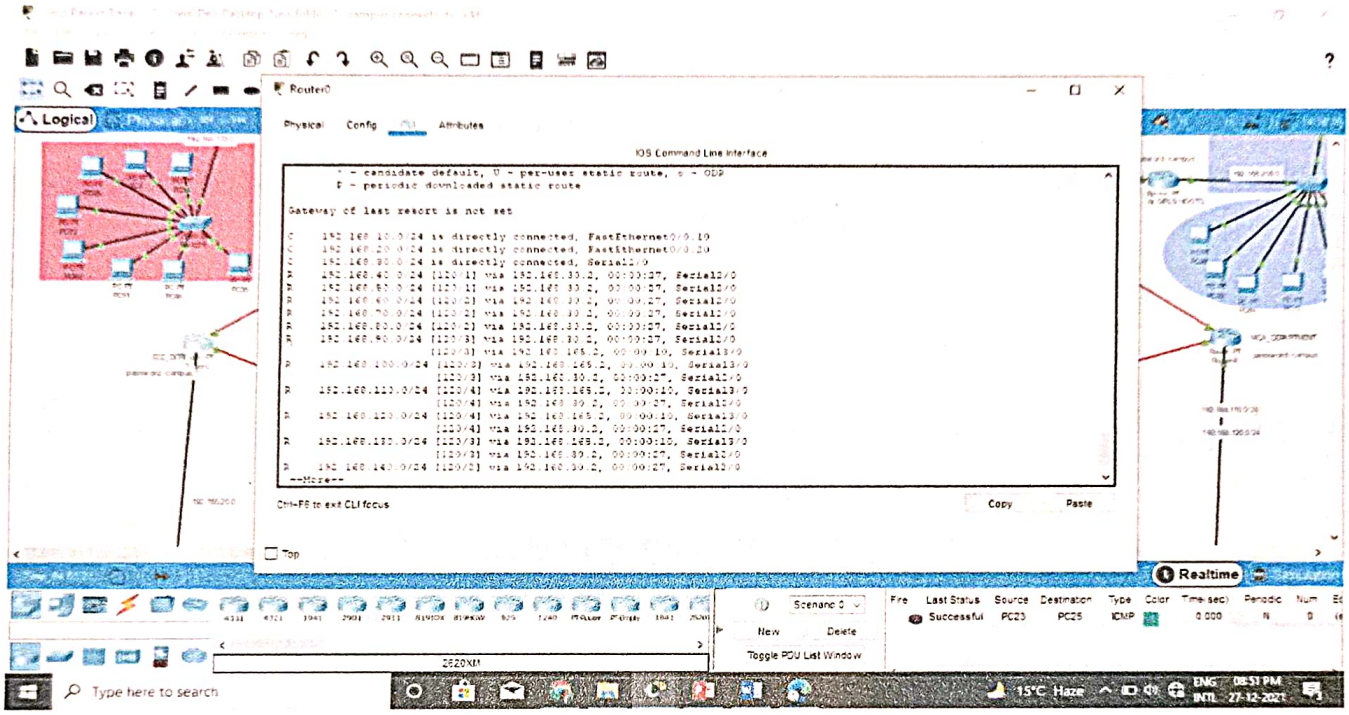
## Commands to Verify Configuration

- Show Running
- Show ip interface brief
- Show ip route
- Show ip access-list

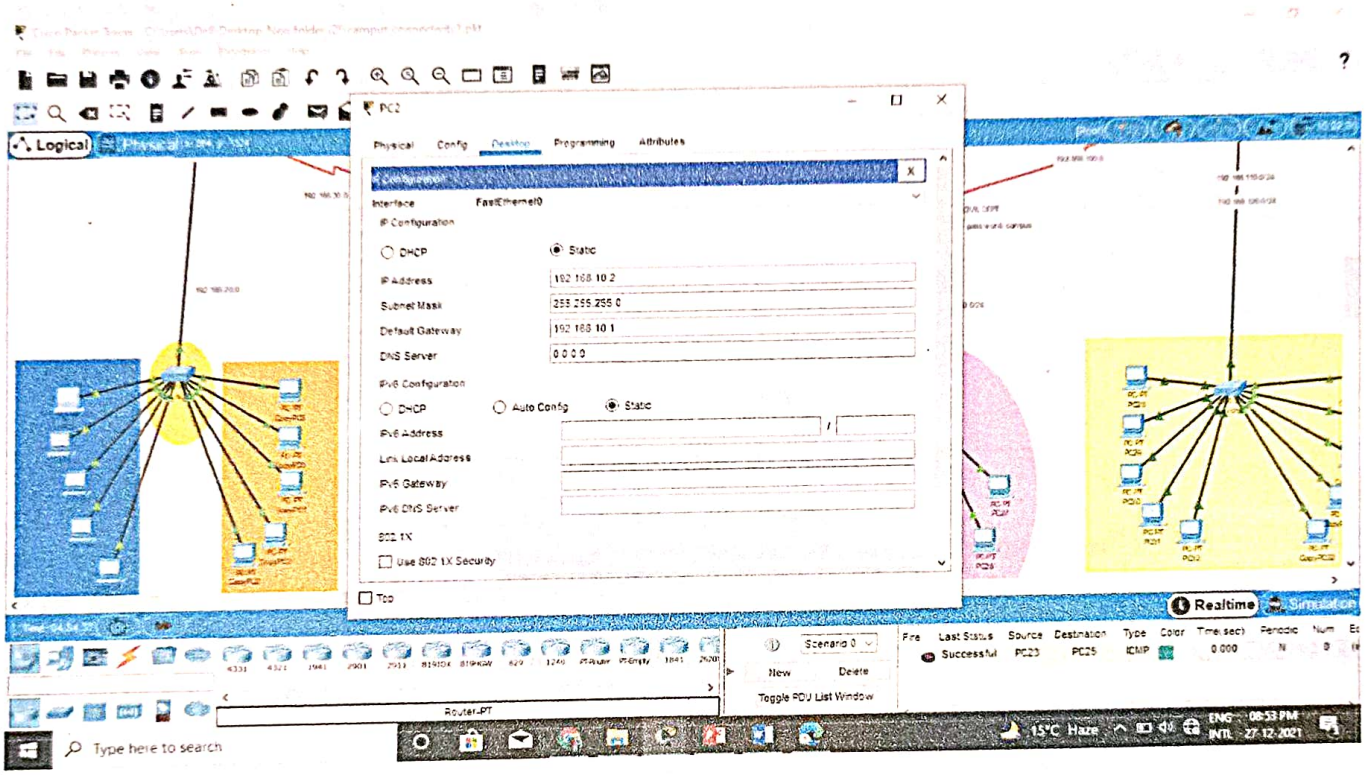
# RIP Configuration



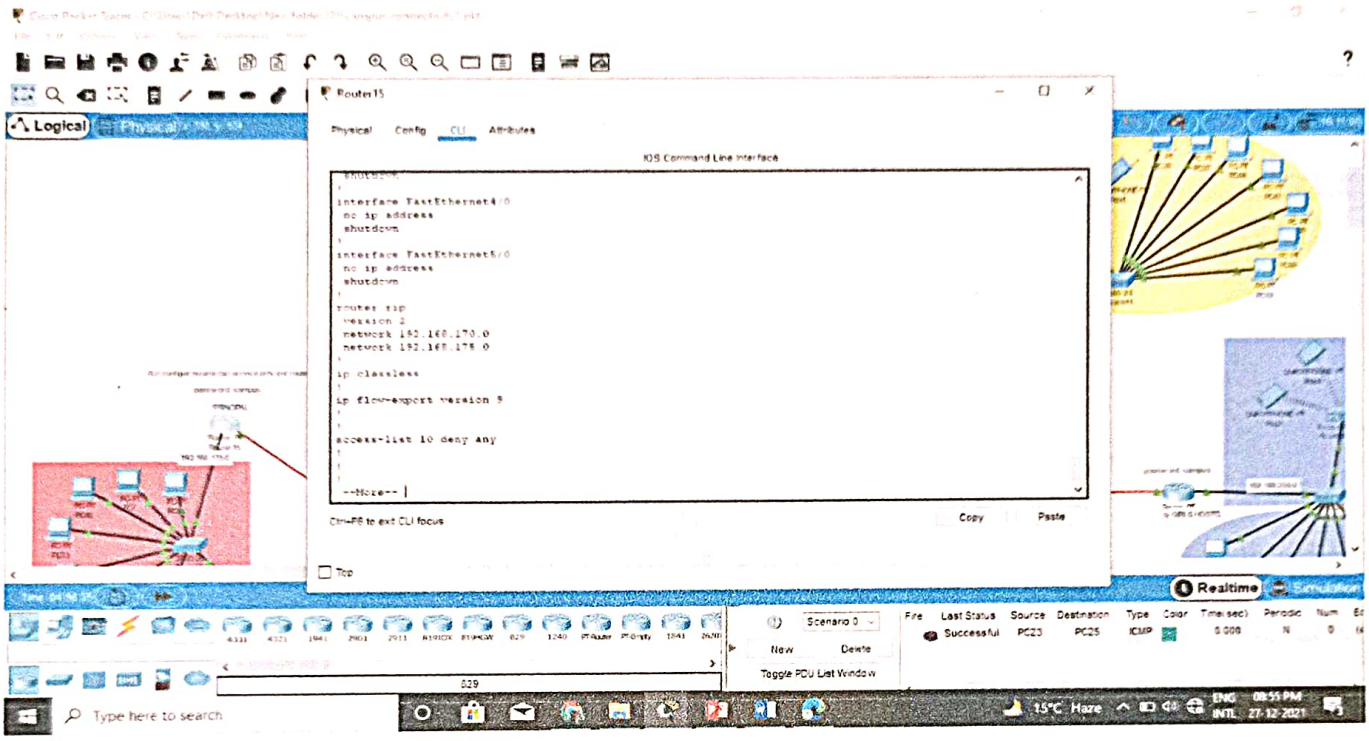
# Checking Routing Table



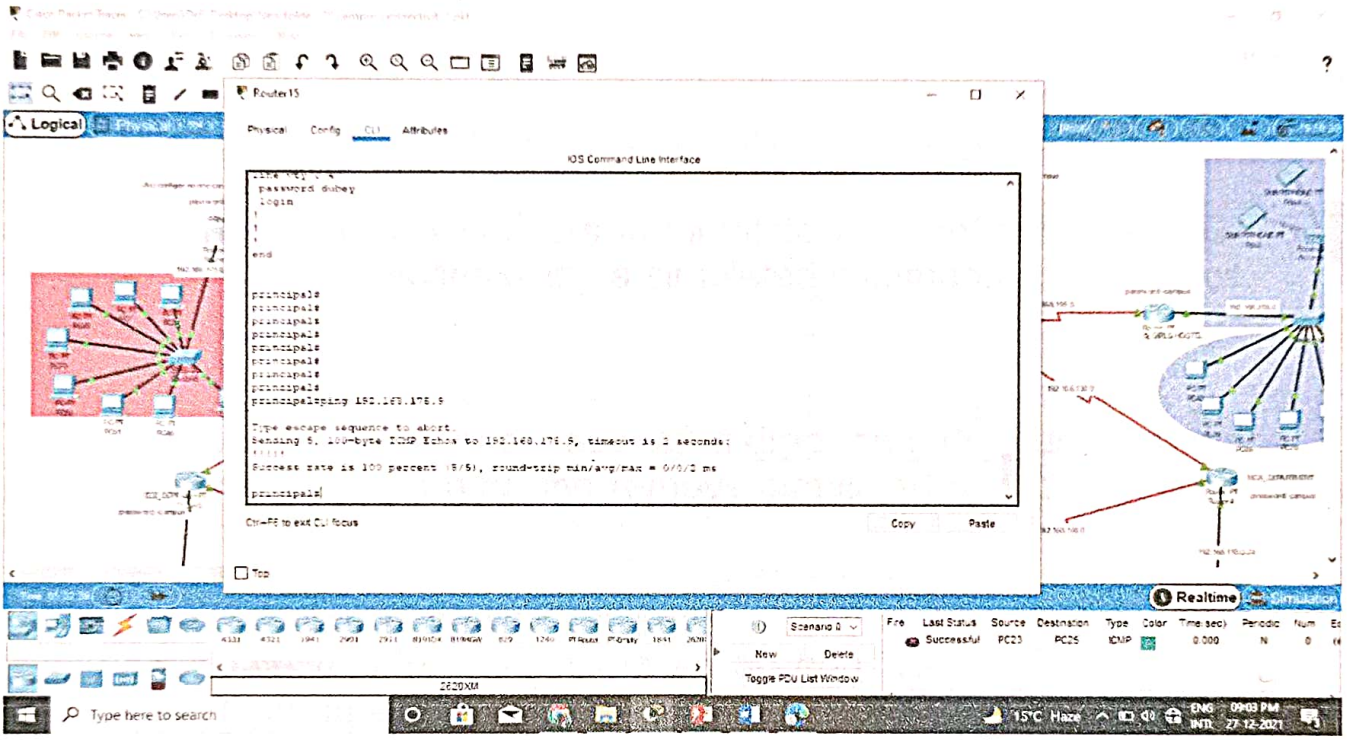
# Static IP Address



# Access list Configuration



# Outputs (Verify Connectivity Using PING)



# Software Requirement Specification

1. Cisco Packet Tracer is a cross platform visual simulation tool designed by Cisco Systems that allows users to create network topologies and imitate modern computer networks.

2. The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface.

3. Packet Tracer makes use of a drag and drop user interface, allowing users to add and remove simulated network devices as they see fit.

4. The software is mainly focused towards Certified Cisco Network Associate Academy students as an educational tool for helping them learn fundamental CCNA concepts.

5. Previously students enrolled in a CCNA Academy program could freely download and use the tool free of charge for educational use.

# SCOPE OF CAN

1. This project is give us an efficient methodology connected among all computers that are used in a respective university or college.

2. Apart from interconnection the project economical is made the topology by keeping in mind about the cost.

3. The most important points is authentication and security to prevent the unauthorized access.

4. To Design the network outlook for the community campus area network produces the substructure for all other exposure in the service framework such as security of the network, wireless area network, mobility as well as putting the justification to provide safety and security, operational efficiencies, virtual learning environments, and secure classrooms.

5. This paper describes the network design scenario approved by Cisco, as well as where we can apply these scenario within the various locations of a community college network.

6. Finally, key network foundation services such as switching, routing, multicast, and high availability are given for the full campus area network.

# References


- 1) Cisco Certified Network Associate Study Guide fifth edition by Todd Lammle.
- 2) www.cisco.com
- 3) www.wikiepedia.com
- 4) Computer Networks-A top-down approach by Kurose and Ross.